

**Accessible and Usable PDF Documents:  
Techniques for Document Authors  
Third Edition**



Karen McCall, M.Ed.

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## **From the Author**

This book is based on the work and experience of Karen McCall. This book was written as a best practices guide for working with accessible tagged PDF documents. These are the techniques that have worked or not worked for me and I decided to share them with others who are working in the area of accessible tagged PDF.

Topics in this book are arranged where they might logically appear such as Tables in all chapters on Microsoft Office and the chapter on InDesign; however I've also created chapters for document elements such as lists and tables that consolidate information specific to accessible lists or tables so that the information you need is in one place.

Even as I "finish" this book I am making notes on new methods and techniques for working with accessible tagged PDF documents for the fourth edition of this book. There is always something new to learn and every PDF document gives you that opportunity!

## **Dedication**

This third edition of my book is dedicated to Joyce Malombe, Aimee and Greg Todd ...and to my "live in" friends Barnaby Edmund and Olivia Zane...who all keep me focused and somewhat sane.



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# Introduction

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This book is designed to answer some of your questions about the accessibility and usability of PDF documents. The focus is on Adobe Systems© tools, Microsoft Office© and its tools and an ability to use them to create tagged, accessible PDF documents; however there are other flavours of PDF creators out there and if a PDF document is not tagged, it represents a barrier to anyone who does not have access to a monitor or a mouse.

You are included in people who don't have access to a monitor or a mouse if you use any device where the screen becomes faint and hard to see in bright lights or any device designed for hands free operation. Laying a foundation of accessible and usable digital information, in this case, PDF documents, also provides a framework for more global access to information by everyone. Using accessibility and usability as the underlying technology structure liberates us to create truly usable tools.

This book focuses on PDF or Portable Document Format and the tools Adobe Systems and Microsoft have developed toward more accessible and usable digital information.

There are still issues of authority, DRM or Digital Rights management, security, and the ability of a document author to create information that is structurally sound. These issues will remain, and conceivably get more bizarre in their incarnations before we really understand accessibility and usability of digital content.

It is hoped that in working through some of the techniques and concepts in this book, that the implications of inaccessible and unusable information formats will become clearer. Inaccessible content affects more than people with disabilities...it affects all of us in the digital environment.

## **What is PDF?**

PDF or Portable Document Format allows you to maintain document integrity and security over various platforms of delivery such as PC/Windows or Mac based computers. Fonts and document formatting attributes are saved within the file itself. PDF is also useful for online forms such as registrations, textbook order forms or expense reimbursement. These can also be made accessible. The new frontier in accessing PDF documents are the hand-held, SmartPhone and other devices on the technology horizon. Standard size monitors and mice aren't necessarily integrated into these tools. Frameworks of accessibility and usability are increasingly important to everyone.

In terms of access to PDF documents by people with disabilities who use screen reading technology, at this time PDF is not a “portable” document format. People with disabilities do not have tools to read PDF documents on SmartPhones, PDA’s, or other portable devices. We are confined to accessing PDF documents on desktop, laptop, or tablet computers. PDF is far from being a portable format and it appears that no development of an accessible PDF reader for these devices is underway. This is one of the reasons the issue of being able to save a PDF document in a format that is “portable” such as plain text or Microsoft Word format is still prevalent.

This book is designed to include basic to advanced skill levels in working with PDF documents.

Creating accessible PDF documents allows people using screen readers such as Freedom Scientific's JAWS© [Job Access With Speech] and GW Micro's Window-Eyes© to read most of the information in these unique documents. TextHelp© has also developed Text-to-Speech software to be used with PDF documents for access by people with learning or cognitive disabilities.

## **History of PDF Accessibility**

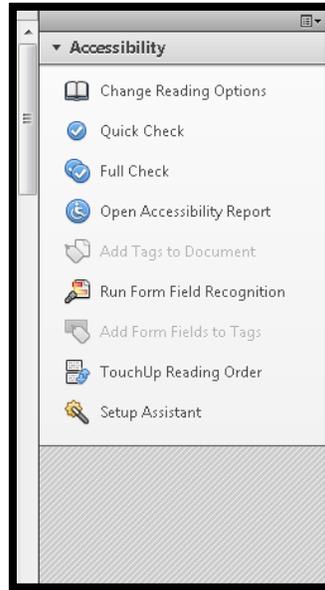
Adobe Acrobat and Acrobat Reader 4.x had a plug-in that would allow PDF files created in an application like a word processor, to be converted into a readable text or HTML file. This conversion was not possible, however, if the document had certain security restrictions or if it was a scanned image of a document.

Version 5.0 of Adobe Acrobat introduced more accessibility for documents created in native applications. Using the MakeAccessible© plug-in for Adobe Acrobat, a document could have a logical document structure which could be extracted and read by screen readers without manually trying to extract information to another document format. This was the introduction of tagged PDF. People using adaptive technology often had both versions of the Acrobat Reader on their computers in an effort to read older and newer PDF documents. The issue still existed of scanned documents as images and high security documents being completely inaccessible.

When Adobe Systems introduced version 6 of Adobe Acrobat they renamed Acrobat Reader to Adobe Reader© to try and avoid product confusion. Adobe Reader will also read PDF eBook formats which means people don't have to have an eBook reader for eBooks created as “eBook PDF.” This lets document authors tag eBooks that are produced in PDF format. The MakeAccessible plug-in is now incorporated into Adobe Acrobat as a seamless tool.

Acrobat 7 improved on the tagging and repair capabilities we have. Acrobat 8 marked a change in the “user interface” or the look and feel of Adobe Acrobat. Unfortunately this meant that many of the tools those of us who work with tagged PDF use were hidden in non-intuitive places. While Acrobat 9 provided more intuitive access to those tools it also marked the deprecation of some of the abilities to Tag PDF from applications such as Microsoft Outlook. There were other issues with Acrobat 9 that will be covered as we work through the content in this book.

We are now at Acrobat 10. The user interface or look and feel of Acrobat [and Reader] has been completely redesigned. Unlike Acrobat 8 which had a redesign of the existing look and feel, Acrobat 10 "starts from scratch" and looks quite different from previous versions. Most of the items we work with are no longer in the Menu Bar.



**Figure 1 Accessibility Toolbar to the right of the document.**

There are some caveats to upgrading to Acrobat X. If you use the keyboard to work with tagged PDF documents, you can become frustrated at the minimal level of keyboard access to the tools you use on an hourly basis. You can no longer press Alt + A, A, F to do a Full Check. You must F6 into the Toolbars to the right of the document, arrow incessantly until you find the Accessibility Toolbar and continue using the arrows until you find Full Check. This wastes a lot of time as does using the mouse to do this.

The other issues with Acrobat X are:

- We still do not have the summary dialog for the Full Check that we had in Acrobat 8.
- We can't create tagged folders or posts from Microsoft Outlook.
- We still experience the random insertion of images in the Tags Tree with the most common mistagging being to throw all of the images to the top of the Tags Tree or to place all image Tags at the bottom of each page.
- There is no tool for selecting and repairing lists.
- The tagging process still chokes on poorly designed columns especially in desktop published documents.

The initial release of Acrobat X did not have support for a 64-bit version of Microsoft Office 2010. The first service pack or patch might include this. Make sure you update Acrobat X when updates are available to ensure you have the best tools for working with tagged PDF documents.

Other than refinements to what exists, tagged PDF has not advanced since Acrobat 7. So in thinking of upgrading it will be the refinements to the OCR tools and other “fixes” that you will see changes in. If you are on an automatic upgrade cycle, you have no choice.

I guess you can say that Acrobat X does look pretty?

Although on an LCD monitor the colours of the user interface are so washed out that you might need to use screen magnification or screen reading to recognize where you are and what tool you are using even if you don't have a visual disability.

It doesn't matter which native application you are using to generate PDF, you will need to purchase Adobe Acrobat Professional or Adobe Acrobat Professional Extended to perform more detailed accessibility checks and repairs. Acrobat Standard does not have this capability.

**Note:** The new user interface of Adobe Acrobat is not fully accessible to those of us who use the keyboard and/or a screen reader. While the Tags Panel is still accessible the implementation of the Toolbars down the right side of the document are not. The Menu bar items have been replaced with this standardized Adobe application Toolbar system. Accessibility was not part of the core design.

There are other flavours of PDF out there developed and used by other companies. One of the conversion processes that will give you challenges are the infamous Quark© to PDF documents. As we will see, the document author and document designer have a critical role to play in the future accessibility and usability of any print or digital document created. There are also tools you can use to try and read information in PDF documents.

## Adaptive Technology and PDF Documents

It is important to understand that each adaptive technology approaches content and applications in a different way. This is the main reason you cannot define the accessibility of any type of document by how one version of an adaptive technology interacts with it.

The following tools are for people with visual, learning, or cognitive disabilities; however, for people with physical or motor disabilities or for people who are deaf or hearing impaired, PDF content needs to be easily navigable and captioned.

[Premier Technology](#)<sup>1</sup>™ has a tool called PDF Equalizer for viewing and interacting with PDF documents. [PDF Equalizer](#)<sup>2</sup> is used by many school boards and academic institutions as an alternative tool for accessing inaccessible PDF documents. The strength of PDF Equalizer is that it lets someone make notes and export them for study purposes.

Adaptive technology OCR Scanning [Optical Character Recognition] software such as [Freedom Scientific's OpenBook](#)<sup>3</sup>, or [Freedom Scientific's WYNN](#)<sup>4</sup>; or [Kurzweil's K-1000](#)<sup>5</sup> or [Kurzweil's K—3000](#)<sup>6</sup> also contain tools for reading PDF documents.

OpenBook is designed for people who are blind or visually disabled and WYNN is designed for people who have learning disabilities. There is more auditory feedback with OpenBook than with WYNN.

The K-1000 is designed for people who are blind or visually disabled and provides more auditory feedback for menus, dialog boxes and message boxes. The K3000 is designed for people who have learning disabilities and has more limited auditory feedback. Both the K1000 and OpenBook can also be used with your screen reader instead of the included synthesizer.

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<sup>1</sup> Premier Technology home page: <http://www.readingmadeez.com/home.html>

<sup>2</sup> Premier Technologies PDF Equalizer home page:  
<http://www.readingmadeez.com/products/PDFEqualizer.html>

<sup>3</sup> Freedom Scientific, OpenBook: <http://www.freedomscientific.com/products/fs/openbook-product-page.asp>

<sup>4</sup> Freedom Scientific, WYNN: <http://www.freedomscientific.com/LSG/products/wynn.asp>

<sup>5</sup> Kurzweil Educational Software, K-1000: <http://www.kurzweilededu.com/kurz1000.aspx>

<sup>6</sup> Kurzweil Educational Software, K-3000: <http://www.kurzweilededu.com/kurz3000.aspx>

If you are looking at existing mainstream software to allow access to Adobe PDF, both [TextBridge](#)<sup>7</sup> and [OmniPage Pro](#)<sup>8</sup> from Nuance [later versions] allow conversion of PDF to text. In most cases a scaled down version of one of these two applications comes with your scanner.

If you are an organization or institution requiring the high volume production of tagged Adobe PDF files from scanned documents, look at using [Adobe Capture](#)<sup>9</sup>. This is also a valuable tool for converting documents that are scanned images into readable PDF format which is tagged automatically.

With version 7 of the Adobe Acrobat and Reader products, Adobe also introduced a server based structure for deploying and securing PDF documents. This is the Adobe LiveCycle series of products. You can use Adobe Acrobat or Reader. Within LiveCycle, however, the majority of the LiveCycle products used to enhance networking and security are not accessible to people using adaptive technology.

With the implementation of Adobe's LiveCycle server side line of products, organizations can determine who has access to documents for specified periods of time, in effect permitting a PDF document to "expire" after a certain number of days. DRM is alive and well!

With version 7 of Adobe Acrobat Professional, Adobe included one of the LiveCycle products: LiveCycle Designer for creating forms. [Adobe LiveCycle Designer](#)<sup>10</sup> is a separate application that is installed when you install Adobe Acrobat Professional. It creates "XFA" forms which are accessed through Adobe Acrobat or Adobe Reader. There is no tool to validate the accessibility of forms created using LiveCycle Designer.

## Keep Current!

If you are creating tagged PDF, it is important to use the current version of Adobe Acrobat professional. Up until version 8, each iteration of the software provided improved tagging features. There were also new tools for checking the logical reading order of tagged PDF documents and new repair features. My hope was that in Acrobat 10 tagging tools and processes would be improved. There has not been any advancement in terms of tagging since Acrobat 8. The only reason to upgrade to X would be that you are using Office 2010.

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<sup>7</sup> Nuance, TextBridge: <http://www.nuance.com/textbridge/>

<sup>8</sup> Nuance, OmniPage Pro: <http://www.nuance.com/omnipage/>

<sup>9</sup> Adobe Capture: <http://www.adobe.com/products/acrcapture/index.html>

<sup>10</sup> Adobe LiveCycle Designer: [http://www.adobe.com/enterprise/pdfs/xml\\_form\\_designer\\_faq.pdf](http://www.adobe.com/enterprise/pdfs/xml_form_designer_faq.pdf)

Now that the user interface has serious accessibility issues I am back to recommending Acrobat 8 if your organization is still using Office 2003. Adobe has failed to restore the summary information that you get for an Accessibility Full Check in Acrobat 8. Combined With minimal resources put into the advancement of tagged PDF there is little reason to upgrade. Although Acrobat X was used for this book, the techniques apply to Acrobat 7 through X. Some of the processes may differ such as the integration of LiveCycle Designer into the Acrobat application but the techniques and problems you will encounter are the same. I also recommend installing the [Microsoft Save as PDF or completely inaccessible XPS add-in](#)<sup>11</sup> to give you options in Office 2007. This add-in is included in Office 2010.

The initial release of Acrobat X did not have support for a 64-bit version of Microsoft Office 2010. The first service pack or patch might include this. Make sure you update Acrobat X when updates are available to ensure you have the best tools for working with tagged PDF documents.

There are still problems with using Picture Styles in a DOC or DOCX document and parts of the table grid lines being mistagged as images outside of the <Figure> Tag [in previous versions of acrobat these were properly tagged as Artifacts]. In Some documents from Word 2007 and 2010 all images or <Figure> Tags are thrown to the top of the Tags Tree. From this point they will have to either be dragged to their logical place in the document or if you've used captions, made Artifacts.

In previous versions of this book I've recommended that those of us who use adaptive technology keep up to date with mainstream tools like Adobe Reader and Adobe Acrobat. However generally the whole area of accessibility for mainstream and adaptive technology tools seems to be stalled. I still recommend that our adaptive technology is up to date but it is less important to keep Adobe Reader or Acrobat up to date. As with people who aren't using adaptive technology the only reason to move to Acrobat 9 would be if you are using Office 2007 and the only reason to upgrade to Acrobat 10 is if you are using Office 2010 however the accessibility problems might preclude this as an option.

If you can't keep current with your adaptive technology, make sure that the version of Adobe Reader you are using is compatible with your version of the adaptive technology. This will help in accessing tagged accessible PDF documents. You will encounter difficulties if the adaptive technology/Adobe Reader combination is not compatible. See your adaptive technology developer web site for this information.

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<sup>11</sup> Microsoft Save as PDF or XPS ad-in download page:  
<http://www.microsoft.com/downloads/details.aspx?FamilyID=4d951911-3e7e-4ae6-b059-a2e79ed87041&displaylang=en>

## Terminology

As a person who uses a screen reader and/or screen magnification software and who is familiar with the following terms, there are some phrases and terms you might not be familiar with. As an author, there are some new terms such as DRM that you might not know.

**DRM** Digital Rights Management.

**PDA** Personal Digital Assistant. This could be Palm or windows Mobile based.

**PDF** Portable Document Format.

**RSI** Repetitive Stress Injury; for example Carpel tunnel Syndrome.

**Screen Magnification** an application that provides magnification and auditory support for activities on your computer.

**Screen Reader** provides auditory feedback for all components of activity on the computer; lets you use the computer without using a monitor.

**SmartPhone** A type of phone which incorporates phone functionality as well as PDA tools.

**TTS** Text-to-Speech; provides auditory feedback for information primarily in the main document Window.

## AppKey

The keyboard equivalent of a Right Mouse Click is the Application Key commonly referred to as the "AppKey." The AppKey is located on the lower right side of the main keys on your keyboard. It is just to the left of the Ctrl or Control key, and to the left of the left Windows Key [the key with the Windows logo on it]. The image on it looks like a little application Window.

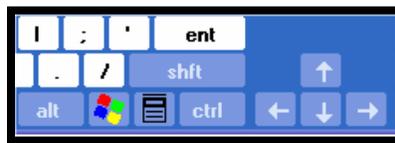


Figure 2 An on-screen keyboard showing the location of the AppKey.

## Activate

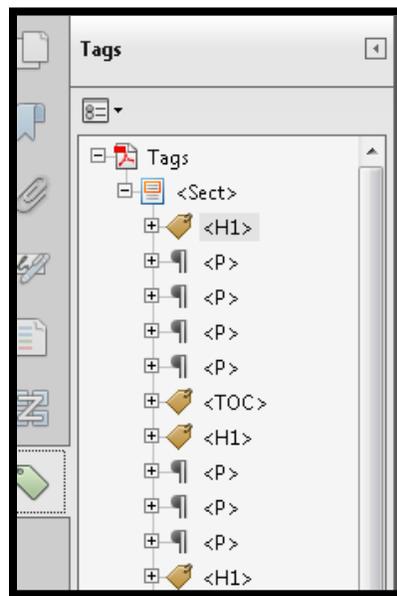
In an effort to be device independent, I've use the word activate to indicate either a mouse click or the press of an Enter key. Activate represents a left mouse click/Enter key and AppKey represents a right mouse click.

## Focus

With screen readers, we often keep track of which part of the screen or application “has focus.” This is different from selecting something and is sort of the equivalent of moving your “visual focus” to another part of the screen or application.

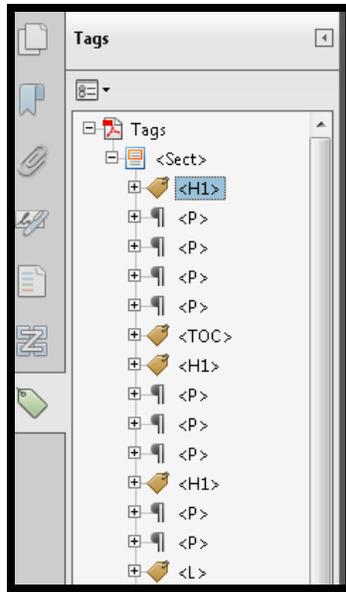
If you are moving through the Tags Tree, you might want to move your focus to the PDF document itself. Pressing F6 will do this. In the Tags Tree, the tag element that was selected will appear as being greyed indicating that focus has shifted to another part of the application Window.

The following image shows a tag with focus moved to another part of the Adobe Acrobat Professional Window. Within the Tags Tree, the element is still technically “selected;” however, you can’t do anything with the tag because focus has moved to another part of the application Window.



**Figure 3 Tags Tree with Tag in focus but not selected.**

The following image shows the same Tag selected.



**Figure 4 Tags Tree with Tag selected.**

If a tag is selected, you can modify it, make repairs or move it. If you lose the focus/selection of the tag, press F6 to bring the selection/focus back to the tag so you can work with it.

The term focus is also used in this book to describe where your cursor is when you open a dialog box. For example, pressing Ctrl + the letter O will bring up the open dialog box and focus will be in the filename edit box where you can type the name of the file you want to open. You would move focus to the list of files and folders by pressing Shift + Tab. When you do this, if you are using a screen reader, you might hear that a folder or file is there but not selected. In effect it has focus but you can't open it because it is not "selected." If you press the Spacebar, the folder or file is select it and can then be opened.

## **Legacy PDF**

For this book, legacy PDF refers to any document you may be faced with that is not tagged. This includes PDF documents created after the ability to tag them. Not every author creates accessible and usable PDF documents. This is the fifth iteration of Adobe Acrobat that provides support for creating accessible and usable PDF documents and many document authors are still learning how to incorporate accessibility and usability into their PDF documents. As with other legacies, you may not always know what you inherit until it is in front of you.

## **DAISY Books**

DAISY or Digital Accessible Information System is the format for digital talking books. At one time, this format, which is an international standard, was seen as a format for books for the blind or visually disabled. In the years since the establishment and evolution of the DAISY format, we've

come to recognize that it is a format that everyone can use and take advantage of. For more information on DAISY visit the [DAISY Consortium Home Page](#)<sup>12</sup>.

## Repurpose Content or Documents

Our ability to reuse or “repurpose” documents and pieces of information is essential in the digital environment we live and work in. As document authors, creating one document that can then be used to create Braille, HTML, DAISY content, PDF or other formats means less work. Authoring tools are now including more automated tools to let us bring information from other applications into different formats and build the structure for those formats based on what we’ve done in the original document. Our ability to repurpose information and documents is not only useful when we need to create more accessible information for people with disabilities; it is also useful in creating information that will be used on hand-held devices such as PDA’s or SmartPhones.

## Where to Start?

If you are unfamiliar with PDF documents and why we need to tag them for accessibility and usability, you might want to read [George Bell’s excellent description of PDF documents](#)<sup>13</sup>.

If at all possible, begin with Microsoft Office based documents that you’ve created yourself. This is a less painful experience than diving right into InDesign, Quark scanned or TIF based PDF documents. You may also have to learn how to create accessible documents in the native application such as Word. If you simply throw document parts together to make a document look nice without the underlying structural elements, you will have a lot of repairs when the document is converted to tagged PDF.

One of the basic barriers to creating accessible and usable PDF documents is that document authors don’t use the tools in their native applications for providing document structure. It is too easy to just “fling formatting” or throw bold, align and colour at content without using a style. Even people in the desktop publishing industry often use images or improperly created text elements to get that “perfect visual effect” assuming that their readers are only going to have visual access to the information.

In the past, or pre Acrobat version 5 and the evolution of the Internet, we didn’t have to pay much attention to the structure of a document. For PDF documents in particular, their purpose was primarily to facilitate camera ready documents that were to be printed. The goal was a crisp clear

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<sup>12</sup> DAISY Consortium Home Page: <http://www.daisy.org/>

<sup>13</sup> George Bell’s description of PDF documents: <http://www.karlencommunications.com/adobe-accessibility.htm>

print document and the intention was never to have these documents in digital format “for the masses” let alone people with disabilities.

Now that PDF documents are available and used for almost every type of document on the Internet, we need to not only look at how documents can be tagged for accessibility but how we create the source documents so that we can implement good design and lessen the repairs when documents are converted to tagged PDF.

It may take you a while to understand the relationship between tags and the content of a PDF document. Tagging a document doesn’t mean that the visual aspects of a document are changed. Tagging a document looks at standards of structural elements and tries to pull them together to form a document...the same thing document authors should do.

If you’ve used Corel WordPerfect© or have created any HTML documents and have looked at the HTML code, you already have a basic understanding of the tagging process for PDF documents.

The paragraphs in this document, for example are identified by Microsoft Word as paragraphs because they have the structural elements that Word says belong to a paragraph. The headings in this document were created using the corresponding heading styles as their base, so Word sees them as headings in the document structure. In turn, these document parts or elements are tagged properly as paragraphs or headings respectively.

Because the headings and paragraphs were created using inherent structural elements, when I repurpose this document to Braille, PDF, HTML or a DAISY book, the authoring tools I use to create these other formats will automatically recognize these structural elements and build the structure of the other documents. I will have little or no clean-up and repair work.

Most tags are turned on at the beginning of text, or the document element and then turned off when the document author wants to use a different element.

Again using a paragraph as an example, if we could look under the hood of our document, we would see something like...

```
<P>The paragraph text typed here.<P>  
<the code for an Enter>
```

...And then the rest of the document, either another paragraph, a table, a heading or an image.

In this book, we will be using the Highlight Content tool most of the time in Acrobat so you’ll be able to see the visual content that corresponds to its Tag in the Tags Tree.

In many respects you will need to learn to let go of the visual representation of the document and begin to understand how the content of the document will be accessed or “rendered” to the person reading the document. This means being able to look at headings, links and form controls as separate components of a document. For example, if you could get a list of links in a document

would you be able to know where a link will take you? If you were filling out a form and could only see the form fields or form “controls” in a list would you be able to fill out the form and submit it?

**Note:** Each Tag must correspond to a document part. You cannot have Tags in a PDF document that do not correspond to a document element in the visual document. This is just bad form.

## Accessibility and Usability Settings

When you use Adobe Acrobat and Adobe Reader, you can change some of the visual settings to make text more readable. You can also use the “Read Out loud” tool from the View menu to have a PDF file read to you. These tools are available to everyone.

When performing QA or Quality Assurance processes on PDF documents it is important not to use a lot of user defined settings that a person using adaptive technology “must” have in order to read the PDF document. It is not fair to demand that someone trying to read a document use “your” settings or way of viewing and interacting with PDF documents.

We need to be able to read a PDF document with “out of the box” settings. If we choose to use high contrast, Read Out Loud, or screen magnification the PDF should stand on its Tags. We cannot accommodate every setting variable for adaptive technology and Adobe Reader.

You can, however, use some of the preferences as part of your QA process to verify and validate the accessibility of your PDF documents.

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# Logical Document Structure

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Before we look at what logical document structure is, we need to understand the relationship of Tags to the visual document. Adding tags to a document does not change the visual representation of the document. The tagging tool uses the underlying structure of a document to create a readable "version" of the visual representation. It looks for Headings, paragraphs, images, tables and other elements and creates tags based on them.

If the Tags are not correct or do not provide someone with the logical reading order of the content, we can rearrange the Tags to match the visual access to the content on a page. This is why we need to let go of the visual and focus on the content and what order we need the content to be read in. There is a lot of discussion about reading left to right, top to bottom but the reality is that visually documents aren't created that way. Content is placed on a page to draw the eye to a specific point and guide the person reading the page through a reading order determined by the author. This is where the Tags come in...they let you arrange the content so that the adaptive technology accesses it in the same order as you would visually.

We begin with exploring the Adobe Acrobat application itself. This gives us some familiarity with the tools and their locations.

# Overview of Adobe Acrobat 10

The entire user interface has changed for Acrobat X. Many of the menu items that were fast and easy to access are now incorporated into expandable and collapsible Toolbars to the right of the document that are barely accessible if you are using the keyboard.

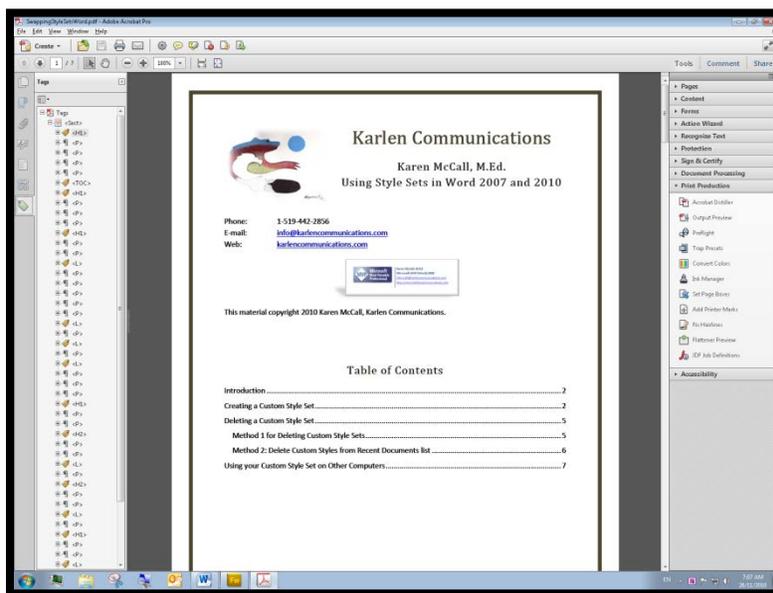
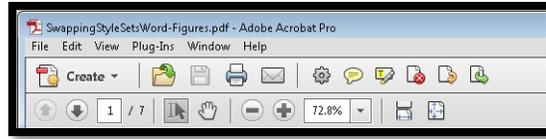


Figure 5 Adobe X user interface.

The Navigation Panes containing the Bookmarks, Content, Order and Tags Panels are to the left of the document. The Pages, Content, Recognize Text, Accessibility and Forms Toolbars are to the right of the document.

If you are using the keyboard instead of a mouse you must F6 into the Toolbars to the right of the document and then arrow incessantly down to the tool you want to use. If you have RSI or Repetitive Stress Injury you will want to avoid this, however if your RSI is due to the overuse of the mouse, there is no solution. I haven't tried this user interface with voice recognition but if it isn't really designed to be accessible, am not holding out much hope.

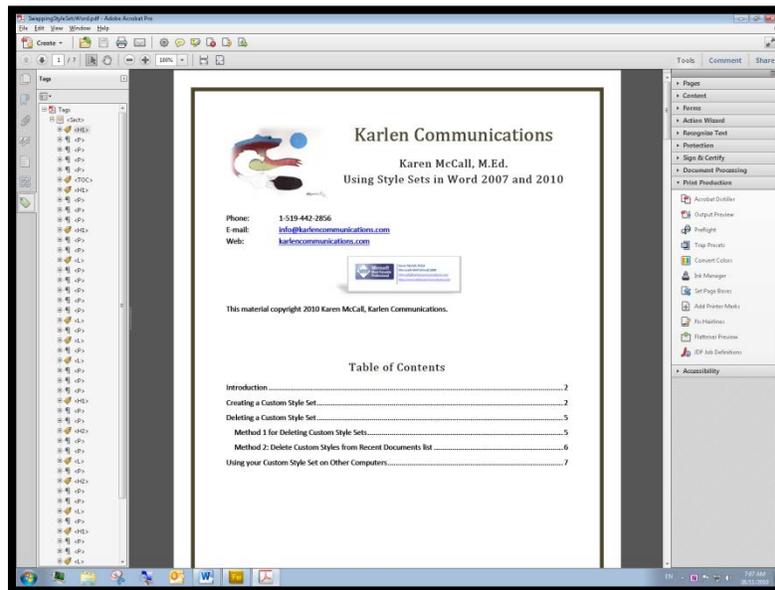
When you launch Adobe Acrobat, you have some standard Window elements such as the title bar, menu bar, and toolbars. In Adobe Acrobat, what appears to be a large toolbar is really several small toolbars consolidated on one or two lines.



**Figure 6 Standard Toolbars in Acrobat X.**

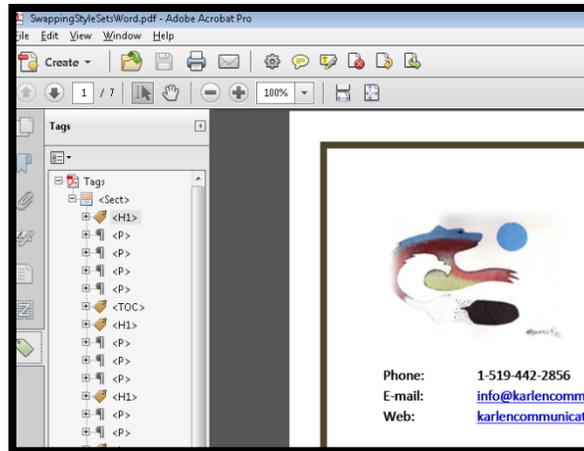
There is no Status Bar as such in the Acrobat application but you can drag any of the standard Toolbars to the bottom of the application window to serve as a Status Bar. Sometimes you might want the page numbers to be along the bottom of the application window because you are used to seeing them there. In the image above, I've arranged my Toolbars for the way I work. Most of my repair tools are along the second line of standard Toolbars and I've closed the Tasks Toolbar.

On the left side of the main document Window are the Navigation panes. The Navigation panes include tabs for Bookmarks, Tags, Fields, Order, Comments or Thumbnail views of your document. When the Navigation panes are closed, you can still view the Navigation Tabs.



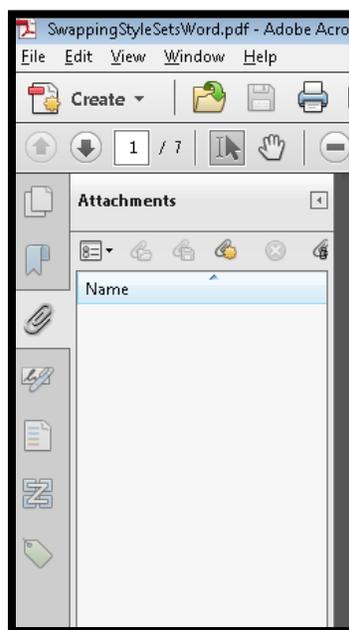
**Figure 7 The Acrobat X user interface.**

Pressing F4 will open or close the Navigation panes.



**Figure 8 Navigation Panes to the left of the document.**

You can show any attachments to the PDF document by choosing View, Show or Hide, Navigation Panes and pressing Enter on Attachments. The keyboard commands are Alt + V, S, which should open the Show or Hide item and select navigation Panes which is the first item. Press the Right Arrow to open the Navigation Panes options and then press A for Attachments.



**Figure 9 Attachments shown in the Navigation Panes.**

Comments are no longer part of the Navigation Panes and is now a Toolbar. The Comments Toolbar has been moved over to the right of the document. Just above the Toolbars to the right of the document are three items: Tools, Comments and Share. Tools will show you the Pages, Document

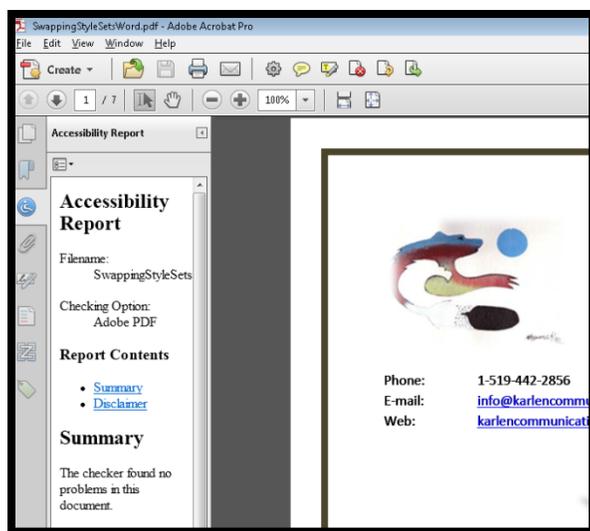
Processing, Accessibility tools and so forth; Comments will show you the tools for commenting on documents including the Comment Toolbar.



**Figure 10 Comments Toolbar to right of document.**

The Comments Toolbar is still inaccessible to adaptive technology although you can navigate it using the keyboard.

As you add Tags to documents or perform an accessibility full check, other icons will appear in the Navigation panes representing these reports.



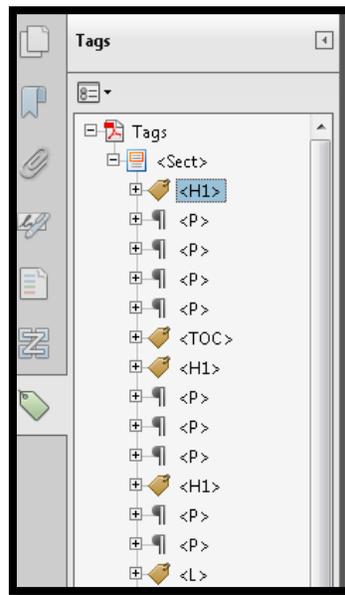
**Figure 11 Full Check Report in navigation Panes.**

The most important tools for repairing PDF documents are the ability to highlight content, the Tags Tree and the Order panel. Don't worry, you'll get plenty of practice working with these!

First let's look at the Tags Tree and get familiar with some of its structure.

## The Tags Tree

Each PDF document tagged for accessibility has a Tags Tree. This tree identifies parent and child elements of a document. The Tags Tree looks like a view of your computer in the Windows Explorer view except instead of folders and files, you have headings, paragraphs or tables and the document content associated with them. The figure below shows the Tags Tree of a document. The Tags Tree is on the left and the document is on the right.



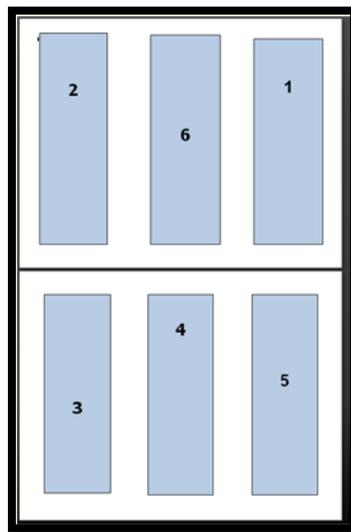
**Figure 12 Tags Tree in document.**

If you are looking at a document tagged from Microsoft Office you may notice that instead of a `<P>` Tag for paragraphs you have a `<Normal>` Tag. “Normal” is the word style for a normal paragraph. Some applications may have specific styles for an inherent paragraph. As you work with tagged PDF you’ll begin to recognize where PDF documents came from based on the Tags you see.

Images, formula, or images of text may have a `<Figure>`, `<Shape>`, or `<InlineShape>` Tag. Links will have `<Links>` Tags. Lists will have a parent `<L>` Tag denoting the start of a list with child Tags of `<LI>` or list item under them. Tables will have a `<Table>` Tag with child `<TR>` or table row Tags under them which in turn may have either a `<TH>` for table header or `<TD>` for table data cell.

Every part of the readable document has a corresponding Tag in the Tags Tree. You cannot have content represented in the document without a Tag for it in the Tags Tree. If we think of the matching games we played when we were young, it is the same thing...everything on the left or in the Tags Panel and/or the Order Panel must have a match on the right or in the visual document. Unlike the games we played matching items, each Tag must be in the order that the content is “read” visually on the page to the right.

This is one concept that is difficult for some people to let go of. It doesn't matter what the visual layout of the document is on the right, the Tags have to be presented to the person reading the PDF document in the order in which you would read the content. Consider a tri-fold brochure. When presented in tagged PDF these documents are often flattened and presented as single pages of content. If we adhered to the layout of the document on a 5.5 by 11 letter sized landscape page, you would read what would be considered the fifth panel, the sixth panel, the first panel, the second panel, the third panel and then the fourth panel. Someone using adaptive technology wouldn't know what they were reading about wouldn't have access to the first panel until they had read the fifth and sixth panel. When working with tagged PDF documents and their accessibility and usability we need to let go of what we think of as printed material and look at how we can present sometimes awkwardly arranged content in a way that is logical and understandable to someone who can't see how the content is arranged and can't visually bounce around the page searching for the correct reading order ....something we may do automatically and within a nano second.

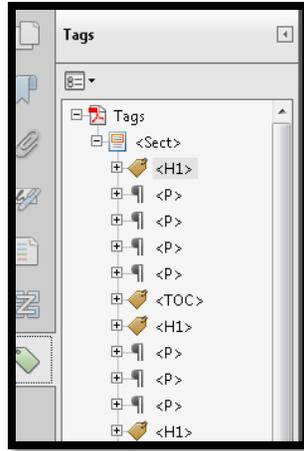


**Figure 13 Tri-fold brochure with logical reading order identified.**

There are also <Span>, <Page>, <Worksheet>, and <StyleSpan> Tags. As you work with more tagged PDF documents, you'll begin to recognize how Tags are generated from specific applications and will also begin to have an idea of the amount of repairs that will most likely be necessary.

## Using the Tags Tree

When you choose View, Show or Hide, Navigation Panes and then any of the tools such as Tags, Content or Order, they are placed in the Navigation Panes to the left of the document ready to be used.



**Figure 14 Tags Tree docked in Navigation Panes.**

In previous versions of Acrobat you would have to return to the View menu and then choose Navigation Panes and Dock All Tabs to accomplish this.

The advantage to having this done by default, as you can see, is that the Tags, Order, and Content panels are out of your main working area and you will be able to see more of the information in those panels stretched down the left side of the document. It is the most effective way to work with these panels.

**Note:** Use the F6 key to bring focus back to the Tags Tree if you lose it and are using the keyboard instead of the mouse. Pressing F4 will show or hide the navigation Panes; pressing F6 will put focus on either the Tags Tree/Tags Panel or the tab with current focus in the Navigation Panes or your PDF document.

## Family Matters!

The logical document structure includes parents, child and sibling elements. The "main" parent is the Tags Tree. Elements nested under the Tags Tree with no other "children" or a "+" sign next to them, remain child elements. A paragraph or <P> Tag can have a <Link> Tag within it if there is a link in the paragraph text. The <Link>Tag will have a plus sign next to it because it contains all the content and attributes to make the link work. The main concept is that there is a hierarchy to the structure, parents and children just like a family tree. Part of what we do is to reconstruct that family tree when branches break, content hasn't been added properly, or is placed in the wrong "branch" and to make sure that images and links have Alt Text so that they are identified appropriately.

## Elements and Artifacts

Artifacts are objects that are not essential for accessing the information in the document. For example, Artifacts might be coloured dividers or column lines, crop marks, comments or pagination. They may also be decorative images used to fill space on a page. Decorative images add no support to the content on the page. Artifacts will not appear in the Tags Tree. There are times when you will have to use the TouchUp Reading Order tool to make an errant element an Artifact.

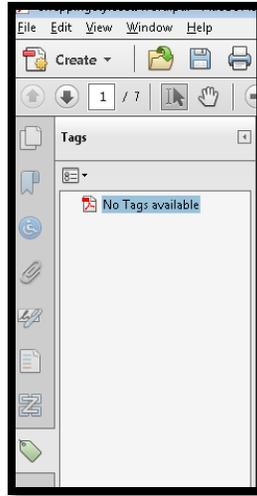
For example, if you have a decorative border down the right side of the page that shows what is in a newsletter, and that information is provided through the use of headings or a table of contents, the decorative border would be tagged as an Artifact, part of the background rather than part of the readable document. Remember that everything in the Tags Tree will be read to the person who is using adaptive technology. Visually you can skip over decorative elements but if they are in the Tags Tree a person who is using a screen reader has to take the time to listen to them. As an exercise read through a brochure or annual report that has a lot of decorative elements. Then go back to page one and read absolutely everything on each page. How much more time did it take you? Did you begin to experience frustration and want to “get on to the content?” This is what people who are forced to read everything on the page, even decorative elements, will be experiencing.

**Note:** There is a discussion around how much of a document needs to be tagged for reading. Do you interrupt the flow of content with decorative borders, page numbers and what would otherwise be considered artifacts? It is an interesting debate. I fall on the side of readability of information. For me, there is nothing more annoying than to have my train of thought interrupted by a decorative border that a reader without a visual impairment can avoid, but I am forced to “look at” and read.

Elements can be tagged, and normally do get tagged when the document is rendered accessible. Element properties help adaptive technology such as the JAWS screen reader render or interpret information contained in the document to the person using the adaptive technology.

## Deleting a Tags Tree

One caution is that once you create a Tags Tree and have modified it for maximum usability and accessibility; you can delete it by mistake. One press of the Delete key is all it takes to lose the Tags Tree or any of its nodes and have to start over.



**Figure 15 No Tags in document.**

If you do accidentally remove the Tags Tree or a node, simply close the document using Control + F4 without saving the changes and open it with Alt + F for File, then the number 1 as it was the last document you were working on.

Another reminder of how important it is to save documents once you complete something you are happy with, and to take care of which keys you are pressing! In working with tagged PDF I would also strongly suggest that you save iterations of documents in case you need to go back to the last repair and start from that point again. This is especially true when working with scanned or desktop published documents.

On the other hand, knowing that you can delete a Tags Tree comes in handy if you've really mucked up the tags and can't find daylight!

## **Logical Document Structure**

I began this chapter with the heading "Logical Document Structure. What is this? How do we create or design for a logical structure to our documents?"

We've looked at the relationship between the visual representation of the PDF document and the Tags Tree. When I first began accessible and usable PDF workshops in 2002, we were focused on repairing existing PDF documents. For the most part it was assumed that we would primarily be working with PDF documents that were already created. When we were able to Tag a document directly from Microsoft Office and then applications such as Adobe InDesign, participants at my workshops began asking how to create better documents so that they didn't have as many repairs. This question also arose out of working with newly created untagged PDF and wondering how they could improve the accuracy of the conversion tool for applications where there was no direct ability to Tag from the native application.

As someone who uses the adaptive technology and had taught document processing for the DOS environment, I had a good foundation in document design and what my adaptive technology could access and had the potential to access.

In 2004 – 2005 when the material from my workshops went through its final incarnation from workshop notes to online course and finally to this book, I also began working on the “Logical Document Structure Handbook: Word 2003.” This too came from information presented in my workshops and notes taken as I began using and investigating the relationship between Tags and structural elements I could implement in Microsoft Office applications, specifically Microsoft Word.

2006 marked the publication of the Logical Document structure Handbook: Word 2003. I authored an article in the Accessible Content digital magazine that summarized information in the book. The contents of my book were summarized in an appendix I wrote for the QUE book “Special Edition: Microsoft Word 2007” by Faithe Wempen.

We’ll go into detail on the specific document parts and how they affect accessibility and usability of tagged PDF when we work through the chapters on Microsoft Office 2003 and Microsoft Office 2007. This section of the book will provide an overview of some of the structural elements and why they create better documents and better tagged PDF documents.

## **Templates**

The easiest way to implement consistent structure in a Word document, PowerPoint presentation or Excel workbook is to create a template for each type of document you will work with. The template includes any styles, colours, effects, and any text that is consistent from publication to publication. For example the company address, profile, disclaim our, legal notices, contact information and so forth.

This means that anyone who needs to produce an annual report for example, creates a new annual report that uses the “Annual Report” template. The template has all the components of the annual report and the editor will just need to enter new information and format it using the inherent styles in the template.

This book, for example, has specific title styles that include dark green lines, centered text, a specific font size and so forth. Every time I need a chapter title, I use the Title style and every chapter title is formatted the same. I don’t have to guess at what I did for the last chapter...or book that I wrote...everything is in my “Karlen Book” template.

## **Styles**

Just as with web pages a heading has a hierarchical place on the page headings in Word documents do as well. A Heading level 1 is more important than a heading level 2 which is more important than a heading level 3. If we start using headings randomly because of the size or way an inherent heading is formatted, we defeat the purpose of using headings and invalidate a key navigational structure for both Word documents and PDF documents.

A person using a screen reader is able to move through a document from heading to heading. For example if the style “Heading 1” was merely “bling” with bold, larger font, and different font thrown at it...decorating the text, adaptive technology would see this as a plain paragraph. There is a visual structure to it but not an underlying one that is the backbone of the document.

Imagine trying to find something in this book with no table of contents, no headings, nothing to distinguish one piece of text from another. This is what adaptive technology and people using adaptive technology see if headings, lists, proper tables, and other document structures aren’t used.

If you don’t like the way a heading looks, you can change it in a template or create a custom style based on the one you don’t like. As we’ll see, basing a custom style on an existing one is also key to implementing a logical document structure.

## **Lists**

Make sure that lists are created properly. Some types of fancy bulleted lists are non-Unicode characters or symbols and therefore any text associated with them will not be tagged or seen as being part of a list.

If you are using images for bullets and the document is converted to tagged PDF, realize that you might be spending hours repairing each bullet to being an Artifact and manually rebuilding lists in your documents.

Spacing between bulleted or numbered items is often implemented incorrectly which means that each bulleted or numbered item will be identified to someone reading the document using adaptive technology as individual lists rather than individual items in a single list.

## **Tables**

Tables should not be used for design layout. If you do decide to use a table for design layout know that you may end up making repairs to a tagged PDF where the conversion tool has recognized some parts as being part of a table but in areas with large pieces of text, the conversion tool has simply made them paragraphs.

Make sure your rows don’t break across pages, you use cell margins instead of the Enter key for spacing, you identify column and row titles, and you do not use “heading styles” in a table. Tables should also be inserted not drawn. As much as possible, try not to merge or split cells and never insert a table inside another table!

## **Text Boxes**

Text boxes are inherently inaccessible. They are floating objects not really part of the text layer of a document. When a person using a screen reader tries to read a Word document that contains text boxes, any content in the text box is not seen by the screen reader. When the document is repurposed to tagged PDF, because a text box or paragraph frame is a sort of floating object, it gets plunked where the conversion tool thinks it should go which may not be the logical reading order in

the document. Sometimes, again because of the inaccessibility of text boxes and paragraph frames, some of the text is converted as an image and some as text. This will require a lot of repair time.

## **Table of Contents and Bookmarks**

If you've used styles for headings, it is easy to generate a table of contents for your documents. Headings are also used by the adobe conversion tool and the Microsoft Save as PDF or XPS plug-in for Office 2007 to create bookmarks in a PDF document.

Using one simple document part, heading styles, improves the accessibility and navigability of a document exponentially...and lessens your repair time.

## **Alt Text**

If you apply Alt Text in a Word document, PowerPoint presentation, or Excel workbook, first the Alt Text will be converted to the tagged PDF document...less repair time. Secondly, you can copy and paste that image between open Microsoft Office applications and the Alt Text will come with it so you don't have to retype it!

## **Page Numbers**

Page numbers are another useful structural element so that people can find things in a Word document as well as the resulting PDF document.

Until Adobe Acrobat 8, there were some problems if your document had preface or epilogue pages. The problem was that page VI was seen as page 6 by the Go To page tool in Adobe Acrobat or Reader. If a student was looking for something in a text book, they would have to make the mental calculation to accommodate for preface or epilogue pages. You couldn't say "go to page VI" either.

Now you can do both, go to page VI and it will go to the preface page or go to page 6 and it will go to the actual page 6 of the PDF document.

By using page numbers in the source document, the person who is reading the tagged PDF document can verify that they are on the right page. Remember that not everyone will be using Adobe Reader 8 or 9.

## **Navigational Structures**

Because PDF documents don't behave the same way that a word processed document does, and people with disabilities using adaptive technology do not have the same level of access with tagged or untagged PDF documents at this point in time, whatever navigational structures you can implement to help quickly find content and read it is your goal.

Toward this goal, bookmarks, headings, a linked Table of Contents, page numbers and so forth provide a variety of navigational structures within a tagged PDF document. Remember that people may still be using Adobe Reader 5 or 6 with an appropriate version of their screen reader. With those versions of screen readers it was not possible to move heading by heading through a tagged

PDF document...but, they can access a linked Table of Contents and bookmarks. With Adobe Reader 5 or 6 even if the page numbers are skewed someone can still use a linked Table of Contents or bookmarks. Someone using Adobe Reader 9 with appropriate versions of adaptive technology will have access to all navigational structures you implement.

Consider how you navigate PDF documents and what would be helpful to you in finding information fast.

## **“Infer Reading Order from Document”**

One of the “mantras” of this book is that there is no such thing as adaptive technology specific compliance as a criteria for validating a PDF document as being “accessible.” The most commonly used adaptive technology for this mythical “goal” is when you are asked to ensure that all PDF documents are “JAWS Compliant.” Other adaptive technology is also used for this non-existent “criteria.”

There is no such thing as a “JAWS Compliant” PDF document. There are too many variables. The ability to set the reading order of a document is one of them.

When people ask that PDF documents be “JAWS Compliant” there is no clear criteria as to what this means other than “JAWS can read it.” This is not a criteria and isn’t useful in making repairs to PDF documents. It does not set any criteria for a QA or Quality Assurance process.

The default preference for the accessibility of a PDF document is to “infer the reading order from the document.” If the PDF document is tagged, the logical reading order will follow the Tags down through the Tags Tree rendering the content in the order it appears in the Tags Tree.

If a PDF document is not tagged, adaptive technology such as the JAWS screen reader may have a tool to create what are “virtual Tags.” This is based on the Adobe Systems “Trusted Adaptive Technology” and is a tool integrated into Adobe Acrobat and Adobe Reader to provide a level of access for untagged PDF. It is a tool that attempts to bridge the gap between tagged PDF after version 5 of Adobe Acrobat and legacy PDF which may not be tagged. It is NOT meant to circumvent the design and creation of accessible tagged PDF documents although in the past year I’ve seen this become a definition of an accessible PDF in organizations who do not have a working knowledge of how to make PDF documents accessible.

If adaptive technology can create these virtual Tags then the document “is” accessible. This is not true. There are three components of an accessible PDF document:

- The document is tagged.
- The Tags are in a logical reading order.
- The Tags are appropriate for the type of content they are related to.

- This means headings are tagged as headings, lists are tagged as lists, tables are tagged as tables with table headers, rows, columns, and cells tagged properly.

Another problem with this approach arises when you have dynamically generated reports where neither the template nor the data populating the reports is tagged. In most instances, although the “virtual Tags” may be able to render some of the information in the report, much of the dynamic data is relegated to being an Artifact and offers no ability to use repair tools to identify and render it to the person reading the generated report.

If a PDF document comes from a desktop publishing software and contains images of text, this content too cannot be “virtually tagged” and rendered to the end-user.

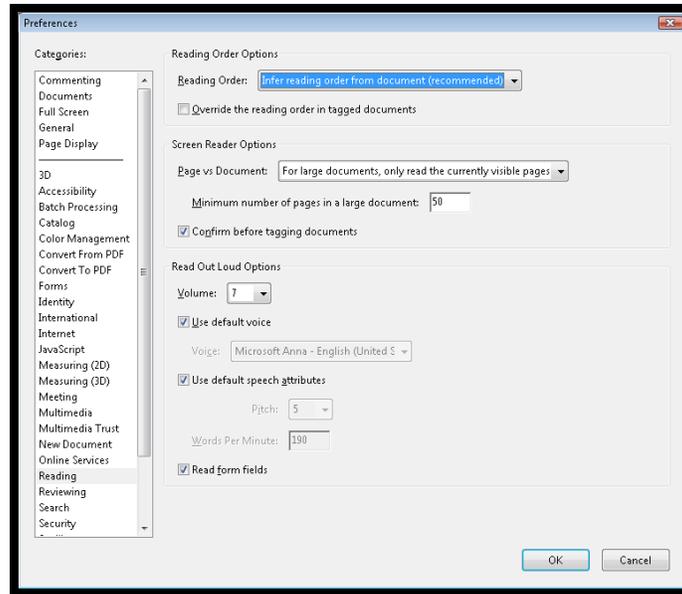
The ability to create the “virtual Tags” is meant as a “tentative” tool to try and render otherwise inaccessible content. The creation of “virtual Tags” is done each time the PDF document is opened and may not virtually Tag the same way twice. It depends on where the document came from. Virtual Tags do not appear in the Tags Tree if you are using Adobe Acrobat.

This is where the preferences or settings for the reading order of the document come into play.

By default, most current Trusted Adaptive Technology will let the person know in some way that the document is not tagged and ask what should be done. Since these settings can also be used for tagged documents, it is important to understand their impact on the work you do.

You can also look at the settings in the Reading preferences in Adobe Acrobat or Adobe Reader. This is where we’ll start.

To review the Reading Preferences press Ctrl + K, then choose the Reading category.

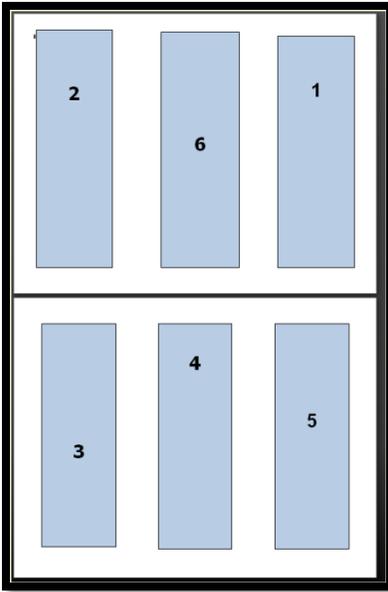


**Figure 16 Reading category for Adobe Acrobat or Adobe Reader Preferences.**

The first option is to infer the reading order from the document and it is the recommended one. This means that the Trusted Assistive Technology tool in Acrobat or Reader will work in partnership with the adaptive technology to use the document “as is” to try and figure out a logical reading order to present to the person using the adaptive technology. If a document is tagged, this is easy; the setting to infer the reading order from the document uses the Tags Tree. If the document is not tagged, the pretend or virtual Tags are implemented and this is what is presented to the person reading the document with adaptive technology.

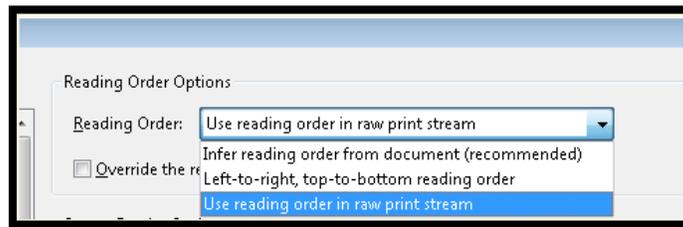
The second option is to read the PDF document “Top to Bottom, Left to Right.” This is a useful tool if you are trying to read an untagged document and the content in the “virtual Tags” is not understandable or not presented to you in what you think is a logical reading order. However, this setting ignores the Tags Tree so if the document has columns for example, the content may be read in a linear manner across the line on the page rather than down the column.

Consider the tri-fold brochure. By changing the reading order to “Top to Bottom, Left to Right” it will be read starting at the top of panel 2 across the page taking in content from panels 6 and 1 respectively. The brochure will then be read starting at the upper left of page 2 which is panel 3, then across panels 4 and 5, then each line down the page.



**Figure 17 Tri-Fold brochure.**

If someone is reading a correctly tagged document and chooses this setting, does this mean that the document is “not accessible?” If you are chasing the mythical “JAWS Compliance” it does.



**Figure 18 Close up of the reading settings in the Reading Preferences category.**

The third option is to read the PDF document using the “raw print stream.”

What does this mean?

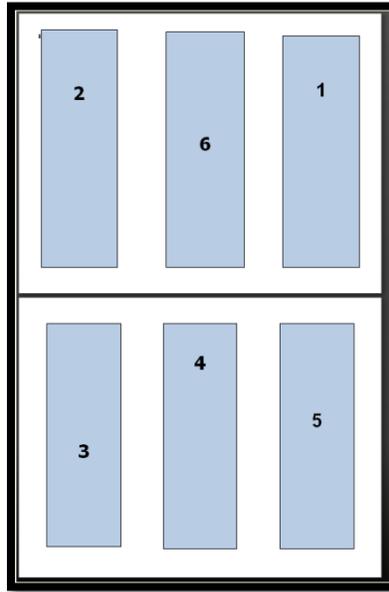
When a PDF document is “printed” it is not printed in any particular order. For example a footer might be sent to the printer first, followed by a table, or the table gridlines, followed by content in the middle of the page, followed by the last heading....well you get the idea. When you read something based on the elements sent to the printer to be printed on the page, the result is typically randomly rendered content to adaptive technology.

Why have this setting?

If you are trying to read a PDF document and it isn’t making sense, this is one tool you can use to try and sort it out and make some sense of what you are listening to. This is a tool you can use for

untagged PDF documents if you are using adaptive technology. It is not recommended for use with tagged PDF since it too ignores the Tags.

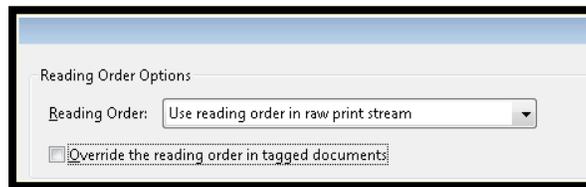
Consider the tri-fold brochure with this option. Content would be read in the order it will be sent to the printer which is not necessarily where it appears visually on the page.



**Figure 19 Tri-Fold brochure.**

If someone is reading a correctly tagged document and chooses this setting, does this mean that the document is “not accessible?” If you are chasing the mythical “JAWS Compliance” it does.

It is because we have large numbers of untagged documents that we need other ways of viewing and interacting with those PDF documents. However, if a PDF document is tagged as well as it can be and someone chooses one of these settings, or chooses to override the Tags or accessibility in the document, it would not make the document “inaccessible” unless you had agreed to the mythical “JAWS Compliance.



**Figure 20 Ignore Tags setting in Reading category.**

The other setting in the Reading Order Options is a check box to ignore the Tags and just read the document. Once again, this is a tool to use if content in the document doesn’t seem to make sense to you and you want to look at the document in a different way. For example, if the document has

been tagged but the Tags weren't verified or repaired to ensure they were in the right reading order or that the Tags were the right Tags for the content, the document may not make sense. Trying to access the tagged information but not in the order the Tags appear in the Tags Tree is one way to try to read the document so it makes sense.

Using these tools would be the equivalent of someone visually reading the document in a poorly lit area taking the document to a desk with a lamp to see if they can see more of the print, or taking it near a window to see if they can reduce glare or see it better.

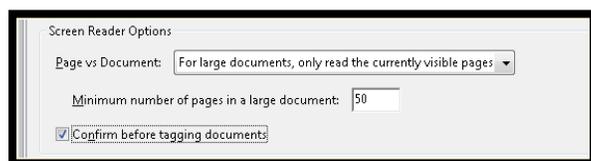
If someone is reading a correctly tagged document and chooses this setting, does this mean that the document is "not accessible?" If you are chasing the mythical "JAWS Compliance" it does.

There may be nothing you can do to the actual Tags to make the document any more "accessible" than it is; however, if you are chasing singular adaptive technology "compliance" you will never be able to achieve an end to your project or an "accessible" PDF document. The financial implications to this are huge!

The focus for creating accessible and usable PDF documents is to ensure that the document has the correct Tags, can be read in a logical reading order, and has Alt Text where appropriate, properly tagged tables, and a good navigational structure. Standards and guidelines for Tags are the criteria to work from and toward.

## Screen Reader Options

Under the Reading category in the Preferences dialog are settings for screen readers.



**Figure 21 Screen reader settings under the Reading category in the Preferences dialog.**

The three main settings deal with how many pages to present to the screen reader at one time. As a PDF document is loading, often screen readers go silent while they and the computer are working to load and then begin reading the PDF document. Most screen readers will begin reading a PDF document as soon as it loads. If a PDF document is long, it may take several minutes for the document to load and for the person using the screen reader to be able to begin reading it.

The default is for large documents, to only read the current page. This means that the information for the current page will be put in the screen reader's buffer and then given to the person using the screen reader.

The next setting defines what a large document is. The default is a document of 50 pages or more.

The third setting is an important one for anyone using a screen reader. This check box is the setting to notify you when you open an untagged PDF document and ask how you want to approach the content.

If you are using a screen reader and are making repairs to PDF documents, for example using it with screen magnification, you will want to turn this off while working with untagged documents. I've found that if you allow the creation of virtual Tags that it affects the actual Tags you add to the document and generally results in more repairs. There have been some documents that I've had to close without saving, turn this setting off and then reopen the document to proceed with repairs. If you are attentive to your screen reader, you could also say no when this dialog opens and then proceed with the tagging of the document.

**Note:** If you choose to have one page or the current page presented and get a list of links, headings, or form controls from your adaptive technology, you will only get those items that are on the current page not the entire document. There are times when performing QA or audits that you will need to view more than one page of this type of information to ensure quality control. If you are auditing a PDF document and don't get all of the links or headings you know should be in a document, check this setting.

Now that we have a background in Tags, logical document structure, and some ways of viewing PDF documents, let's look at the tools we have available to make accessible PDF documents possible.

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# Tagging and Repair Tools

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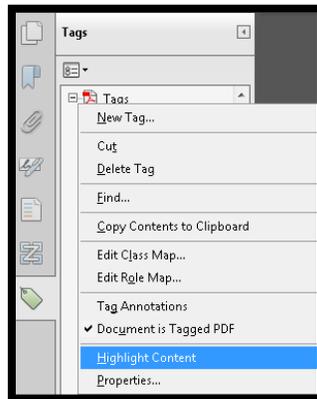
Adobe Acrobat has several tools that are useful in creating or repairing accessible and usable PDF documents. To date I've chronicled over 17 [seventeen] of them! This section is an overview of most of them and where to find them.

## Highlight Content

This is your best friend when it comes to tagged PDF! While you are moving through the Tags Tree, using Highlight Content will let you see what content is associated with the Tag that is selected.

To turn on the Highlight Content, open the Tags Tree in the Tags Panel in the Navigation panes.

Press the AppKey and choose Highlight Content from the context menu. You will need to do this for each PDF document you open and each time you open a PDF document. It is not a "document setting."



**Figure 22 Highlight Content in Tags Tree.**

As you move through the Tags, you will see the associated content highlighted. This lets you check a logical order of content.



Figure 23 Tags Tree open and Highlight Content turned on. Content is highlighted for its Tag.

## Select Text Tool

The Select Text tool is used to select text for bookmarks or text you want to find or create a text based tag for. The Select Text tool is located to the left of the Hand tool on the toolbar.



Figure 24 Select Text tool active in toolbar.

If you choose the Select Text tool and then move your mouse pointer over text in the PDF document, you will see a beam shaped cursor or carat. If you move the Select Text tool over an image, it will change to the Select Image tool automatically and you will be able to drag the mouse across the image and select it.

If you need to create a tag for an image, you will need to use the TouchUp Object tool to select it in your PDF document. You can create a tag for text based information using the select Text tool, but can't create a tag for an image using the Select Image tool.

## Modifying Tags with F2

If a tag is wrong but the content of the tag is captured correctly, you can edit the tag while in the Tags Tree and make the tag type the correct one. For example if text has been tagged as a paragraph <P> and it should be a heading <H2>, you can edit the tag and make it an <H2> tag or heading level 2.

In the following Tags Tree, the <P> tag should be an <H1> tag.

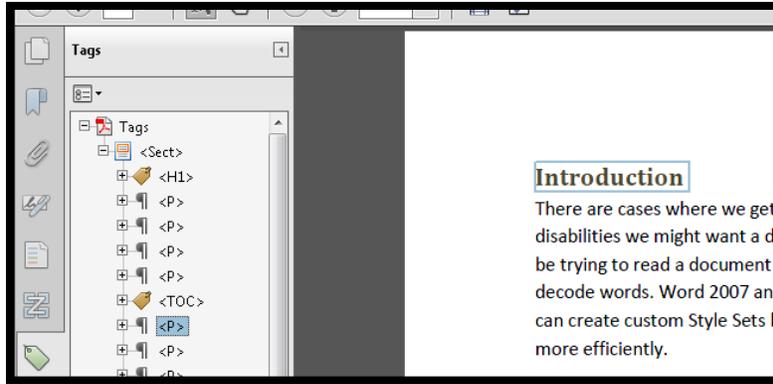


Figure 25 Selected Tag.

Press F2 to go into Edit mode, use the arrows to locate the >, then Backspace over the text in the tag and replace it with "H1."

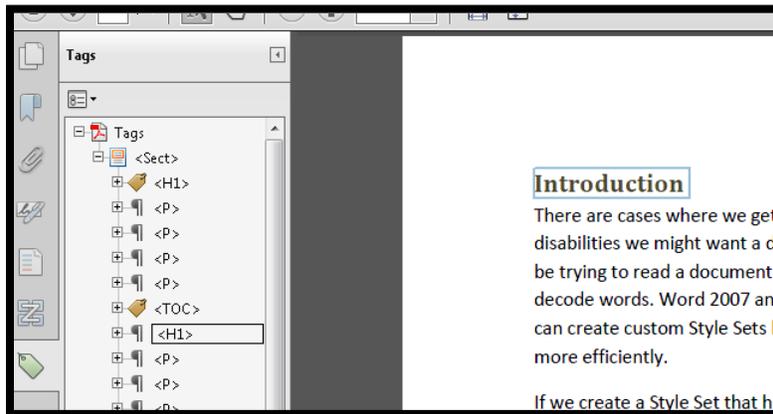


Figure 26 Tag in edit mode with repair made, just before pressing Enter.

Once you've edited the tag, press the Enter key to confirm the change. The tag will be shown as selected again and have its new tag type.

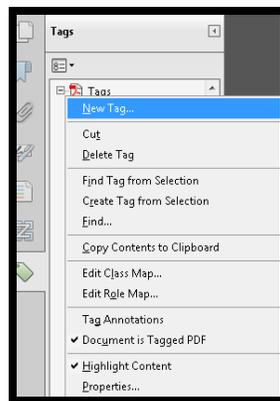
**Note:** You may not be able to do this if you are using a screen reader. Some versions of screen readers interfere with the use of this technique and will not let you edit Tags.

## Create New Tag

There will be times when you need to create a new tag. You typically need to do this if an element is not tagged properly or if a tag for an element is missing. Examples are when table or list elements are not captured independently; when two cells are tagged as one, or when two list items are tagged as one.

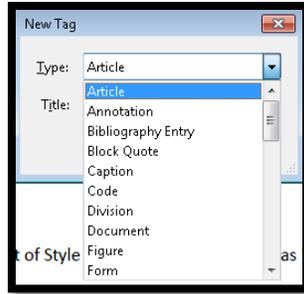
To create a new tag, select the place in the Tags Tree where you want the new tag to appear. If you have the Tags root selected, the new tag will be put at the bottom of the list and you will have to move it. If you select a tag within a section or part, the new tag may be added at the end of the selection, but this requires less of a move than if it were at the end of the document. Generally, the new tag will be placed just under the tag you've selected as a reference point.

Once the nearest tag has been selected, press the AppKey. The first item is New Tag. Press Enter.



**Figure 27 New Tag from context menu in Tags Tree.**

When you press Enter on New Tag, a small dialog opens and your focus is in the type of tag you want to create. If this is the first time you've created a new tag during this session of Adobe Acrobat, the choice will be "Article." The tags are listed alphabetically. Press alt + the Down Arrow to expand your list of choices. You can't use first character navigation to move quickly to your choice. Use the Up and down Arrow keys to find the Tag you want and select it. Tab to the OK button and press enter.

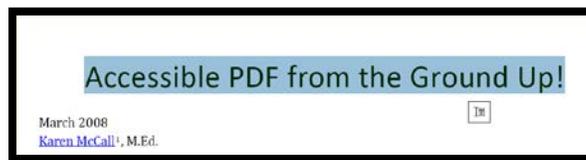


**Figure 28 New Tag dialog with Tag Type list expanded.**

The new tag is added to the Tags Tree at or near the location of the Tag you had selected.

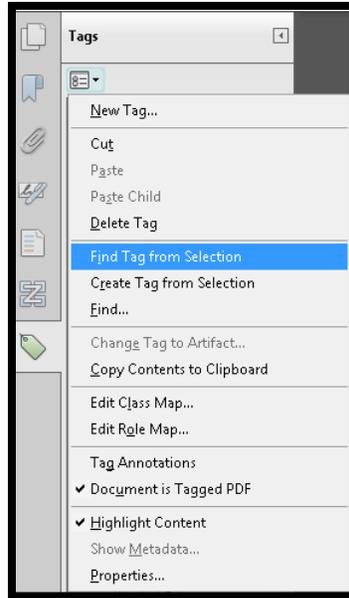
## Find Tag from Selection

If you are working in a tagged PDF document and want to check on tags that you suspect might be mistagged or missing, you can find the tag in the Tags Tree. Use the Select Text tool to select a piece of the PDF document content. If you want to verify that a link is properly tagged, select text just before or just after it. Because it is a link, you won't be able to select it directly...you'll end up activating it.



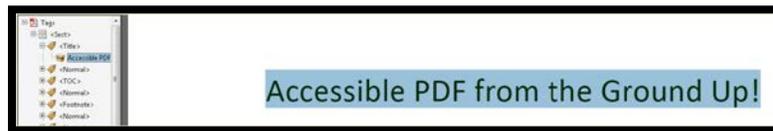
**Figure 29 Image of text that has been selected using the Select Text tool.**

Once a piece of the document is selected, move to the Tags Tree in the Tags Panel in the Navigation panes and activate the Options button.



**Figure 30** Image of the context menu from the Options button with Find Tag from Selection selected.

Choose Find Tag from Selection. The Tags Tree expands and the tag is revealed. It will have focus but will not be selected.



**Figure 31** Text found in the Tags Tree.

In the preceding image, I've selected the content in the Tags Tree so it is more visible. Sometimes when a Tag has focus but is not selected it is hard to see as the contrast between the light gray highlight and the white background of the Tags Tree isn't good.

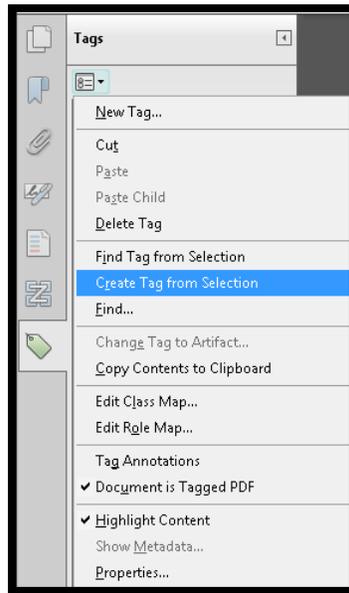
If there are a lot of tags in the Tags Tree, you might have to scroll down the Tags Tree to find the tag. Press F6 to move into the Tags Tree and select the tag to make any modifications necessary.

## Create Tag from Selection

You can also create tags or tag content from selected pieces of a PDF document. For example, if you have a <Figure> tag and the tag is right, but the content is not right [perhaps some surrounding text is included], you can delete the contents of the <figure> tag and redefine the contents.

1. Select the <Figure> tag in the Tags Tree and delete the content under it, the "pathpathpaht."
2. Move to the PDF document window.

3. Select the figure in the PDF document using the TouchUp Object tool from the Advanced Editing toolbar.
4. Move to the Tags Tree in the Tags Panel in the Navigation Panes and activate the Options button. You can also press the AppKey.
5. Choose Create Tag from Selection. The newly defined <Figure> content will nest itself neatly under the <Figure> Tag.



**Figure 32 Create Tag from Selection in context menu.**

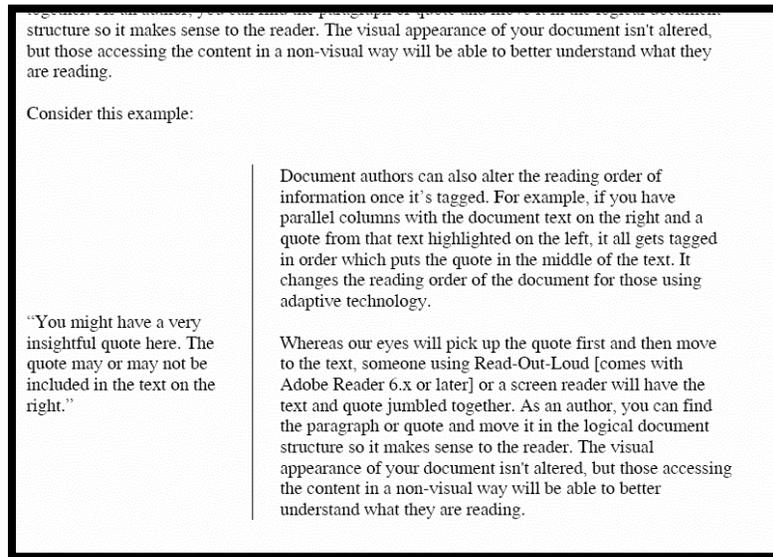
To add content for text based tags, use the Select Text tool which is next to the hand on the basic toolbar, not the TouchUp Text tool under the Advanced Editing toolbar.

If an empty tag is not selected when you begin this process, the dialog box asking you what type of tag you want to create will appear and let you define the tag as well as create the content for it.

This gives you two useful ways to add tags and modify tag content to the Tags Tree.

## Reflow

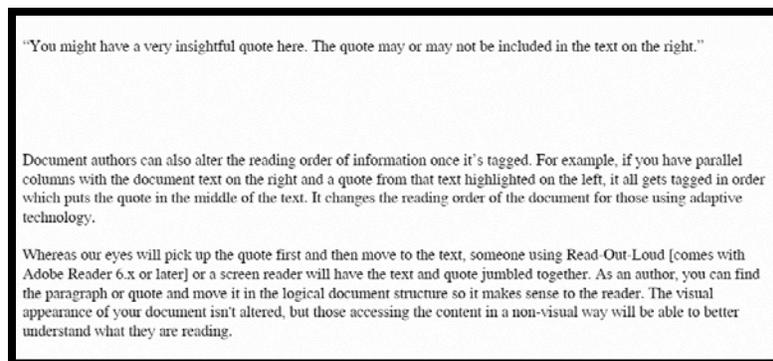
Reflow is a tool used by people with visual learning or print disabilities who may find the layout of a document visually confusing. This tool lets you view the content of a tagged PDF document as a single column rather than multiple columns or randomly placed blocks of content.



**Figure 33 Document view before Reflow is turned on.**

For example, if a document has either newspaper or parallel columns, using Reflow will put all the information in the PDF document into a single viewable column.

Press Ctrl + 4 to turn Reflow on. Pressing Ctrl + 4 again will return the document to its original view.



**Figure 34 Document view after Reflow has been turned on.**

This does not change the actual document. It does let the reader view and read PDF document content in a more accessible and usable format.

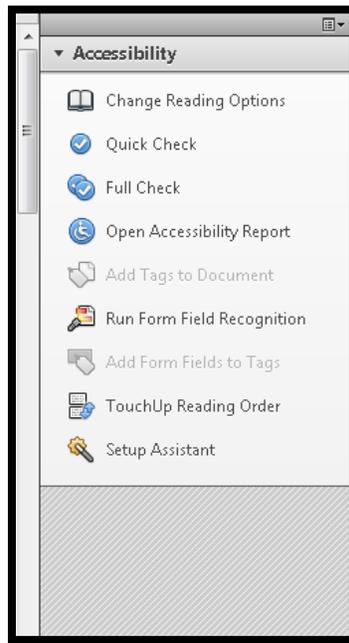
For this reason, it can also be used to verify a logical reading order of the tagged PDF document.

If your tagged PDF document has form controls or fields you won't be able to use Reflow. If your tagged PDF document has tables, the tables will not reflow but content not in tables will reflow.

## Add Tags

If you have an untagged PDF document, you can add the Tags using Adobe Acrobat.

You will need to have the Accessibility Toolbar open to the right of the document. In the following image, I've closed all other Toolbars so that I can work exclusively with the Accessibility tools. You can do this using the keyboard by pressing F6 until you move into the Toolbars, pressing Shift + Tab once you hear the first item in the list of shown Toolbars and then pressing Enter on the Show or Hide Toolbars button. You will have to do this several times to close any Toolbars you don't want visible. There is an option to show multiple Toolbars but I chose to just close the ones I wasn't using. This lets me then show or hide Toolbars as I need them.

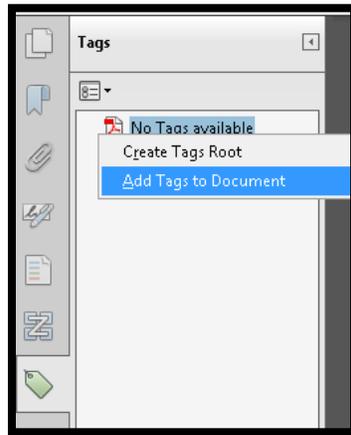


**Figure 35 Accessibility Toolbar.**

You will have to F6 into the Accessibility Toolbar and then arrow down to Add Tags each time you need to add the Tags to a document. There is no shorter way to do this in Acrobat X.

You can also add either a Tags Root if you want to manually add Tags to a document or Add Tags directly from the Tags Tree in the Tags Panel in the Navigation panes. Use the AppKey to open the context menu when "Tags Not Available" is shown in the Tags Tree.

With the new user interface of Acrobat X adding the Tags from the Tags Tree in the Tags Panel in the Navigation Panes might be faster.



**Figure 36 Add Tags to Document from Navigation Panes.**

If you choose to “Create Tags Root” using the context menu in the Tags Tree, you will be able to select content and manually Tag the entire document. This is very time consuming but on some flawed or fragile PDF documents, it is the only way to create clean Tags while not having content disappear on the visual representation of the document.

## **Add Tags Report**

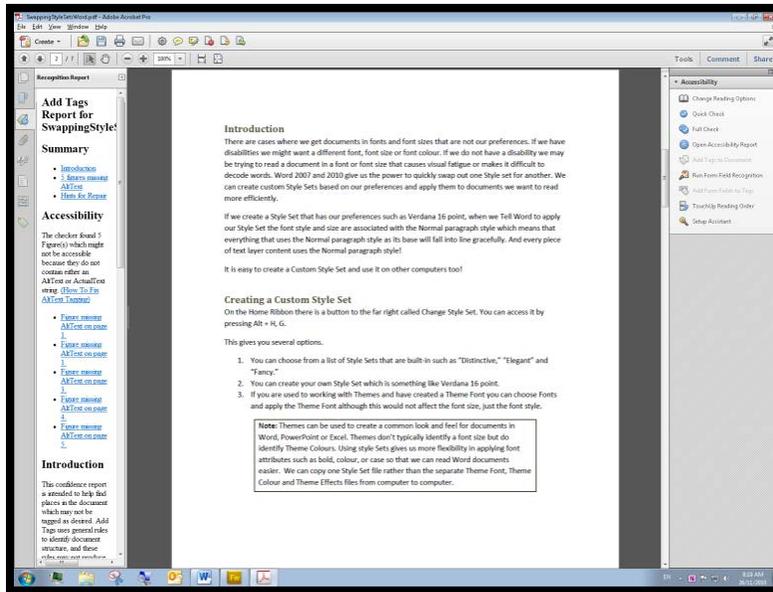
When you have an untagged document and then add the tags to it, if there are any tag elements that the Adobe tagging tool is not sure of, you will get an Add Tags Report.

You will not get an Add Tags Report if you choose to create a Tags root and then manually add Tags to the document.

When an Add Tags Report is generated, an Add Tags Report icon is placed in the Navigation panes and the report is open ready for review. You can access this report at any time while this document is open. If you close the document and open it again, you will not have access to the Add Tags Report.

If the tagging tool has problems identifying elements, it will tell you whether it has high confidence, medium or low confidence in the tags created. You will also get information on sections of text that it may have questions about.

To review the problem elements, activate the links in the Add Tags Report and the corresponding content will be highlighted. As a document author, you can then review the problem for intent, context and verification.



**Figure 37 Add Tags Report.**

If you activate a link for a perceived problem in the Add Tags Report it will take you immediately to that area of the document so you can perform a visual inspection and make your own decision. You can toggle working between the Add Tags Report, the Order panel or the Tags panel to make necessary repairs.

The Add Tags Report is a useful tool for document authors but it is not a substitute for author participation in creating accessible and usable PDF documents.

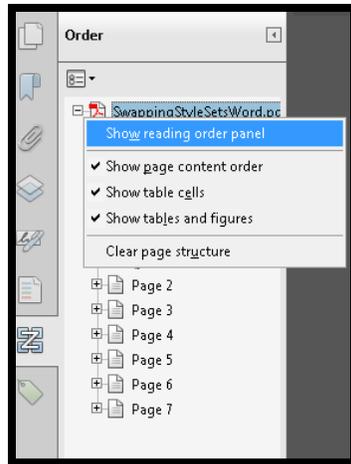
The Accessibility Full Check and the Add Tags Report are mechanical tools. You should not rely on clean reports from either tool as the benchmark for or definition of an accessible and usable document.

Use both of these tools as guides or “indicators” of what work may need to be done. Often, once you’ve worked with many tagged PDF documents, you’ll begin to recognize problems by skimming through the Add Tags or Accessibility Full check reports.

## **TouchUp Reading Order Tool**

The TouchUp Reading Order tool can be activated in the following ways:

- Choose TouchUp Reading Order on the Accessibility Toolbar to the right of the document.
- In the navigation panes, choose the Order tab to open the Order Panel. This will let you view the reading order without the TouchUp Reading Order Panel getting in your way. By pressing the AppKey anywhere in the Order Panel list you can choose to open the TouchUp Reading Order Panel.



**Figure 38 Show Reading Order Panel from Order Panel.**

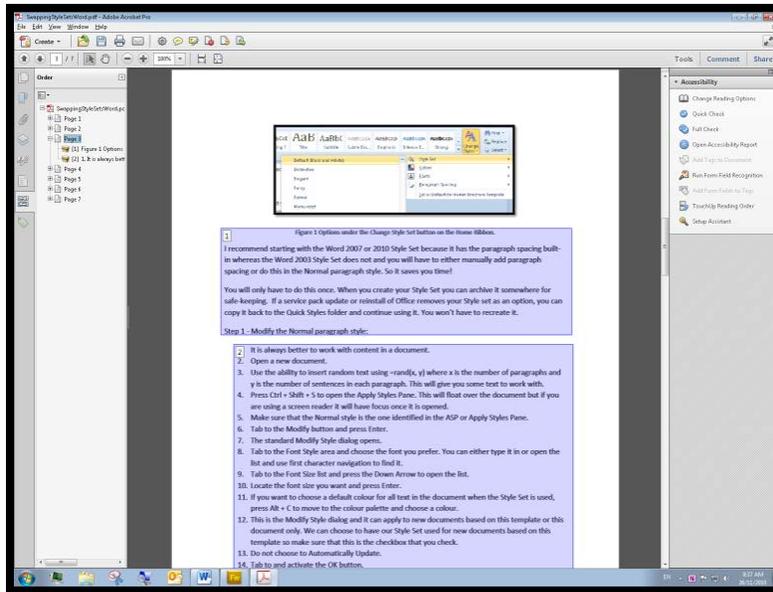
When looking at content using the Order panel, what you are looking for is that each content “container” has a number that moves down the page in the order in which the content will be read. The first number, 1, should be at the top of the page followed by the number 2, 3, 4 and so forth so that all content on the page is shown in the order in which it is supposed to be read.

You can drag and drop the content “containers” in the Order panel so that they are rearranged in their logical reading order. An exception to this is for flawed or fragile PDF documents created from many layers of content or images that came from desktop published documents.

As you move through the page and its contents in the Order panel, the content “container” is highlighted in the document so that you can see exactly which number is selected.

Keep in mind that this is a more global view of the order of content and won’t necessarily give you the Tag details. For example a page might simply have one huge text block labelled “1.” The reality is that the page has headings and paragraphs and isn’t one block of text. Likewise you may have several paragraphs identified as one block of text in the Order panel but you need to check and make sure that each paragraph has its own <P> or <Normal> Tag so that the document is read properly and the adaptive technology buffers aren’t overloaded.

The Order panel gives you the view from the satellite but you still have to look at the details in the Tags Tree using Highlight Content.



**Figure 39 Order Panel open to show global tagging of document.**

In the preceding document the image I placed in the source document is “tagged” as an Artifact. It does not have Alt Text in the Word version of the document. One of the problems with tagged PDF as of Acrobat 9 is that <Figure> Tags are often thrown to the top of the Tags Tree instead of being placed in their logical position in the Tags Tree. Document. Fortunately I always add captions to images which means that even though I identify all of the images as Artifacts in Acrobat, screen readers still have access to the caption text. This lets the person reading the document who can’t see it know what the figure is for.

Why do this instead of rearranging the Tags?

It is a matter of cost effectiveness. In a document with 10 images or more do you want to spend the time dragging <Figure> Tags around the Tags Tree or spend your time on more pressing problems? This would also let you spend your time on other documents. Once I use the Order Panel to put the images into the background/Artifacts, I can then delete the empty Tags from the Tags Tree as I perform the Quality Assurance on the document.

This random insertion of <Figure> Tags happens whether you use the Adobe add-in for Word or the Microsoft add-in because both use the same PDF specifications which are the current ones.

To reassign content in the Order Panel, press the AppKey and from the list choose Tag as Background/Artifact for images on pages. This lets you make repairs to documents without opening the TouchUp Reading Order panel. It is also useful to know that with some documents, you can’t make changes using the TouchUp Reading Order tool but you can use this context menu. Part of repairing tagged PDF is being able to think creatively on the fly and if one way of making a repair doesn’t work, try another.

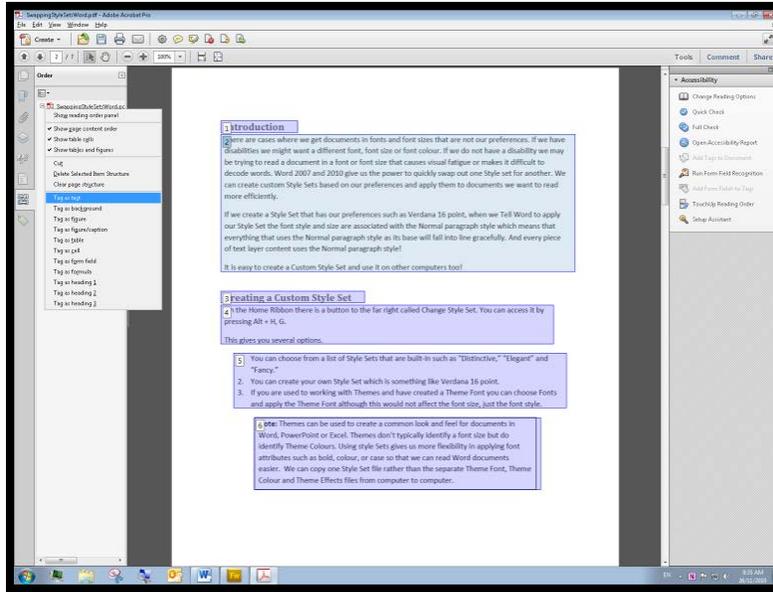


Figure 40 Context menu in Order Panel for making repairs.

If you choose to open the TouchUp Reading Order Panel, it will float over your document. There is no way to dock it anywhere. A good strategy is to reduce the view of the document so you can place the TouchUp Reading Order Panel in some black space around the document to prevent constantly having to move it out of your way..

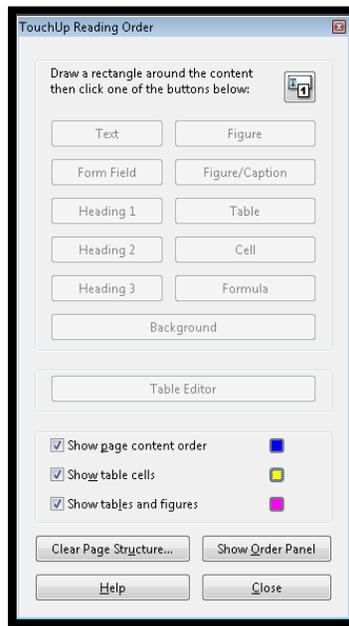
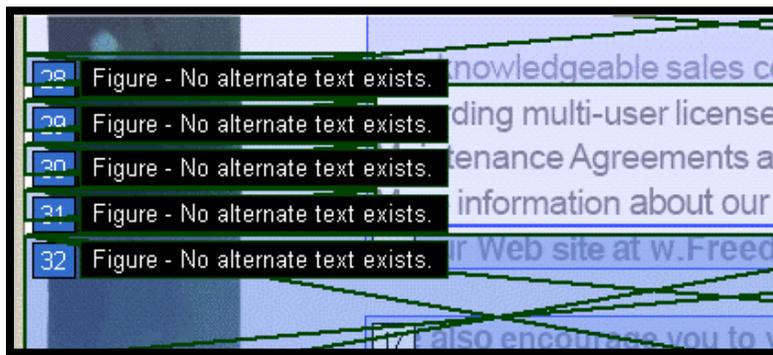


Figure 41 TouchUp Reading Order Panel.

By default, the colours used for each element in a document are black and grey scale; however, you can redefine them for your own preferences. When working with PDF documents, I find it easier to visually distinguish elements if they are coloured brightly. Click on any of the colour palettes in the lower half of the TouchUp Reading Order Panel and choose bright colours.

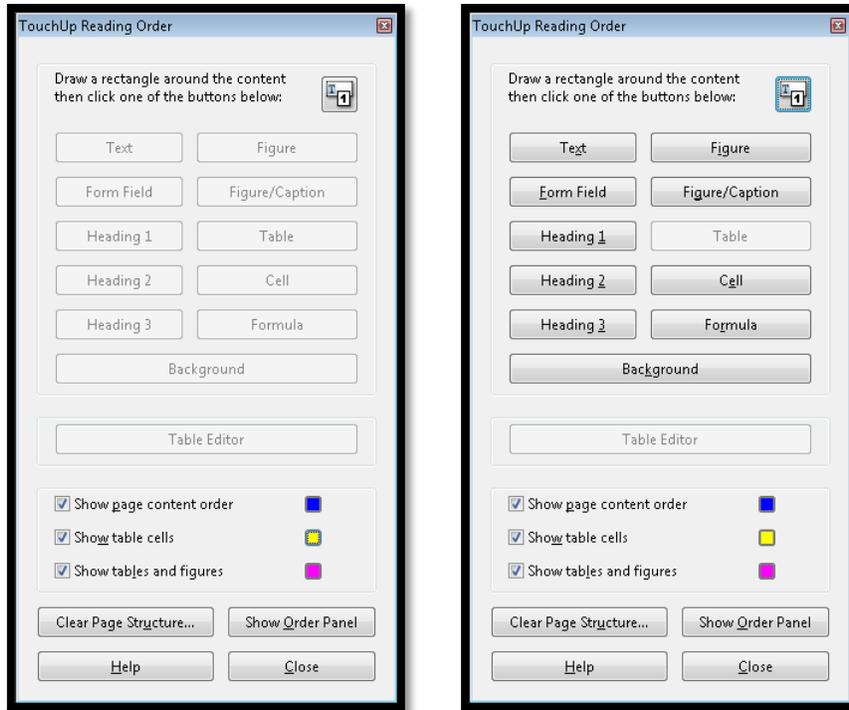
To select elements in the document, use the mouse to click on the small number in the upper left of the element container.

If you have more than one element to modify at the same time and the modification is going to be the same for these elements, you can select one of them, hold down the Ctrl key and then select the others. This is useful when you have to redefine “figures” which are really part of the background, not the document itself as in the sample image below.



**Figure 42 Similar document elements selected for identification using the TouchUp Reading Order tool.**

The first image in this chapter of the TouchUp Reading Order panel showed it as it is when it is first launched. None of the buttons are active. This is because nothing in the document has been selected.



**Figure 43 TouchUp Reading Order tool with element not selected/left and with element selected/right.**

The images above show my bright colours chosen for content. As mentioned, by default these are all black. Having all content be represented by the same colour creates more time in trying to quickly find a specific type of content.

Once I've selected a number in the reading order, the buttons become active and I can reassign attributes for elements. For example, I can determine that a figure is really background and by activating the Background button, the "figure" element disappears from the tags Tree and the TouchUp Reading Order view and becomes an Artifact or part of the background. The numbered elements in the TouchUp Reading Order renumber themselves to reflect the new logical reading order of content.

I can also use the mouse to select page content and then reassign it. A caveat is that you can't redefine a figure as text. A figure is a figure. You can, however, reassign text as a figure if it is part of a logo or brand name.

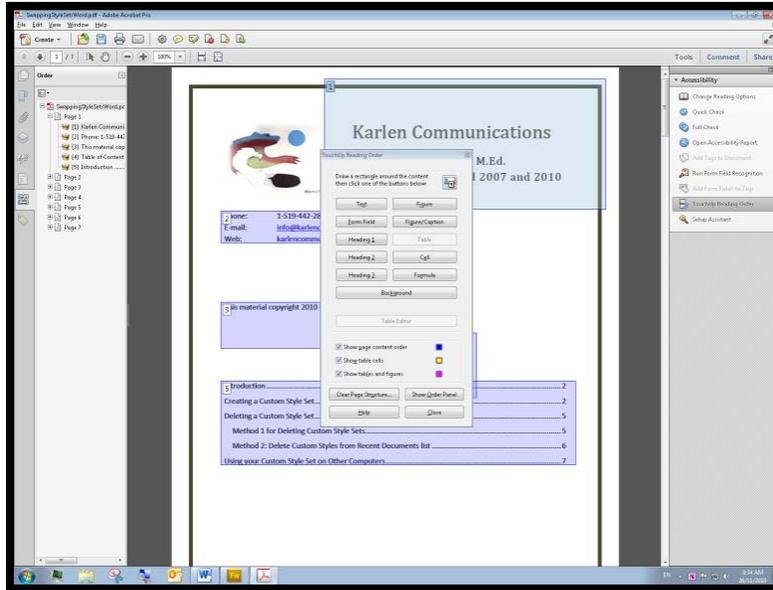


Figure 44 TouchUp Reading Order Panel with document element selected.

When a content “container” is selected in either the Order Panel or the TouchUp Reading Order panel, it is shown on the screen in my colour choice which is blue which is equal to highlighting it.

If a page of content is so “awful” it can’t be worked with, you can clear the existing page structure and rebuild it. You can also remove the structure for the entire document. Remember that there is no “oops” or undo button. If you accidentally delete page structure/Tags, close out of the document without saving and then reopen it

We will get a lot of practice using the TouchUp Reading Order tool as we work through the advanced repair techniques.

## Table Editor

Part of the TouchUp Reading Order panel tools is a “Table Editor.” In Acrobat .9 this tool lets you identify a “scope” attribute for columns that span more than one column. For example in a complex table where you may have two header rows one of which spans the other.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	2500

In the preceding table there are two header rows. The first header row contains two headers that were created by merging two cells. By implementing the “scope” attribute, when a person using a screen reader moves down through the content for Barnaby’s sales for the second quarter, they would hear: “First half of 2009, second quarter, Barnaby, 2,500. The person reading the information in the data table would be able to understand the relationship between data and understand what the number 2500 meant.

Consider that without using table headers or the TH Tag for “First Half of 2009,” “Second Quarter,” or “Barnaby” that a person using a screen reader would hear the following as they moved through to that table cell: “2000” If they went through the entire table of data without TH or column and row titles/headers, they would hear: “Karen, 1500, 2500, 2500, 27500, Barnaby, 2000, 2500, 2750, 2750, Olivia, 2000, 2500, 2750, 2750.”

This is a simple table. Can you imagine trying to figure out the relationship between data in a complex table?

To use the Table Editor , select a table in the document by clicking on its content “container” number.

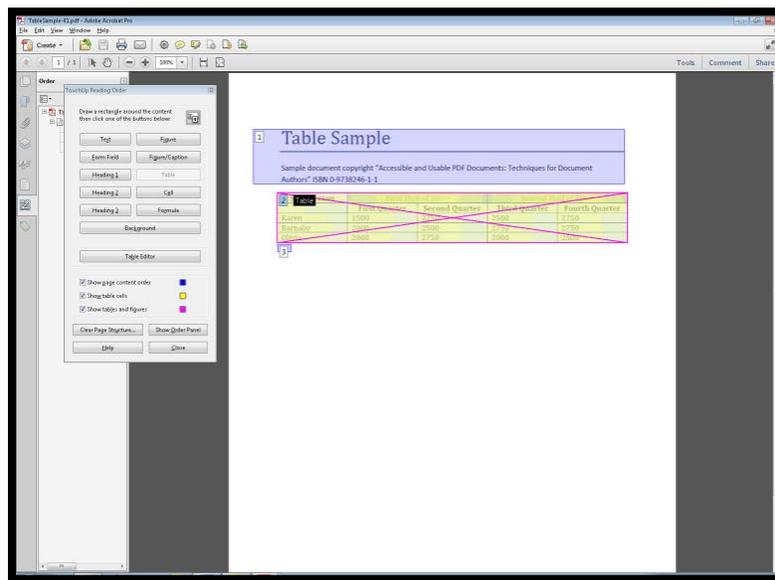


Figure 45 Table Editor available in TouchUp Reading Order Panel.

The TouchUp Reading Order panel temporarily disappears and the table is outlined in red.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	2500

**Figure 46 Table with Table Inspector active.**

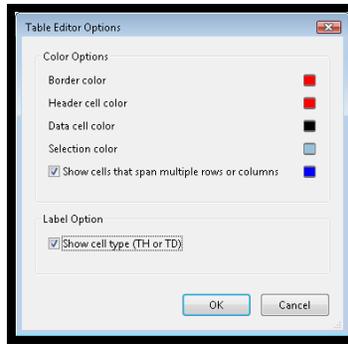
The cells in the table are outlined which lets you verify that the right content has been distributed appropriately in the table as individual table cells.

At this point, activate the left mouse button. A context menu opens. Choose “Table Editor Options.”.

Salesperson	First Half of 2009		Second Half of 2009	
		Second Quarter		
Karen	1500	2250		
Barnaby	2000	2500		
Olivia	2000	2750		

**Figure 47 Context menu for table while Table Inspector is active.**

A dialog opens with settings for how you work with and view tables while using the Table Inspector.



**Figure 48 Table Inspector Options dialog.**

If you have colour deficits and have issues seeing red, you can adjust the colours for table elements to meet your needs. You also want to make sure that the check box to “Show all types” is checked. You can use colour to quickly evaluate the tagging of the table and its cells and then make repairs.



**Figure 49 Table Inspector options with colours changed and check box to show cell types checked.**

Activate the OK button and you are returned to the document. Now you will be able to see the attributes for each cell.

TH Salesperson	TH First Half of 2009		TH Second Half of 2009	
TH	TH First Quarter	TH Second Quarter	TH Third Quarter	TH Fourth Quarter
TD karen	TD 1500	TD 2250	TD 2500	TD 2750
TD barnaby	TD 2000	TD 2500	TD 2750	TD 2750
TD zivia	TD 2000	TD 2750	TD 2000	TD 2500

**Figure 50 Table Inspector now showing table Tags such as TH or TD.**

Notice that because I've used odd colours, it is easier to see which cells have a <TH> Tag and which cells have a <TD> Tag. If a cell is tagged as a <TD> or data cell but it should be a header cell as in this table, you can make this repair.

Using the mouse, left click to select the cell.

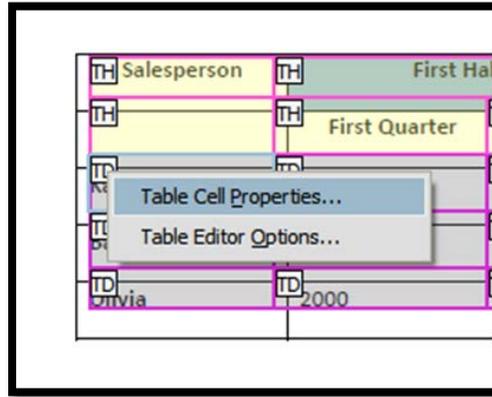


Figure 51 Table Inspector context menu showing "Table Cell Properties" selected.

Activate the left mouse button to open the context menu but this time choose "Table Cell Properties."

A dialog opens and since this is a <TD> or Table Data cell, that is the radio button that is checked.

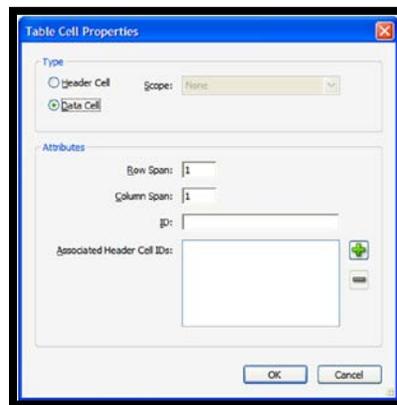
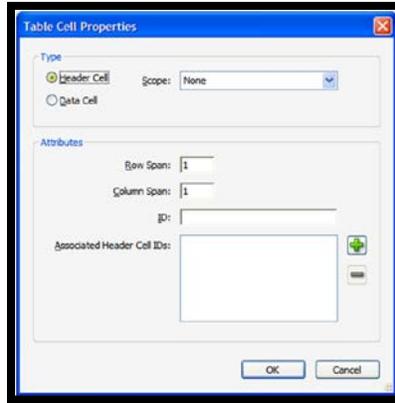


Figure 52 Table Cell Properties dialog open showing Table Data cell selected.

Choose the "Header Cell" radio button, Tab to and activate the OK button.



**Figure 53 Table Cell Properties with the Header Cell radio button selected.**

When you return to the document, the cell now has a <TH> Tag rather than a <TD> Tag. In the following images I've repaired all of the cells in the first column.

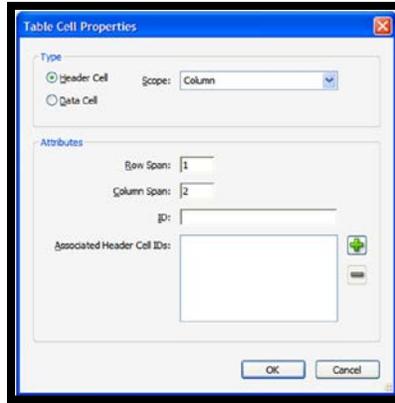
Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Allen	1500	2250	2500	2750
Annaby	2000	2500	2750	2750
Atyia	2000	2750	2000	2500

**Figure 54 Repaired cells in column one to be <TH> Tags rather than <TD> Tags.**

Notice that they are now the yellow colour so are clearly visible as <TH> or Table Header cells.

Also notice that the Table Inspector didn't know how to colour code the two merged <TH> or Table Header cells in the first row of the table. We need to repair this.

Select the "First Half of 2009." By clicking on the <TH> attribute in the upper left corner of the cell. Right click the mouse to open the context menu and choose "Show Cell Properties."



**Figure 55 Table Cell Properties dialog with scope information filled in.**

You will be warned that you might be creating a “malformed” table if you continue. Say yes and review the changes to the table.



**Figure 56 Image of warning message when you use the scope attribute.**

The following two images show the first repair and then both repairs. Remember that I left the bright blue to be the colour of merged cells.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
karen	1500	2250	2500	2750
patnaby	2000	2500	2750	2750
trivia	2000	2750	2000	2500

**Figure 57 First repair of a merged header cell.**

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	1500

Figure 58 Completed repairs on the two merged header cells.

But how is this related to the Tags Tree? Glad you asked! If we close the TouchUp Reading Order tool and go to the Tags tree, expand the <Table> Tag and move through the table structure, we can see the results of the work we did. With Highlight Content turned on, we can explore the table content cell by cell.

Table Sample

Sample document copyright "Accessible and Usable PDF Documents: Authors" ISBN 0-9738246-1-1

Salesperson	First Half of 2009		
	First Quarter	Second Quarter	Th
Karen	1500	2250	2500
Barnaby	2000	2500	2750
Olivia	2000	2750	2000

Figure 59 Tagged table in PDF document.

This is a perfect example of the persistent problem with tables coming from Word as of Acrobat 9. Notice the gridlines for the table that have been mistagged as <Span> and will show up in an Accessibility Full Check as images without Alt Text or elements not in the structure tree. The repair for this is to go into the Content Panel and make each one an Artifact.

When doing repairs to PDF documents, you will be toggling between tools. This lets you check your work to ensure that nothing is broken. When working with flawed or fragile PDF documents you may repair something on page 5 and "break" something on page 9. Often this is because the PDF document came from a desktop publishing application and the document wasn't put together in a well-designed way. The most common reason for content separation is that layers of content have been released or were not grouped or compressed in the desktop publishing application.

## Add or Edit Interactive Objects

The advanced Editing toolbar used to be found under the Commenting menu bar item or through the Tools menu. It is now located in the Content Toolbar to the right of the document and is called “Add or Edit Interactive Objects.” Once in the Content Panel you will need to expand the Add or Edit Interactive Objects tools in order to use them.

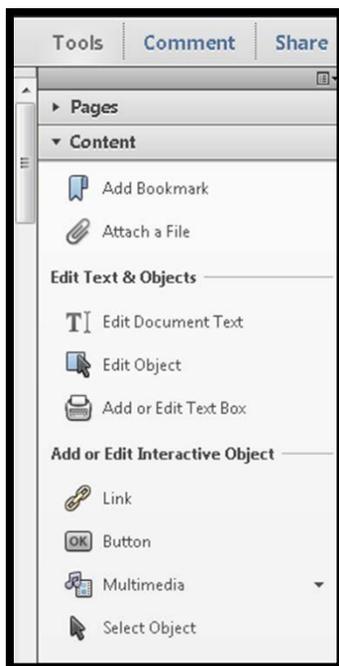


Figure 60 Content Toolbar showing Add or Edit Object tools.

## Links

The Link tool from the Add or Edit Objects tools in the Content Toolbar lets you manually add links to PDF documents. Use this tool if the Create Links from web addresses found in the Document Processing Toolbar did not create links for all web addresses in the document. The automatic tool looks for the preface <http://> so if this is not present in a web address, it might be missed.

Remember to add all links to the document before you Tag it.

You can also use the Select Text tool to select text in the document and create a link from the selected text which then will use the selected text as the “Alt Text” for the link. Alt Text will need to be added for any links created that are not created using the Select Text tool.

## Select Objects

Use the Select Object tool to select any images in the PDF document that need to be in the Tags Tree but were not initially tagged. Decorative images do not need to be in the document structure.

## Action Wizard

This tool is new to Acrobat X and is not accessible if you are using adaptive technology and/or the keyboard. Although you can Tab around the dialog that opens to let you edit or create a new Action Wizard item screen readers cannot read the items which means those of us using screen readers can't create or edit actions..

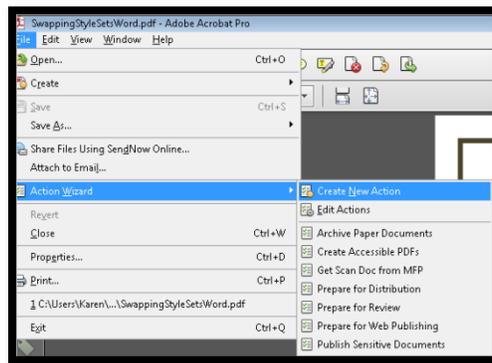


Figure 61 Action Wizard from the File menu.

Having said that there is a predetermined set of actions to create an accessible PDF document. This is a very basic set of steps and basically tags the document and runs an accessibility full check.

You can edit any of the existing actions provided you don't use a screen reader. Choose the action Wizard and then choose to edit actions. A dialog opens and you can choose which set of actions you want to edit. This part of the process is accessible.

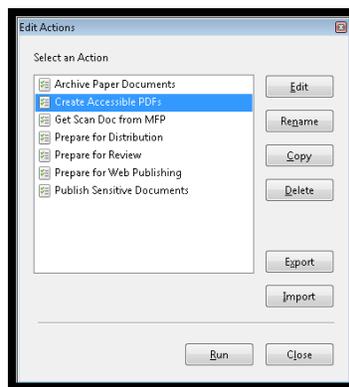


Figure 62 Dialog to edit a specific Action Wizard set of steps.

The ability to select an action to edit is accessible, however once the action steps are open, screen readers are not able to read the items tabbed to.

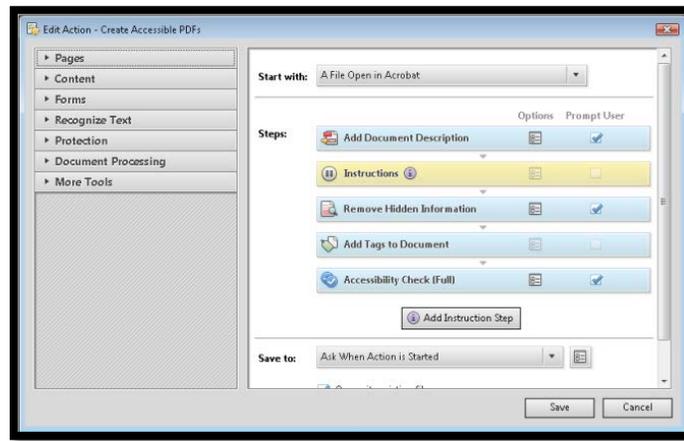


Figure 63 Edit Action Wizard steps dialog.

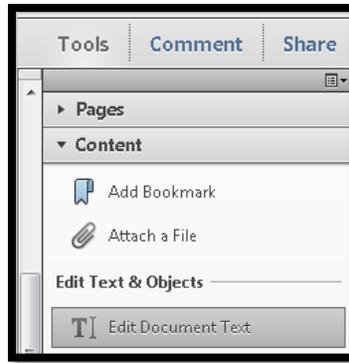
## Fit Text to Selection

The “Fit Text to Selection” tool comes in handy if you have a scanned document, have performed OCR on it and some of the text has not been recognized properly. Typically I find this tool useful for web addresses in document. Because OCR tries to make words out of the characters it sees, sometimes web addresses can be misrecognized.

As the name of the tool suggests, this is not a way to edit PDF documents. It will fit the text you type to the selected space in the document.

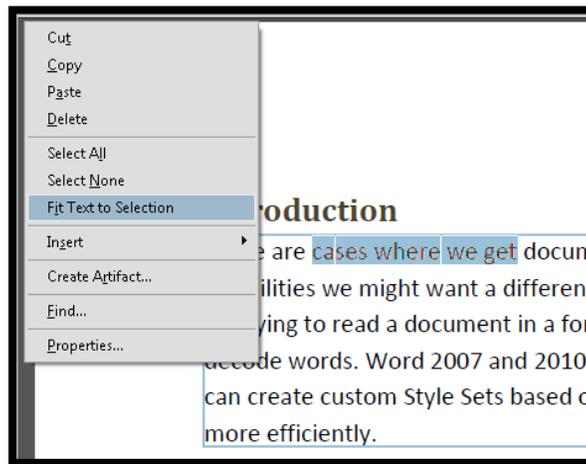
The first step is to activate the “Edit document Text” item in the Content Toolbar to the right of the document.

Then click on the area you want to edit. In this case the entire paragraph was identified. Use the Select Text tool to select words on a line and then press the right mouse button. This activity is mouse driven. Choose Fit Text to Selection.



**Figure 64 Edit Document Text in the Content Toolbar to the right of the document.**

The next step is to click on the paragraph that needs minor edits. It will then have a blue line around it. Press the right mouse button and choose “Fit Text to Selection.”.



**Figure 65 Fit Text to Selection from the context menu.**

Use the mouse to select the words that need replacing. Once you begin typing you will only have the amount of space you identified to type in. As you type the letters will begin to fill the space.

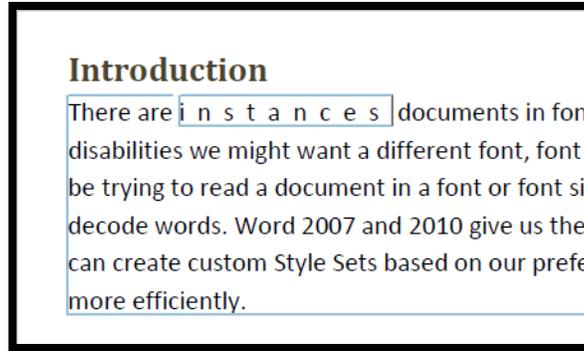


Figure 66 Area on line where new text needs to be inserted.

If you type too many characters to fit into the space, they will just keep piling on top of each other.

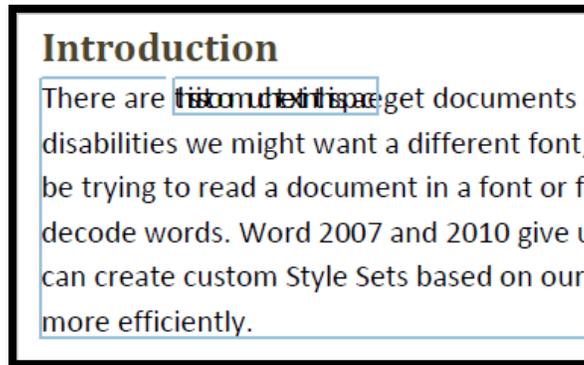


Figure 67 Too much content in the selected space.

If you do not have the font used in the document on your computer, you will get a warning message. This means you cannot edit any of the content.

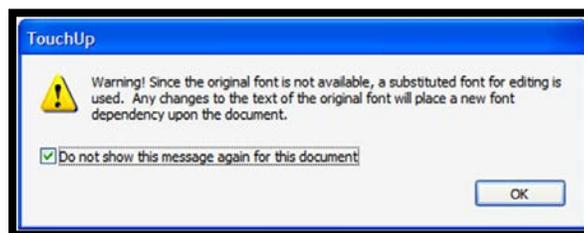


Figure 68 Font not on your computer message.

As a person repairing PDF documents to be accessible it is not generally your responsibility to make these types of minor edits to the content of documents. It is also not a good habit to get into with clients. What you need is the final document signed off by someone who has reviewed it and is willing to say "there will be no more edits or changes to this document." If there is, you need to build that additional pricing into your contract.

Once you've finished repairing the text, you can switch back to the Select Text tool or the Hand tool to take focus off of the text so you can see it better.

Remember that Adobe Acrobat is not an editing tool, word processor, or desktop publishing application. There will be some documents that will need to go back to the document author to be repaired.

## Save as Word Document or Accessible Text

One of the other tools you have is to save the PDF document as either a Word document or "accessible text." I've found this tool to be "wonky" depending on where the document came from. For example if I have a Microsoft Word document saved in the "doc" format I am more likely to have Alt Text for images be in the accessible text version than I am if I use a document that is in the new Microsoft Word file format "DOCX."

It is the same with any images that have been captioned. The captions will appear in the accessible text version but may not be where you think they should be. For example sometimes a caption will be included in a paragraph, sometimes on a line by itself, and sometimes above or below the content it is between in the PDF document.

The Tags of a document can be correct and a screen reader will read the content of the PDF in its logical document order, but when it is saved to accessible text, there is no guarantee that elements that should be in a text only version of the document will consistently be there.

It will also take you a lot of time to go through the text only version of your document trying to match the text only version to the PDF version.

To save a PDF document as a Word document provided you have the right permissions:

1. Press Alt + F, A for File, Save As which opens a sub-menu.
2. Press W for Microsoft Word which gives you a sub-menu with two options for Word formats.
3. Once you choose your format, the document will be save to that Word format.

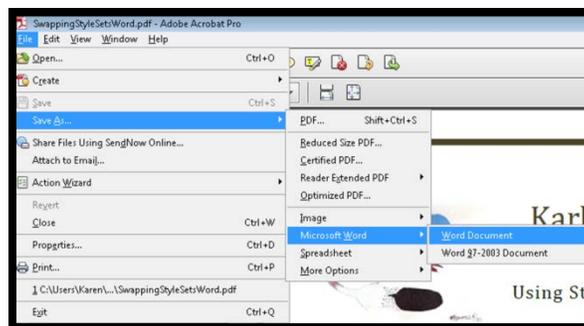


Figure 69 Save as Word document options.

To save a PDF document as accessible text provided you have the right permissions:

1. Press Alt + F, A for File, Save As which opens a sub-menu.
2. Press M for More Options.
3. Choose Accessible Text from the sub-menu.
4. The document will be saved in plain text format.

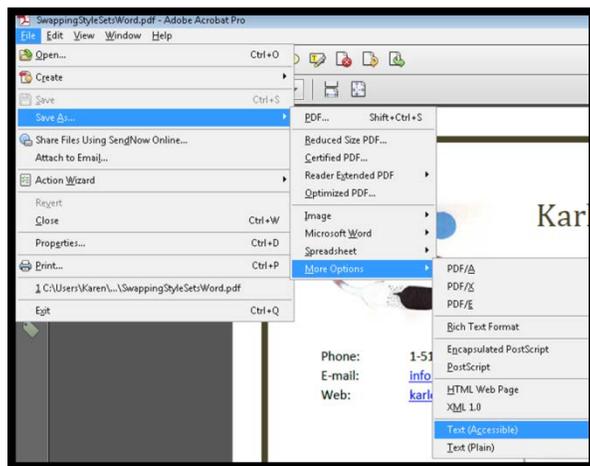


Figure 70 Save as accessible text option.

I mention this as a tool for looking at the accessibility of a PDF document because it will give you an idea of the issues and problem areas of working with PDF documents and the content that is rendered to the end-user. If we understand what types of information are and are not being given to someone using adaptive technology, we can help the evolution of PDF as a more accessible file format.

## Read Out Loud Text-to-Speech

The Read Out Loud Text-to-Speech tool is useful for skimming through tagged PDF documents and performing spot checks on specific areas of the document.

Now is a good time to talk about one of the growing myths in accessible and usable PDF documents: “JAWS Compliance.” There is no such thing.

If you talk to someone who asks that PDF or other documents be “JAWS compliant” the usual answer is that “JAWS needs to be able to read them.” No one can articulate exactly what this means. I use the JAWS screen reader as an example here but this myth applies to anyone asking for “Window-Eyes Compliance” or “ZoomText Compliance” or any other adaptive technology specific “compliance.” There is more detail on this when we get to the validation tools chapter.

There are too many variables to even try to make this any type of standard or guideline.

This brings us to a discussion about Read Out Loud which is not a full screen reader, but is a Text-to-Speech tool. A full screen reader has the ability to move through a PDF document by links, headings, form controls, words, lines, or paragraphs. It will also read dialogs and menu items. The purpose of a screen reader is to provide full access to the computer for someone who is blind. Text-to-Speech accesses primarily the document. It is designed for people with learning disabilities to provide auditory support when reading documents. In most cases dialogs and menus aren't read to the end-user.

Because both TTS and screen reading tools use a synthesized voice, it will depend on the voice synthesizer and the synthesized voice you use for how much information is pronounced, enounced, and rendered to you. For example a more human phoneme based voice might sound better but might also not have certain symbols or letter combinations in its pronunciation dictionary. This means that words are mispronounced or can be ignored altogether.

If a PDF document is properly tagged but someone uses a synthesized voice that does not have the ability to "read" everything to the end-user, does this mean that the PDF document is inaccessible?

The focus is on making the PDF documents accessible. You cannot account for every type and flavour of synthesized speech available to someone reading the document using adaptive technology.

When using Read Out Loud for spot checking PDF documents, it will use the default voice you assign to it. If you are using Microsoft Windows XP for example it will read the documents using Microsoft Sam which is not a human phoneme voice. Microsoft Anna, which is the default for Windows Vista is a more human phoneme voice so the PDF documents sound more human but pay attention to see if any text is misread or ignored all together. If you have purchased other synthesized voices, you can change the default on your system and Read Out Loud will use that voice to read the PDF documents.

Read Out Loud will read a page or the entire document. There is a bit more flexibility with it in Acrobat and Adobe Reader 9; however, it is not as feature rich as a screen reader like JAWS or Window-Eyes.

Using a screen reader is a useful tool when performing the QA or Quality Assurance on PDF documents or in an accessibility audit process but it cannot be the definition of what an accessible PDF document is.

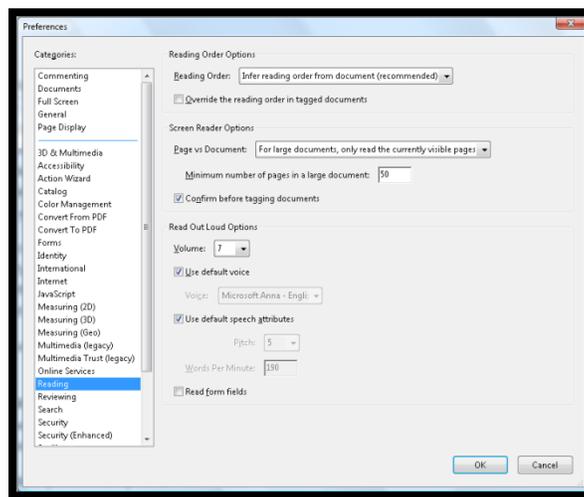
By using a screen reader like JAWS during the QA or audit process you can get a list of links and see if any are missing, misspelled, or don't have Alt Text. You can get a list of headings and see if any are missing, not in a hierarchical order, and can be navigated to. You can get a list of form controls and see if any are missing, labels are complete and make sense, and you can quickly move to a specific form control to fill it in.

## Read Out Loud Preferences

If you are using the Read Out Loud tool in Adobe Acrobat, there is a Preference setting under Reading to have form controls read to you. This is useful because you can then Tab through the form controls and know where there are missing labels or missing label text.

To set reading preferences in Adobe Acrobat:

1. Press Ctrl + K to open the Preferences dialog.
2. Choose the “Reading” category from the list on the left of the dialog.
3. Press Tab to move into the preferences for reading/Read Out Loud.
4. Choose to have form controls or fields read. This is a check box at the bottom of the Reading preferences.



**Figure 71 Reading Preferences.**

You can also change the pitch and voice rate for reading documents. I typically leave the defaults since this is what most people will do and I use the adaptive technology to spot check areas where I think there might be issues. It is not cost effective to sit and listen to every PDF document you work on. We need to use the tools we have wisely, effectively and efficiently.

You can use some of the accessibility and usability settings in a QA or audit process. However, it is not fair to people using adaptive technology to limit access of a PDF document or any other digital content to specific settings. Again, this is why we work with standards, guidelines and Tags and not adaptive technology specific definitions of accessibility.

## **Additional Tools**

The following tools will be covered as we encounter them in other chapters.

- Language.
- Bookmarks.
- OCR or Optical Character Recognition for scanned documents.
- Adding Alt Text to Images and Links.

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# Validation Tools

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There are two ways to mechanically check the accessibility of a PDF document. The Quick check provides what can be described as superficial information on the accessibility of your PDF document. The Quick Check is available in Adobe Reader as well as Adobe Acrobat. The Full Check provides more detailed information on accessibility issues and can provide repair hints as well. The Full check is only available in Adobe Acrobat Professional. I recommend that authors and people tagging and repairing PDF documents use the Adobe Acrobat Professional and the Full Check tool To provide a cursory check of PDF documents.

**Note:** It is important to remember that these mechanical validation tools are not intuitive nor do they have common sense. Basing "complete accessibility standards and policies" on a clean accessibility full check report" is misleading and may not produce an accessible/usable document. The Accessibility Full Check is only one tool that should be used in a QA or audit process.

## Quality Assurance and an Audit Process

It is essential that for every project or organization you have a defined criteria for what an accessible PDF document is. If you are working with the draft refresh of Section 508 in the United States, the criteria are clear and measurable. You can also use the WCAG 2.0 guidelines or legislation within your country to define what an accessible PDF document is.

As discussed in an earlier chapter using something like "JAWS Compliant" as any type of criteria for what an accessible PDF is will be the same as chasing your tail. Unless clear criteria can be established from which to measure your work, any attempt at making PDF documents accessible and usable will be unattainable.

What do I mean by clear and measurable criteria?

- The PDF document has Tags.
- The Tags are in a logical reading order.
- All headings are identified.
- All headings are in a hierarchical order.

- All content related images have meaningful Alt Text.
- All decorative images are Artifacts.
- All links have Alt Text.
- All lists are tagged correctly.
- When images of text are in a document the Actual Text attribute is used not the Alt Text attribute.
- All mathematical/scientific notation or <Formula> Tags have Alt Text.
- All form controls have meaningful labels.
- All required form controls indicate that they are required in the label.
- Column and Row titles have TH Tags and the scope and table header ID are used appropriately.

These are a few of the elements that can be measured and confirmed.

If you are repairing PDF documents you will need to establish the QA [Quality Assurance] and audit criteria before you start the project or begin work on the documents for your organization.

There may be documents that cannot be made accessible due to their creation process. We are going to briefly look at what can go wrong in a PDF document that might render it inaccessible or “imperfect but accessible.” I am also going to remind you at this point that there is no such thing as any PDF document being “adaptive technology specific compliant.”

## “JAWS Compliant PDF”

One of the phrases used to define accessibility of PDF documents that has emerged is “JAWS Compliant PDF.” Variations of this are “Window-Eyes Compliant PDF” and “ZoomText Compliant PDF.” The core problem with this approach to accessibility – other than its non-existence – is that if it did exist, it would confine accessible documents to one adaptive technology only. It is also basing a definition of accessibility on a tool used to access information rather than on a tool to validate code, tagging, and structure...on an adaptive technology not designed to be the criteria for “accessibility testing.”

There are many variables and problems with attempting to use ONE adaptive technology to define accessibility.

- What version of the adaptive technology is the base for the criteria?
- What version of Adobe Reader is the base for the criteria?
- What settings in the adaptive technology are the base for the criteria?
- What settings in Adobe Reader are used for the criteria?
- What is the knowledge and skill level of the end-user defined for the criteria?
- What ARE the criteria?

The fundamental flaw in this approach to accessibility is that it negates universal design in favour of design for one adaptive technology at one point in its development cycle, one person's skill level at using the adaptive technology, one specific set of user settings for Adobe Reader and/or the adaptive technology, and negates access to PDF by anyone using any other type of adaptive technology.

It also negates the work of both the adaptive technology developers and Adobe Systems toward more accessible and usable PDF documents.

## **Flawed PDF**

Any PDF content that originated as a document with no document structure. The result is a fragile PDF document that seemingly has a never-ending cycle of accessibility problems. Often these PDF documents can only be tagged, they cannot be fully repaired.

## **Fragile PDF**

This is PDF content that was created in such a poor manner, most likely with no structure and corrupt assets in the original document. The result is that for every repair you make, two more flaws appear. It is sometimes like walking on thin ice, you may be able to walk on one small crack but you've created ten more that contribute to the weakness of your position.

## **Corrupt Assets**

These are found primarily in documents that have come from desktop publishing software. They are images, pieces of text, diagrams, and charts, any "asset" used in the creation of the desktop published document that does not allow for the tagging, proper tagging, or optimization of the final PDF document.

What does this mean?

Consider a piece of text like this paragraph. It begins as "real text" in a text editor or word processor. It then needs to be used in other documents. To retain its integrity it is converted to an image file format such as TIF or TIFF. The asset is easily distributed throughout an organization and is used in various publications. Along the way, someone converts the TIF file to a GIF file or a PNG file both of which are other image file formats. The asset is then inserted into a desktop published document using Adobe InDesign for example. This will also happen if you are using Quark but InDesign lets you Tag a document in the InDesign application so I am using it as the sample desktop publishing application.

Now our asset is in a document that is then converted to tagged PDF. The result is often an asset with an identity crisis: is it text or is it an image? In many cases this one asset or what visually looks

like text is tagged as both text and a figure. One word or line may be tagged as text while the next three words or lines may be tagged as an image or several images. The entire piece of text may be tagged as an image.

I can hear you now...so we can use Alt Text for that asset/Tag!

No. The problem is that adaptive technology has buffers for content. Each adaptive technology has a different sized buffer. This is why it is critical that each paragraph has its own <P> or paragraph Tag and that Alt Text isn't an essay on the image. The goal is to ensure that the document is properly tagged.

Remember when you used to try and download information from the Internet and some of it came down to your computer, you were able to see or hear that piece of the media stream, then another bit was downloaded to your computer, you listened or watched that bit then another bit...well you get the idea.

It is the same with adaptive technology. Once a PDF document begins to load on the computer, the adaptive technology buffer begins to fill up. If too much information is in the Alt Text attribute, it may prevent the PDF from being opened if the person is using adaptive technology, it may crash the adaptive technology or it may crash Adobe Acrobat or Adobe Reader or both the adaptive technology and Adobe Acrobat/Reader. This is true even if the preference setting is on loading a page at a time. The end result is a PDF document that can only be opened when adaptive technology is turned off.

Aha, well then find the document, turn off the adaptive technology, open the document, and then turn on the adaptive technology again!

I am going to use the JAWS screen reader as the example here because you can easily find information on JawsScripts or the JAWS Scripting language. Window-Eyes has SET files that perform a similar function.

When you launch Adobe Acrobat or Adobe Reader, JAWS says "aha, Adobe Reader....let's get the tools ready so that not only the application will work but documents can be read!"

If you launch Adobe Reader and open the document before you have the adaptive technology running, the adaptive technology looks around and says "Huh? Now what should I do?"

Sometimes you will have decent access to the application and the PDF document, but other times you won't. The adaptive technology may be sluggish, non-responsive, non-focused on what it is supposed to be reading, settings might be ignored, keyboard commands may not work properly and all of this is frustrating.

You may have an ability to refresh the screen or initialize scripts or SET files but this is not a substitute for having the adaptive technology running before you launch an application.

The other issue in using corrupt assets is that if you try to reduce the file size once the document is tagged and meets the accessibility criteria set out by your organization, they become blurry and people without adaptive technology will not be able to read them.

Always use cleanly created assets for documents that are going to be converted to tagged PDF documents.

Whenever possible, do not use images of text in documents to be converted to PDF or any other accessible document format.

## **Accessibility Quick Check**

The Accessibility Quick Check does not provide a lot of information. It simply tells you whether the document is accessible or not. If you are using adaptive technology such as a screen reader, you will already know this. It is useful if you have a tagged PDF and want to see if there are any superficial problems such as lack of language or structure.

Press Ctrl + Shift + F6 to activate the accessibility Quick Check.

You will get a message dialog identifying superficial issues with this document. It will not give you details on what aspects of the structure might be missing. For people using adaptive technology, this is useful information. If they do have access to any of the content, it might be presented to them out of order. As previously mentioned, this is where you can go to the Preferences dialog and try to read the document top to bottom, left to right, or by using the raw print stream. If these options fail to assist in putting the document content into a logical reading order, the document is unreadable.

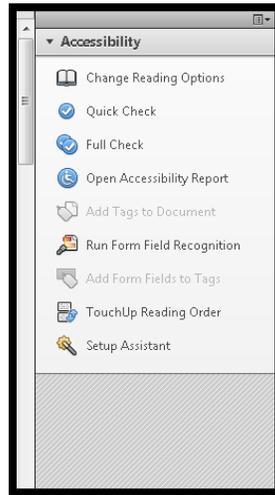
You don't have access to the Full Check if you are using either Adobe Reader or Adobe Acrobat Standard. This is as far as you can go in terms of checking the accessibility of a PDF document.

## **Accessibility Full Check**

The accessibility Full Check will create an HTML document containing issues and repair hints. Once the tool has looked at the document, the Accessibility Full Check Report will open in a report panel in the Navigation Panes to the left of the document. An icon is placed in the Navigation panes so you can switch between Tags, Order, Content, and the Accessibility Full Check.

To perform an Accessibility Full Check make sure that the Accessibility Toolbar is visible to the right of the document. Press F6 to move focus to the panels to the right of the document. You can then begin pressing the Down Arrow and Right Arrow to move to the Accessibility Panel and open it. Continue pressing the Down Arrow until you find Full Check and then press Enter. You may have to ice your fingers if they cramp up.

If you know that you are going to only use the Accessibility Toolbar you can close all other Toolbars from the View Menu, Show or Hide. This lessens the number of times you have to press the arrow key to use the Full Check.



**Figure 72 Accessibility Toolbar to the right of the document.**

Here are the options under Full Check:

- Create Accessibility Report
- Browse button to put the report in a location other than the default
- Include repair hints in accessibility report
- Create comments in document.
  - This will put comments in the document which will have to be removed before the document goes live.
- Page Range : All pages in document, Only those pages selected in the Pages Panel to the left of the document, or Pages from X to Y
- Checking Options – all of these are checked by default
  - Name gives you the option to perform an Adobe PDF check which will validate Tags or to perform a Section 508, WCAG 1.0 or WCAG 2.0 validation for the document.
  - Alternative descriptions are provided
    - This does not provide information as to whether the Alt Text is meaningful or whether links have Alt Text.
  - Text language is specified
    - This does not provide information for multilingual languages as to whether there is the proper language attribute for language changes in the document.
  - All content is contained in the document structure
    - This will not tell you that content has been mistagged as Artifacts or that content that should be tagged as Artifacts has been added as content.
  - All form fields have descriptions

- This does not provide information on whether the descriptions are meaningful or whether required form controls have this information in the ToolTips.
  - List and table structure is correct
    - This means that the Tags for a list and list items is present but it will not identify list items that should be in a list but are not. For example if a list item is mistakenly tagged as a paragraph this will not show up in an accessibility full check. If a list item has the <LI> Tag but is not within a list Tag or <L> this will be identified.
    - This means that there is a M<Table> Tag and <TR> and <TD> Tags but it will not identify if all cells have been tagged, if <TH> Tags are present, or if content that should be in multiple cells has been tagged into one cell.

**Note:** If you choose to view comments, any accessibility issues will be identified as comments when you view the file in Adobe Acrobat. These will have to be removed before the document goes live.

Choose your options and press Alt + S to Start Checking

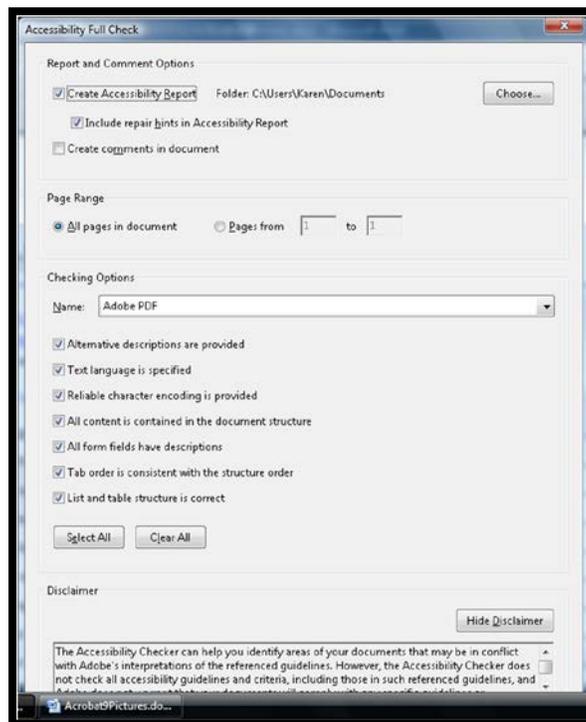
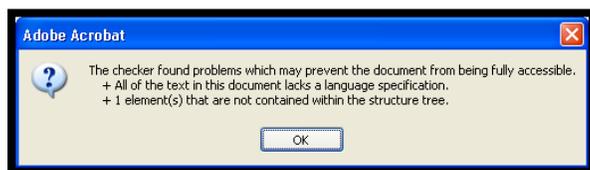


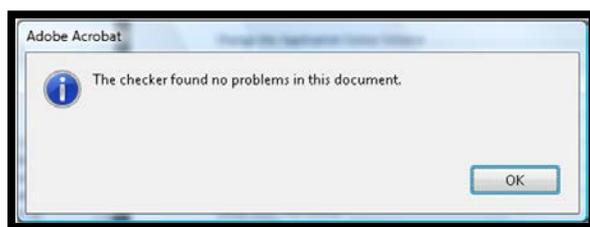
Figure 73 Accessibility Full Check dialog for Adobe PDF validation.

In previous versions of Adobe Acrobat, we had a hint as to what the problems were in a document. For those of us who “live in Adobe Acrobat and repairs to PDF documents, this was often enough to give us a starting point. You get to know the documents you are working with and a summary such as this is quite valuable. It means you don’t have to spend time skimming through the Accessibility Full Check report.



**Figure 74 First notification when performing an Accessibility Full Check in Adobe Acrobat 8 and earlier.**

In Adobe Acrobat 9 and X, you do not get this summary information. You are only told that there are problems with the document. You have to view the Accessibility Full Check report in order to see any of the issues.



**Figure 75 Accessibility Full Check preliminary message.**

In the past, for example, if you forgot to give the PDF document a core language, this would have been identified in the preliminary message. You could then dismiss the Accessibility Full Check Report, add the language and then perform another Accessibility Full Check. Time saved. Now you have to wait until the accessibility Full Check Report appears in the Navigation panes and skim through the found problems until you find the missing language item. This takes valuable time.

If you are working on a document where non-Unicode bullets are used and you would see that there were 360 non-Unicode elements you would automatically know what the problem was and quickly move to the Content panel in the Navigation Panes to make the repairs. Now you have to wait until the Accessibility Full Check Report launches and wait until you come across this error. Time wasted.

There are other issues with an Accessibility Full Check. If you’ve accidentally added Alt Text to a Tag such as <Span>, <P>, or <Part>, you may get an error in the report saying that there is Alt Text that will not be rendered to adaptive technology. But, it doesn’t tell you where in your document this is. You have to search the properties of EVERY Tag in the document until you find it. You can’t use the Order panel to discover this error. Even if you find the errant Alt Text and make the repair,

you will still be told that the problem exists in the document. In most cases the only solution if your organization requires a clean Accessibility Full Check is to remove the structure from that page and build it manually...or, if you can't find the errant Alt Text...to completely retag the document and start over.

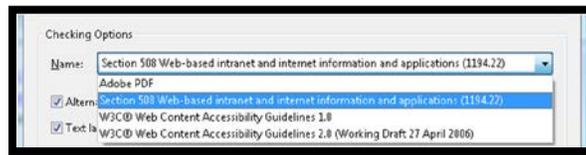
For this reason and others, I recommend that you create several versions of your work that chronicle the stages of success. This way you won't have to go back to square one if something goes horribly wrong.

## Options for Full Check

As mentioned in the overview of options in the Full Check dialog, you can perform a Section 508 full check or a full check based on WCAG 1.0 or 2.0. WCAG is the World Wide Web Content Authoring Guidelines. Section 508 is an American law for web content based.

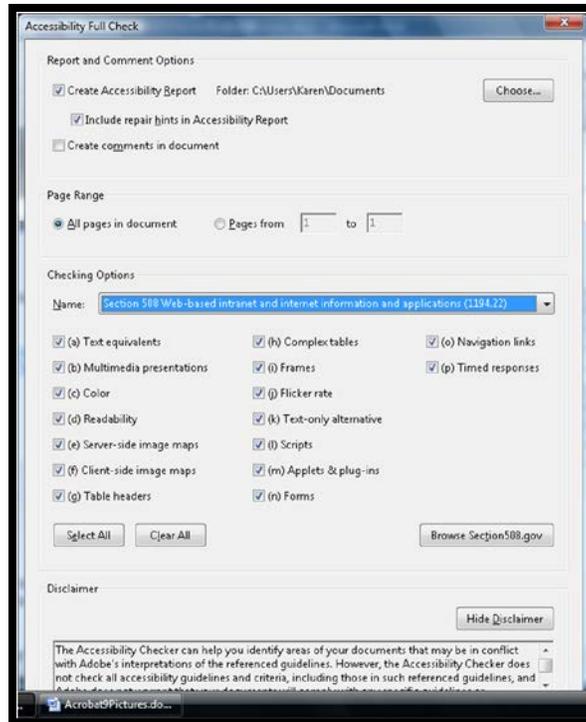
WCAG 2.0 is the latest and now fully implemented set of guidelines that now includes non-HTML based content. WCAG was focused primarily on HTML accessibility.

Section 508 was initially focused on HTML content but the refresh of Section 508 includes detailed criteria for other document formats such as PDF, word processed, presentation, or spreadsheet based documents. Note that Flash content and applications is included in both Section 508 refresh documentation and WCAG 2.0 final version.



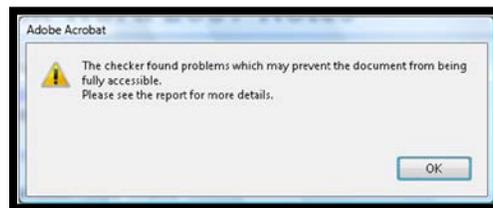
**Figure 76 Name or type of full check to be performed area of the Full Check dialog.**

If you choose to perform a Section 508 full check, the options in the Full Check dialog change.



**Figure 77 Section 508 Full Check options.**

Using a Section 508 full check lets you choose to validate against all or some of the provisions for Section 508.



**Figure 78 Problems with document message dialog.**

To date I have not performed an Accessibility Full Check where I did not receive a message indicating that there are problems with the document. An automated tool cannot check to see if the colour contrast is good, if the multimedia has captioning or notifies the end-user to download a player, or if the navigational links are present and correct. It also can't determine whether Alt Text for images or links is appropriate for the image or link.

It is the same when you choose to perform either of the WCAG based accessibility checks. The Accessibility Full Check dialog will change and you will be notified that there are problems with the document.



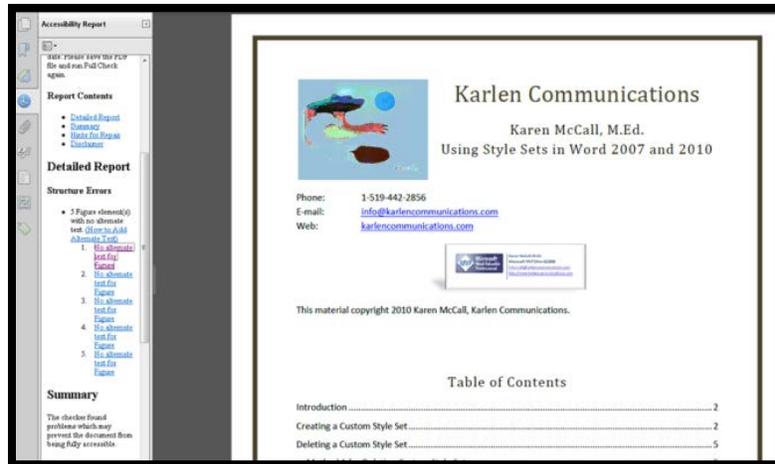
Figure 79 WCAG 2.0 Accessibility Full Check options.

In the next topic, we'll look at how to use all of the types of accessibility full checks as part of a QA or Quality Assurance process.

## Using an Accessibility Full Check Report

When you choose a type of accessibility full check report the report is generated and displayed in the Navigation panes to the left of the document. An icon for the report is added to those in the Navigation panes.

As you choose elements identified as problems in the Accessibility Full Check Report in the Navigation panes, the element may be highlighted in the document. You can then move to the Tags Tree, Order panel, or Content panel and make repairs based on your knowledge of the proper reading order, element and attribute you are looking at, and other author determined decisions about accessing the document.

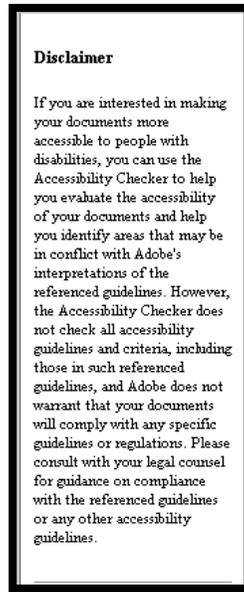


**Figure 80 Accessibility Full Check Report open in the Navigation panes.**

You can scroll through the accessibility Full Check report to see what the issues are. Sometimes you'll forget to check for a language or a correct Tab Order for links or form controls before you begin an Accessibility Full Check. If we still had access to the summary dialog, we'd be able to spot this quickly instead of having to scroll through the full report to the left of the document.

Both of these are easy fixes and one of those "duh I can't believe I forgot to check these before doing the full check" items. This is where having this information in the preliminary message would have been useful and saved time. Once identified you could quickly add these items and then redo the accessibility Full Check to see more extensive issues.

In each of the accessibility reports there is a disclaimer.



**Figure 81 Disclaimer at end of reports.**

The following is the text from the disclaimer of an Adobe PDF full check:

**Disclaimer:** If you are interested in making your documents more accessible to people with disabilities, you can use the Accessibility Checker to help you evaluate the accessibility of your documents and help you identify areas that may be in conflict with Adobe's interpretations of the referenced guidelines. However, the Accessibility Checker does not check all accessibility guidelines and criteria, including those in such referenced guidelines, and Adobe does not warrant that your documents will comply with any specific guidelines or regulations. Please consult with your legal counsel for guidance on compliance with the referenced guidelines or any other accessibility guidelines.

We often fail to read to the bottom of the Accessibility Full Check reports to see this disclaimer.

Once again we are reminded how impractical it is to use an Accessibility Full Check as a definition of an accessible PDF document. The Accessibility Full Check [and the Quick Check] are mechanical tools that are not a substitute for “human validation” or a formal QA or Quality Assurance process. It can be part of one, but it is not the definition of “accessible” PDF.

When you perform an Accessibility Full Check and you choose either Section 508/ or WCAG options to check against, the results are a bit more cryptic.

The following image shows the changes to the Full Check dialog when you choose to do a Section 508 validation. Note that the choice for a Section 508 validation is based on Internet content rather than more specific document format standards or guidelines.

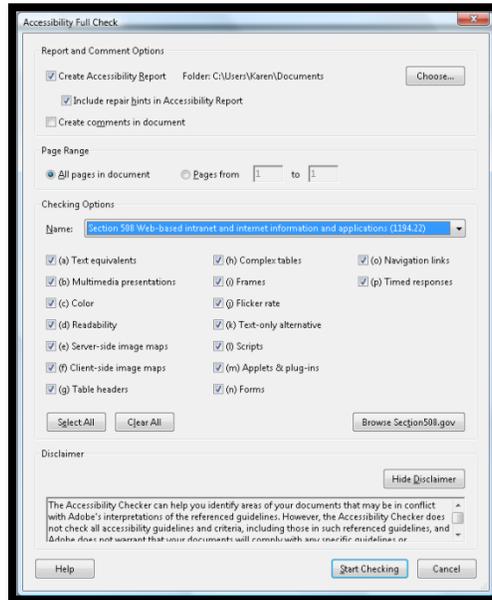


Figure 82 Section 508 Full Check options.

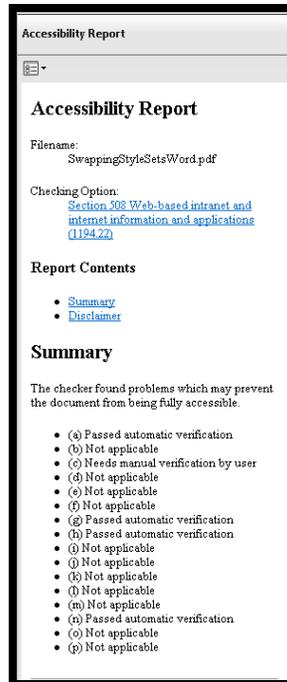


Figure 83 Section 508 Accessibility Full Check report.

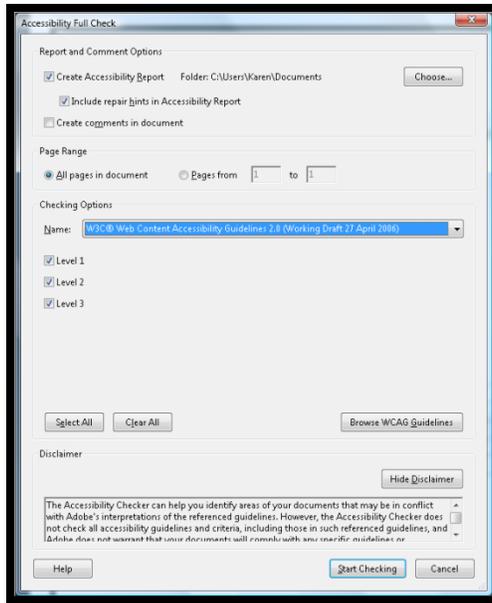


Figure 84 WCAG 2.0 draft full check options.

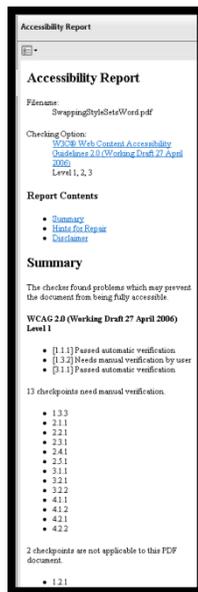


Figure 85 WCAG 2.0 full check report.

For both of these types of full check, there is a lot more manual reviewing of the document. The WCAG 2.0 choice indicates that WCAG 2.0 is still in draft which it is not. The list of items found are basically a rendering of every item in a WCAG 2.0 check list.

The Section 508 full check report is similar in that it simply presents you with the Section 508 checkpoints and advises you to go and review them manually.

## Accessible Fillable Forms

If you create a fillable form using Adobe Acrobat, you can use the Accessibility Full Check as part of the QA or audit process. If, however, you use LiveCycle Designer, it is important to note that there is no “validation” or accessibility checker for this application or resulting tagged PDF documents. You cannot use Adobe Acrobat’s Accessibility Full Check if the form you’ve created comes from LiveCycle Designer. There is also no way of viewing Tag or the Tags Tree in LiveCycle Designer.

You cannot make the repairs to a LiveCycle Designer form in Adobe Acrobat. If it came from LiveCycle Designer, it must always be worked on in LiveCycle Designer.

## Add a Language to a PDF Document

It is important to add a base or core language to a tagged PDF document. This will tell the adaptive technology which synthesizer language to read the document in. For example if you are using a French Synthesizer and a document in English opens but there is no language identified for the document, the French synthesizer will try to pronounce the English words.

This is true for multilingual documents as well. Each time the language changes in the document, whether it is for text or Alt Text for images, the Tag for that element must identify the language change.

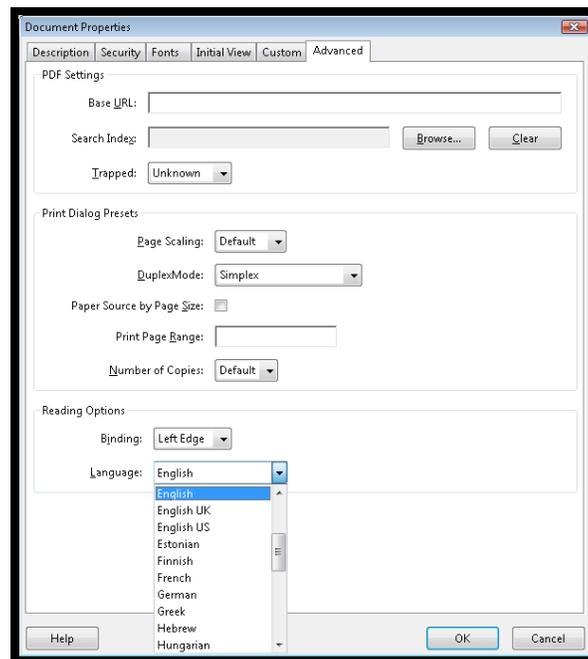


Figure 86 Advanced Document Properties with list of available languages expanded.

To add a language to an entire document:

1. Press Ctrl + D to open the Document Properties dialog.
2. Your focus is on the General tab.
3. Press Ctrl + Tab until you arrive at the Advanced tab.
4. Alt + L will put you in the language list box.
5. Press Alt + Down Arrow to open the list of available languages.
6. Use the Down Arrow to choose the base language for the entire document by pressing Enter on it. You can also use first character navigation to find the language you want.
7. Tab to and activate the OK button by pressing Enter.

If you are working with a multilingual document, you will need to establish the core language for the document using this tool and then use the language property for each Tag that has a different language.

There is more information on repairing multilingual documents later in this book.

## **Tab Order in a Tagged PDF Document**

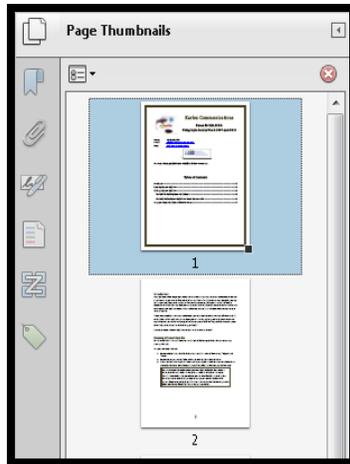
Repairing the Tab Order of a document that has links or form controls is a relatively easy repair. Generally if I find one instance of the Tab Order being off, I repair all the pages in the document whether they have links or form controls on them or not.

The Tab Order reflects the order in which content such as links or form controls can be tabbed to in a PDF document. Although you may see this for pages that do not have links or form controls on them, this is again an errant Accessibility Full Check Report but one that can easily be “repaired.”

It is a misnomer that people using adaptive technology “tab” around a PDF document. The Tab key is used to move from link to link or form control to form control.

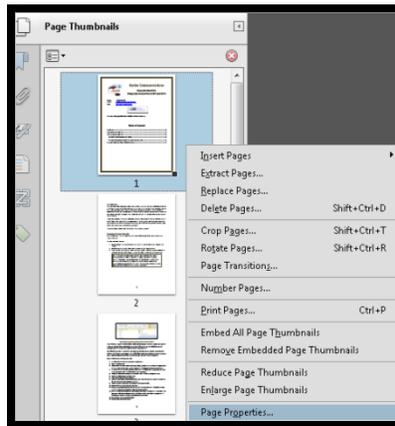
To change the Tab Order of a page or document:

1. Select the Pages tab in the Navigation panes.



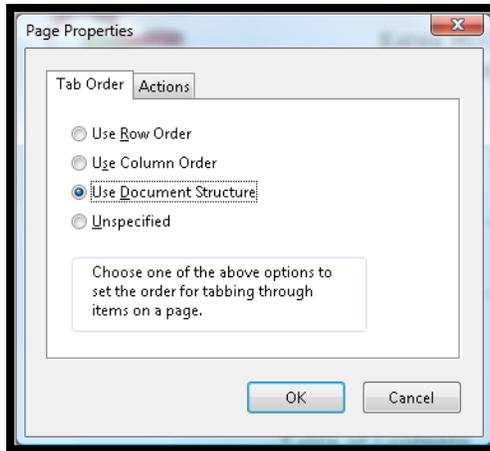
**Figure 87 Pages Panel in the Navigation Panes to the left of the document.**

2. You can do this by page or by selecting the entire document. For this example, we will select the entire document.
3. While in the Pages panel of the Navigation panes, press Ctrl + A to Select All of the pages in the document.
4. Press the AppKey and choose Document Properties.



**Figure 88 Context menu for Pages showing the Properties option.**

5. Choose to have the Tab Order defined by the document structure.



**Figure 89 TouchUp Page Properties dialog.**

Sometimes selecting all pages is faster than trying to find and repair all pages affected in the document.

**Note:** You will have to save documents, close them and open them again for a screen reader to “see” the repairs. You **MUST** start the screen reader **BEFORE** you launch the application which might require you to exit Acrobat, start the screen reader then launch Acrobat and the document again.

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# The Basics of Tagged PDF

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What do we mean by a basic tagged and accessible PDF document? At its very core, an accessible PDF document has to have the following elements:

- A Tags Tree.
- Logical Reading Order.
- Tags are appropriate for the corresponding content.
- Core language for the document.
- Correct Tab Order.

The “Tag is appropriate for the corresponding content” ensures that all elements of a PDF document are tagged properly. It would get the Tags as close to the visual representation of the document as is currently possible.

This can be delineated by identifying such document elements and components correctly as:

- Headings are tagged correctly. This means that headings are identified and that they present a hierarchical order to the content.
- Tables are tagged correctly. This means all cells are properly tagged and TH Tags are correct
- Lists are tagged correctly. This means that a bulleted or numbered list has the <L> and <LI> Tags respectively.
- Paragraphs are tagged correctly. This means that each paragraph has its own <P> Tag.
- Alt Text is present for Images and diagrams or formula and scientific notation.
- Bookmarks have been created.
- Links can be activated by the keyboard.
- Links have Alt Text.
- Each element that we can properly Tag [For example Footnotes] is properly tagged.

At its very core an accessible PDF document is defined by having Tags. However, if those Tags do not encompass all relevant content in a document and present it to someone in a logical and coherent manner, it is as useful as having a PDF document that isn't tagged.

If there is no ability to navigate through the document, activate links or access information conveyed in images, formula, scientific notation, lists, or tables, then it is also not usable or useful.

Consider any book that you've recently read. Remove any visual cues for topic changes, bulleted or numbered list items, a linked table of contents, or even an index. How would you find the information you need when you need it.

A few years ago I received a 250 page document of conference proceedings that were tagged. However there were no page numbers because the proceedings were a compilation of all submitted abstracts, there were no headings, no table of contents, no Bookmarks, absolutely no way of knowing what was in the proceedings without reading through EVERY page and taking my own notes on what to use the Find tool for in the future if I ever wanted to find information again.

It was like looking at a pile of papers on the floor that has no page numbers and only paragraph text. How would you figure out what is in the document and where it is or should go?

**Note:** You will have to save documents, close them and open them again for a screen reader to "see" the repairs. You MUST start the screen reader BEFORE you launch the application which might require you to exit Acrobat, start the screen reader then launch Acrobat and the document again.

## Hierarchy of Tasks

This is your new mantra! Adobe Systems has documented and created a flow chart of the hierarchy of tasks to perform on an untagged PDF document. This flow of processing lets you ask yourself the following questions:

1. Is the document a scanned image of a document?
  - a. If so, then perform OCR or Optical Character Recognition on it using the "Recognize as Text" tool in Adobe Acrobat.
2. Does the document have links?
3. If so, then use Advanced, Document Processing, Create links from URL's.
4. Does the document have form controls? Will it be a fillable form?
  - a. If so, then add the form controls/fields to the PDF document.

It is only after these checks have been done that you Tag the PDF document.

Once the document is tagged, perform necessary repairs to ensure optimal accessibility.

The details associated with this last point are mine. As someone who uses adaptive technology and understands what we can make available to someone reading a PDF document, I believe we need to provide optimal access to all content of a document that is critical to the understanding of the overall content of the document.

We'll walk through all of these in the course of this book. For now we will assume that the document is not scanned, does not have form controls and does not have links.

## **Adding Tags to a Document**

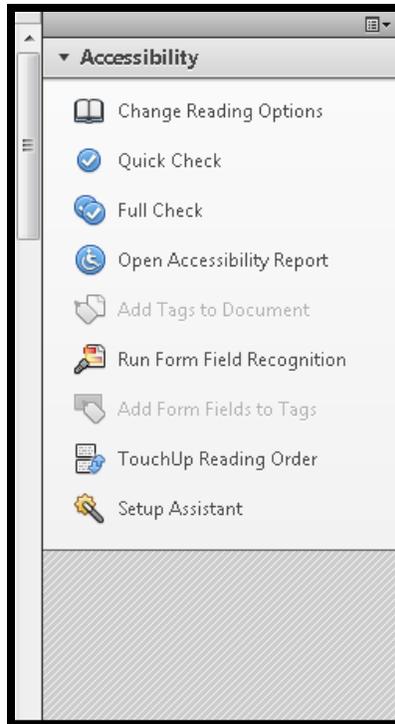
If you are working with legacy PDF documents or untagged PDF documents the first thin to be done is to add the Tags to the document.

Tip: If the document came from a Microsoft Office application, it sometimes creates more accurate Tags if you can use the source document and Tag it in the Microsoft Office application.

If you are using adaptive technology and get the dialog letting you know that this is an untagged document and asking if you want to infer the reading order from the document, press the Escape key to dismiss the dialog. I find that if I allow those virtual or pretend Tags to happen it interferes with my ability to Tag some content in the document using real Tags. This is a personal observation and not anything that has been documented anywhere but here.

In Acrobat make sure that the Accessibility Toolbar is visible to the right of the document. Press F6 to move focus to it and then arrow down incessantly until you find Add Tags to Document. It is faster if you close all other Toolbars and just have the Accessibility Toolbar open.

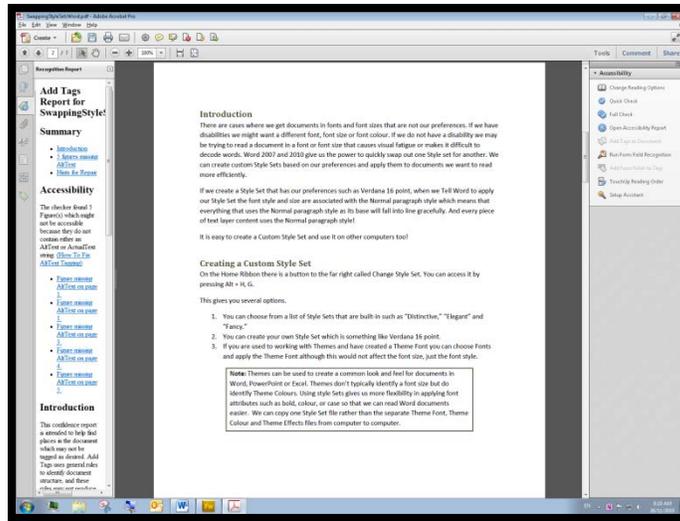
As an alternative you might want to try the Action Wizard steps for an accessible document. Press Alt + F, W for File, Action Wizard and then press Enter on the Accessible document option in the sub-menu.



**Figure 90 Accessibility Toolbar to the right of the document.**

If you choose to add the Tags from the Accessibility Toolbar or the Tags Tree, you will see a progress bar in the lower right of the application window showing your progress as the document is tagged.

When the Tags have been added to the document, the Add Tags Report will open in the Navigation panes.



**Figure 91 add Tags Report.**

AS you locate issues of high, low, or medium confidence in the Add Tags Report, you can activate the links and the corresponding content will be highlighted for visual inspection.

You can then switch between the Tags panel, Order panel, or in extreme cases the Content panel to perform repairs.

I typically glance at the Add Tags Report and then move directly to the Order Panel to make sure that everything that should be tagged has been tagged. I can then make decisions about decorative images that should be Artifacts and part of the background. This also lets me verify that text hasn't been tagged as images or images have been tagged properly. As I've mentioned, this is a more global or satellite view of the document but I find it faster to use this method than reading through the Add Tags Report. As long as the document is open you will have access to the Add Tags Report so you can refer to it if needed.

As someone without a visual disability you may be reluctant to use the Zoom tool thinking that it is only for people with visual disabilities. Often zooming the visual representation of the document to 400 or 800 percent is the only way to clearly identify some of the problems found in either an Add Tags report or an Accessibility Full Check. Don't be afraid to use the Zoom Tool as part of your toolkit for repairing PDF documents for accessibility. It will save you time and visual fatigue.

If you've tagged a document and find that there are a lot of repairs but the repairs are as a result of how the conversion tool has interpreted the document structure there are a couple of alternatives. This would primarily be for documents that can be tagged but when they are tagged the content is not tagged properly and it will take more time to repair the Tags than to add them again manually. There are documents like this although they are not as prevalent as they were a few years ago.

What type of document would this be?

Typically this is a desktop published document with columns or content placed in nonlinear design on the page. It gets tagged in a linear manner so that all the content in columns is tagged as a line across the page.

In a <P> Tag for example you would have the first line of column 1, the first line of column 2, and the first line of column 3. In the second <P> Tag you would have the second line of column 1, the second line of column 2, and the second line of column 3. This would go on throughout the entire document although in some places a paragraph might be tagged properly while in other areas of the document multiple areas of content are in a <P> or paragraph Tag.

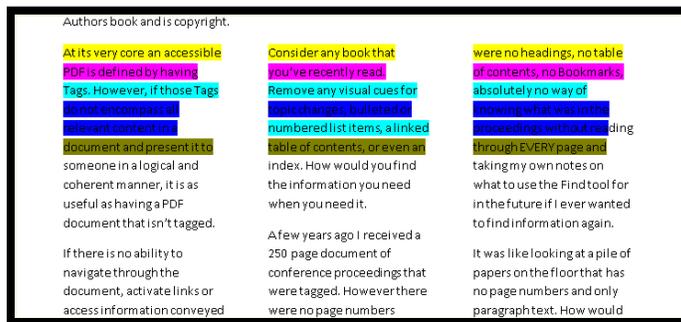


Figure 92 Example of how text in columns is often mistagged.

The preceding image illustrates the issue of linear tagging in a columned document. In the Tags Tree, this would look like this:

<P>

At its very core an accessible Consider any book that were no headings, no table

<P>

PDF is defined by having you've recently read of contents, no Bookmarks

This is what would be read to someone using a screen reader or TTS tool.

The repair is to manually separate each segment of text and put it with the rest of its paragraph. Because the text is jumbled into one paragraph Tag, you can't simply drag and drop it into place. You will need to use the Select Text tool to try and select the text for the appropriate paragraph and use the Create Tag from Selection tool to recreate the Tag content.

In some documents, you will need to delete the text under the <P> Tag and completely rebuild the paragraphs manually.

**Note:** You can use the keyboard to select content more effectively and efficiently by using the Select Text tool, placing the cursor at the beginning of the line and then using the keyboard commands to select text. Shift + Right Arrow will select a character to the right, Ctrl + Shift + Right Arrow will select a word to the right, Ctrl + Shift + End will select from the cursor point to the end of the line, Ctrl + Shift + Down Arrow will select from the cursor point to the end of the paragraph.

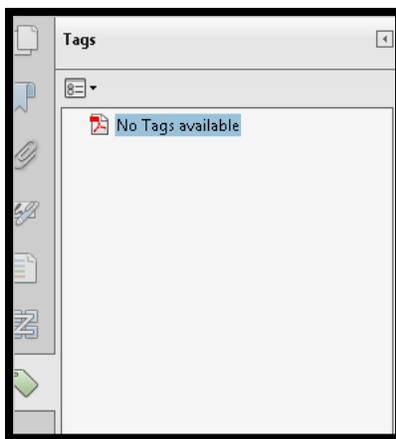
Depending on how the document was created, you may end up having to select individual characters tagging them and then trying to select text that seems to be “velcroed” to other text. In some documents, it will be impossible to correctly Tag some content because of the way the content was created in the source document. This is rare but you will come across it. In looking at the preceding image, this might be the case for the dark blue highlighted text. Notice that in column 1 there are two lines of text tagged correctly as part of the paragraph but in column two the second line has been tagged as part of the previously tagged <P> content. In column 3 there are two lines tagged together that are logical. It may be difficult to properly Tag the content in the light blue highlight because of its proximity and association with other content.

At this point we are adding the Tags and not delving into the repairs. An Add Tags Report might not pick up the preceding example as an issue. Working with the Order panel or the TouchUp Reading Order tool will definitely not pick this problem up.

## The Tags Root and the Tags Tree

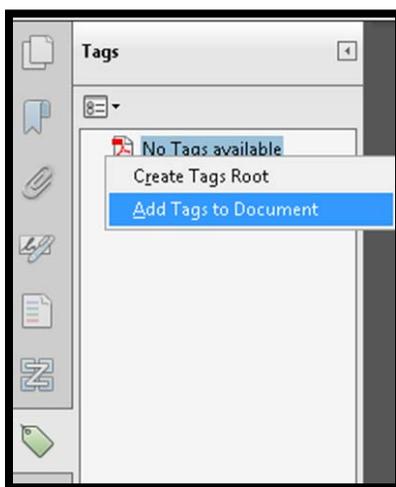
If a document does not have Tags, you have two methods of adding them. You can choose to add the Tags from the Tags Tree which will add Tags for the entire document or to just add a Tags Root which will let you add each Tag manually.

. In a document with no Tags, if you look at the Tags Tree it will show “No Tags Available as illustrated in the following image.



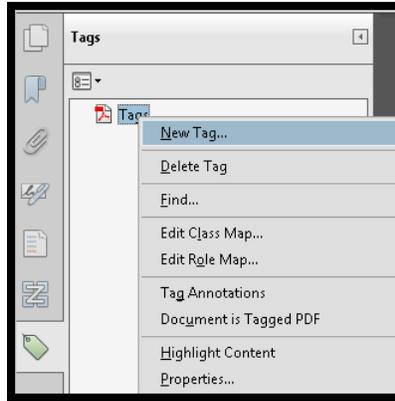
**Figure 93 No Tags available in the document.**

You can press the AppKey to get a context menu with the option to either create a Tags Root or to Add Tags to the Document as shown in the following image.



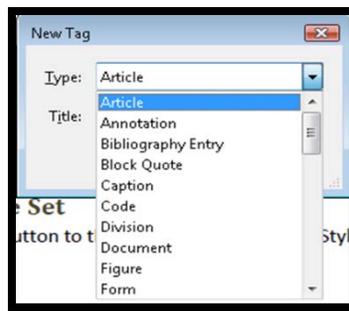
**Figure 94 Adding Tags from the Tags Root.**

If you choose to just add the Tags Root, you will need to press the AppKey and add the new Tags to the document as shown in the following image. Each piece of content that needs to be tagged will require its own Tag just as with the automatic tagging tool.



**Figure 95 Tags Tree options for creating Tags.**

When the New Tag dialog opens your focus is in the type of Tag to be created. Use Alt + Down Arrow to open the list of choices, or if you know what type of Tag you want by its proper name, you can type the words instead.



**Figure 96 New Tag dialog.**

Tip: Case is important. Whether you are typing in the New Tag dialog or using F2 to edit Tags, the use of upper and lower case is important in creating a valid Tag.

You should now see a difference in the Tags Tree. There is a Minus Sign next to “Tags” and the new Tag is nested immediately under the Tags Root. It should also be selected as the Tag you’ve just added. For this example I’ve added an <H1> Tag for the heading I need to Tag. It is the first element in the document.



**Figure 97 Heading Tag added to the Tags Root manually.**

Making sure that the <H1> Tag is selected, I use the Select Text tool and the keyboard to select a paragraph in my document.



**Figure 98 Content in document selected to associate with Tag.**

The next step is to add the content to the Tag I created.

With the text selected, I return to the Tags Tree and press the AppKey keeping the <H1> Tag selected. I could also use the Options button to get the same context menu.

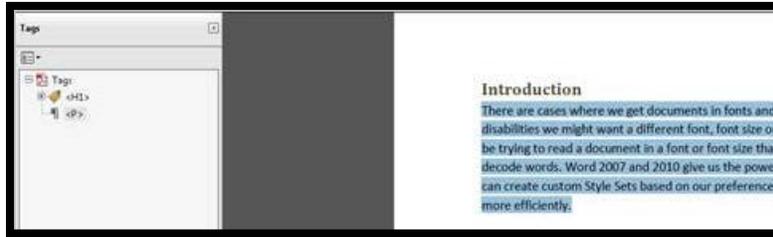
Choose “Create Tag from Selection” and the content is added and nested under the <H1> Tag.



**Figure 99 Heading content added to Tags Tree manually.**

To check this, turn on the Highlight Content by pressing the AppKey while any element in the Tags Tree is selected. Choose Highlight Content which is near the bottom of the context menu.

The next Tag I need to add is a <P> Tag for the paragraph under the heading. Follow the same steps as with the heading Tag.



**Figure 100 Tag added and content selected ready to create the Tag.**

Add the Tag to the Tags Tree, select the corresponding content, return to the Tag Tree and press The AppKey and choose Create Tag from Selection.



**Figure 101 Create Tag from Selection visible in Tags Tree.**

One of the things I've noticed about Acrobat X is that the tagging of documents whether manual or through the Adobe Distiller, takes in part of the background or background of surrounding text as part of "the Tag." Don't panic. You can verify that this is an issue or not by looking under the Tag to see what content is going to be rendered to the end-user.

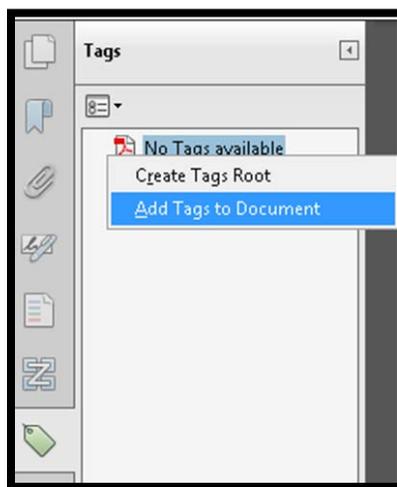
If we look at the content under the <P> Tag we can see that the text just above it and just below it was not captured as part of the content. This means that only the content we selected will be the content under that <P> Tag. This inclusion of bits of the background happens more when working with Acrobat 9 than it did in previous versions. To some extent it is repaired in Acrobat X however it can still happen so don't panic.

There is no way of preventing this type of overlap from happening. It is a quirk of Adobe Acrobat 9 and above. The critical component is that each part of the content has its proper Tag and place in the Tags Tree..

When you add Tags to a document manually you will not get an "Add Tags Report." You can use the Accessibility Full Check to skim through problems in the document, use the Highlight Content and Order tab to see if you've missed any content that should have been tagged.

**Note:** You can create a Tag from selection by selecting the content first and then choosing “Create Tag from Selection.” This will first open the New Tag dialog. However, you have more control over where the content is placed in the Tags Tree if you create the Tag first and then add the content to it.

If a document has no Tags available you can choose to Add Tags to the document in the Tags panel without using Advanced, Accessibility, Add Tags to Document. Which tool you use will depend on the way you work.



**Figure 102 Options for tagging from Tags Root.**

By choosing Add Tags to document all Tags will be added to the document and an Add Tags Report will open in the Navigation panes.

## Tagging Documents from Microsoft Office

There are chapters in this book for Microsoft Office 2003, 2007 and 2010. This topic will provide an overview of settings in Acrobat Distiller for creating the tagged PDF documents from a structured Office document. The details will be in the respective chapters.

### Acrobat Distiller

All PDF documents come through Adobe Acrobat Distiller. The “MakeAccessible” plug-in is part of this tool. Although we don’t refer specifically to Distiller or the MakeAccessible tools by name, they are in the background when a PDF document or tagged PDF document is created.

If you are using Windows XP you can find it under the Adobe Program group. If you are using Windows Vista or Windows 7, type “Distiller” in the search edit box of the Start Menu and it will be the first item in the results.

You can use Distiller on its own to create tagged PDF documents. When you launch Distiller a dialog opens with your options. We will not be using Distiller directly, this is meant to let you know where all “the magic” happens.

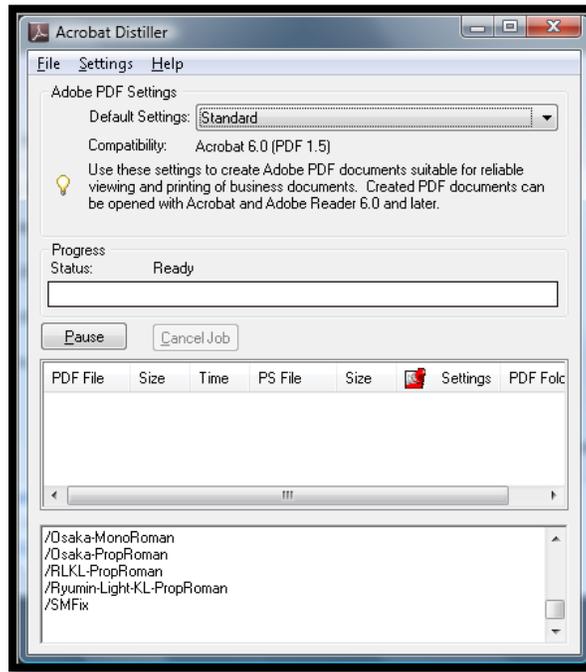


Figure 103 Adobe Distiller X dialog.

## Adobe Acrobat Add-in for Microsoft Office

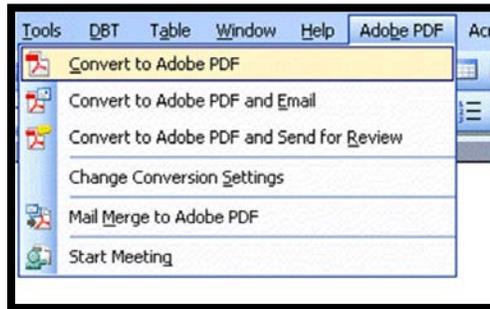
When you install Adobe Acrobat, an add-in for Microsoft Office applications is also installed.

The initial release of Acrobat X did not have support for a 64-bit version of Microsoft Office 2010. The first service pack or patch might include this. Make sure you update Acrobat X when updates are available to ensure you have the best tools for working with tagged PDF documents.

**Note:** You must install Microsoft Office before you install Adobe Acrobat Professional. If you've had to do repairs to or reinstall Microsoft Office check the communication between Office and Acrobat. You may have to repair or reinstall Acrobat to have PDF capabilities.

## Adobe PDF Maker

You'll know whether the Adobe Acrobat add-in has been installed when you see two new items in the menu bar just after the Help item in Word 2003: Adobe PDF and Adobe Comments. The keyboard commands to open these menu bar items are Alt + B for Adobe PDF and Alt + C for Adobe Comments.



**Figure 104 Word 2003 Adobe PDF Menu items.**

In Office 2007 and 2010 32-bit versions the Adobe add-in can be found under the Acrobat Ribbon.



**Figure 105 Adobe Ribbon in Word 2007.**

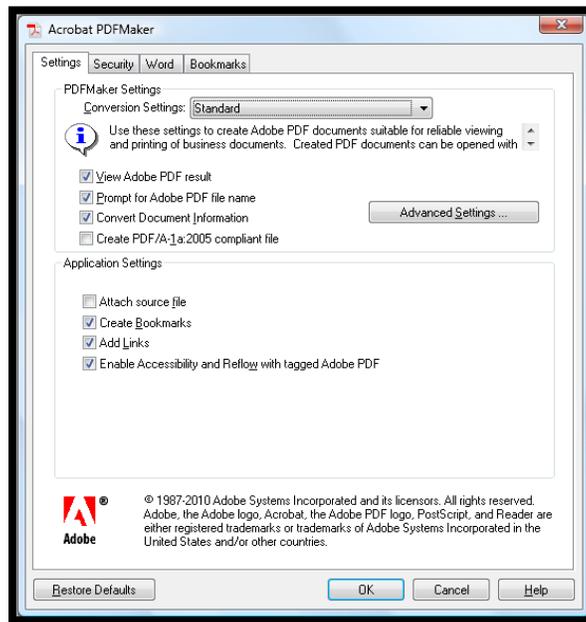
You will want to take a look at the conversion settings which can be found under “Change Conversion Settings.”

The keyboard commands for accessing the Acrobat tools from the Ribbon are Alt + B followed by the character for the individual task.

The only changes you would need to make are in the Bookmarks tab if you have custom heading styles in your document in Word 2003. This tool is not reliable if you are using Word 2007 or 2010 32-bit version. The use of styles to create structured more easily tagged documents will be covered in the chapters on Office 2003 and Office 2007.

**Note:** If you are using the Nuance PDF Creator, the PDF Creator tool also installs a Microsoft Office conversion option on the Menu bar. It is called “PDF Create.” Make sure you have the right tool available. PDF Creator from ScanSoft does not create tagged PDF and does not have this capability.

This is a review of the settings and how they impact the accessibility of a tagged PDF document.



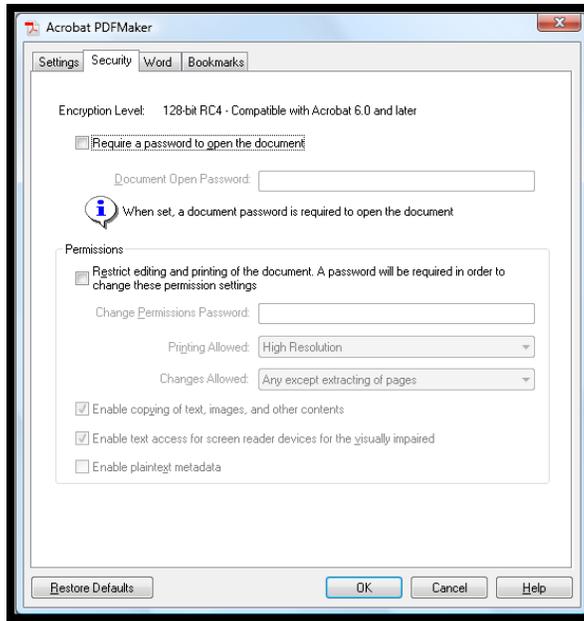
**Figure 106 Settings tab in the Adobe PDF Maker dialog.**

On the first tab in the PDF Maker dialog the important check boxes are:

- Create Bookmarks which is checked by default.
- Add Links which is checked by default.
- Create accessibility and Reflow with tagged Adobe PDF which is checked by default.

The next tab is one that confuses many people who want or need secure documents.

The Security tab shows you what versions of Adobe Reader the document will be “compatible” with. This means “what version of Adobe Reader can open the document.” You don’t generally want to go backward past version 6 or 7. Allowing for adaptive technology access, access improvements evolved dramatically with versions 6 and 7.

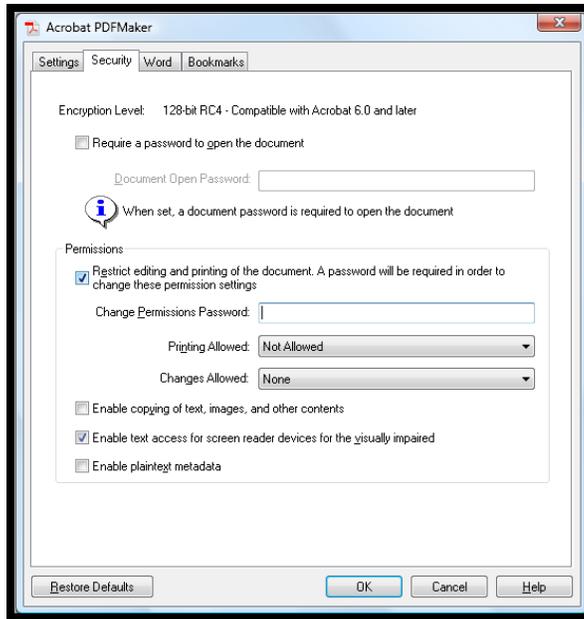


**Figure 107 Security tab of the Adobe PDF Maker dialog.**

You need to keep in mind that not everyone can afford to upgrade their adaptive technology. As an organization and part of the process you went through to develop standards, the versions of Adobe Reader and their corresponding adaptive technology would have been part of the discussion. For example if a document is only available to anyone with Adobe Reader 9 and JAWS 9 or Window-Eyes 6 you are creating documents that are not accessible to anyone using Adobe Reader 8 with JAWS 8 or Window-Eyes 5.5. When developing standards and guidelines for your organization know your audience. You can plan to incrementally drop a version off when a new version is released, but you need to recognize that not everyone has the latest and greatest adaptive technology.

If you want to change the encryption level you can do this in Adobe Distiller.

The remainder of this dialog is important for an accessible PDF document.



**Figure 108 Security settings for modifying the PDF document.**

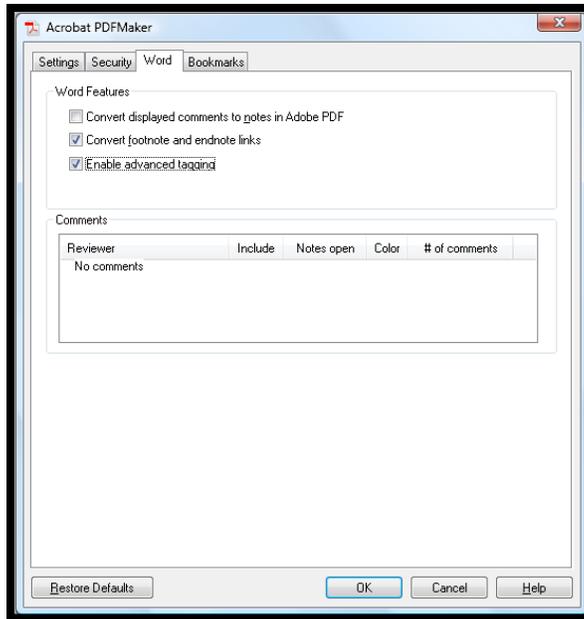
While you can set a password to open a document, this isn't generally done unless the documents are sensitive or classified. It is one more password to remember.

Most people do, however, look at the security settings to change or modify the PDF document. Document authors get nervous when they see the options under this password protected security. "I don't want people to print, comment, edit, copy or extract information from my documents!"

At one time copying and extracting was linked to the accessibility of a document. Document authors had to let people copy and extract because the two were one check box.

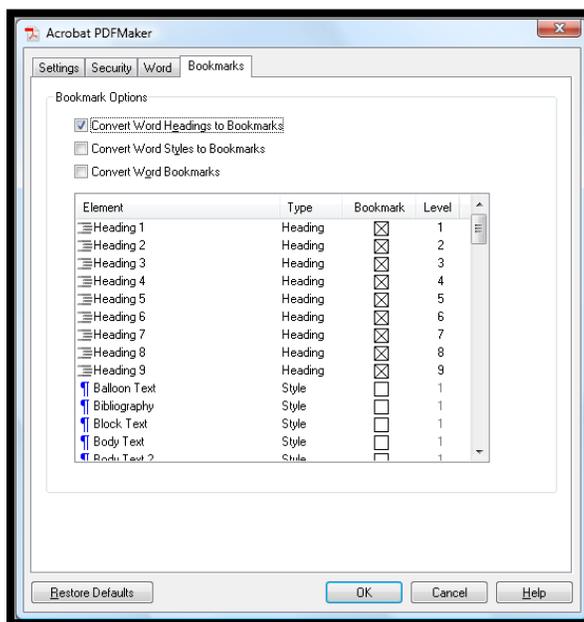
This began to change with Acrobat 7. Now you can prevent copying and extracting of content but still let people using adaptive technology read your documents. In effect you can turn off the ability to print, make changes, copy and extract information or leave the ability to plant metadata turned off and as long as you allow access for the adaptive technology which is checked by default [and your document is tagged], people using adaptive technology will be able to read the document.

At one time we could use the keyboard to copy and paste information from a document when you couldn't use a mouse to do so but this leak has been fixed and this is no longer possible.



**Figure 109 Word settings tab in Conversion Settings dialog.**

The next tab in the Adobe PDF Maker dialog is for Word specific settings. You will want to check the advanced tagging. I can't find any references as to what this setting really does, but since we are creating accessible and usable PDF documents and the accessibility of a PDF document depends on Tags, any setting that says it will enhance tagging is one that we need to choose.



**Figure 110 Bookmarks tab in Conversion Settings.**

The next tab is important as it lets you create Bookmarks in the PDF documents you create based on your use of styles in Word documents.

I've discovered that in Word 2007 and 2010 this mapping is not reliable when trying to add bookmarks to the tagged PDF. You may have to add some of the Bookmarks manually once you switch to Acrobat.

Despite this you always want to use heading styles in an appropriate hierarchical order because this lets people who aren't using adaptive technology find their way around your documents. Since headings are used to create a table of contents, as navigational structures themselves, and to create Bookmarks, implementing this one structural element will save you time and add to the accessibility and usability of your PDF documents generated from Word.

If you have created custom styles based on the existing heading styles, you will be able to add these to the list of heading styles used to create Bookmarks. If you have used a custom template, each time you use the template the custom headings will be found and Bookmarks will be created. Do it once and benefit always!

## **Finally...Converting Word Documents!**

Once you've reviewed the Adobe PDF Maker settings and have modified them for your needs, converting PDF documents is as simple as accessing the Acrobat menu or Ribbon and choosing "Convert to PDF."

You will only need to modify settings once and they will remain for all documents produced, even the security settings.

If you reinstall or have to repair Acrobat, you will need to review your settings and only then may have to modify them again.

**Note:** In Acrobat 9 or X you can no longer create a tagged PDF archive of Outlook mail messages or folders. The resulting document is untagged. This is a huge step backward. When you do create an untagged PDF from an outlook mail folder, it will open in an inaccessible Flash application called "Portfolio" even if you have chosen not to do so in the Adobe Reader or Adobe Acrobat Preferences.

## Save as PDF or XPS

Microsoft Office 2007 has an add-in from Microsoft that lets you create tagged PDF without having Adobe Acrobat on your computer. This tool uses the PDF 1.7 specifications which are the most current.

The [Save as PDF or XPS](#)<sup>14</sup> is a free download from the Microsoft site. There are some quirky things about it such as putting all images in the document at the top of the Tags Tree, but for simple documents, this is a good alternative to having Adobe Acrobat on everyone's computer.

To save a Word document, for example, as a tagged PDF document:

Press Alt + F, F in Microsoft Word. This will open the Office button and then open the additional file format saving options.



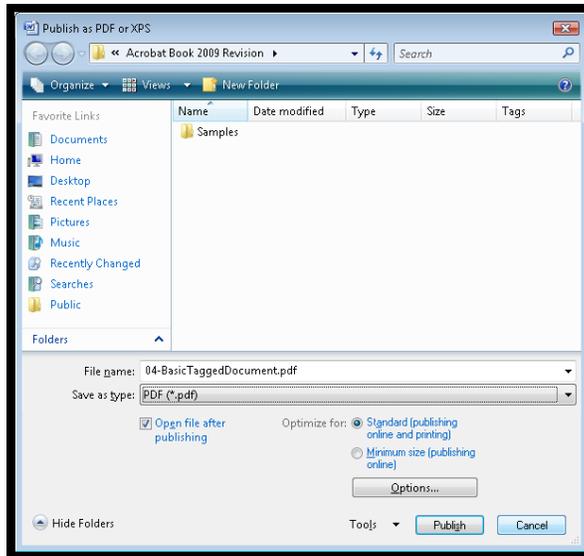
Figure 111 Save as PDF or XPS options from the Office Button in Word 2007.

This will open a Save As dialog that lets you choose between XPS and PDF format. Choose the PDF format.

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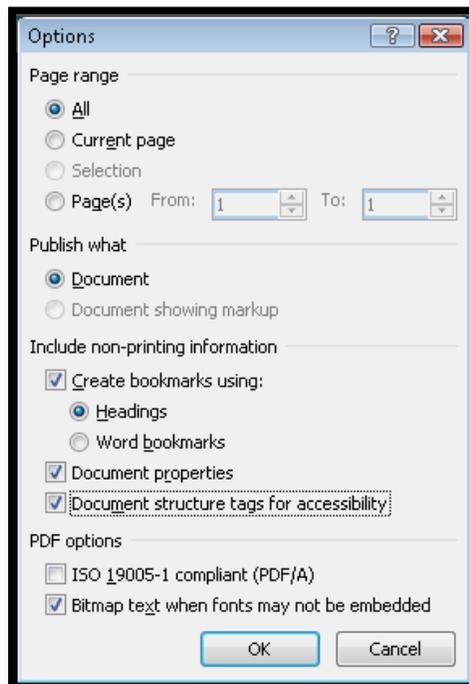
<sup>14</sup> Microsoft Save as PDF or XPS plug-in:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=4d951911-3e7e-4ae6-b059-a2e79ed87041&displaylang=en>



**Figure 112 Save as PDF or XPS location and options dialog.**

Activate the “Options” button in the lower right corner of the dialog once you’ve chosen PDF as the file format.



**Figure 113 Save as PDF options dialog.**

In the Options dialog, make sure that the check box to create Bookmarks is checked and that the bookmarks are based on Word headings. Also make sure to check the check box to include the document structure Tags for accessibility.

Tab to and activate the OK button by pressing Enter.

Now when you use this tool, until you repair or reinstall Microsoft Office, you will be using the headings in Word to create Bookmarks in your PDF documents and the document structure will be tagged for accessibility.

In Office 2010 the add-in is part of Office and is not a separate install. The other change is that you don't access this option from the File/Backstage area in two steps. use the typical Save As dialog by pressing Alt + F, A for File/Backstage, Save As and then choose PDF from the Files of Type list. you can also press F12 to get to the same place. How easy is that?!

Using both the Adobe and Microsoft tools lets you create a work flow where tagged PDF are generated using the plug-in and then audited and QA's through Adobe Acrobat.

One of the issues I've found with the Microsoft add-in is that it works well with the new DOCX format whereas Adobe Acrobat still has some issues with some of the document parts such as Picture Styles. Adobe acrobat converts DOC documents more effectively than the Save as PDF or XPS plug-in.

One of the quirks of Acrobat 9 and X is that if you have images in a document, all of the images for that document are placed at the top of the Tags Tree rather than their logical place in the reading order. Another problem that I've seen is that the images are placed at the bottom of the page in the tags Tree and Order Panel despite their logical position on the page. When the <Figure> Tags are all at the top of the Tags Tree you will either have to drag each <Figure> Tag to its logical place in the Tags Tree or; if you have used captions, you can put the images in the background as Artifacts. People using adaptive technology will have access to the caption text so will know that there is an image and what it is. In most cases reassigning these images as Artifacts is the most cost effective solution. Microsoft is aware of this issue and is working on it.

**Note:** the XPS format is a completely inaccessible file format.

## Print to Adobe PDF

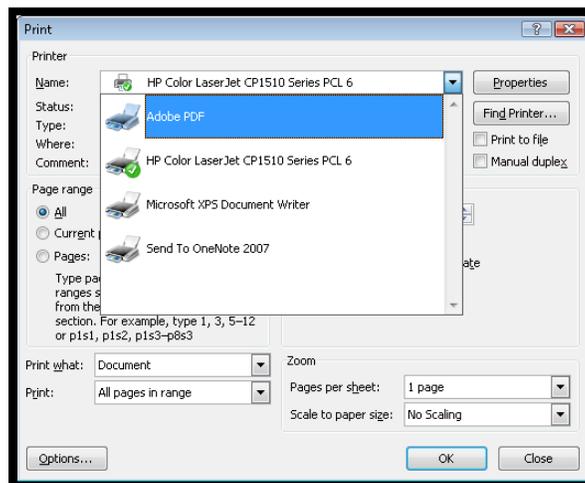
If the native application you've used to create your document does not have the ability to Tag a document, you will need to "print the document to Adobe PDF."

When you install Adobe Acrobat, a new "printer" is added to your list of printers. This allows you to send any document to the Adobe PDF "printer."

A caveat to this is that using the Print to Adobe PDF creates an untagged PDF document.

If you are working in Microsoft Word and are creating a template for a form, you will need to use this tool. Remember our hierarchy of tasks: add the form controls before you Tag the document. This is the only exception. You should otherwise always generate a tagged PDF document.

To Print to Adobe PDF, press Ctrl + P which will open the Print dialog. Then choose Adobe PDF from the list of printers.



**Figure 114** Print dialog with printer selection open illustrating the Adobe PDF printer.

Once you choose the Adobe PDF option as your printer, and activate the Print button, you will be asked to name the PDF document and choose a file location.

With the document saved as an untagged PDF, it can now be opened in Adobe Acrobat, form controls can be added and then the document can be tagged.

If the native application does not allow for the saving or exporting as tagged PDF, this may be your only option. In those cases, the document can be opened in Adobe Acrobat and the Tags can be added. However it is always preferable to add the tags using the tools in the native application.

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# Microsoft Office 2003

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Much of the text in this chapter is similar to the content in the chapter on Microsoft Office 2007. The barriers to accessibility are the same no matter which version of Office you are using. As a document author, you can control many of these issues and prevent the barriers in both an Office based document and a tagged PDF document. Office 2007 uses Ribbons instead of Menus and has different ways of doing things. For this reason I created two separate chapters to try and avoid confusion between the two versions. I reinstalled Office 2003 on my computer to do this chapter.

One of the most notable differences between the two suites is that I have more tools for creating accessible document in Office 2007 than I do in Office 2003. This is especially true in PowerPoint.

## Word 2003

In this book I've talked a lot about using templates and making sure your documents have the proper structure so that there is little or no repairs needed in the resulting tagged PDF document.

This chapter details how to do this. You may also want to purchase the "Logical Document Structure Handbook: Word 2003" edition for details on inaccessible document parts.

First, let's look at creating templates for documents.

## Creating Templates for Documents

When I talk about using styles for headings, many people say that they don't like the look of the inherent heading styles in Word or that their organization has specific criteria for what a heading in a document should look like.

In this book, I've created headings and titles that "I" like and can use effectively. The headings I use are the heading styles inherent in Microsoft Word. By using a template, in this case "Karlen Book" I can modify the look and feel of any of the document parts I use without affecting the Normal.dot or normal document template Word uses when you create any new document.

By creating a template I can also use the inherent keyboard commands for applying heading levels to text. This save time in that I don't have to go to the Formatting Toolbar and the styles area, drop down the list of available styles in the document and then choose the one I want. Simple keyboard commands apply the heading style I want.

A template can contain any “static” information such as disclaimers, contact information, preface content, and content that would remain the same with every iteration of the document.

One of the biggest problems in not developing and using a template for each of your ongoing publications is that the result is a hodge podge of formatting. Each time a different person reviews or revises content, they don’t know what formatting was used in previous versions so can’t easily apply it to the version of the document they are working on. Many people visually apply formatting...if it looks sort of like the other stuff in the document it works for me!”

When you have a template for an annual report for example, all of the styles that will be used in that annual report are there in the template. The person creating or revising the document just has to apply them. Initially staff will need to be trained and there should be a style guide to go along with publications.

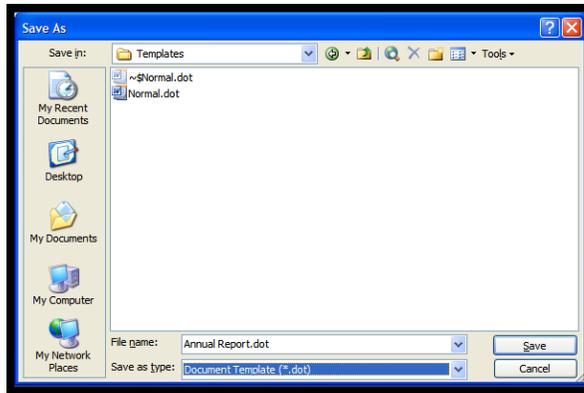
In workshops that I’ve done participants are always amazed at how much time they will save in using styles and templates and how good their documents look when finished. The fact that they are also building in accessibility is a “bonus.”

Just as with HTML, many people think that making Word documents more structured and “accessible” means more work when it really means less.

To create a template in Word 2003:

1. Open a blank document.
2. Press F12 or Alt + F, A.
3. The Save As dialog opens.
4. Give your template a name. For example “Annual Report” without the quotation marks.
5. Press Tab to move to the Files of Type list and choose “Document Template.”
6. Notice that the location of the document will change and the template you are creating will be placed with other Microsoft Office templates.
7. Move to and Activate the Save button by pressing Enter, or press Alt + S to do the same thing.

Now you can add text, change the base font set and size, change the colour of text, add a style for important information you want to call out, and modify any of the heading styles in the document. As long as you are working in the DOT file, you are working on the template or the look and feel of the annual report [in this example].



**Figure 115 Save as Word template dialog.**

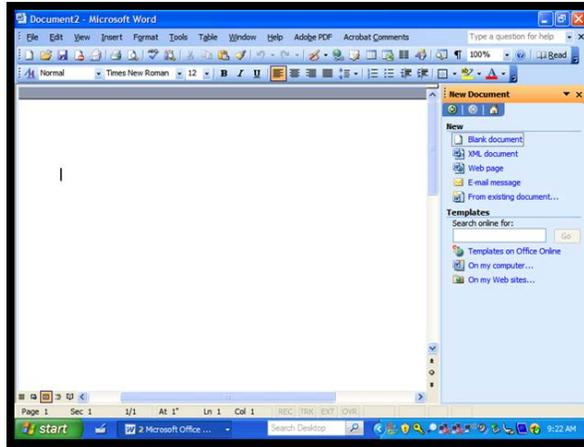
## Using a Template

Once you have created your template it is easy to deploy over a network and use. You can place it on a server and give everyone access to it or you can place it in the Application Data, Microsoft, Templates folder for a user account on an individual workstation.

For this example we are going to assume that you have placed the template in the Templates folder on your computer.

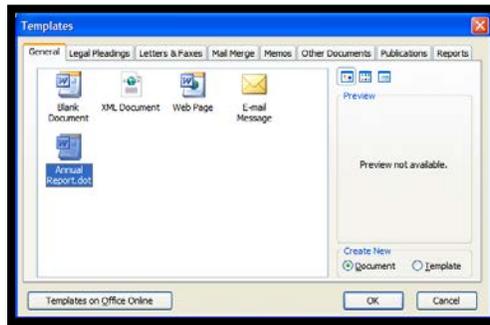
To open and use the template:

1. Press Alt + F, N for File, New.
2. The Getting Started pane opens to the right of the currently open document or the main document window.
3. Use F6 to put focus on it if focus did not follow your keyboard command.
4. Choose "On my computer."
5. This should open a dialog that contains tabs. The first one, General, should be in focus and your Annual Report template should be there.
6. Select it and activate the OK button.

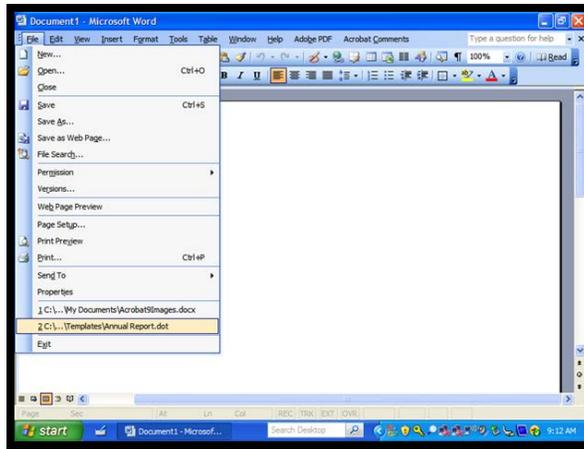


**Figure 116 Getting Started pane to the right of the currently open document.**

If you've recently worked on or used the template, it will show up in a list of recently used templates. Don't confuse this with the list of recently used documents. If you open the list of recently used documents and choose Annual Report.dot, you will open the template itself. You want to make sure the document you are opening is Annual Report.DOC. This will retain the integrity of your template but let you rename the "working document" to something like "Annual Report 2009.DOC."



**Figure 117 Dialog showing available templates in Word.**



**Figure 118 Annual Report template listed in the recently used documents.**

The preceding image shows how you can edit the template if it is among the recently used documents you've had opened.

You can always return to the Templates folder on your hard drive and make modifications to the Annual Report template as the standards for documents in your organization change.

You can find templates in

- Windows XP: C:\Documents and Settings\Username\Application Data\Microsoft\Templates.
- Windows Vista or Win 7: C:\Users\Username\Application Data\Microsoft\Templates

The Application Data folder might be hidden. You can show hidden files by changing the File and Folder Options.

## **Styles and Custom Styles in Word**

Now that we understand the importance of templates and how easy they are to create, we need to look at what goes into a well-designed template.

There are elements or document parts we can build into a template that will let people using adaptive technology navigate a Word document easier spending less time trying to find content and more time reading the content...which is what we want in a document.

The first and foundation step toward a more accessible Word document and a Word document that can be tagged as PDF with little or no repairs in Acrobat is to use heading styles to denote content or topic changes.

Just as with HTML or web based documents, the use of headings in a Word document not only provides a method of visual navigation to content but an underlying structural navigation as well.

Headings are easy to use and easy to modify. The only “trick” to using them is to retain a hierarchical structure to your document.

What does this mean?

Maintaining a hierarchical integrity means that you move from a heading 1 to a heading 2 and not a heading 3 or 4. The logical progression of topics and sub-topics should be reflected in the heading levels you use in a document.

There are two tools in Word to help with this: a linked Table of Contents and the Outlining tool.

First, let’s apply heading styles to see how effective they can be.

There are two ways of applying a heading style.

To apply a heading style using the keyboard:

1. Select the text to be used for the heading.
2. Press Ctrl + Alt + the number 1 for a heading level 1.
3. Press Ctrl + Alt + 2 for a heading level 2.
4. Press Ctrl + Alt + 3 for a heading level 3.
5. Press the Home key to remove selection from the text.

I’ve only had one publication where I’ve had to use a heading level 4. In Word there are approximately 11 heading levels that will provide the structure you are looking for. You would apply a heading 4 through 11 by using the second method.

To apply a heading style using the Apply Styles Pane or ASP:

1. Select the text you want to apply the heading to.
2. Press Ctrl + Shift + S to move focus to the ASP which is the first item in the Formatting Toolbar.
3. Press the Alt + Down Arrow to open the list of styles.
4. Press the letter H to move to the first style beginning with that letter.
5. Use the Down Arrow to find the heading level you are looking for.
6. Press Enter to apply the heading style you want.
7. Focus is returned to your document.
8. Press the Home key to remove selection from the text.

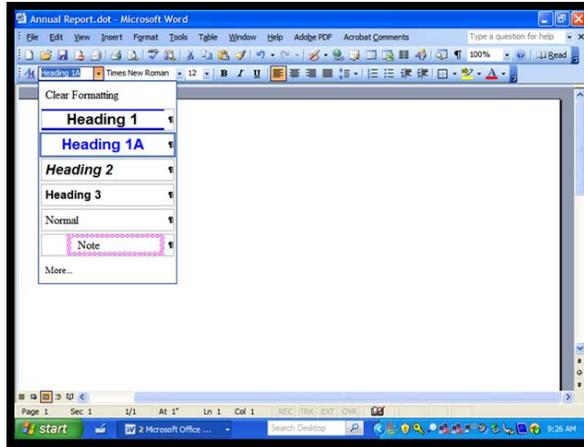


Figure 119 Apply Style Pane opened while text is selected.

In both methods I suggest you select the text you want to apply formatting to first. This prevents the overlapping of formatting which often results in repairs when you get to the PDF document. If you have ever looked at the Tags for a poorly formatted PDF from Word document and seen an <H1> Tag with no content, it is a result of overlapping formatting or formatting that was turned on but not turned off at the right point in the document.

What does this mean for adaptive technology such as screen readers?

If a person using a screen reader gets a list of headings in a document they will have a heading level with no content.

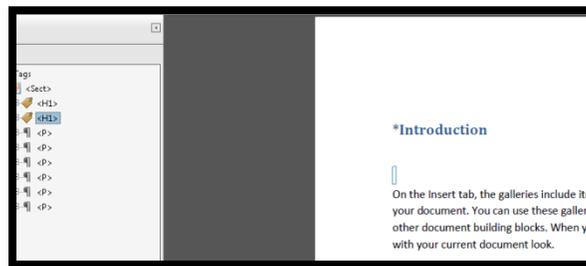


Figure 120 List of headings in a PDF document showing empty heading Tags.

A person trying to navigate the documents using headings would find blank lines that have been identified as headings or high level topic changes in the document. This wastes a lot of time in trying to find specific content and being able to easily and quickly navigate to it.

What does this look like in the Tags Tree?

In the Tags Tree you would see the heading Tags for the document but the line in the document that was formatted for a heading would have an “empty line” or content associated with it.



**Figure 121 Tags Tree showing heading Tag with no content.**

The Highlight Content was turned on for this sample document so you can see the Tag for the corresponding blank line in the document.

It is easy to forget to turn off formatting which is why the recommendation that you select what you want to format and then apply the formatting.

## **Customizing Headings**

What if you don't like the way the headings look? How can I use headings that match my document design?

I recommend not modifying the normal blank document headings. There is no reset button per se in Word or Microsoft Office. The easiest way to restore the default template formatting is to delete it from the Templates folder before you launch Word and once Word is launched it will rebuild the Normal.dot. Of course this removes all of your styles and customization. Another good reason to create document specific templates!

I will assume that you are working with the Annual Report DOT or template file.

In a template you can change the inherent styles because they will only apply to that template.

The first step in modifying a style is to create text and select it. Again I do this because then I remember to remove the formatting and delete the text before saving the document. It also lets me see immediately what the changes look like in the document and I can choose to keep going or to modify the style again.

With some text selected and a heading style 1 applied by pressing Ctrl + Alt + the number 1, Press Alt + the letter O, S which will open the Styles pane on the right of your document.



Figure 122 Styles pane in Word 2003.

One of the reasons for selecting the text and applying the style we want to modify is that when we open the Styles pane it will be selected so we don't have to spend time hunting for it.

Press F6 to move focus back to the Styles pane if focus is lost. Use Tab and Shift + Tab to move around the pane and the Up and Down arrows to move through the various styles. In our case, Heading 1 is selected and this is the style we want to modify.

If you lose focus on the Heading 1 style, press Tab and the Arrow keys until you are on the Heading 1 style in the list of styles.

Press the AppKey to open the context menu and choose Modify.

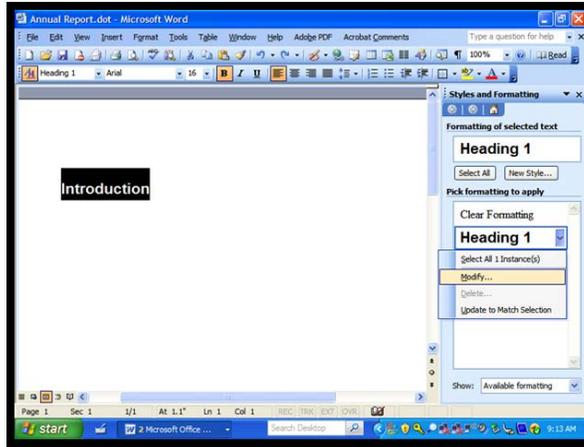


Figure 123 Context menu for the Heading 1 style open showing "modify."

A dialog opens with all the options for the Heading 1 style.

Choose to modify the Heading 1 style.

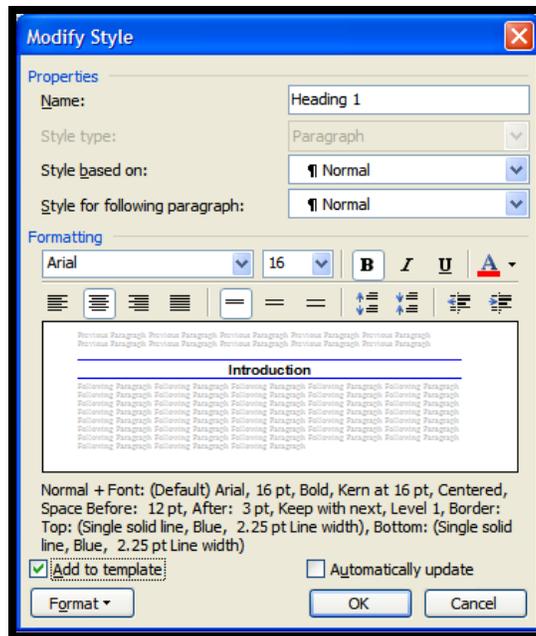


Figure 124 Modify Style dialog.

You can change any of the attributes including fonts, colour, size, bold, underline, or Italic.

A caution is not to over format. In the book "Logical Document structure Handbook: Word 2003" the digital document conventions/standards are discussed as well as the dangers of over formatting.

By default since this is an inherent heading style and not a custom or new style, the underlying style it is based on is the normal paragraph style. Because this is Heading 1, it is recognized as the inherent structural heading element for a first level topic change. If we were creating a new heading 1 style, we would want it based on this underlying structure which is why the “style based on” would be Heading 1 for a custom first level heading style.

Use the Format button to further modify the paragraph settings. For example indenting the heading or other text left or left/right.

You can use the Format button to add borders and shading to your heading or other text styles.

As you apply changes to the style, you can see them reflected in the sample area of the dialog. It is still a good idea to have the text selected and the base style applied so that when you activate the OK button you see it immediately in the document.

There are two check boxes at the bottom of the Modify Style or New Style dialog. One is to add the style to the template. Make sure this is checked.

The other check box is to “automatically update.” My recommendation is not to check this option. What I find it does is to update all iterations of the style in the document and the template. At first this might seem useful, however, if I am working on a new document based on this template and insert a page break before one heading so that it is placed on the top of the next page, all of my headings at that level are automatically updated to start at the top of a new page. This creates nightmares in formatting some documents. In many cases I’ve had to go back and recreate the original template so it was usable again...this time not checking the check box to automatically update.

**Note:** Remember to only modify the inherent styles of a template and not the Normal.DOT which is your new blank document in Word.

## **Create a Custom Style**

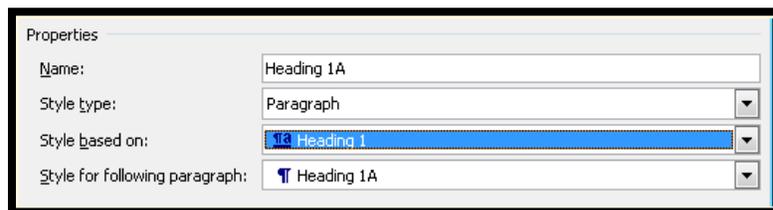
There may be times when you want more than one look and feel for a level 1 heading. For example in a preface you might want one look to headings while in the main body of a document you want another. This is done by using custom styles.

The critical thing to remember about creating a custom style is that it has to be based on an existing style in order for the structural integrity of documents to be retained. For example if you call something “Heading 1A” and it is based on the normal body text rather than the heading level 1 structure, it will be a plain paragraph in terms of structure and not a true heading.

This is another reason to create some text and format it with the style you want to create the custom style for. You won't have to look through the long list of styles in the document in order to find the one you want to base the new one on. This is another time saver.

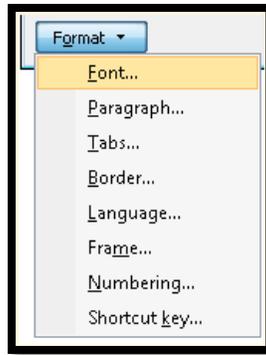
To create a custom style:

1. Type some text in your template.
2. Format it with the heading level or other formatting structure that you want.
3. Open the Styles pane by pressing Alt + letter O, S.
4. Make sure that your chosen style is the one selected in the Styles pane.
  - a. Sometimes you might inadvertently press a key that would remove the selection or focus from the sample formatting.
5. Activate the New Style button near the top of the Styles pane.
6. The "New Style" dialog opens and you are in the edit box where you can type in the name of the new style.
  - a. I suggest giving the new style a name that will correspond to its place in the hierarchy of the document. For example "Heading 1A" or "Heading Preface." By naming it something that begins with the word heading, it will be placed in the Styles pane near the original heading 1 which will make it easier to find.
  - b. You cannot use the Ctrl + Alt + 1 to apply your custom heading to text; however, you can create a shortcut key to do so if you want. Once the custom heading is in the list of styles for the document, it can easily be found in the Apply Styles Pane or ASP.
7. All of the underlying structural recognition for a heading level 1 is in place in this dialog. This includes spacing before and after the text. You can change this if you want.
  - a. The key is to leave the "Style based on" as Heading 1 if this is the style you are basing the new one on.
8. This lets you completely redesign Heading 1 and retains the underlying structure of the heading so it will be "recognized" when the document is repurposed to tagged PDF.



**Figure 125 Properties area of the new Style dialog.**

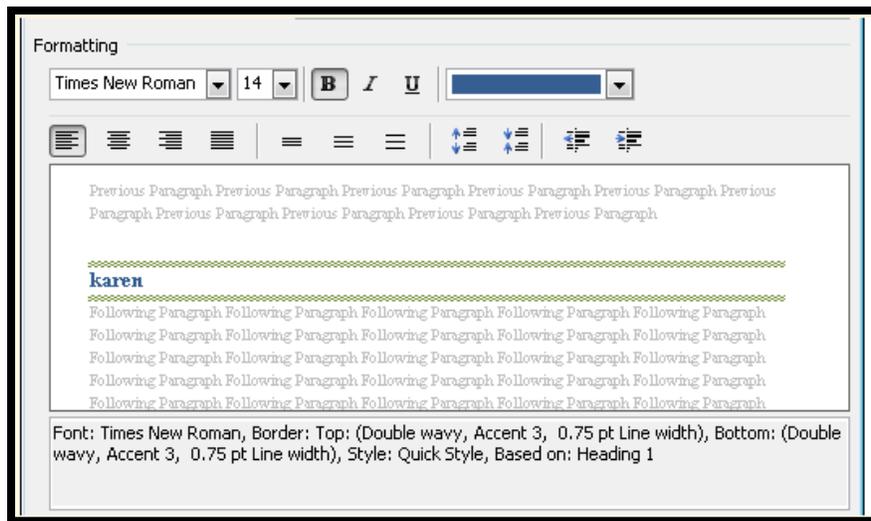
9. Use the Format button to add a border or shading or indent the text.
10. Do not use a Paragraph Frame as this is an inaccessible document element similar to a text box.



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**Figure 126 Format button options for customizing styles.**

As you add attributes to the style, they are reflected in both a visual view of the style and a list of the attributes of the style.



**Figure 127 Formatting area of the New Style dialog.**

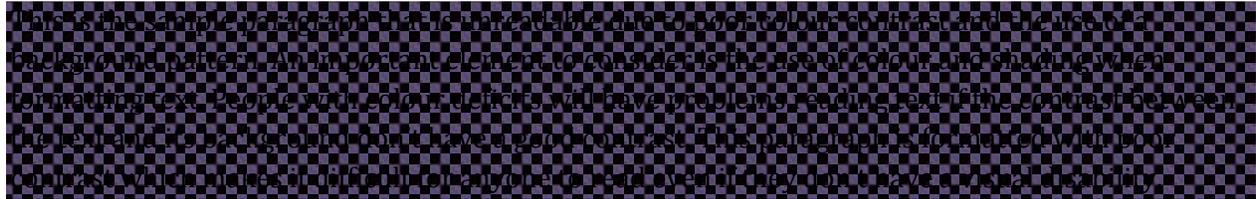
Once you have the custom style looking the way you want, make sure the “Add to template” button is checked, don’t check the automatic update check box, and Tab to the OK button and press Enter.

Your new style has been added to the template and the text that was selected will reflect how it will look in your document.

The sample in the preceding image is not typically what you would consider visually pleasing but it does illustrate how a style can be customized or even modified.

An important element to consider is the use of colour and shading when formatting text. People with colour deficits will have problems reading text if the contrast between the text and its

background don't have a good contrast. The following paragraph is this one but formatted with poor contrast which makes it difficult for anyone to read even if they don't have a visual disability.



The paragraph above uses colours from the normal document palette in Word 2007. It also uses the weave pattern as part of the background for the text. While colours in a document palette may complement each other we need to be attentive to the readability of our documents.

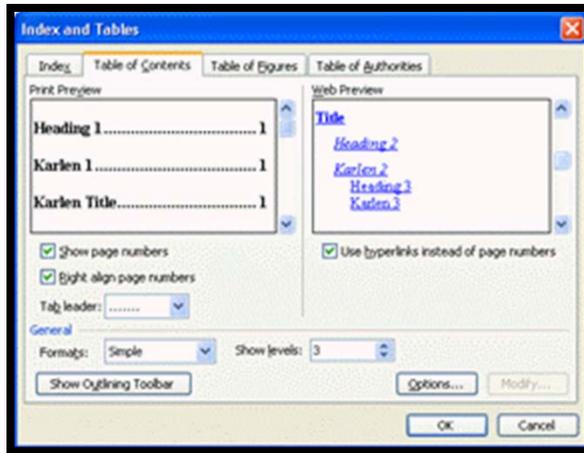
Modify and customize styles in templates to ensure that your documents look the way you want but still retain the hierarchical structure that headings and other document parts provide.

## Table of Contents

One of the advantages to using headings, as mentioned earlier, is that you can use the headings to create a Table of Contents for your documents. When a linked Table of Contents is created, it not only gives you a hierarchical view of your document, but it also improves navigation and will be converted to a linked Table of Contents in the tagged PDF document.

To create a Table of Contents:

1. Place your cursor where you want the Table of Contents to be generated.
2. Usually I set this up by creating the subtitle "Table of Contents" or "Contents." It can be on a new page or if the document is short, on the title page.
3. Press Alt + letter I, S to open the References sub-menu.
4. Choose Index and Tables
5. Press Ctrl + Tab to move to the Table of Contents tab.



**Figure 128 Table of Contents dialog.**

In the preceding image the “Karlen 1” which is a heading level 1, has been nested at the same level in the document and Table of Contents as the inherent Heading 1. Karlen 2 is at the same level as Heading 2.

The Table of Contents is linked by default and you want to retain that setting.

Dot leaders from the topic title to the page number are preferable for readability. Placing the page number immediately after the topic title is visually confusing for people with learning, cognitive or visual disabilities. Screen readers will read the line of dots as an ellipses so the person using a screen reader will not hear all of the dots across the page.

Try to avoid text or formatting that is all capital letters. All capitals or uppercase text is the most difficult to read for people with and without disabilities because it removes our ability to use word prediction skills. This means we can’t recognize words by their shape. If all the letters “look the same” with no visual distinction we spend more time decoding letters and words and less time understanding what we are reading.

Once you’ve reviewed the format for the Table of Contents, move to and activate the OK button by pressing Enter.

The Table of Contents is generated at the cursor point.

Contents	
Introduction.....	10
Standard Keyboard Command Terminology.....	11
The AppKey.....	11
Focus and Selection.....	11
Command Conventions.....	12
Changes from Microsoft Word 2003.....	12
View Tab.....	13
Installing Additional Sounds.....	13
Orientation to Microsoft Word.....	14
The Word Application Window.....	14
Office Button.....	15

**Figure 129** Table of Contents generated using headings.

Although using Word 2007, the preceding image illustrates what a Table of Contents would look like in a document. Notice that the levels of headings are nested beneath each other with level 1 headings out dented to the left margin. This is a quick and visual means of looking at the hierarchical structure of content in your document. A heading that does not follow in a hierarchical order can easily be moved to its rightful place using the Outlining tool or its level changed in the Print view of the document to reflect its proper place in the hierarchy of content.

A Table of Contents can easily be updated by pressing the AppKey and choosing “Update Fields.” A dialog will open and your choice is to just update the page numbers or to update the entire Table of Contents. I usually choose to update everything as a precaution against missing something.

**Note:** If you use captions for figures in a document or tables in a document a Table of Figures or Table of Tables can be generated using this same technique.

## Outlining Tool

If you are not familiar with using Outline view and the Outlining tool, you can switch to Outline view by choosing View, Outline.

Your document will immediately look a bit different. You will be able to see the hierarchy of headings. “Parent” headings will have a plus sign next to them if they are collapsed and a minus sign next to them if they are expanded.

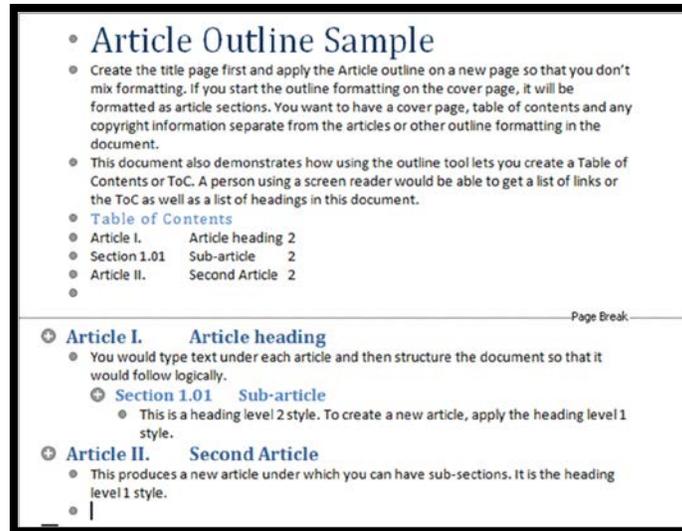


Figure 130 Word document in Outline view.

If you use the Bullets and Numbering tools to add an outline preface such as Chapter, Article, Section and so forth, you will see this reflected in the Outline view of the document.

You can drag or drop, cut and paste levels of the book which can help if content doesn't make sense or seem to follow a logical order when viewed using Outline.

This is a valuable tool for document authors.

## Alt Text on Images

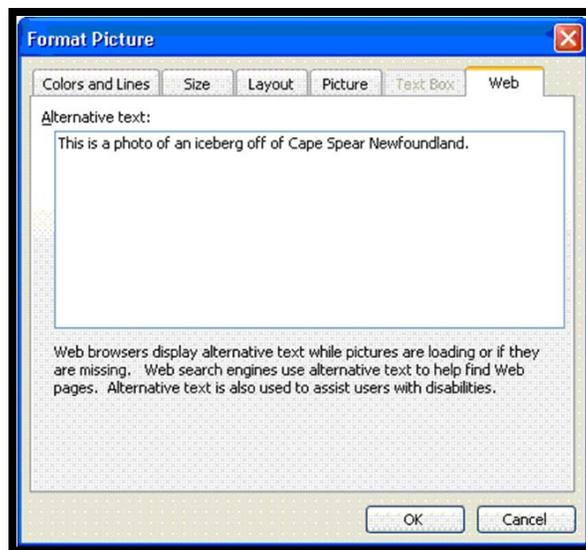
You can add the Alt Text to your images in Microsoft Word. The "bonus" is that if you repurpose the image from a Word document to a PowerPoint document or Excel document by copying and pasting, the Alt Text remains with the image so you don't have to retype it unless the image has a different context in each document.

**Note:** If you are using the Office Clipboard, you can hold up to 24 images or pieces of content on the Office Clipboard at once and repurpose them in other Office documents.

To add Alt Text to an image in Microsoft Word:

1. Make sure the image is selected.
2. Press the AppKey to open the context menu for the image.
3. Choose “format Picture,” “Format Shape,” or Format Object” whichever one is at the bottom of the context menu.
4. Press Ctrl + Tab to move to the “Web” tab.
5. Press Tab to move into the edit box and then type the Alt Text for the image.
6. Tab to and activate the Close button.

Typically you want the caption under the image. The images or figures will automatically number themselves and you can update the fields the same way you do with a Table of Contents if you notice they are not being automatically updated.



**Figure 131 Format Picture dialog with Web tab in focus.**

Now is a good time to remind you that adaptive technology has a buffer into which goes the content of the document so it can be rendered to the person reading the document in a smoother manner. It is the difference between listening to a sentence read in pieces and listening to the entire sentence.

The purpose of Alt Text is to provide and alternate description of the image. All images and objects should be supported by surrounding content and should never be the content themselves. This lets you keep the Alt Text concise and meaningful.

If you put too much content into Alt Text for an image you run the risk of crashing the adaptive technology buffers which means that your documents become inaccessible. In some cases, I've seen so much Alt Text for an image in a PDF document that the document cannot be opened as long as the adaptive technology is running. In other documents, I've seen single pages try to load and then

crash either the adaptive technology, Adobe Reader/ Acrobat or both. If someone can't open and read the PDF document...or the Word document...it is an inaccessible document.

The question always arises as to what the exact number of character "the buffer" can hold. It is different for each adaptive technology. The goal is not to push the envelope of Alt Text but to provide meaningful and concise Alt Text for the image. This is one of the reasons that having each paragraph within its own <P> Tag is also important. Knowing that the adaptive technology uses buffers and those buffers have limits makes you aware of what you are doing and cognizant of making a document accessible rather than focusing on "the limits of adaptive technology."

As a rule, if each paragraph has its own Tag and the amount of Alt Text is not larger than you would find in a typical paragraph, you are within the boundaries of adaptive technology buffers.

In the case of organizational or workflow charts that might be large, having a separate descriptive document may be the only way of fully describing the chart or diagram content. This is true if the chart or diagram is not supportive of surrounding content but is the content itself. This may also help people without disabilities who may find the chart or diagram confusing.

The other issue with equations is that Alt Text is not like regular text. What I mean by this is that when a person encounters an image or equation with Alt Text it is read as all or nothing. You cannot go through Alt Text character by character or word by word. It is not meant to be "text" it is alternative text describing a non-text element in a document.

## **Alt Text for Equations**

Until we have support for MathML in our general documents and PDF documents, we need to make sure that equations include Alt Text that fully details the equation.

Equations in Word are objects and as such require Alt Text. Without Alt Text, the person using a screen reader would hear "graphic."

Adaptive technology is not intuitive enough to read an equation, even if typed in a readable format. For example using +, -, /, and \* would be read to someone using adaptive technology as "plus, dash, slash, and star. Even a simple math equation such as "a+b" would be read where the "a" is pronounced like the word "a." This makes it difficult to understand a formula or scientific notation. As equations and scientific notation become more complicated, they require the "long hand" version to be provided in the Alt Text. For example "A squared times B squared plus C squared divided by the square root of 2 equals." Please note that I only passed grade ten math on the condition that I never take another math course...an agreement which I've honoured. <Grin>

If you are using the Equation Editor, you will need to provide the detailed equation as Alt Text while the caption can be a simple formula identifier such as "The formula for determining Area." In this instance the Alt Text and a caption would be different.

The other issue with equations is that Alt Text is not like regular text. What I mean by this is that when a person encounters an image or equation with Alt Text it is read as all or nothing. You cannot go through Alt Text character by character or word by word. It is not meant to be “text” it is alternative text describing a non-text element in a document. If someone using TTS or a screen reader doesn’t understand the equation, they do not have the option of slowly going through the equation piece by piece until they understand its components or meaning. Information about mathematical equations or scientific notation needs to also be included in surrounding text so that the visual representation of the equation is fully explained.

## Captions for Images

As well as using Alt Text, you should use captions for images whenever possible and appropriate. We forget that documents can be viewed either digitally or in hard copy or print. I don’t know of any paper that lets you wave a finger over an image and shows you the Alt Text. If an image has printed with low toner, low colour, is a complex image and is confusing on paper, or has been photocopied from the original; details of the image may be difficult to see.

In these cases, a caption helps relate the image and its composition to the surrounding content.

You can have different Alt Text and caption text; you can also have a “Null” Alt Text.” One of the discussions for captions and Alt Text is that a screen reader will pick up the text twice. This means that the information is repeated to someone who can’t see the page. It is a decision the document author needs to make and ensure that the policy or standard is carried out in the entire organization for every document.

I do put the duplicate text for Alt Text and the caption although sometimes I use the caption to expand a bit on the image. I do use a screen reader and can use a keyboard command to skip over things I don’t want to dwell on; however, not all of the people who use adaptive technology are familiar with the keyboard commands or techniques for using what can be considered “non-navigational structures” to move around documents.

Recently, because the Microsoft Save as PDF plug-in and at times the Acrobat PDF Maker plug-in put the <Figure> Tags at the top of the Tags Tree, I was able to reassign images as Artifacts in a document because the captions were on them. This saved time because I didn’t have to drag each <Figure> Tag to its proper place in the Tags Tree but the information in related to the images was still available to someone using adaptive technology. Yu never know when you will need to develop another “repair technique.”

**Note:** When using adaptive technology as part of an extensive QA or audit process, don’t “get fancy.” Stick to the basics of the adaptive technology and don’t assume that your end-users have a skill base beyond the basics.

To create a caption for a figure, image, or object in a Microsoft Word document:

1. Select the image, equation, or object.
2. Press the AppKey to open the context menu.
3. Choose "Caption."
4. The Caption dialog opens and your focus is in the caption edit
5. I usually press the Spacebar once to give a bit more room between the figure number and the text of my caption to improve readability.
6. Tab to and activate the OK button using the Enter key.

You don't need to change anything unless you have document specific needs.

Make sure the caption is under the image, figure or object and not above it. Placing captions under images is the standard position; however, if you have document specific needs, you can place it above the image, figure or object.



**Figure 132 Caption dialog.**

A caption for an equation should go at the bottom of the equation while a caption for a table should go at the top of the table. Putting the caption at the top of the table lets people know what kind of data they can expect in the following table. It helps connect the visual table structure to the expected content.

## Contextual Links

One of the most frustrating things for those of us using adaptive technology to listen to are long web addresses. Even if we take the time and have the patience to listen to a lot of gibberish that doesn't make sense, the final moments of reward for our patience is to hear "file001.html" or some other filename that will not give us any idea of where the link will take us.

The answer is to use contextual links in HTML, or any application that lets you use a contextual link, and to add Alt Text to links in a PDF document if the links are not contextual.

Most screen readers and some screen magnification tools have the ability to present the person reading a Word document or PDF document with a list of links in that document.

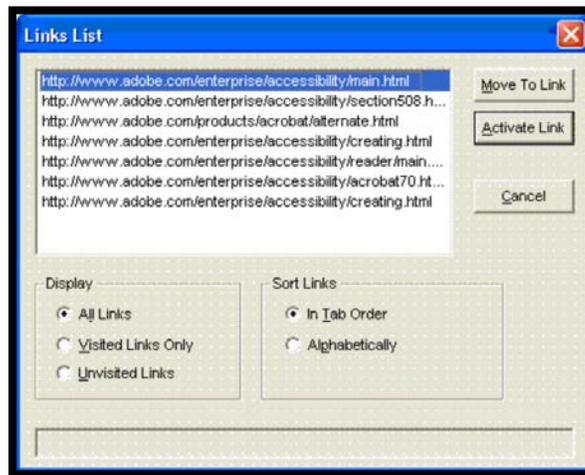
Those of us using those tools make use of first character navigation.

What does this mean?

The ability to press the first character of the topic or link we want and then move to it saves us a lot of time. For example, in the list of links for a Word document you would hear “[Karlen Communications web site](#)” instead of <http://www.karlencommunications.com>. I haven’t provided footnotes for these two links because they are mirrors of each other so you have both the long web address and the contextual address in the same line of the paragraph. Notice how intrusive the long web address is to your reading.

You would be able to press A for Adobe Accessibility, M for Microsoft Accessibility and so forth.

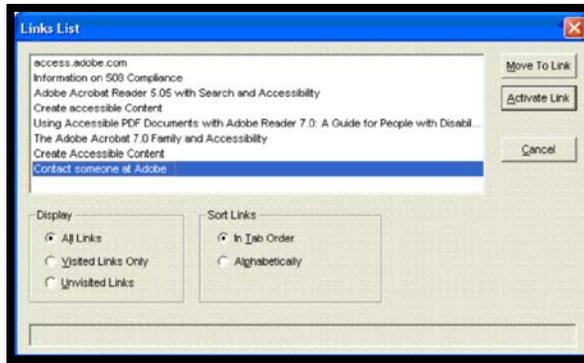
Not only does this save time but it also enhances the readability of a paragraph. Consider the ever increasing length of web addresses and how people are forced to visually skip over them in order to finish the thought of the paragraph or sentence. For people with learning, cognitive or visual disabilities this often represents a break in the understanding. Even for people without disabilities, our ability to plunk a web address in the text where we want it available often disrupts the readability and flow of the thought and concept being presented.



**Figure 133** List of links from the JAWS screen reader.

Consider the list of links in the preceding image. Remember one of the things we talked about early in this book was the need to start looking at document in a different way. We need to look at how information can be or will be accessed.

How much easier is it to find exactly what you are looking for or even to make sense of what is available in the document when you use contextual links?



**Figure 134 Contextual list of links.**

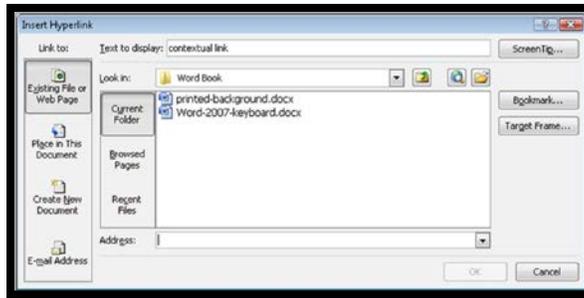
When a link occurs in the middle of a sentence or paragraph, it is also easier to read the “link in context” and to identify its relationship to surrounding content.

Some document authors fear that this approach will affect the way they write. You have to craft a sentence carefully so that a contextual link is appropriate for the paragraph and your writing style. Any adjustments you need to make to your writing style to use contextual links is a will help you become a better document author. It is the same as using voice recognition software...the immediate concern is that you will have to speak differently, however, once you are used to using voice recognition your own personality is still there. You may not slur as many words but the way you write using your voice has improved.

Another important technique in creating contextual links no matter what document format you are using is not to begin each link with phrases such as “click here to...” or “Select this link to go to...” Remember that this approach to creating links impedes first character navigation. If each link begins with the letter “C” for “click here,” the person trying to navigate to a link will have to go through and read EVERY link in the document to find the one they want. It is as annoying as having to listen to “http: //blah, blah, blah...” endlessly.

To create a link from text in a document:

1. Select the text you want to use as the link.
2. Press Ctrl + K.
3. This opens the Create Hyperlink dialog.
4. Your focus will be in the edit box where you can either type in or paste a web address.
5. If you have a web page open and are in the Address Bar you will see the web address already filled in.
6. Once you’ve typed in the web address or pasted it into the edit box, Tab to and activate the OK button by pressing the Enter key.



**Figure 135 Create hyperlink dialog.**

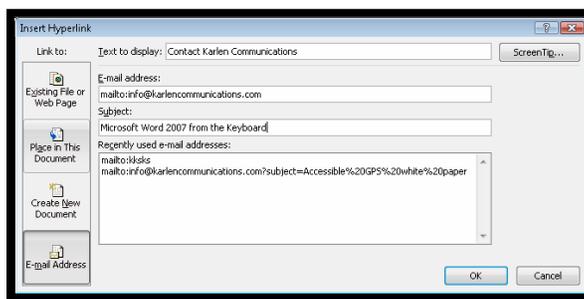
You can also create a link that will open the person’s e-mail client so that they can send you a message. This is handy in a PDF document because you can also fill in the subject line which lets you filter mail as it enters your Inbox.

To create an e-mail link:

1. Select the text to use for the link.
2. Press Ctrl + K.
3. This opens the Create hyperlink dialog.
4. Press Alt + M to activate the “E-mail” button in the lower left of the dialog.
5. Type the e-mail address you want mail sent to.
6. Tab to the Subject edit box and type in a subject.
7. Tab to and activate the OK button by pressing Enter.

When someone activates this link in either a Word or tagged PDF document, their default e-mail client opens and both the To and Subject fields are already filled in. They just have to write the message text and send it. It is also easy to identify when it comes into your Inbox.

You can return to the External link button options by pressing Alt + X the next time you launch the dialog.



**Figure 136 E-mail hyperlink options in the Create hyperlink dialog.**

You can also create a link to other documents. If you are going to do this, it is a good idea to keep them all in the one folder so that they are easy to find and update if necessary.

## **Alternate Links**

One of the techniques I use for documents is to make use of the footnotes or endnotes in a document to provide the long web addresses. A person who is using adaptive technology can still get a list of links and use first character navigation for the general context of the link, but they can also get the full web address by accessing footnote or endnote information.

This technique is critical if you know the document will be printed or if you are going to allow printing of the document once it is converted to tagged PDF. Once again I do not know of any paper that lets you touch a link on a printed page and open a browser to view the linked to contents.

By using footnotes or endnotes...as I have done in this document, you can facilitate both uses of the document: digital and hard copy print.

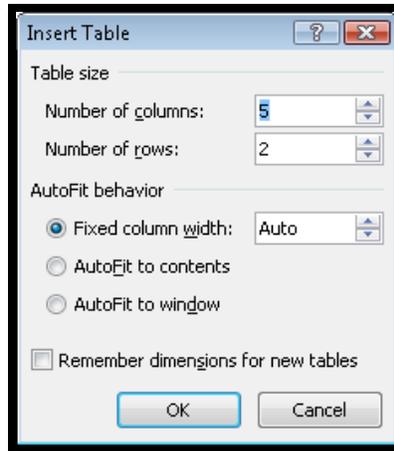
## **Tables**

We all know that tables should not be used for design layout. We also know that tables should not be nested in each other. This is important if you are going to repurpose your Word document to tagged PDF. It is also important for the accessibility of a Word document. Adaptive technology has specific keyboard commands for working with tables. These are different from the “every day keyboard commands for working with a document such as this one which does not use tables to format the document.

Many people who use adaptive technology, well, hate tables because they are overused, nested, created improperly so that even if you can use the table keyboard commands, you can't move around a table in any logical or meaningful order and they are completely frustrating. An analogy would be if you were blindfolded and put into a maize where you think you've figured out a way of navigating the maze but all of a sudden there is a maze within a maze, the rules change, you don't know what they are...how do you even begin to try and work out a strategy for getting out?

## **Inserting Tables**

There are some simple things you can do when working with tables to improve their accessibility. The first is to insert a table rather than draw it. By inserting a table you create a “uniform” table. You can easily make your table “non-uniform” and difficult or impossible to navigate, but you can at least begin with an accessible foundation.



**Figure 137 Insert Table dialog.**

To insert a table into a document:

1. Choose Table, Insert, and Table.
2. A dialog opens where you can choose how many columns and rows the table will have.
3. Once you've selected the number of columns and rows, Tab to the OK button and press Enter.
4. The table is inserted into the document at the cursor point.

The generic non adaptive technology keyboard commands for moving around tables in Word are:

- Alt + NumPad 5 to select the table.
- Tab to move to the next cell and select its contents.
- Shift + Tab to move to the previous cell and select its contents.
- Shift + Left, Right, Up or Down Arrow will extend the selection in the specified direction: left, right, up or down.
- Alt + Shift + Page Down to select the current column from the cursor point/selected cell to the end of the column.
- Alt + Shift + Page Up to select the current column from the cursor point/selected cell to the top of the column.
- Alt + Shift + End to select the current row from the cursor point/selected cell to the end of the row.
- Alt + Shift + Home to select the current row from the cursor point to the beginning of the row.
- Alt + Home moves you to the first cell in a row.
- Alt + End moves you to the last cell in a row.
- Alt + Page Up moves you to the first cell in a column.
- Alt + Page Down moves you to the last cell in a column.
- Alt + Shift + Down Arrow moves you one row down and selects the row

- . Alt + Shift + Up Arrow moves you one row up and selects the row

If you are using adaptive technology such as a screen reader, there are also commands for getting column and row title information as well as cell coordinates. The list of keyboard commands above are not adaptive technology specific so you can use them to move around a table. This might help in understanding that in a table there is another layer of keyboard commands we need to use. If a document is laid out using a table, or if the table is not “standard” or “uniform” it becomes difficult to navigate.

You can easily see why ensuring that tables are tagged properly is important.

Data tables need to be designed so that the relationship between cell content is easily rendered to the person using adaptive technology and to anyone visually accessing the table.

Two questions I have document authors ask themselves are:

What are the header rows for the table? [In Word 2003 you can only have one header row while in Word 2007 you can have more than one header row.]? If you can’t identify a header row for the entire table...a reference point for moving from cell to cell within that column, then maybe a table isn’t the right “format” for the content.

Can you put a caption on the table? If not, then a table structure is not the way to format the information.

The following images are from the book “Logical Document Structure Handbook: Word 2003.” They illustrate the problems in using tables for design layout. As we relate these problems to tagged PDF, we often see partially tagged information in a table. For example a row that goes on for several paragraphs with no content in cells to the left, blank cells used for visual spacing that are tagged as individual tables...the mistagging adventures can go on and on. Because adaptive technology such as screen readers announce that a person is entering a table and how many columns and rows it has which in turn tells the person reading the document that they will need to use their table keyboard commands, if the table is empty, contains many empty rows or columns, and has no header information, the accessibility of content and the usability of the document itself come into question.

Logical Document Structure Techniques	
Item	Description
Creating Custom Styles	
Why use custom styles?	It is important to use custom styles for elements of the document you want or need to change the look of.
Type of custom style.	It is also important that your custom style be based on the structural element you are trying to affect.  For example, if you are creating a custom heading, it needs to be based on the heading 1 through 9 styles, not the Normal paragraph style.
Create a custom style.	<ul style="list-style-type: none"> <li>• Select the text you want to create the style for.</li> <li>• Choose Format &gt; Styles and Formatting.</li> <li>• Activate the new styles button.</li> <li>• In the dialog box, make sure you change the "Style based on" to the structural element you want, for example Heading 1.</li> </ul>
Lists	In the cell above, the list was created using a tool other than bullets and numbering. This means that any adaptive technology will see this as paragraphs, not bulleted items or steps in a process.
Tables	

Figure 138 A table used for design layout.

In the preceding image, the first three rows in the table have been colour coded. Gridlines were shown to demonstrate the “structure” of this document. The first row is pink and is a header row. The second row is blue and is also a header row. The third row is yellow and is also a header row.

The actual size of this table is 6 [six] columns wide. In the first row, the pink one, the six columns have been merged to be one cell. In the second row, the blue one, the first three columns are merged and the last three are merged. In the third row, the yellow one, all six columns have been merged again. Visually this might imply a piece of heading information for the table which could be represented by the pink row. Visually the table then has two “sub headings” represented by the blue row and the yellow row...but wait!

At the end of the page we see another yellow row, a row where all six columns have been merged to indicate another visual heading. If we assume that the first yellow row has been tagged with a TH Tag representing a table header, how can we now tell the adaptive technology which is mechanical and not intuitive to ignore the first yellow row and now use the second yellow row?

Even visually this is confusing because the “content” associated with this new yellow title row begins on the second page of the document.

items or steps in a process.	
Tables	
Create a table.	Use Table > Insert not Table > Draw
Table settings	Identify a heading row.
	Choose Table > Heading rows repeat.
	Make sure your cursor is in the first row of the table or the row you want to use as the

**Figure 139 The bad table design continues!**

Aha, I hear you now...just use the Enter key to force the yellow bit onto the next page or use a “table break” to put the yellow bit on the top of the second page.

Not so fast! If we continually press the Enter key to force the positioning of content, each blank line may be rendered to the person using adaptive technology. Imagine sitting listening to “blank, blank, blank, blank....”

If we use a table break it means that a “new table” structure begins at the top of the second page which in turn means that the header rows are now part of the first table and not part of this second one. The yellow header has no relationship to the pink or blue header of the first table and stands alone.

But wait...there’s more!

On the second page of this document, remember the table was used to “design” an entire document, we see a change in the table structure itself.

Select the table, then press the AppKey and choose Caption. Table captions are automatically inserted just above the table.				
<b>Checklist for Logical Document Structure</b>				
<b>Element</b>	<b>Doc 1</b>	<b>Doc 2</b>	<b>Doc 3</b>	<b>Doc 4</b>
Check each structural element you’ve used appropriately in your documents.				
Headings				
Lists				
Tables				
Images				
Equations				
<b>Universal Design</b>				
Web	Even on web pages, you need to use the tags or structural elements properly. For example, if you are creating a list, use the   tag to indicate a blank line between list items. If this doesn’t work, then adhere to the HTML rules, don’t break them.			

**Figure 140 The bad table continues to the second page of the document.**

Suddenly we have a data table! The document author has eliminated the sixth column, added a new pink merged row of cells indicating it is a table header, followed by a new blue row of five table header cells...yes we have five columns now instead of two! The new pink and blue header information is followed by a new yellow header row that sort of looks like a table summary?

The data table itself has five columns and five rows.

So which is the table header information? The choices are:

- The first three header rows on page 1.
- The second yellow header at the bottom of page 1.
- The new set of three table headers on page 2.

Confused? It gets even better!

Just after the data table which is part of the original table and not a nested table the table changes its structure again! [Don't even think about nesting tables!]

Now we have a pink table header but no blue or yellow header rows. Instead of two columns of content where the first three columns and last three columns are merged in each row as we found on the first page, we now have the first two columns and last four columns merged.

This will often go on in a document for its entire length. I've seen one row go on for five or six pages with no content in the first columns and only a small stream of content in the last column. Even for those of you who are visually accessing the content the usability and readability of the content is compromised. There is also the issue of all that wasted white space and paper while you watch a tiny stream of content flow down the right side of the pages.

So how can we create better tables? Let's look at some options.

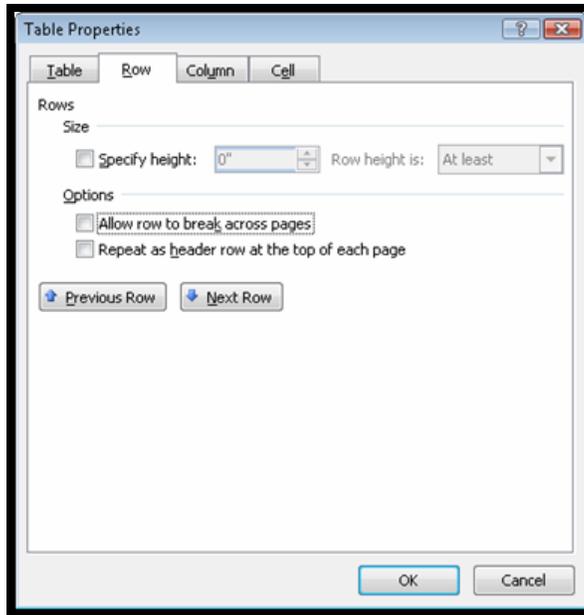
Don't Allow Rows to Break Across Pages

Many document authors will balk at this suggestion. There is a tool in Word that lets you prevent rows from breaking across pages. This means that if the content in one cell, one row will not fit on a page it cannot be presented in the table. This is a good way of keeping you honest with the content of a table cell and hopefully giving pause to consider that using a table for design layout isn't the best method.

Tables should be used for data!

To turn off the breaking of rows across pages which is on by default:

1. Select the table.
2. Press the AppKey and choose Table Properties.
3. Move to the Row tab.
4. Uncheck the check box to "allow rows to break across pages."
5. Tab to and activate the OK button by pressing Enter.



**Figure 141 Table Properties dialog with Row tab in focus.**

Using other formatting tools, you can make your publications interesting, well designed, and accessible.

## **Header Rows Repeat**

It is not good form to use “heading styles” in a table. If we think about using a table to format our document, this would eliminate a key component for navigation and creating a Table of Contents.

So what then are “headers?”

The header information in a table provides the key or legend to the relationships of the data in the table. You can create a style called “Table Header” which will give your tables a consistent look and feel but they should not be based on the heading level 1 through 11 styles.

Let’s consider why we use the heading level styles. The heading styles are used to indicate a change in topic, a hierarchy of the content in the document. In a table, we have column and row titles. If we were to use a heading style it would create confusion for the person reading the information in the table because, using the table navigation commands we move across a row in a table and not to content immediately under the current cell.

**Table 1 Summary of sales for January and February 2009.**

Salesperson	January	February
Karen	525	550
Barnaby	550	525
Olivia	500	550

If the text “Salesperson” were a heading level 1 style for example, the content under it would be either another heading 1 style in the form of “January” or another heading 1 style in the form of “Karen.” Logically this would not make sense to someone reading the information.

Table headers are “tagged differently” than heading styles and perform a different function. By identifying table headers, adaptive technology can tell someone in cell B3 that the salesperson Barnaby had sales of 550 in January. This information would not be available if we had used a heading style. A person using adaptive technology would just hear “cell B4 550.” The relationship is lost. This is a small sample table but if we were looking at a large complex data table, the person reading the data would just hear a series of cell coordinates and numbers.

Word 2007 and 2010 lets you choose more than one row to be a column header. Neither version lets you identify row titles at the present time. This will need to be done in Adobe Acrobat.

The other advantage to having the header row repeat is that the table header information will be at the top of each page that the table spills over to. This helps people with learning, cognitive, or visual disabilities keep track of the relationship between the data they are looking at without having to go back to the start of the table to jog their memory about the column titles. When the document is converted to tagged PDF it will be this header row repeat identifier that will be used to create the <TH> or “Table Header” Tags in the PDF document. Although you will need to add additional table header rows for column and row titles, it will save you time in that the first row/column titles are already done.

I recognize that it is confusing. You have Heading Styles, Page Headers and Table Headers. This is another reason to use templates. You can implement the page headers or footers that contain page numbers, have specific styles for hierarchical content changes, and also have a consistent style for the column and row titles in any tables used in the document.

I do recognize that this does not cover complex data tables. When you create complex data tables much of the repair work will need to be done in Adobe Acrobat to sort out table header information.

To let the header row repeat:

1. Select the row that is the header row for the table.
2. Press the AppKey to open the context menu for the table.
3. Choose Table Properties.
4. Press Ctrl + Tab to move to the Row tab.
5. Check the check box to repeat as header row at the top of next page or press Alt + H.
6. Tab to and activate the OK button by pressing Enter.

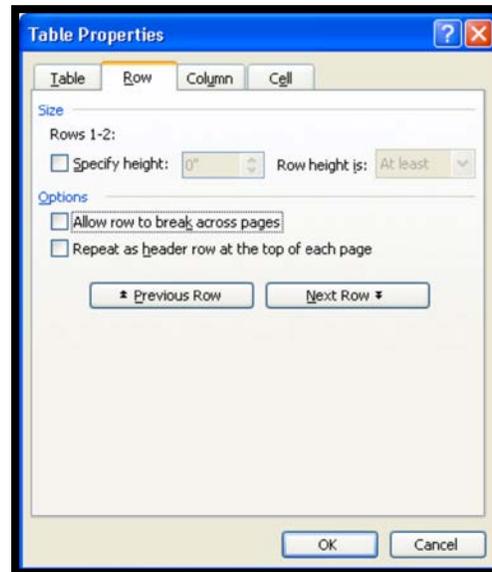


Figure 142 Table Properties dialog with Row tab in focus.

By using the “Header row repeat tool in Word, we can identify the column titles in a table.

This is also the tab that you use to uncheck the rows breaking across pages.

## Table Header Repairs in Acrobat

Once you have converted the Word document to tagged PDF, you can open the Tags Tree and use F2 Edit mode to make any <TD> or table data cells into <TH> cells. You can also use the table inspector for a more visual representation of the cells you are repairing.

## Adjust Cell Margins/Padding

Often in tables we tend to press the Enter key to create some visual space around text because we think it looks too crowded. When someone using adaptive technology enters a cell with a lot of blank lines and tries to navigate and read content line by line, every press of the Enter key you made is read as “blank, blank, blank...” If we hear one or two of these blank lines, we assume that the cell is empty and that for some reason the document author just kept pressing the Enter key. We make this assumption based on years of similar “spacing techniques” in other Word documents

as well as HTML documents. In many HTML documents, instead of adjusting cell padding or the space around the text, document authors just press the Enter key.

In HTML there is a way to provide the visual spacing effect and not use the Enter key. There is also a tool for this in Word. It is the use of “cell margins.”

When you adjust cell margins you will be adjusting the cell margins for all cells in that row. You can choose to modify the cell margins for individual rows, several rows or for the entire table to give it a more uniform look and feel.

To adjust the cell margins:

1. Select the cell or row you want to modify.
2. Press the AppKey and choose Table Properties.
3. Press Ctrl + Tab to move to the Cells tab.
4. Press Alt + the letter O to open the Options dialog.
5. Uncheck the check box that has all margins the same at the predetermined size.
6. You can then press Tab to move to the combo boxes where you can adjust the top, bottom, left or right cell margins.
7. Once you are finished, Tab to the OK button and press Enter to confirm your changes.

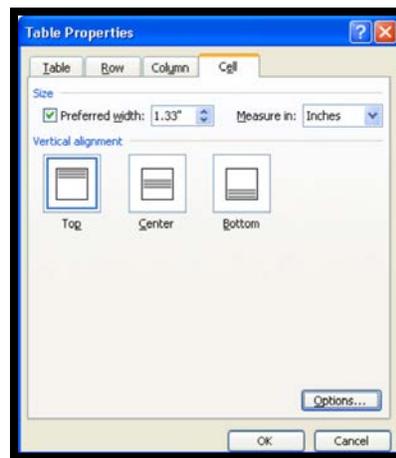


Figure 143 Table Properties dialog with Cells tab in focus.

**Note:** Do not use whole numbers for cell margins. I suggest beginning with something like .10 and going to a maximum of .30. If you start going over this number your table will look odd as there will be too much space around text. Using whole numbers can result in a message saying this is not a valid action. It would be similar to trying to set page margins wider than the page.



**Figure 144 Cell Options dialog.**

**Table 2 Summary of sales for January and February 2009 [Second Sample].**

Salesperson	January	February
Karen	525	550
Barnaby	550	525
Olivia	500	550

In the preceding table I've set the top and bottom cell margins at .20 to give you an idea of what this might look like. Typically I use the .10 inch cell margin as it gives some space but doesn't make the table look awkward.

## Captions for Tables

As with images and equations, we need to make sure tables have a caption. For tables, the caption should be above the table. This provides information for people with learning, cognitive or visual disabilities about what type of information they can expect in the table that follows. This information is also read to someone using a screen reader.

To add a caption to a table:

1. Select the table.
2. Press the AppKey to open the context menu for a table.
3. If you do not select the table, you will get a context menu for the text.
4. Choose Caption from the context menu.

5. The Caption dialog opens and your focus is in the caption edit box just after the words “Table #.”
6. Each table will automatically be numbered as you add captions.
7. Type a caption for the table. A table caption is like the summary tag in HTML and provides a brief description of the contents of the table.
8. Tab to and activate the OK button by pressing the Enter key.



**Table 3 Caption dialog with Table caption chosen.**

When you have a table selected, the choice will automatically be changed to a table caption. After this you will need to double check that the type of caption is changing for each element you are applying it to.

## Bulleted and Numbered Lists

One of the most mal formatted items in a Word document are bulleted or numbered lists. The main issue is once again the use of the Enter key to create space between bulleted or numbered list items.

Let’s take a look at how adaptive technology renders a bulleted or numbered list.

- House
- Car
- Boat

When the preceding list is read it is read as “List start, bullet house, bullet car, bullet boat, list end.”

If we use the Enter key to put space between the items, it will be read like this: “list start, bullet house, list end, list start, bullet car, list end, list start, bullet boat, and list end.”

- House
  
- Car
  
- Boat

Not only is this a lot more “extraneous stuff” to listen to, but the relationship between the listed items is lost. This becomes critical in understanding steps, instructions, or sequenced content. It is quite easy to lose your place while listening to each sequential item being announced in isolation from the rest of the sequenced content.

This can be repaired in Adobe Acrobat but it will take time. The goal is to minimize the amount of repairs to be done in Acrobat but also to make the Word document more readable. If the Enter key were used in the Word document to space the listed content, the person using adaptive technology would hear the constant list start and list end notifications.

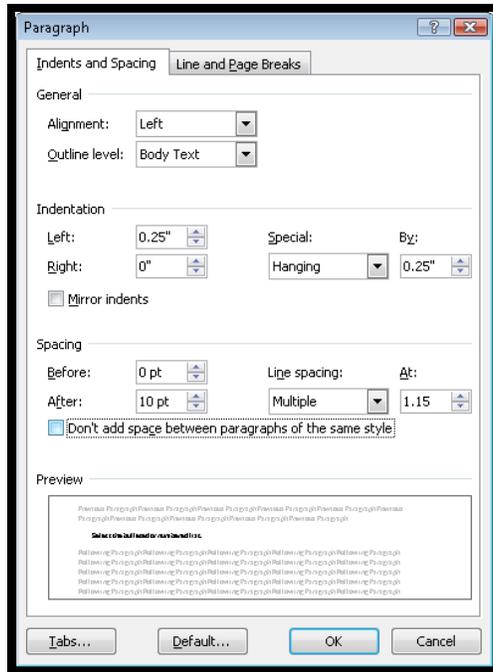
How can we put some space around our listed items without creating an accessibility issue in both Word and tagged PDF?

The best way to do this is by selecting the entire bulleted or numbered list and using the Paragraph dialog to adjust spacing.

To add spacing beneath a bulleted or numbered list item:

1. Select the bulleted or numbered list.
2. Press Alt + the letter O, P.
3. The Paragraph dialog opens.
4. Uncheck the check box to not have spacing between paragraphs of the same type.
5. Notice that the item above this indicates that there will be a space of 10 point below the bulleted or numbered list if this check box is unchecked.
6. Tab to and activate the OK button by pressing Enter.

The set of instructions above were adjusted using this method so that you can see the visual effect. In the previously spaced list when I press Ctrl + Up or Down Arrow to move from paragraph to paragraph I now land on each sequential numbered item rather than the blank lines between the numbered items.



**Figure 145 Paragraph dialog with Indents and Spacing tab in focus.**

You can do this on the bulleted or numbered lists you want a bit of space around and not do it on bulleted or numbered lists you don't. Because the 10 point space beneath each bulleted or numbered list item is predetermined, the spacing will always be the same giving your document a more consistent look and feel.

Typically there is space before the first bulleted or numbered list item so we don't want to increase that. By allowing the 10 point spacing after each item, the bulleted or numbered list looks better and gives us the visual space effect we want while retaining the integrity of the list structure.

If we try to adjust the "List Paragraph" style, we often end up "disorienting" the bullet from the text associated with it. By using the option to change the paragraph spacing after the bulleted or numbered items we save ourselves a bit of a headache and can make the change quickly.

## **Converting the Word Document**

Now that we have an accessible Word document we can use the Adobe PDF Menu item to convert the document to tagged PDF. We discussed the conversion settings in the chapter "text" and the settings should still be in place.

All you need to do is choose Adobe PDF, Convert to PDF to convert your document.

**Note:** If you are working on a large document you will get a message saying that this process might take a while to complete and suggesting that if you choose not to Tag the document that it will go faster. The whole point is to create a tagged PDF so say “Yes” continue tagging the document.

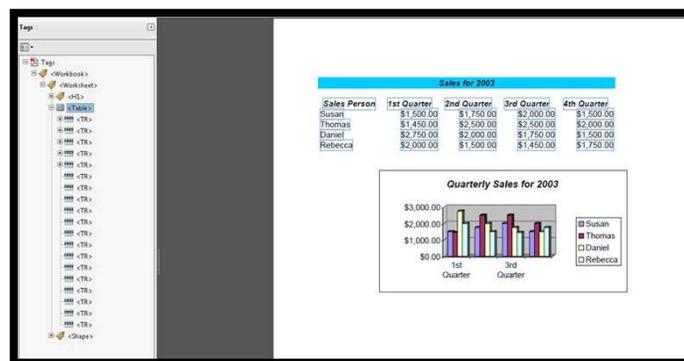
## Excel 2003

We are now going to convert a simple spreadsheet with a chart into a tagged PDF document. A workbook or worksheet seems to break all the rules about using tables for design layout since a workbook or worksheet cannot be anything but “tables.” This means more repairs in Adobe Acrobat.

### Converting a Workbook or a Worksheet

By default, you will be converting a single worksheet, the one your focus is on. If you want to convert an entire workbook to a PDF document, choose Adobe PDF and press Enter on Convert Entire Workbook. Once this is selected, it will remain checked until you uncheck it.

The tags created when you convert an entire workbook show each worksheet as a <worksheet> tag with the child tags under it as shown in the following image. A <workbook> tag is created as the parent for the individual worksheets.



**Figure 146** Tags Tree showing how Excel workbook and worksheet elements are converted to tagged PDF.

In the preceding image I've repaired the Excel document by making the title of the Excel table a heading and moving it out of the <Table> Tag.

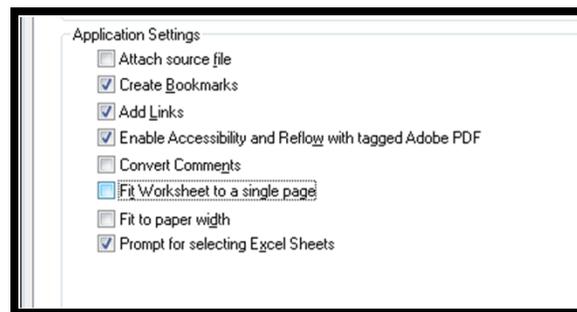
## Excel Conversion Settings

One of the questions I get asked a lot is how to present an entire worksheet on one page so that the relationship between the data in the worksheet is not lost. There are conversion settings for Excel just as there are conversion settings for Word and PowerPoint.

Let's walk through the conversion settings for Excel.

To view the conversion settings for Excel press Alt + B and choose Change Conversion Settings.

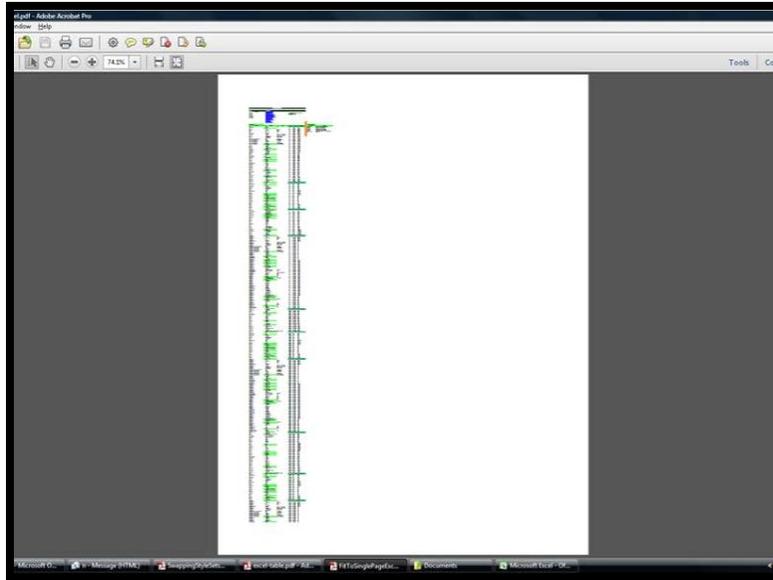
A dialog opens with fewer options than we have for Word. This is, of course, because we are in a different application with different accessibility needs.



**Figure 147 Excel specific conversion settings for tagged PDF.**

One of the things I am asked during workshops is how to fit one worksheet on a single tagged PDF page. When a document, worksheet or presentation is converted to PDF, the default behaviour for display is to create 8.5 by 11 inch visual pages. This is sometimes not practical for worksheets especially since we have to turn off the column and row titles [in Page Setup dialog]. Often we don't want to visually separate data into an unreadable layout. Viewing data that was meant to be displayed as a huge worksheet in a linear non-navigable format causes the data to lose its impact and meaning.

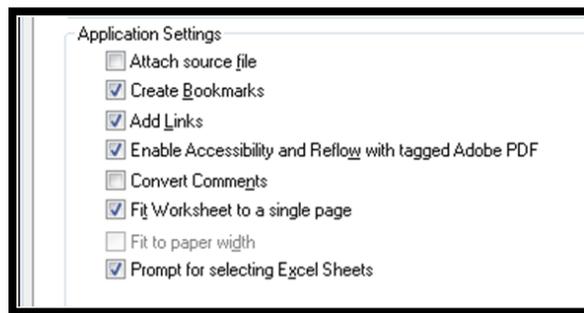
In the conversion settings for Excel there is the option to "Fit the worksheet to the page" which will retain the margins.



**Figure 148 Fit Worksheet on a single page.**

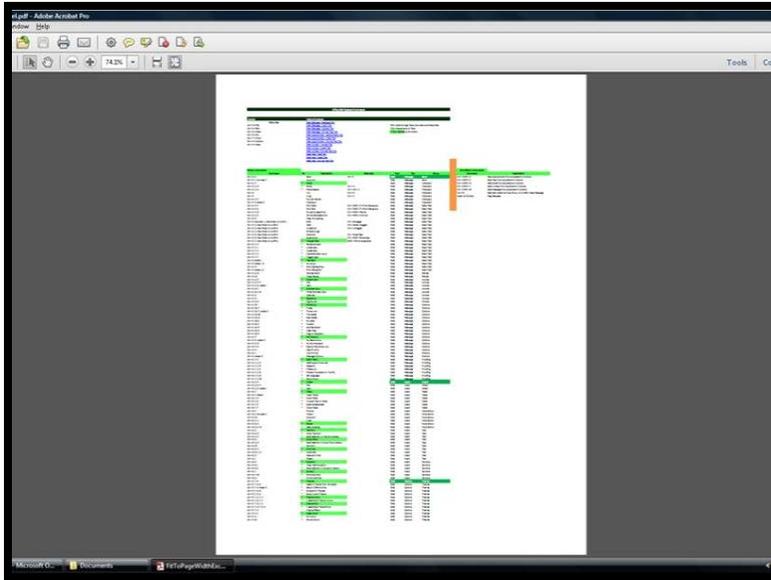
I talked earlier in this book about not being afraid to use the Zoom tool for performing repairs in tagged PDF documents. It is the same with Excel workbooks or worksheets you choose to try and fit on one page or piece of paper...don't be afraid to use the Zoom tool so that you can read the data.

When you choose the option to fit the worksheet to the page, the option to fit the worksheet to the paper is not available. The converse is true, when you choose to fit the worksheet to the paper; you cannot choose to fit the worksheet to the page.



**Figure 149 Excel Conversion Settings for Excel.**

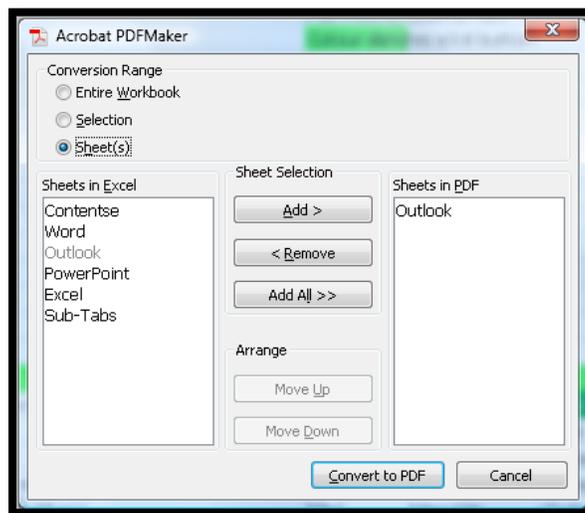
When you choose to fit the worksheet to the paper, the results will be displayed as shown in the following image.



**Figure 150 Fit Excel worksheet to page width.**

I do not have a worksheet larger than these ones so cannot advise on the results when worksheets are huge. These are the only options you have to try and fit worksheet content onto one continuous viewable area.

When you choose to create the PDF document, a dialog will open where you can choose which worksheets you want to convert to tagged PDF.

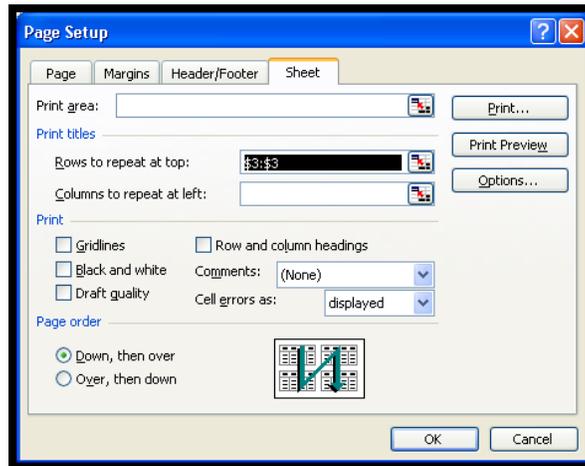


**Figure 151 Excel Adobe Conversion Settings dialog.**

## Preparing the Worksheet for Conversion

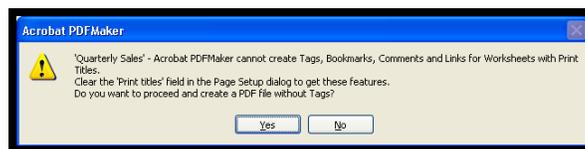
If you are printing a hard copy of a worksheet, it is useful for your reader to have the titles of columns and rows appear on each printed page so that they have a point of reference for the data they are reviewing.

You turn the titles on in the File > Page Setup > Sheet tab.



**Figure 152** Page Setup dialog box in Microsoft Excel 2003 showing the "rows to repeat at top" edit box.

When you convert the sheet to a tagged PDF document, you will need to remove these. If you forget, you will have a dialog box reminding you that a PDF document can't be created as long as the titles feature is turned on.



**Figure 153** Message you will get when you try to convert a Microsoft Excel 2003 worksheet to tagged PDF without removing the "row to repeat at top" from Page Setup.

Anticipating your question, the titles will have to be manually identified once we create the PDF document.

You can leave page headers and footers on the worksheet.

Once the titles have been removed, choose Adobe PDF > convert to PDF.

When the worksheet opens in Adobe Acrobat, press F4 to view the tags tree. We've used a simple worksheet. If you have a more complicated worksheet, you might want to begin with the TouchUp Reading order tool.

The entire document is tagged as a table until we get to the chart at the end.

Notice that at the beginning of the table structure, the heading hasn't been separated from the main table content. This needs to be done so that people using adaptive technology can identify the title of the table.

To create the heading tag for this table:

1. Select the <worksheet> tag. Turn on the Highlight Content.
2. Press the AppKey and choose new Tag from the context menu.
3. The new tag is a Heading Level 1. Locate this in the list of tags and press enter on the OK button.
4. Move the <H1> tag to be the first tag under <worksheet> if it doesn't position itself there.
5. Expand the Table tags in the Tags Tree.
6. Select the <TD> tag that has the information for the table title in it. Expand this tag and select the content for the table title.
7. Drag the content for the table title to the <H1> tag and position it as a child element/nested under the <H1> tag.
8. Go back to the <TD> tag and delete it. It should appear as an empty tag. With no plus sign next to it.

You can delete the other empty <TD> Tags for the <TR> or table row, or you can simply delete the empty <TR> Tag.

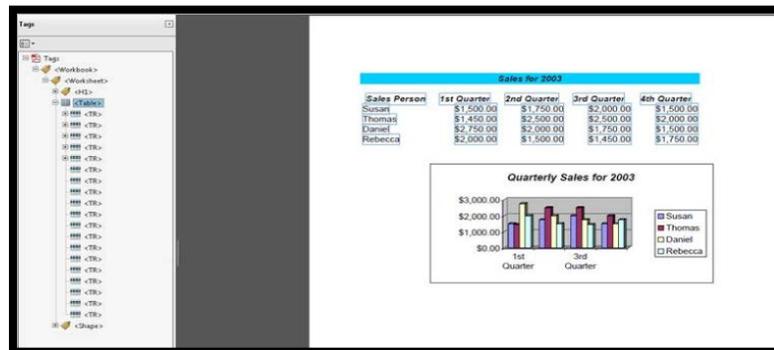


Figure 154 Tags Tree with Highlight Content turned on showing table structure.

Normally we do not delete Tags; however, it is possible to delete Tags that are empty. A caveat to this is not to use the Delete key to tidy up the Tags Tree. If you are going to delete empty Tags make sure you save the document as a new version before you do. In the event that the deletion of even an empty Tag affects the logical reading order or the ability to get a clean accessibility full check, you want to be able to immediately go back to the last good repair in the document so you don't have to do all that work all over again.

**Note:** You never want to delete content from the visual document. If you have content in the visual document send it back to the document author or desktop publishing house to have it removed. Removing actual content from the visual page can affect other content on the visual page in a detrimental way. We'll discuss this when we look at desktop published documents.

Now we need to identify the table headers which will replace the identification method used in Excel through the File > Page Setup > Sheet.

1. Select the first <TR> set in the Tags Tree. You will be able to see the corresponding PDF content with the Highlight content turned on.
2. Expand the <TR> containing the column titles.
3. For each <TD>, use the F2 key and edit them to show <TH> for table header.
1. You can also use the TouchUp Reading Order tool for this and the Table Editor.
2. Now that we have the column titles identified with their <TH> Tags, we need to make sure that the row titles have <TH> Tags. This will let adaptive technology look above and to the left/column 1 to provide relationship information as the table data itself is navigated.
3. Expand the second <TR> Tag.
4. Select the first <TD> Tag.
5. Press F2 to go into Edit mode.
6. Replace the letter D with an H.
7. Press Enter to confirm this change.
8. Do not modify the remaining <TD> cells in that row. They are table data cells.



Figure 155 Editing the row titles to be <TH> Tags.

We need to do this for all the “Sales People” in column 1.

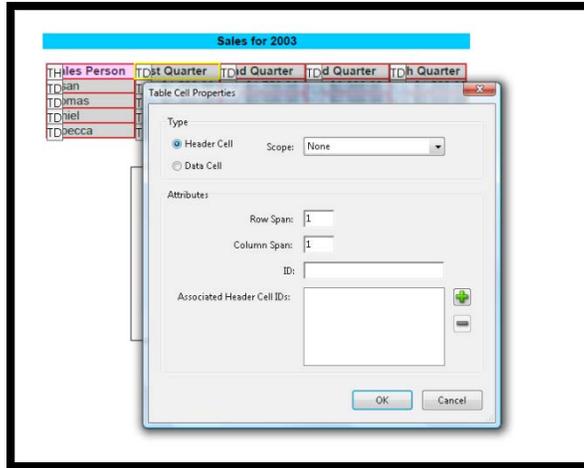


Figure 156 Using Table Editor to make the repairs to the table header cells.

The following image shows the finished repairs from the Table Editor in the TouchUp Reading Order Panel.

Sales for 2003				
Person	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Jan	\$1,500.00	\$1,750.00	\$2,000.00	\$1,500.00
Thomas	\$1,450.00	\$2,500.00	\$2,500.00	\$2,000.00
Niel	\$2,750.00	\$2,000.00	\$1,750.00	\$1,500.00
Becca	\$2,000.00	\$1,500.00	\$1,450.00	\$1,750.00

Figure 157 Finished repairs to table header cells in the Table Editor view.

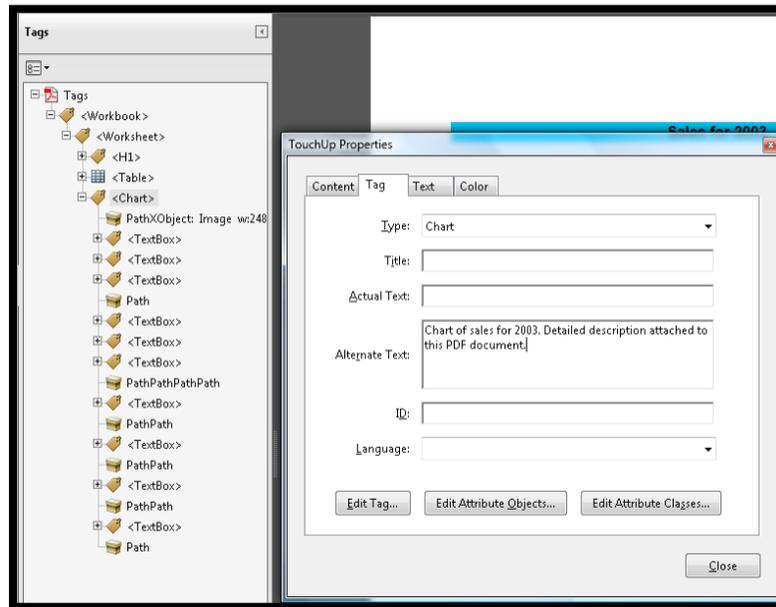
The last thing we need to do with this PDF document is to provide Alt Text for the chart.

The chart reflects a visualization of information people using screen readers have access to in the document. Because the information is available in another format, we can use Alt Text such as “Chart of information from the table above.” If there were no other format for the information contained in the chart, you would have to provide Alt Text describing the chart information.

To add the Alt Text for the chart Tag:

1. Select the <Chart> Tag not the content under it.
2. Press the AppKey to open the context menu.
3. Choose Properties which is at the bottom of the list so you can press the Up Arrow to move to it quickly.
4. The TouchUp Properties dialog opens.
5. Press Alt + R to move to the Alternate Text edit box.

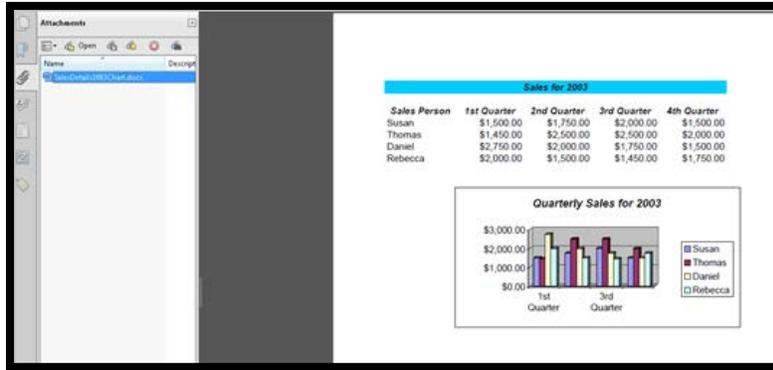
6. Type in the Alt Text for the chart.
7. Remember to be concise.
8. If the chart is in a different language, change the language. If the chart is in the language of the entire document, leave the language area as it is.
9. Press Alt + C to Close the TouchUp Properties dialog.



**Figure 158 Adding Alt Text to an image in Excel.**

Generally, images, charts, diagrams and other visualizations of information need to support content not be content on their own. The information shown in visual representations should be available in a more readable format in the document.

If the chart or diagram is too complicated to provide brief and concise Alt Text, you may need to attach a Word or NotePad document with a more detailed description of the chart or diagram. We are talking about Excel so the raw data should be available to someone using a screen reader. This technique is mentioned here as a consistent work around for providing more verbose descriptions of document images, objects, charts and diagrams. This technique is especially useful for Visio or Project diagrams.



**Figure 159 Detailed description of chart attached to a tagged PDF document.**

The Alt Text for the image in the PDF document would let the person reading this document know that a descriptive file was attached to the PDF document.

## Workbook Table of Contents

The sample workbook and worksheet for this topic was simple and clear. What happens if you have several sheets of data and large areas of the worksheet that contain data.

Going back to the days of Lotus 1-2-3 for DOS and my first course in how to use this application, we were taught that every workbook should have a Table of contents. It is something I still implement for larger workbooks with large amounts of data and several worksheets.

A good example is my Excel workbook that contains all the Ribbon Commands for Microsoft Office 2007. This is a complex workbook because it has information about the core ribbons, the Sub-Ribbons, and standard non-Ribbon keyboard commands for Word, Outlook, PowerPoint, and Excel.

How can I facilitate navigation to content as people need to look up keyboard commands?

Using named ranges and consistency of language, I created a Table of Contents on the first sheet and named that worksheet Table of Contents.

Word	Outlook	PowerPoint	Excel
Word Home Ribbon	Outlook - Message Ribbon	PowerPoint Home Ribbon	Excel Home Ribbon
Word Insert Ribbon	Outlook - Appointment Ribbon	PowerPoint Insert Ribbon	Excel Insert Ribbon
Word Page Layout Ribbon	Outlook - Contact Ribbon	PowerPoint Format Ribbon	Excel Page Layout Ribbon
Word References Ribbon	Outlook - Task Ribbon	PowerPoint Animations Ribbon	Excel Formulas Ribbon
Word Mailings Ribbon	Outlook - Format Text Ribbon	PowerPoint Slides Show Ribbon	Excel Data Ribbon
Word Review Ribbon	Outlook - New Ribbon Commands	PowerPoint Review Ribbon	Excel Review Ribbon
Word View Ribbon	Outlook - New Ribbon Commands	PowerPoint View Ribbon	Excel View Ribbon
Word Non-Ribbon Commands	Outlook - New Ribbon Commands	PowerPoint Non-Ribbon Commands	Excel Non-Ribbon Commands
Outline Ribbon	Outlook - Handout or Notes Master Ribbon	PowerPoint Handout or Notes Master Ribbon	
Common Task Sub-Ribbon			
Picture Task Sub-Ribbon			
Drawings Task Sub-Ribbon			
Tables Task Sub-Ribbon			
Header and Footer Task Sub-Ribbon			
Text Box Task Sub-Ribbon			
Review Task Sub-Ribbon			
Review Task Sub-Ribbon			
Review Task Sub-Ribbon			

Figure 160 Table of Contents on the first sheet in an Excel workbook.

On each subsequent worksheet I included a “mini Table of Contents” just for that worksheet.

If a person is using a screen reader, they can get a list of links on this Table of Contents page and quickly move to the content they need. If a person is not using adaptive technology, the Table of Contents also lets them find information quickly.

The Table of Contents on each named sheet lets a person using a screen reader skim through the worksheets and then get a list of links for that worksheet and navigate to the content they need. For anyone not using adaptive technology, finding the specific keyboard commands is also easier.

Creating named ranges to make linking content easier, creating a Table of Contents and a sheet specific Table of Contents, and naming worksheets appropriately all contribute to the accessibility of the Excel workbook and to the resulting tagged PDF.

**Note:** You create links in Excel by using Ctrl + K on selected text in a cell and then linking to the Bookmark in the workbook. Of course you can also link to outside content.]

Ribbon Commands	Ribbon	Group	M	Description	Alternate
Alt + H, V, P	Home	Clipboard	*	Paste Sub-Menu	Ctrl + V
Alt + H, V, S	Home	Clipboard	*	Paste SpecialDialog	Ctrl + Alt + V
Alt + H, X	Home	Clipboard		Cut	Ctrl + X
Alt + H, C	Home	Clipboard		Copy	Ctrl + C
Alt + H, F, P	Home	Clipboard		Format Painter	
Alt + H, F, letter O	Home	Clipboard		Clipboard	
Alt + H, F, F	Home	Font		Font Style	Ctrl + Shift + F = Font dialog
Alt + H, F, S	Home	Font		Font Size	Ctrl + Shift + P = Font dialog
Alt + H, F, G	Home	Font		Grow/Increase Font	Ctrl + Shift + Period
Alt + H, F, K	Home	Font		Shrink/Decrease Font	Ctrl + Shift + Comma
Alt + H, E	Home	Font		Clear Formatting	
Alt + H, Number 1	Home	Font		Bold	Ctrl + B/toggle
Alt + H, 2	Home	Font		Italic	Ctrl + letter I/toggle

Figure 161 Table of Contents on the Word worksheet.

## PowerPoint 2003

In general, slides are index cards for speakers and eye candy for the audience. They tend not to contain usable content as isolated documents and need the context of the speaker for any contextual basis of information.

Based on experience working with instructors, it should also be noted that PowerPoint is not a word processor.

One of the improvements in tagging since Acrobat 7 is that the titles, subtitles, and headings in PowerPoint slides are now tagged properly. Of course this is “if” you are using the default placeholders on slides and not text boxes or shapes. Once again, the standard template containers for slide titles, subtitles and text need to be retained in the templates you develop for your organization. It is when we deviate from the standard and accessible structure that we end up with more repairs in Adobe Acrobat.

There is a tool in Microsoft Word that will let you send your Word document to PowerPoint and create the slides for you. The slides are basic and lack the “bling” or eye candy, but it is a good starting point to develop content for a presentation.

## Create a Presentation in Word

It is easy to create your presentation in Word and then send the content to PowerPoint.

1. Open a new blank document. It doesn't have to be a template; it is the underlying structure that will be converted to the slide components.
2. Type the title for the second slide in the presentation.
3. We will add the title slide in PowerPoint.
4. Type the bullet points for the first slide or press the Enter key to move to the next line.
5. Select the text that you want to be the title of the second slide.
6. Press Ctrl + Alt + the number 1 to make it a heading level 1.
7. Select any bulleted items on "the slide" and make them heading level 2.
8. Repeat this process for each slide of the presentation: slide titles are heading level 1 while bullets are heading level 2.
9. Save your work.

On the File menu is the option to send the document to PowerPoint.

When you do this, the slide presentation is created. PowerPoint will open, the slides will be constructed and you are ready to add images and the title slide.

This lets you work on the content of your presentation without being distracted by visual design and bling. It also creates an accessible version of your presentation that can be sent to participants who can then access it on note taking devices or laptop computers or it can be Brailled. To tidy up the Word document as an alternate format document, open the Styles pane, select all instances of heading level 2 and make them normal text once you've sent the document to PowerPoint.

How do I finish my presentation in PowerPoint?

Once the slide content has been sent to PowerPoint, switch to slide sorter view in PowerPoint by pressing Alt + V, then choosing Slide Sorter. . This is where not being able to provide you with images of PowerPoint 2003 might create some issues for you. My apologies.

1. In Slide Sorter view use the keyboard because it is more accurate and faster to position the cursor just before the first slide.
2. Choose Insert, Slide, and choose the Title Slide format.
3. If your cursor was just before the first slide, this is where the Title Slide will be placed.
4. If you were a bit off, you can drag the Title Slide to its position or cut and paste it there.
5. Switch to Normal view by pressing Alt + V, then choosing Normal.
6. Press Tab to move into the Title placeholder.
7. Press Enter to activate Edit mode.
8. Type in the title of the presentation.
9. Press the Escape key once to get out of Edit mode.
10. Press the Tab key to move to the Subtitle placeholder.

11. Press Enter to activate Edit mode.
12. Type in The Subtitle information.
13. Press Escape to get out of Edit mode.
14. Now you can add the bling.
15. Press Alt + the letter O for Format.
16. Choose Slide Design.
17. Choose the design you want to use for the presentation.

Now you can add images, tables and other elements to the presentation.

Many people use text boxes in PowerPoint without knowing that text boxes are not accessible whether they are used in Word, PowerPoint, Excel or Outlook. Because they are objects that sort of float above the text layer of a document, the adaptive technology can't "see" them.

Many people think that if they use the File, Save As..., tool to save a PowerPoint presentation to an outline or RTF document that they are providing an accessible form of their presentation. If the presentation has text boxes, this is not true since none of the content in the text boxes will be in that RTF document. Only content in the standard slide placeholders will be rendered to the RTF format.

If content from text boxes is to be made accessible it must be individually copied and pasted from every text box in the slide presentation into the RTF document or the Duxbury Braille translation software. This creates a lot of unnecessary repairs.

Because text boxes are floating objects, it is also unpredictable where they will appear in the Tags Tree when a slide presentation is converted to tagged PDF. This means more work in going through all Tags and more repairs to the tagged PDF.

## **Slide Master Template**

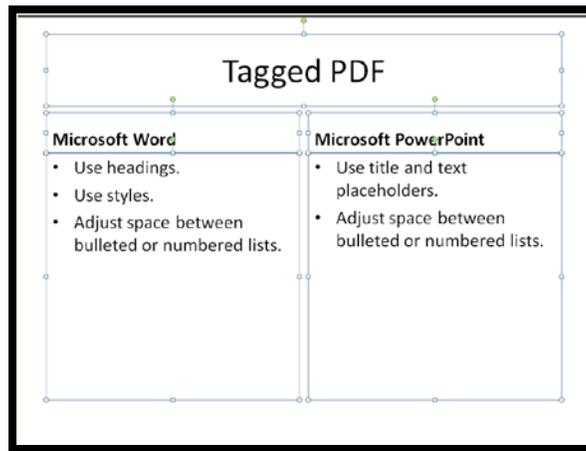
The use of the Slide Master tools, based on what I've been asked to repair in PowerPoint presentations, is a little known secret. Instead of using the Slide Master tools to create a presentation template containing all variances of formatting you'll need, default placeholders are deleted, text boxes and shapes are used instead, images are flung at slides randomly, everything is positioned and sized according to different measurements...well, you get the picture and so does your audience.

Any images that repeat on slides should be in the Slide Master. Any images that you will use for specific types of content should be on a slide template in the Slide Master. Any rearranging of the title or text placeholders should be in a slide in the Slide Master. You can also rename the different slide templates you develop.

The advantage to creating a comprehensive Slide Master set is that anyone creating slides for your organization will have a broader range of slides to choose from and the formatting of content will be uniform and consistent.

I've repaired presentations where subtitles on slides have been different for every slide in the presentation. This detracts from the message of the presentation.

I've also seen comparative information crammed into the wrong slide format. There is a slide format that will let you have a "heading" for the two pieces of comparative information rather than using the two column slide.



**Figure 162 PowerPoint Comparison slide format.**

Notice that the headings for the two columns of comparative information are already in the slide. This means that you don't have to resize fonts or reposition bulleted lists so that they look awkward in each column. Remember that a slide is not a Word document but rather index cards for your presentation. Make sure that your audience can visually find the content and in this case, the content is also more accessible and readable.

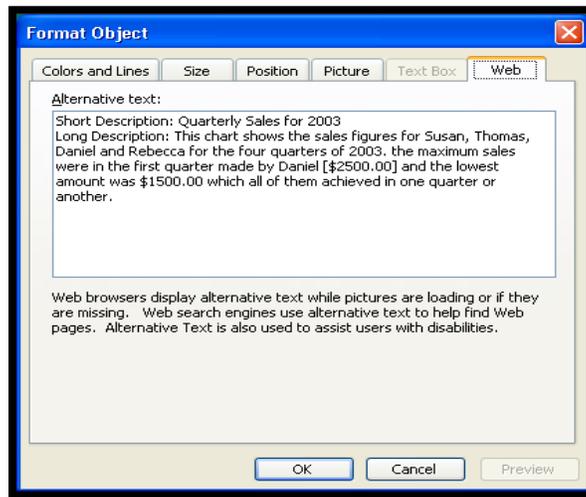
## **Adding Alt Text in PowerPoint**

You can easily add Alt Text in PowerPoint. The Alt Text will then be converted to the tagged PDF document making one less repair necessary. If you are using images that already have Alt Text because they are in a Word document, if you copy and paste those images into a presentation the Alt Text will come with them which means you don't have to add it. Use the Office Clipboard to hold several images as you create a presentation to go with your Annual Report document for example.

To add Alt Text in PowerPoint:

1. Select the image or object.
2. Press the AppKey to open the context menu.
3. Choose Format Picture, Format Shape or Format Object.
4. What you see as the last item on the context menu will depend on what type of object you added to the slide.
5. In the Format Picture, Shape or Object dialog, press Ctrl + Tab to move to the Web tab.
6. Press Tab to move to the Alt Text edit area.

7. Type your Alt Text for the image.
8. Tab to and activate the OK button by pressing Enter.



**Figure 163** Format Properties dialog box for images and objects in Microsoft PowerPoint 2003.

One comment while we are looking at Alt Text for images on slides. When the outline or RTF document is produced as an accessible alternative to a slide presentation, none of the Alt Text will be in the RTF document.

For slides where there is only an image, you can copy and paste the Alt Text into the RTF document so that people who need alternate format or Braille have access to Alt Text for diagrams, images, and objects.

Remember to use the default title and text placeholders for written content.

## Tables on Slides

When using a table on a slide, use the tools in PowerPoint to insert a table. Although we can't use the tools to create <TH> Tags, if we use non-standard tables, images of tables, or drawn tables, these will represent barriers to accessibility in the presentation and any subsequent tagged PDF documents you will need from this presentation.

**Note:** tables will need to be copied and pasted into the outline or RTF document if this is the alternate format needed by participants.

Don't used grouped objects to create the illusion of a table. Use the proper table structure. If you use grouped objects to create the illusion of a table, they will all need Alt Text as individual images

both in the PowerPoint and subsequent tagged PDF documents. This means that the information will not be presented in table format to someone using adaptive technology such as a screen reader.

If you are using colour in tables, make sure there is a good contrast so that the data is readable.

## Links in Presentations

As with links in Microsoft Word, it is preferred that links be contextual rather than the full web addresses.

You also don't want to play around with the size of text used for links. In some presentations I've seen five or six font sizes on one slide in one text placeholder which is visually distracting and detracts from the message you are giving the audience. Your audience will be spending time concentrating on reading varied font sizes rather than listening to you explain what the points on the slide mean.

To add a contextual link for a PowerPoint slide select the text to be the link and press Ctrl + K to open the Create Hyperlink dialog. From this point the steps are the same as they are for Microsoft Word. You can link to a web page, document or other document.

## Bulleted Lists

Just as with Word, you don't use the enter key to create space between bulleted points in a PowerPoint slide presentation. Instead use the Paragraph dialog to add space below each bulleted item.

If you've put too much content into a slide and are readjusting the line spacing so that text doesn't overlap, choose "single" line spacing in the Paragraph dialog rather than "Multiple" which PowerPoint will do by itself when you ask it to cram too much content into one text placeholder.

To adjust the spacing between bulleted items choose Format, Paragraph.

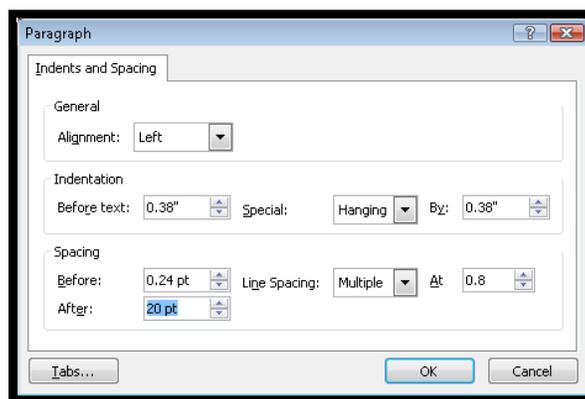
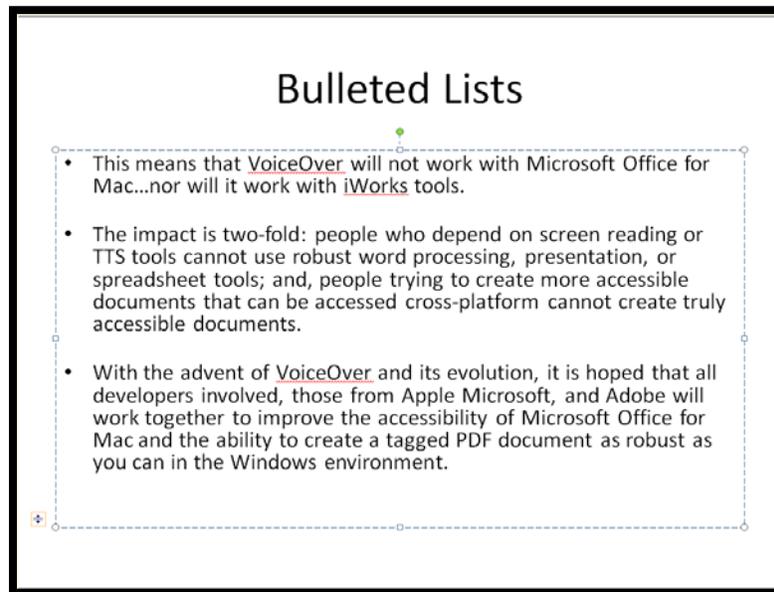


Figure 164 Paragraph dialog in PowerPoint.

In the example above I've used a 20 point spacing which gives the typical amount of space between bulleted items that a press of the Enter key would.



**Figure 165** Bulleted list on a slide spaced using the Paragraph tools.

As with Word, we added the spacing after each bulleted item. We know that the first bulleted item has enough space around it because it is the first one in the text placeholder and the text placeholder is positioned by default to allow space between the title placeholder and the text placeholder or content on the slide.

By using the spacing between the bulleted list items the list is not broken. This means that the content will be read as one list of three bulleted items rather than three lists of single items.

If you have a single piece of content on a slide, using bulleted text might not be the best way to present it. You can turn off the bullets by selecting the text in the text placeholder and choosing Format, Bullets and Numbering and then choosing "None." You can then resize the text placeholder and position it where you want on the slide.

You can also create a slide template with a text placeholder that is not formatted for bullets or numbering by using the Slide Master to do this.

## **Title Placeholder**

In keeping with the theme that PowerPoint is not a word processor nor is it an endless document, we must address the amount of information placed in a title placeholder.

The purpose of the title placeholder or slide title is to provide a "brief and concise" heading for the content on the slide.

In looking at the Outline view of the presentation make sure that multiple slides don't have exactly the same title. For example if you have four slides with the title "Tagged PDF" someone who is using adaptive technology would think that their adaptive technology is stuck and not progressing forward through the slides. This is especially true of someone using a screen reader.

Using numbers after slide titles that are the same is acceptable. For example "Tagged PDF - 1." Usually I use this type of numbering if slides have steps that can't be contained on one slide and need to be carried over to another. A slide might have the instructional step and an image of the dialog or end result of an action.

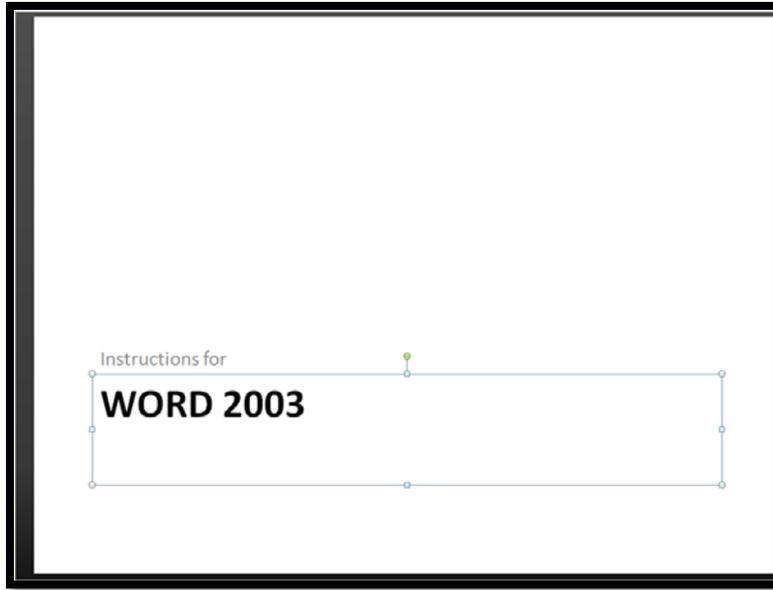
By putting each step on a separate slide, the person who is trying to follow the steps will be presented with one step at a time which gives them time to examine the content at their own pace.

It is also not acceptable to have ten different font sizes and colours in a title placeholder. This is visually confusing to someone with a learning, cognitive, or visual disability.

Once again we are brought back to the design of the presentation. You can use a slide to identify large changes in topic or content. For example instead of putting the words "Word 2003" in every title placeholder for content that is related to Word 2003, using one slide that simply says "Word 2003" clearly identifies the subject of the following content.

I tried to find an easy way to create a Slide Master for a subtitle but was surprised at how confusing and difficult it was. PowerPoint 2007 has a slide in its default template for this: Section Header slide. This makes life a lot easier. The way that PowerPoint 2007 uses slides and slide designs is different as well and proves to be an easy tool to use to create more accessible presentations.

The following image is of the "section Header" slide in PowerPoint 2007. You can create the presentation template using PowerPoint 2007 and save it down as a PowerPoint 2003 template if your office is slowly converting. The relationship between Slide Masters and how you add or insert slides to a presentation is quite convoluted in PowerPoint 2003.



**Figure 166 PowerPoint Section Header slide identifying instructions for Word 2003.**

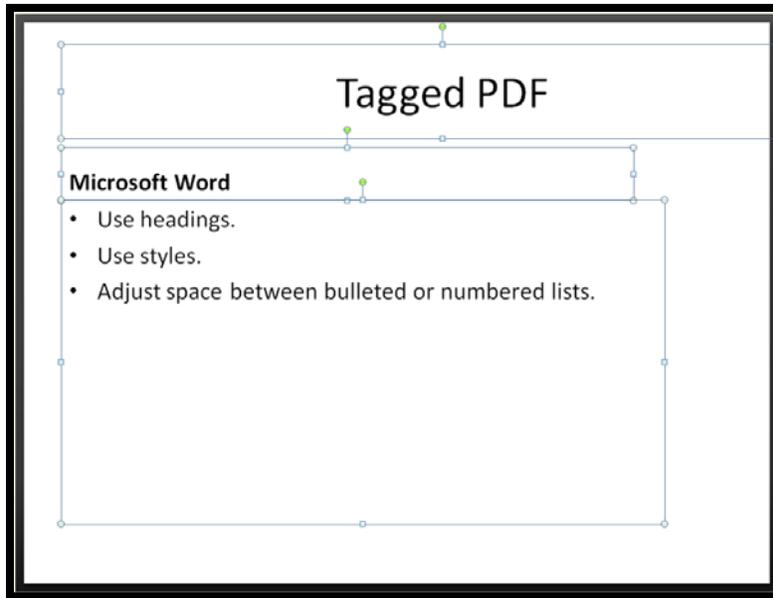
By using this tool in PowerPoint you won't have to try and cram this text into every title placeholder for subsequent slides.

When you do try to cram repetitive information into a title placeholder the content of the slide, the actual title text for the slide gets lost in redundancy.

In PowerPoint 2003 we do have a comparison slide which does allow us to create a slide Master with a title and Subtitle. It too is awkward but I've included the instructions below. We've looked at using the Comparison format slide for presenting comparative information but within the Slide Master tools, you can create a slide with a "subtitle" that is also accessible because it uses the default title and text placeholders.

To create a slide with a subtitle:

1. In the Slide Master view, select the Comparisons slide format.
2. Duplicate this format using the AppKey and choosing to duplicate the slide format from the context menu.
3. On the duplicate version of the slide format, delete the second comparative title and text placeholders.
4. Resize the first set of comparative title and text placeholders to meet your needs.
5. You can also rename this new version of the slide to make it easier for others to know what to do with it.



**Figure 167 New slide with a subtitle in the Slide Master set.**

The preceding image shows the redesigned comparative slide to allow for the use of a subtitle for appropriate content. This slide becomes part of the Slide Master set for the presentation and anyone creating a presentation based on the set of Slides Master has access to it.

## **Grouped Objects**

Although you can create what appears to be charts and diagrams in PowerPoint using grouped objects, these don't translate well into single objects with Alt Text. In some cases each individual object will require Alt Text when the presentation is converted to tagged PDF while in other cases having grouped objects on a slide makes it impossible for someone using a screen reader to figure out what the visual relationships are between the shapes.

One of the nifty tools with Microsoft OneNote is the ability to create screen clippings. If you have the ability turned on in OneNote, you can press Windows Key + S and then use the mouse to drag diagonally over an area of the screen and create what is a "screen clipping."

For the images in this book that are not full screen images, I used screen clippings and then made the clippings PNG files using Macromedia Fireworks 8. As someone who does training material for clients this is a valuable tool and lets me create more meaningful content during a training session or prior to it. I can also visually demonstrate exactly what I am talking about.

Many of the repairs for grouped objects that I do involve taking a screen clipping of a group of objects on a slide and creating one image for which I can add Alt Text. I then delete the grouped objects, insert the image of them, and add the Alt Text.

This makes the slides more accessible and easier to organize the Tab Order of objects on a slide.

## **Slide Numbers**

There is a tool for adding slide numbers that will automatically create a “Slide Number placeholder” that is more accessible than a text box with a number plunked into it.

Using the tool for adding slide numbers will also ensure that the numbering of slides in the presentation is consistent and sequential.

You’ll find this tool under Insert, Slide Number.

You can reformat the look and feel of the slide numbers in the Slide Master if you don’t like the default way they look on a slide.

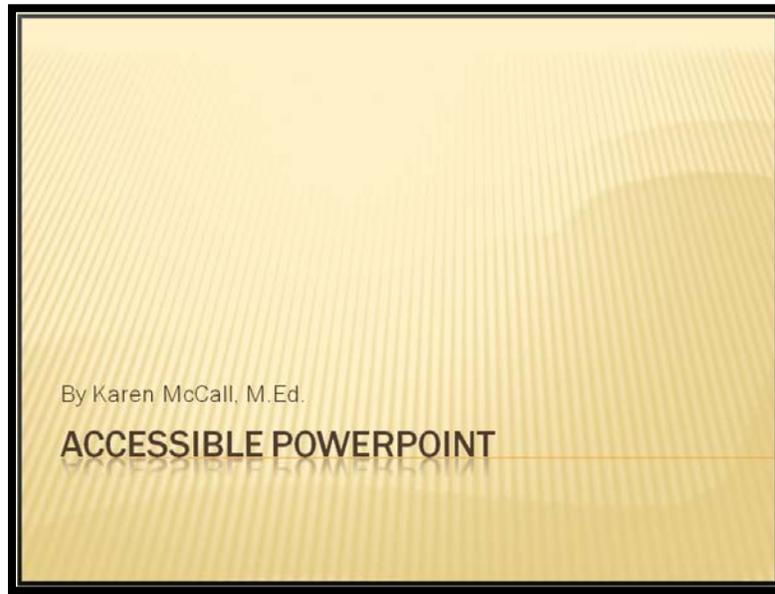
## **Tab Order**

In the case of PowerPoint slides, the order in which the title and text placeholders are tabbed to is the order in which they are read or accessed by someone using a screen reader. For tagged PDF it may also affect the logical reading order of the resulting tagged PDF document.

In PowerPoint 2003 the ability to reorganize the Tab Order of slide objects is found in the transition settings under Tools. You can move objects forward or backward in order on a slide. However this is tedious and is dependent on you not getting confused about which object comes before the other in terms of reading order. PowerPoint 2007 and 2010 have a Selection Pane that makes this process a lot easier.

## Design Layout

There are several things to keep in mind when creating an accessible and usable PowerPoint presentation. Some of them are related to well-designed content.



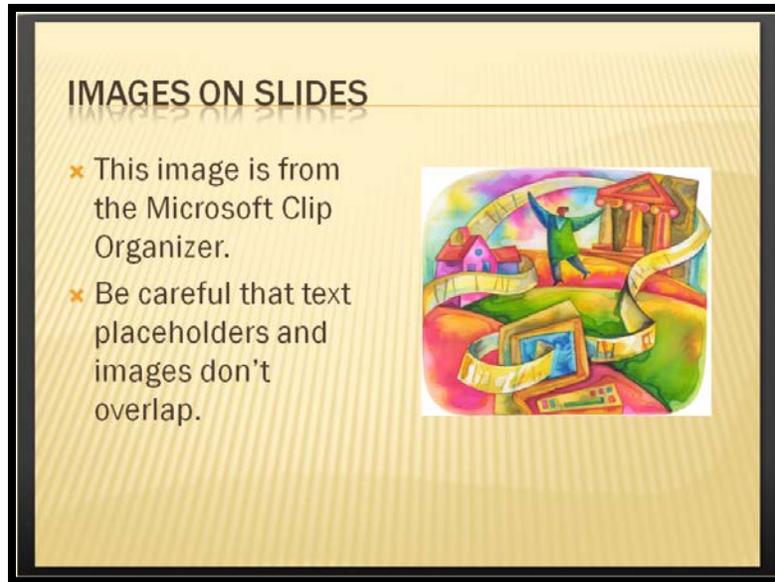
**Figure 168 PowerPoint slide design sample.**

First, take a close look at the slide design that you choose. Often I will start with one design and find that as content is added the design is not suitable. This happens even if I am designing a Slide Master. What seems like a good idea when you start out may change as you develop the template further.

The preceding image is of a default slide design in PowerPoint 2007 but the concepts are valid for PowerPoint 2003.

This design has a mirrored image of title text, a background of wavy lines that I think mimic sand dunes or some abstract design, and thin text that becomes difficult to read as you move into the darker elements of the background design.

Some images won't look "nice" on this type of background design. This is one of the elements that has me look at other slide designs as I develop a presentation or template.



**Figure 169 Image on a slide that makes the slide look too busy and "noisy."**

The other serious accessibility issue with this choice of design is that the titles use "all caps" or all uppercase which is the most difficult font type to read for people with and without visual disabilities. Using uppercase for large or important pieces of content should be avoided.<sup>15</sup>

The foreground and background colours and designs are just as important as they were when we looked at Microsoft Word documents.

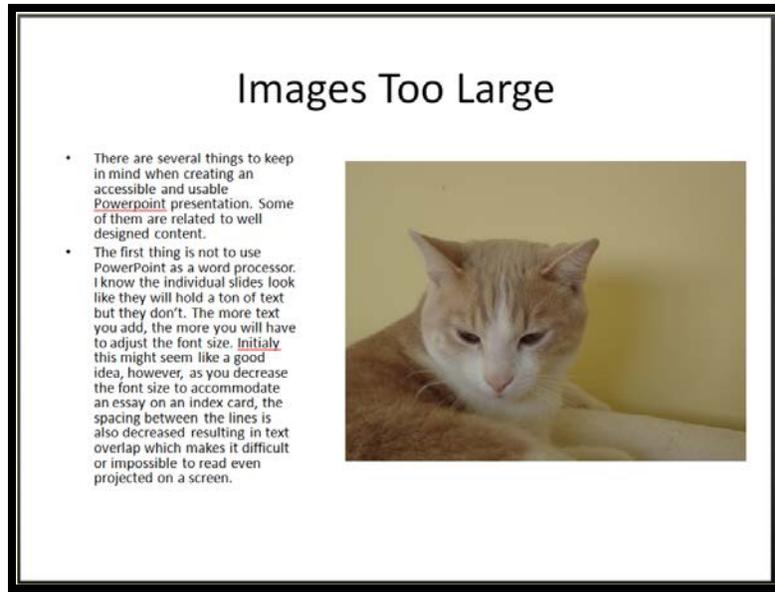
Remember not to use PowerPoint as a word processor. I know the individual slides look like they will hold a ton of text but they don't. The more text you add, the more you will have to adjust the font size. Initially this might seem like a good idea; however, as you decrease the font size to accommodate an essay on an index card, the spacing between the lines is also decreased resulting in text overlap which makes it difficult or impossible to read even projected on a screen.

The solution for text overlap is to divide the content and put it on another slide. You don't want your audience to just sit and look at one slide full of tiny text for half an hour.

Another issue is not to let images overwhelm the content. Images should be sized appropriately and not left to dominate the slide. Often in text heavy slides simply making the images smaller and making the text placeholder larger will help remove the text overlap described above.

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15 Logical Document Structure Handbook: Word 2003 by Karen McCall.



**Figure 170 Slide where image dominates the content or message of the slide.**

In the preceding image, the text or substance of the slide is lost in the huge image on the right. By resizing the image to a smaller size and expanding the text placeholder, the content or message you are trying to give your audience becomes the focus not the picture of Barnaby.

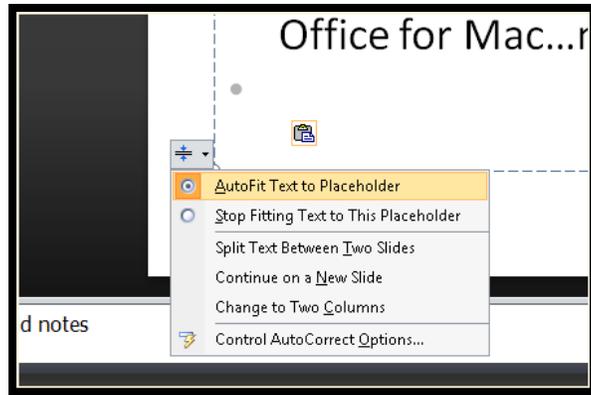
To resize an image on a slide

1. Select the image.
2. Press the AppKey to open the context menu.
3. Choose Format Picture, Format Object, or Format Shape which should be at the bottom of the context menu.
4. In the Format Picture, Object, or Shape dialog adjust the height or width of the image.
5. Tab to and activate the OK button by pressing the Enter key.

If you adjust height or width the other should automatically adjust.

Keep in mind that this image will be projected on a wall and doesn't need to be huge. You can test the presentation by using F5 to enter Slide show mode to view the ratio of the image to text on the slide.

There is a tool in PowerPoint to adjust the size of the text if you have one or two lines overlapping the default text placeholder. When content overflows the text placeholder, a small icon will appear at the bottom left of the text placeholder. One of the options is to adjust the text size. Use this for one or two line overlap and not to fit an essay on a slide. <Grin>



**Figure 171 Context menu in PowerPoint 2007 to automatically adjust the text in a text placeholder.**

The image above is for PowerPoint 2007; however, there is a similar tool in PowerPoint 2003.

Always take note of the presentation and the relationship to images and content and how much content you are trying to put on a slide. Avoid the use of text boxes whenever possible and use presentation templates to design presentations for your organization or specific audiences within your organization.

Most importantly, as with Word documents, you want to present a consistent and accessible look and feel to all your presentations.

## Outlook 2003

The ability to convert individual messages to tagged PDF or to convert entire mail folders to tagged PDF is no longer available in Acrobat 9.

This was a very useful tool and one those of us who do use adaptive technology used frequently to archive messages and mail folders in a secure and accessible format. We can only hope that this ability returns with acrobat 10.

OK, so it didn't, despite an infinite amount of whining on my part.

There are two solutions to this:

1. Save the Outlook mail folder or message as a Portfolio which is still mostly inaccessible for those of us using screen readers. If you save a mail folder as a Portfolio you will need to Tag each and every mail message in the portfolio. This is terribly time consuming.
  - a. You need to open the Portfolio in Acrobat in order to tag each document. You can only Tag each document using the Tags Panel and the Tags Tree context menu. There is no Accessibility Toolbar available when you open a Portfolio in Acrobat.

2. In the Acrobat conversion settings choose not to save as a Portfolio by default. This will save your mail folder or individual messages as plain old PDF documents that will open nicely in Acrobat and you will be able to Tag the entire PDF document of mail posts.

I recommend archiving every four months to keep the file sizes down to something that is manageable. My last archived folder was 823MB as it grew while I was hoping for the tagging ability in Acrobat X. It took almost an entire morning to first archive then Tag this PDF document. However, now I can search for project information, client posts or other information using the standard Search dialog instead of the Portfolio Flash based one.

## **Microsoft Office for Mac**

At this point in time, you cannot create a fully accessible document in Microsoft Office for Mac in either the 2004 or 2008 versions. One significant lack of support is for Alt Text on images and objects.

Although VoiceOver is relatively usable on a Mac using the Leopard OS, there are few applications that are accessible. This is primarily due to the fact that they haven't had to be for several years. The Mac OS has not had a usable screen reader since the mid 1990's. The Mac OS is usable for augmentative communication devices for people requiring communication aids or alternate input devices, but has lagged far behind when it comes to support for people with sensory disabilities such as those who are blind or visually disabled.

This means that VoiceOver will not work with Microsoft Office for Mac...nor will it work with iWorks tools.

The impact is two-fold: people who depend on screen reading or TTS tools cannot use robust word processing, presentation, or spreadsheet tools; and, people trying to create more accessible documents that can be accessed cross-platform cannot create truly accessible documents.

With the advent of VoiceOver and its evolution, it is hoped that all developers involved, those from Apple Microsoft, and Adobe will work together to improve the accessibility of Microsoft Office for Mac and the ability to create a tagged PDF document as robust as you can in the Windows environment.

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# Microsoft Office 2007

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Much of the text in this chapter is repeated in the chapter on Microsoft Office 2003. The barriers to accessibility are the same no matter which version of Office you are using. As a document author, you can control many of these issues and prevent the barriers in both an Office based document and a tagged PDF document. Office 2007 uses Ribbons instead of Menus and has different ways of doing things. For this reason I created two separate chapters to try and avoid confusion between the two versions.

This chapter is specifically for those of you using Microsoft Office 2007.

One of the most notable differences between the two suites is that I have more tools for creating accessible document in Office 2007 than I do in Office 2003. This is especially true in PowerPoint.

## Word 2007

In this book I've talked a lot about using templates and making sure your documents have the proper structure so that there is little or no repairs needed in the resulting tagged PDF document.

This chapter details how to do this. You may also want to purchase the "Logical Document Structure Handbook: Word 2007" edition for details on accessible and inaccessible document parts.

First, let's look at creating templates for documents.

## Creating Templates for Documents

When I talk about using styles for headings, many people say that they don't like the look of the inherent heading styles in Word or that their organization has specific criteria for what a heading in a document should look like.

In this book, I've created headings and titles that "I" like and can use effectively. The headings I use are the heading styles inherent in Microsoft Word. By using a template, in this case "Karlen Book" I can modify the look and feel of any of the document parts I use without affecting the Normal.dotx or normal document template Word uses when you create any new document.

By creating a template I can also use the inherent keyboard commands for applying heading levels to text. This saves time in that I don't have to go to the Apply Styles Pane or the Styles Pane, locate the style I want and select it. I can simply press Ctrl + Alt + number 1 when I select text to make the

text a heading level 1. Any changes I've made to the Heading 1 style are applied. For other styles such as a "Highlight Text" style I can put the Apply Styles Pane on the Quick Access toolbar and in one keyboard command, in my case Alt + 4, I can move to the Apply Styles Pane and type Highlight Text to apply that style. This too saves time.

A template can contain any "static" information such as disclaimers, contact information, preface content, and content that would remain the same with each iteration of the document.

One of the biggest problems in not developing and using a template for each of your ongoing publications is that the result is a hodge podge of formatting. Each time a different person reviews or revises content, they don't know what formatting was used in previous versions so can't easily apply it to the version of the document they are working on. Many people visually apply formatting by saying "if it looks sort of like the other stuff in the document it works for me!"

When you have a template for an annual report for example, all of the styles that will be used in that annual report are there in the template. The person creating or revising the document just has to apply them. Initially staff will need to be trained and there should be a style guide to go along with publications. In Word 2007 you can use Shift + F1 to show the Formatting Pane which will give you the formatting for selected text. This also helps to determine what formatting was used in past document so that a style for current documents can be created.

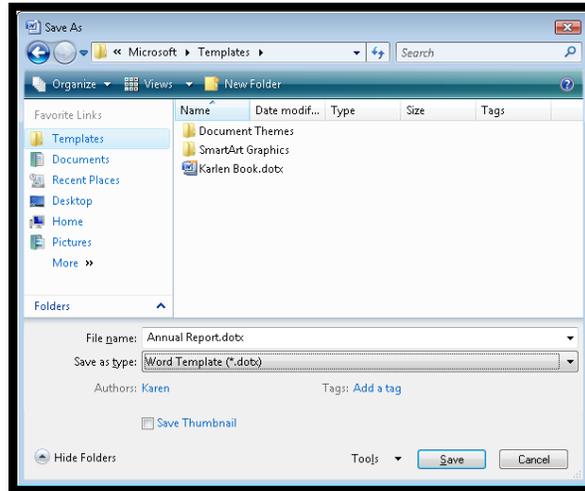
In workshops that I've done participants are always amazed at how much time they will save in using styles and templates and how good their documents look when finished. The fact that they are also building in accessibility is a "bonus."

Just as with HTML, many people think that making Word documents more structured and "accessible" means more work when it really means less.

To create a template in Word 2007:

1. Open a blank document by pressing Ctrl + N.
2. Press F12 or choose File, Save As.
3. The Save As dialog opens.
4. Give your template a name. For example "Annual Report" without the quotation marks.
5. Press Tab to move to the "Save as Type" list and choose "Word Template."
  - a. If your documents have macros you can choose "Macro Enabled Template" from the list.
6. You will need to choose the "Templates" link on the left of the list of documents in order to put the template in with other available templates.
7. Your document will be saved as a DOTX file which is the new Office XML format.
  - a. If you are saving a macro enable template the extension will be slightly different to reflect the inclusion of macros.
8. Move to and Activate the Save button by pressing Enter, or press Alt + S to do the same thing.

Now you can add text, change the base font set and size, change the colour of text, add a style for important information you want to call out, and modify any of the heading styles in the document. As long as you are working in the DOTX file, you are working on the template or the look and feel of the annual report [in this example].



**Figure 172 Save as Word template.**

The preceding image is from a Windows Vista computer. Notice that there is a Templates link on the left side of the dialog. This is where you need to put any templates you are creating so that they will show up in the list of templates and not be considered “just another document.”

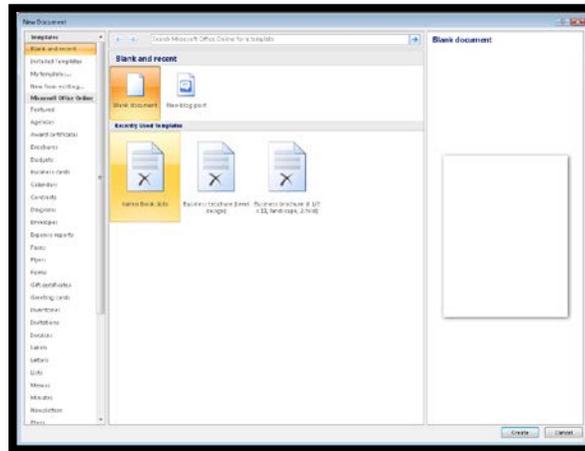
## Using a Template

Once you have created your template it is easy to deploy over a network and use. You can place it on a server and give everyone access to it or you can place it in the Application Data, Microsoft, Templates folder for a user account on an individual workstation.

To open and use a template:

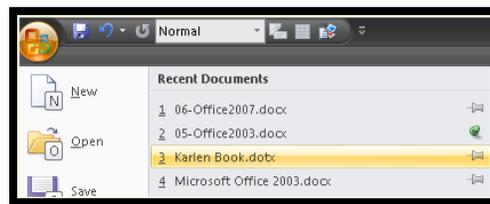
1. Press Alt + F, N for File, New.
2. A dialog opens.
  - a. Use F6 and Shift + F6 to move forward and backward through the areas of the dialog.
  - b. Use Tab and Shift + Tab to move forward and backward through the areas of the dialog.
3. By default your focus is on “new Blank Document.”
4. If you’ve used the template you’ve created recently it will be in the list of recently used templates just below the blank document template icon.
  - a. Press Tab to move into the recently used templates.
5. Use first character navigation to find the one you want.

6. For example I can use K to quickly find “Karlen Book.”
7. Press Enter to open a new document based on this template.



**Figure 173 New document dialog in Word 2007.**

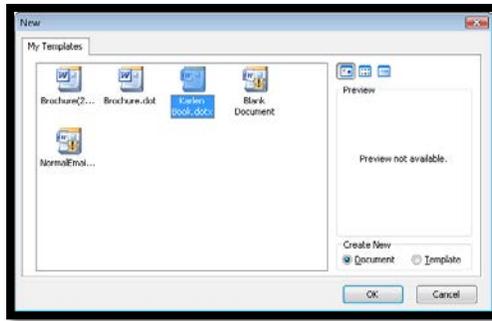
If you’ve recently worked on or used the template, it will show up in a list of recently used templates. Don’t confuse this with the list of recently used documents that you find under the Office Button.



**Figure 174 List of recently used documents in Word 2007.**

If you open the list of recently used documents and choose Annual Report.dotx, you will open the template itself. You want to make sure the document you are opening is Annual Report.DOC. This will retain the integrity of your template but let you rename the “working document” to something like “Annual Report 2009.DOC.”

If the template doesn’t appear in the list of recently used templates, move to and activate the link for “My Templates” which will open a dialog containing all the templates you’ve created.



**Figure 175 My Templates dialog in Word 2007.**

You can always return to the Templates folder and make modifications to a specific template as the standards for documents in your organization change.

## **Text Boxes are inherently Inaccessible**

Text boxes are inherently inaccessible whether you are using Word or PowerPoint, Excel or Outlook.

Why are text boxes inherently inaccessible?

Text boxes are not part of the main document text layer. They are objects that float above the text layer. Because they are not part of the text layer of documents, adaptive technology doesn't see them.

Imagine walking along the trail looking left, right and in front of you. Your feet touch the area you are walking on which means you "have access" to these parts of your surroundings.



**Figure 176** Photo of Jackson Trail Alberta copyright Karen McCall.

The clouds float above the area you are walking in as do birds and insects. The clouds, birds, insects, planes and other elements that you don't have access to would be comparable to the objects that are not in the text layer of a document. The "text layer" would be comparable to the area around you as you walk that you have access to.



**Figure 177** Photo of clouds taken from plane copyright Karen McCall.

Some adaptive technology such as the JAWS screen reader have keyboard commands for getting a list of objects in a document. You can navigate to an object such as a text box and sometimes read the contents.

But here is the problem.

If you are moving from object to object it is like being in an airplane skimming along the clouds. You can see the clouds and go in and out of them but you have no idea from looking at the clouds where you are. You don't have the ability to look down to see what might be below the clouds.

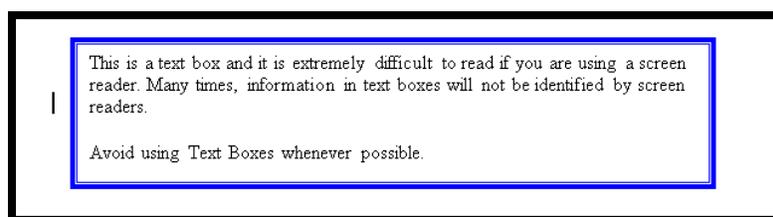


**Figure 178 Photo of clouds taken from plane to illustrate objects and layers.**

This is compounded with layered documents. It is like gliding between layers of clouds without knowing where you are or what you are “touching.” In some cases it is difficult to separate one layer of cloud from another. Similarly with layered documents it becomes difficult separating one layer of “content” from another.

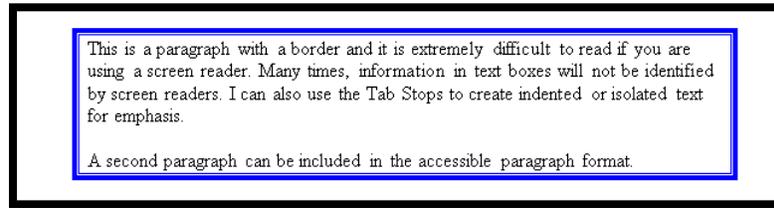
So while you may be able to read the content in a text box, you have no mechanism to help you view what is under it or around it. Each "layer of the document lives in isolation of each other as experienced by adaptive technology.

Text boxes are often used for quotations and other text that document authors want people to really notice and read.



**Figure 179 Text box showing cursor at the margin.**

Paragraph formatting is simple and easy, yet we often use the tools someone showed us during a “marketing of the software seminar” or a tool we found that “did the trick” when we needed a fabulous document done in five minutes.



**Figure 180 Paragraph Style used to visually isolate important content.**

In the preceding image a Paragraph Style was used to visually isolate important content. Some screen readers have the verbosity setting to allow for the identification of borders and shading. This aside the content is accessible and an end-user who is accessing your content non-visually will be able to read this important content.

Once you understand the formatting you can do using the basic tools in Word, you’ll find that these are easy to use...and you can create Custom Styles for formatting you do frequently.

Avoid using text boxes, paragraph frames and other inaccessible elements in documents

## **Styles and Custom Styles in Word**

Now that we understand the importance of templates and how easy they are to create, we need to look at what goes into a well-designed template.

There are elements or document parts we can build into a template that will let people using adaptive technology navigate a Word document easier spending less time trying to find content and more time reading the content...which is what we want in a document.

The first and foundation step toward a more accessible Word document and a Word document that can be tagged as PDF with little or no repairs in Acrobat is to use heading styles to denote content or topic changes.

Just as with HTML or web based documents, the use of headings in a Word document not only provides a method of visual navigation to content but an underlying structural navigation as well.

Headings are easy to use and easy to modify. The only “trick” to using them is to retain a hierarchical structure to your document.

What does this mean?

Maintaining a hierarchical integrity means that you move from a heading 1 to a heading 2 and not a heading 3 or 4. The logical progression of topics and sub-topics should be reflected in the heading levels you use in a document.

There are two tools in Word to help with this: a linked Table of Contents and the Outlining tool.

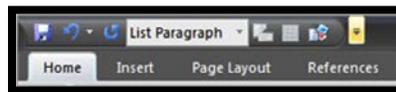
First, let's apply heading styles to see how effective they can be.

To apply a heading style using the keyboard:

1. Select the text to be used for the heading.
  - a. Press Ctrl + Alt + the number 1 for a heading level 1.
  - b. Press Ctrl + Alt + 2 for a heading level 2.
  - c. Press Ctrl + Alt + 3 for a heading level 3.
2. Press the Home key to remove selection from the text.

I've only had one publication where I've had to use a heading level 4. In Word there are approximately 11 heading levels that will provide the structure you are looking for. You would apply a heading 4 through 11 by using the second method.

In Word 2007 I would recommend that you put the ASP or Apply Styles Pane on the QAT or Quick Access Toolbar. This is the fastest way of applying a style using the keyboard. The Quick Styles Gallery, while accessible, does not allow for the use of first character navigation. This means you will have to use the arrow keys until you find the style you want. By using the ASP it is a quick keyboard command to get to it in the QAT and then you can either type in the style you want or use Alt + the Down Arrow to get the list of styles in the document.



**Figure 181 The ASP or Apply Styles Pane on the QAT or Quick Access Toolbar.**

To put the ASP on the QAT:

1. Press the Alt key to put focus in the Ribbon area of the application.
2. Press the Up Arrow to move into the QAT.
3. Press the Right Arrow until you reach the "Customize Toolbar" button.
4. This is the button on the right of the QAT.
5. Press Enter to open the context menu for the QAT.
6. Choose "More Commands."

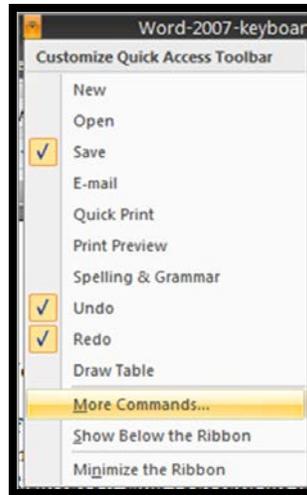


Figure 182 More Commands button on the QAT.

1. This opens a dialog.
2. Your focus should be in the list of types of commands available.
3. Use Alt + Down Arrow to open the list of types of commands and choose “Commands not on the Ribbons.”

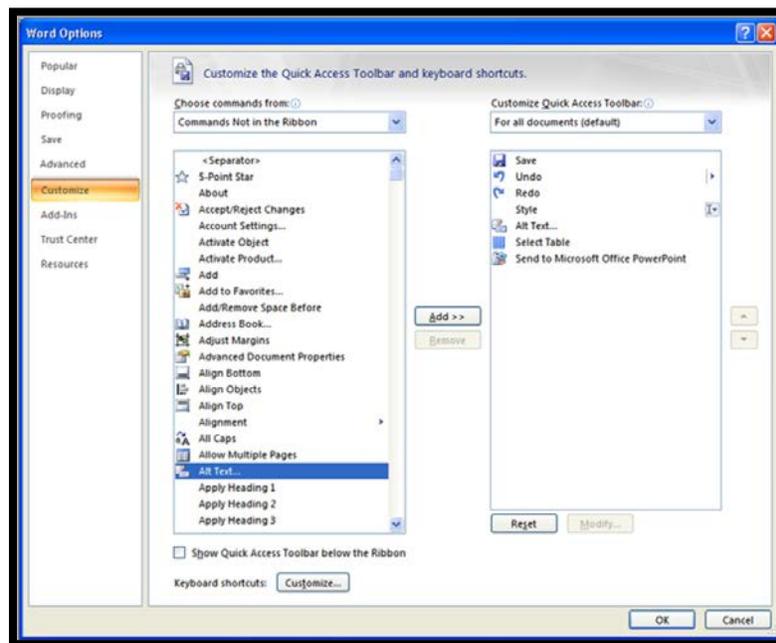


Figure 183 List of available commands that are not on the Ribbons in Word.

1. Choose the command “Styles.” Be careful not to choose one of the other style based tools. You are looking for the single word “Styles.”

2. You can use first character navigation to find this.
3. Press Alt + A to add Styles to the list of items on the QAT.
4. Make sure it is available to all documents.
5. Tab to and activate the OK button by pressing Enter.

Now, when you press Alt + 4 you will access the ASP or Apply Styles Pane using the keyboard and can easily apply a style. The keyboard command will be Alt + 4 if this is the first item you've added to the QAT or Quick Access Toolbar. Each subsequent item will have a sequential keyboard command. You can also rearrange the order of items on the QAT in the Customize Toolbars dialog by moving items up or down.

You can add other tools to the QAT or Quick Access Toolbar. I would suggest adding "Select Table" which can be found in "All Commands. And "Send to PowerPoint" which can also be found under All Commands.

The ASP or Apply Styles Pane can also be used independently of the QAT or Quick Access Toolbar. On its own it is a floating pane over the document.



**Figure 184 ASP or Apply Styles Pane as a floating dialog.**

To apply a heading style using the Apply Styles Pane or ASP if it is not on the QAT or Quick Access Toolbar:

1. Select the text you want to apply the heading to.
2. Press Ctrl + Shift + S to Open the ASP dialog which floats above the document.
3. Press the Alt + Down Arrow to open the list of styles.
4. Press the letter H to move to the first style beginning with that letter.
5. Use the Down Arrow to find the heading level you are looking for.
6. You can also type the name of the style or begin typing it and have auto-complete attempt to match the characters to a style.
7. Press Enter to apply the heading style you want.

Focus is returned to your document.

The ASP is still floating over the document.

You can leave it open or close it until you need it again.

To close the ASP press Ctrl + Shift + S to return focus to it, then press Alt + Spacebar while the ASP is in focus, then press C for Close.

Press the Home key to remove selection from the text.

In both methods I suggest you select the text you want to apply formatting to first. This prevents the overlapping of formatting which often results in repairs when you get to the PDF document. If you have ever looked at the Tags for a poorly formatted PDF from Word document and seen an <H1> Tag with no content, it is a result of overlapping formatting or formatting that was turned on but not turned off at the right point in the document.

## Quick Styles Gallery

In Word 2007 for those of you who are mouse dependent, we also have the Quick Styles Gallery.

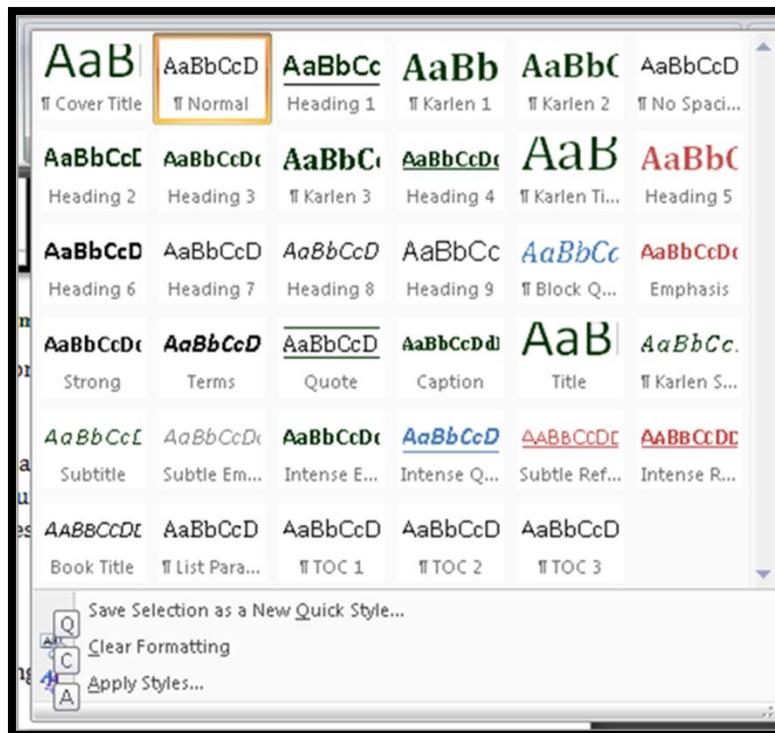


Figure 185 Quick Styles Gallery in Word 2007.

The Quick Styles Gallery is on the Home Ribbon.



Figure 186 Home Ribbon with Quick Styles Gallery.

The advantage to using the Quick Styles Gallery is that as you move the mouse over one of the styles, or as you move the Arrow keys through the styles, if you have text selected, you will be able to see how that text looks if the format you are considering is applied.

If the format is what you want, press Enter to apply it to the selected text in the document.

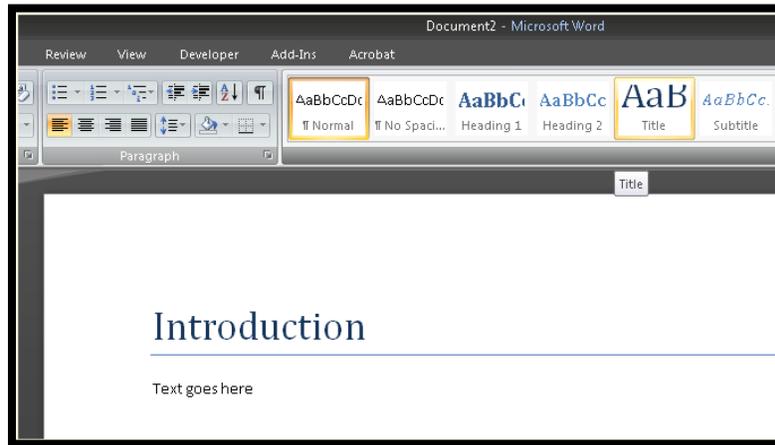


Figure 187 Illustration of selected text with the mouse hovering over the "Title" style.

The preceding image shows the text "Introduction" selected and the mouse hovering over the "Title" style. The default style of the text is still "selected" until you confirm that you want a different style applied.

## Themes

Taken to the next level, if you are trying to change the look and feel of a Word 2007 document, you can use the Themes which contain different colours and font sets. For example if you have a formatted document and want to see what it will look like with a new Theme, you can open the "Change Styles Gallery" which is just to the right of the Quick Styles Gallery.

For example, we have a document that has the "Modern" font set as shown in the following image.

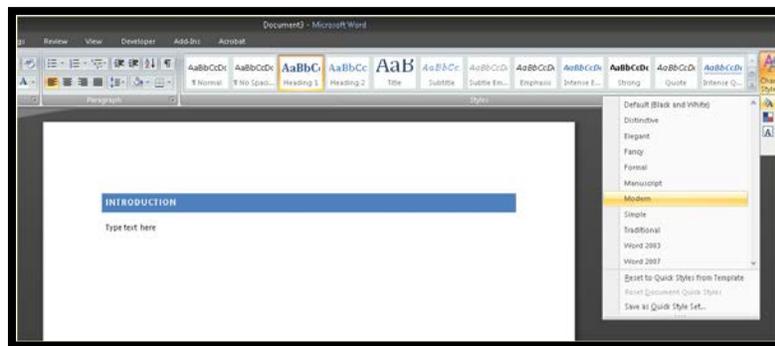
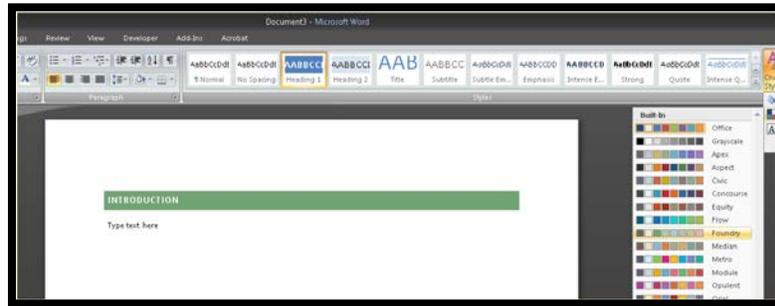


Figure 188 Document showing the Modern font set.

We are still using the default Word 2007 colour scheme but have changed the font set for this document. We can even change the colour scheme to something like “Foundry” as shown in the following image.



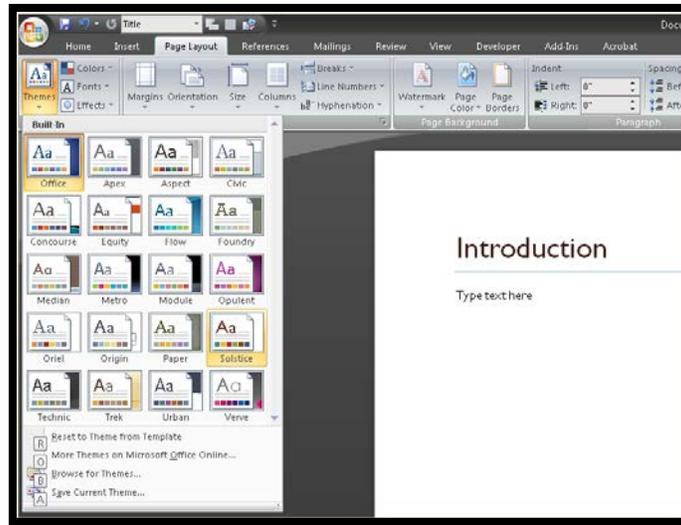
**Figure 189 Document with Modern font set and Foundry colour scheme.**

We can choose any combination for any document we are working on. When creating a template we can achieve an overall look and feel and then make minor adjustments to meet our needs. We can then save the changes as a new theme to be used in all Office 2007 applications.

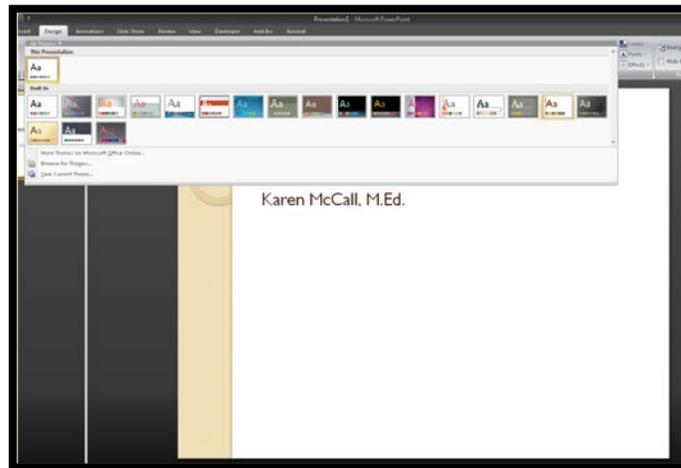
What do I mean by this?

Office 2007 has default Themes for documents, presentations, and workbooks. By using Themes you can mix and match document parts until you get something you like. Keep in mind that not all of these colour schemes will be high contrast or even readable. Make your choices wisely.

Using Themes you can have the same look and feel for all documents. Take the Annual Report for example. If I choose Solstice in Word, I can also choose Solstice in PowerPoint and Excel which ensures that when I present Word document PowerPoint presentation and Excel workbooks they will look the same.



**Figure 190 Themes Gallery in Word 2007.**



**Figure 191 Theme Gallery in PowerPoint 2007.**

The Solstice Theme is available in Word, PowerPoint, and Excel. If we develop Themes for our own organization, they can be used throughout all documents we create. We can build in accessibility and consistency of formatting into even the colours used in all our Office 2007 documents. By applying styles, when we change Themes, the structural integrity is intact; it is just the visual appearance we are changing.

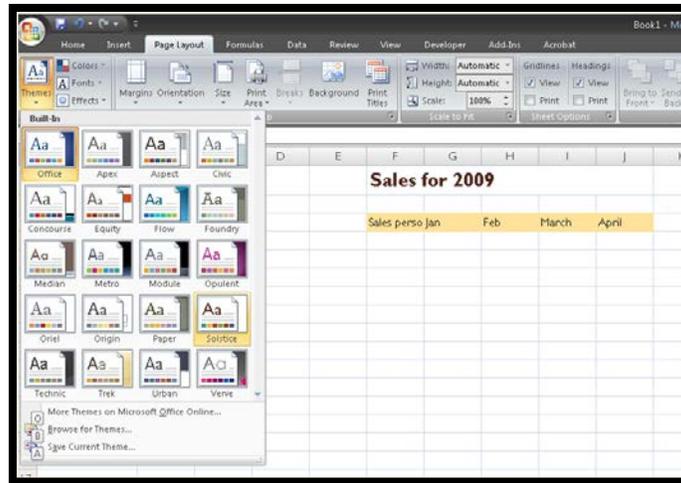


Figure 192 Theme Gallery in Excel 2007.

How easy is that?

## Consistent use of Headings

We got a bit side-tracked and now must get back on task.

We were talking about using headings and how they are used as navigational structures for people using adaptive technology such as screen readers.

The reason I have you select the text you want to apply a heading style...or any style for that matter, is that it helps define the content to which the style will be applied. Many people turn on formatting or a style, type and then turn it off. But many people also forget to turn off formatting or a style until they visually see that they forgot to do so. In these cases, if there was a blank line between the formatting/style and the newly typed content, it is also formatted using the style.

This becomes a navigational barrier when we are talking about headings.

If a blank line is formatted as a heading style, it will be put in the list of headings that someone using a screen reader can get from a Word document.

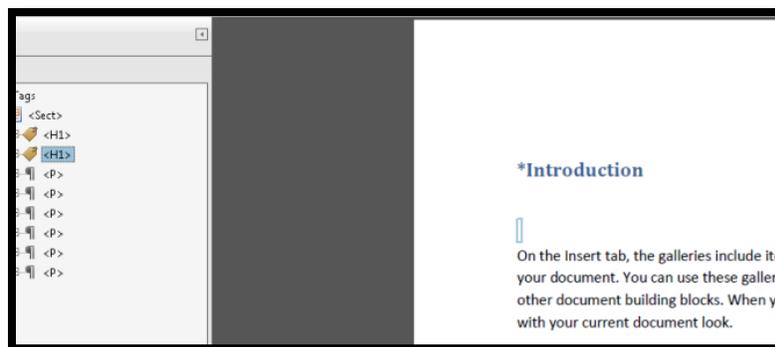


**Figure 193 List of headings in a PDF document showing empty heading Tags.**

While recent versions of screen readers might accommodate for the blank line formatted as a heading, this is not true when the document is converted to tagged PDF. A person trying to navigate the documents using headings would find blank lines that have been identified as headings or high level topic changes in the document. This wastes a lot of time in trying to find specific content and being able to easily and quickly navigate to it.

What does this look like in the Tags Tree of a PDF document?

In the Tags Tree you would see the heading Tags for the document but the line in the document that was formatted for a heading would have an “empty line” or content associated with it.



**Figure 194 Tags Tree showing heading Tag with no content.**

The Highlight Content was turned on for this sample document so you can see the Tag for the corresponding blank line in the document.

It is easy to forget to turn off formatting which is why the recommendation that you select what you want to format and then apply the formatting.

## Modifying Heading Styles

What if you don't like the way the headings look? How can I use headings that match my document design?

I recommend not modifying the normal blank document headings. There is no reset button per se in Word or Microsoft Office. The easiest way to restore the default template formatting is to delete it from the Templates folder before you launch Word and once Word is launched it will rebuild the Normal.dot. Of course this removes all of your styles and customization. Another good reason to create document specific templates!

I will assume that you are working with the Annual Report DOTX or template file.

In a template you can change the inherent styles because they will only apply to that template.

The first step in modifying a style is to create text and select it. Again I do this because then I remember to remove the formatting and delete the text before saving the document. It also lets me see immediately what the changes look like in the document and I can choose to keep going or to modify the style again.

To modify a heading style:

1. With some text selected and a heading style 1 applied by pressing Ctrl + Alt + the number 1, Press Alt + H, F, Y which will open the Styles pane on the right of your document.
2. One of the reasons for selecting the text and applying the style we want to modify is that when we open the Styles pane it will be selected so we don't have to spend time hunting for it.
3. Press F6 to move focus back to the Styles pane if focus is lost. Use Tab and Shift + Tab to move around the pane and the Up and Down arrows to move through the various styles. In our case, Heading 1 is selected and this is the style we want to modify.
4. Press Tab until you are on the Heading 1 style in the list of styles.
5. Press the AppKey to open the context menu and choose Modify.

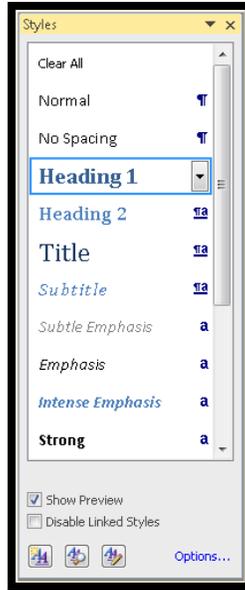


Figure 195 Styles pane in Word 2007.

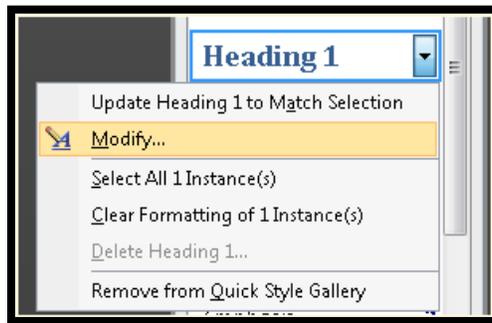
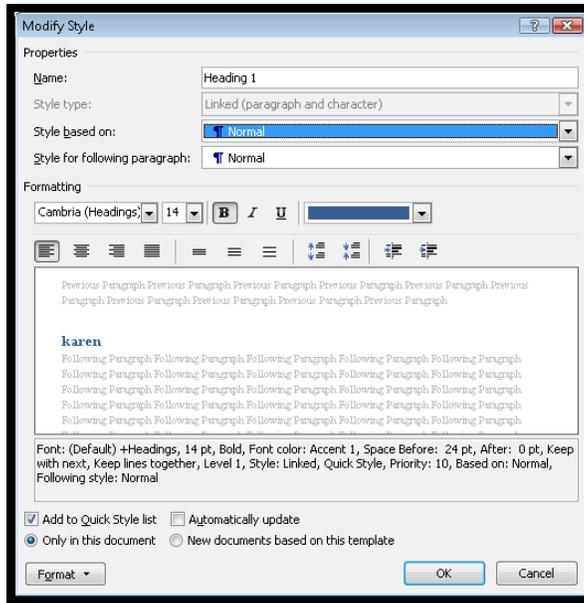


Figure 196 Modify Style context menu item.

1. A dialog opens with all the options for the Heading 1 style.
2. You can change any of the attributes including fonts, colour, size, bold, underline, or Italic.
  - a. A caution is not to over format. In the book “Logical Document structure Handbook: Word 2007” the digital document conventions/standards are discussed as well as the dangers of over formatting.

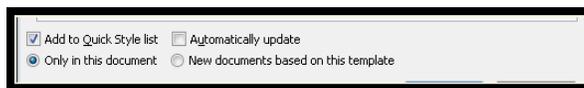


**Figure 197 Modify style dialog in Word 2003.**

When working with the default heading styles, the style they will be based on is the “normal” paragraph style, however, when you are creating a new style, it needs to be based on an existing style.

As you apply changes to the style, you can see them reflected in the sample area of the dialog. It is still a good idea to have the text selected and the base style applied so that when you activate the OK button you see it immediately in the document.

There are two check boxes at the bottom of the Modify Style or New Style dialog. One is to add the style to the Quick Style Gallery and the other is to automatically update the style when you make a change to it. You can decide whether you want the new style to be in the Quick Style Gallery. If you are mouse dependent you’ll want to do this.



**Figure 198 Area of Modify or New Style dialog where you can check to automatically update styles.**

The other check box to “automatically update” is something you’ll need to give some serious thought to. My recommendation is not to check this option. What I find it does is to update all iterations of the style in the document and the template. At first this might seem useful, however, if I am working on a new document based on this template and insert a page break before one heading so that it is placed on the top of the next page, all of my headings at that level are automatically updated to start at the top of a new page. This creates nightmares in formatting some

documents. In many cases I've had to go back and recreate the original template so it was usable again...this time not checking the check box to automatically update.

The two radio buttons are to only use the style modification in this document or to let the document template have access to the modification. If you are working on a template, you'll want to make sure that all documents based on this template have access to the changes you made to the styles.

**Note:** Remember to only modify the inherent styles of a template and not the Normal.DOTX which is your new blank document in Word.

## Custom Styles

There may be times when you want more than one look and feel for a level 1 heading. For example in a preface you might want one look to headings while in the main body of a document you want another. But you want the headings to provide the hierarchical structure of each section of the document. This is done by using custom styles.

The critical thing to remember about creating a custom style is that it has to be based on an existing style in order for the structural integrity of documents to be retained. For example if you call something "Heading 1A" and it is based on the normal body text rather than the heading level 1 structure, it will be a plain paragraph in terms of structure and not a true heading. You won't be able to use it to create a Table of Contents or Bookmarks in a tagged PDF document without performing manual tagging.

This is another reason to create some text and format it with the style you want to create the custom style for. You won't have to look through the long list of styles in the Style based on list in order to find the one you want to base the new one on. This is another time saver.

To create a custom style:

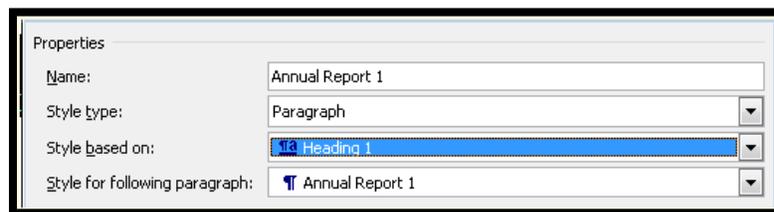
1. Type some text in your template.
2. Format it with the heading level or other formatting structure that you want.
3. Open the Styles pane by pressing Alt + letter O, S.
4. Make sure that your chosen style is the one selected in the Styles pane.
  - a. Sometimes you might inadvertently press a key that would remove the selection or focus from the sample formatting.
5. Activate the New Style button near the top of the Styles pane.
6. The "New Style" dialog opens and you are in the edit box where you can type in the name of the new style and then completely change the look and feel of this heading level 1 style if you need to.
  - a. I suggest giving the new style a name that will correspond to its place in the hierarchy of the document. For example "Heading 1A" or "Heading Preface." By

naming it something that begins with the word heading, it will be placed in the Styles pane near the original heading 1 which will make it easier to find. In our example, I've named the custom heading "Annual Report 1" which is another way of identifying it as a heading level 1. It will be placed alphabetically in the list of styles which means that if you are using the ASP or Apply Styles Pane or the styles Pane it will not be near the styles beginning with the letter "H." This needs to be worked out in the design of the template. What are the naming conventions your organization will use?

You cannot use Ctrl + Alt + 1 to apply your custom heading to text; however, you can create a shortcut key to do so if you want. Once the custom heading is in the list of styles for the document, it can easily be found in the ASP or Apply Styles Pane.

When the Annual Report 1 style is based on the Heading 1 style, all of the underlying structural recognition for a heading level 1 is in place in this dialog. This includes spacing before and after the text. You can change this if you want.

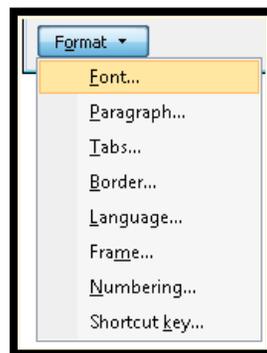
This lets you customize the design of Annual Report 1 and retains the underlying structure of the heading so it will be "recognized" when the document is repurposed to tagged PDF.



**Figure 199 Properties area of the new Style dialog.**

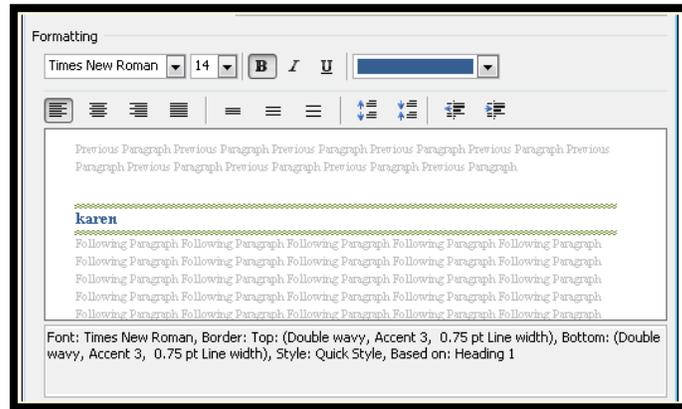
Use the Format button to add a border or shading or indent the text.

Do not use a Paragraph Frame as this is an inaccessible document element similar to a text box.



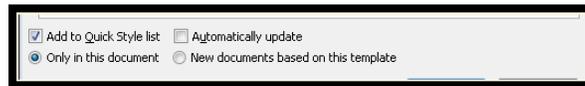
**Figure 200 Format button options for customizing styles.**

As you add attributes to the style, they are reflected in both a visual view of the style and a list of the attributes of the style.



**Figure 201** Formatting area of the New Style dialog.

Once you have the new style looking the way you want, decide whether to add it to the Quick Styles Gallery, do not check the check box to automatically update, and make sure the radio button to use the style for all documents based on the template is selected. Then activate the OK button in the lower right of the dialog.



**Figure 202** Area of the New Style dialog where you can choose to have the style used for all documents based on this template.

Your new style has been added to the template and the text that was selected will reflect how it will look in your document.

The sample in the preceding image is not typically what you would consider visually pleasing but it does illustrate how a style can be customized or even modified.

An important element to consider is the use of colour and shading when formatting text. People with colour deficits will have problems reading text if the contrast between the text and its background don't have a good contrast. The following paragraph is this one but formatted with poor contrast which makes it difficult for anyone to read even if they don't have a visual disability.

This paragraph has been over-formatted with colour and patterns making it unreadable. It is the previous paragraph copied here for demonstration. An important element to consider is the use of colour and shading when formatting text. People with colour deficits will have problems reading text if the contrast between the text and its background don't have a good contrast. The following paragraph is this one but formatted with poor contrast which makes it difficult for anyone to read even if they don't have a visual disability.

The paragraph above uses colours from the normal document palette in Word 2007. While colours in a document palette may complement each other we need to be attentive to the readability of our documents.

Modify and customize styles in templates to ensure that your documents look the way you want but still retain the hierarchical structure that headings and other document parts provide.

## Format Inspector

In Word 2007 you can select text in a document and then press Shift + F1 to open the Format Inspector pane.

The Format Inspector is the Microsoft equivalent to Reveal Codes in WordPerfect...sort of.



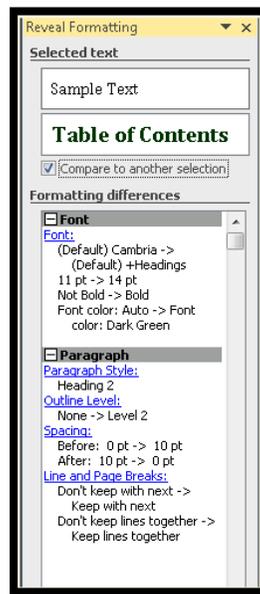
Figure 203 Word 2007 Format Inspector pane.

All of the information about the formatting used for the Heading 2 in this document is shown. I selected the “Table of Contents” heading to illustrate the Format Inspector.

One of the tools in the Format Inspector is the ability to compare the current formatting to another selection.

Once you check the check box to compare the text to another selection, another “box” is visible. Move to the other piece of text and select it.

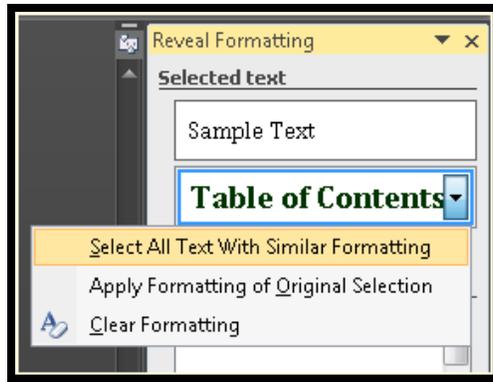
Press F6 to move into the Format Inspector pane and the differences in the formatting are shown.



**Figure 204** Format Inspector showing formatting comparison.

At this point you can make some repairs to bring similar looking formatting into line for consistency in the document.

Press the AppKey on the formatting you want to use for all text of similar level in the document.



**Figure 205 Format Inspector comparing two pieces of text with the context menu for repairs open.**

You can clear formatting for all instances of formatting you determine to be unwanted or you can uniformly apply the formatting from the original selection to the compared formatting. This saves time when you have documents with many editors and many variations of one style.

## Building Blocks

In Word 2007 Building Blocks replace the old “AutoText” tool but provide more flexibility. For example I could put the metaphor for text boxes that I used in this document into the Building Blocks and it would be available to me in any document. I can save formatting or insert the text only and have it adopt the formatting of the destination document.

There are several categories of Building Blocks:

- Cover Pages.
- Equations.
- General.
- Bibliography.
- Header.
- Footer.

This is not the complete list. Anything that is in a Gallery is kept in the Building Blocks file for Word.

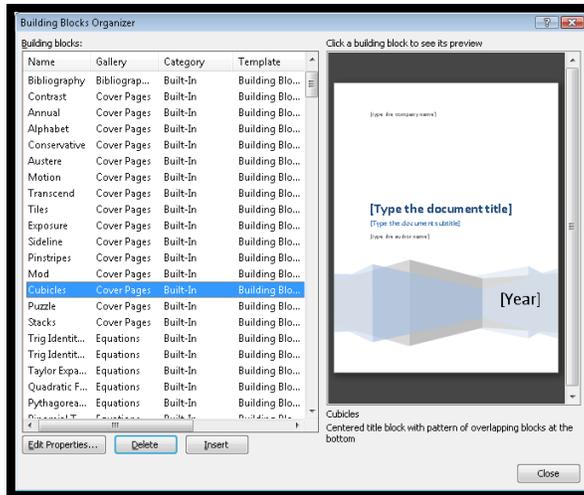


Figure 206 Quick Parts/Building Blocks Organizer dialog.

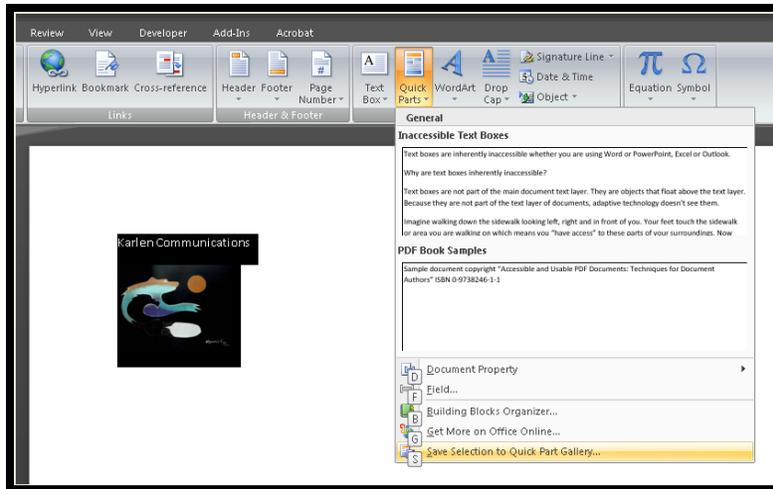
If there is standard information you might not want to use in a template for a specific document because you use it throughout documents created by your organization, use the Building Blocks instead. Just as with templates, they can be deployed over a server or inserted onto individual computers.

**Note:** Not all Building Blocks are accessible. Many of the cover pages and other preformatted documents use text boxes or Content Controls which are inherently inaccessible. Content Controls are used instead of form controls in Office 2007. [To create an accessible form use the legacy controls.]

How do Building Blocks work?

In this example I've typed "Karlen Communications" and inserted the Karlen Communications logo just under the words. I've selected the text and the image.

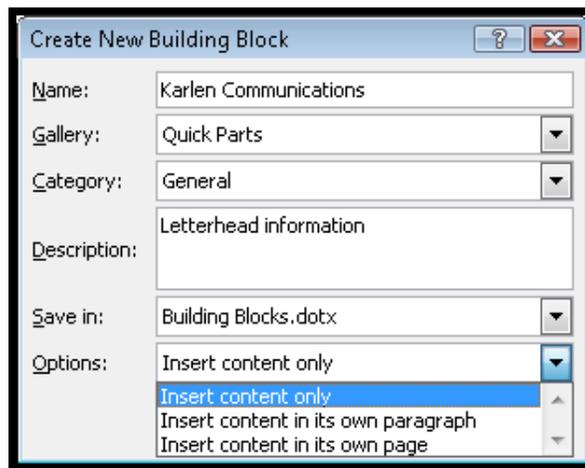
Press Alt + N, Q to open the Quick Parts Gallery and sub-menu.



**Figure 207 Selected content and Quick Parts Gallery and sub-menu open.**

To create a Building Block:

1. Create some static text or document part – something you will use repeatedly for documents.
2. Select the static document part.
3. Choose Save to Quick Parts Gallery from the sub-menu.
4. A dialog opens where you can provide a name for the Quick Part/Building Block as well as other information.



**Figure 208 Create new Building Block dialog.**

5. The options for the new Building Block are:
  - a. Insert content only.
  - b. Insert content in its own paragraph.

- c. Insert content in its own page.
6. Once you've checked all elements of the Create new Building Block dialog, Tab to the OK button and activate it by pressing Enter.

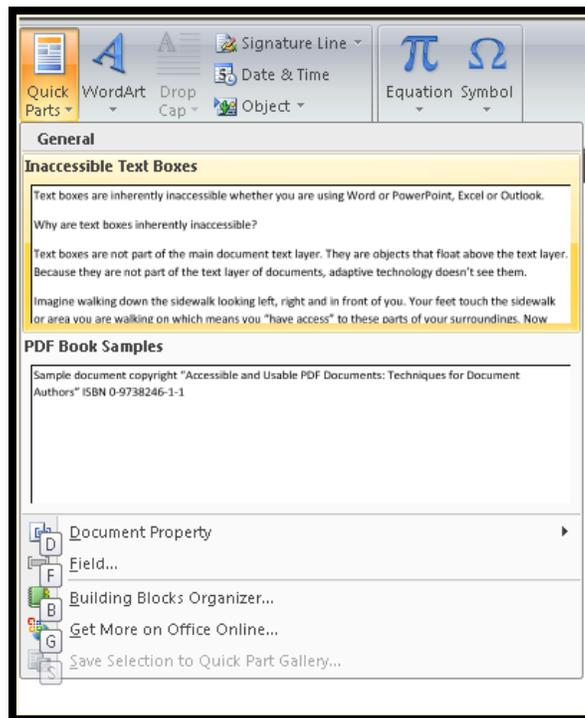
Your new Building Block will be in the Building Block Gallery when you press Alt + N, Q again.

When you close the document you will be asked if you want to save the new Building Block to the template you are working with.



**Figure 209 Save Building Block dialog.**

The following image is of the metaphor for text boxes that I added to my Building Blocks.



**Figure 210 Quick Parts Gallery with newly added building Block.**

Building Blocks, used in conjunction with templates are a powerful tool to help provide constancy and accessibility in documents.

Remember not to build or use Building blocks that have inaccessible content such as text boxes or Content Controls.

# Table of Contents

One of the advantages to using headings, as mentioned earlier, is that you can use the headings to create a Table of Contents for your documents. When a linked Table of Contents is created, it not only gives you a hierarchical view of your document, but it also improves navigation and will be converted to a linked Table of Contents in the tagged PDF document.

To create a Table of Contents:

1. Place your cursor where you want the Table of Contents to be generated.
2. Usually I set this up by creating the subtitle “Table of Contents” or “Contents.” It can be on a new page or if the document is short, on the title page.
3. Press Alt + S, T and choose “Insert Table of Contents.”
4. The tab in focus will be for Table of Content.

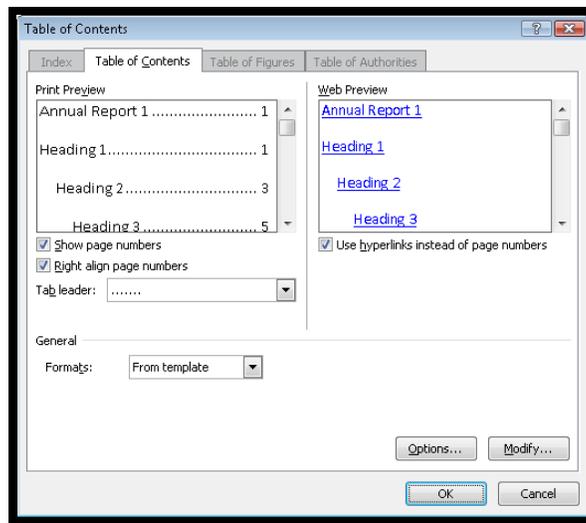
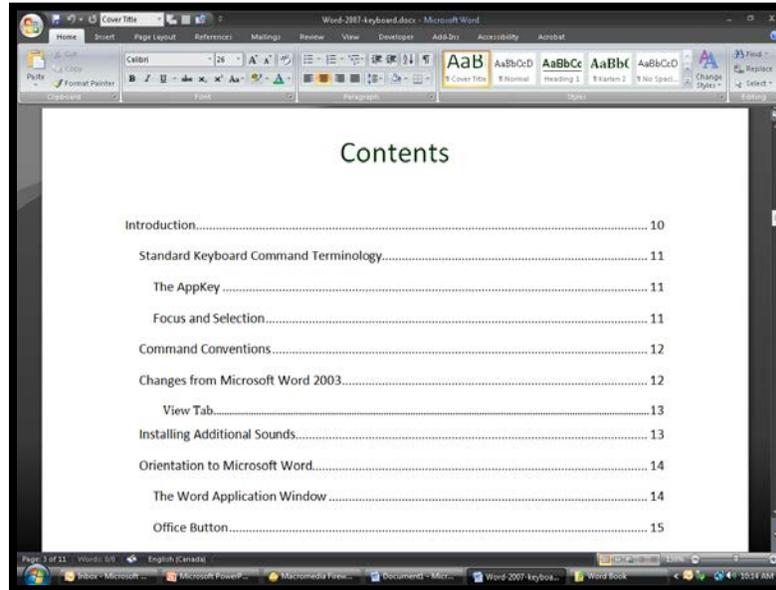


Figure 211 Table of Contents dialog.

5. The Table of Contents is linked by default and you want to retain that setting.
6. Dot leaders from the topic title to the page number are preferable for readability. Placing the page number immediately after the topic title is visually confusing for people with learning, cognitive or visual disabilities. Screen readers will read the line of dots as an ellipses so the person using a screen reader will not hear all of the dots across the page.
7. Try to avoid text or formatting that is all capital letters. All capitals or uppercase text is the most difficult to read for people with and without disabilities because it removes our ability to use word prediction skills. This means we can't recognize words by their shape. If all the letters “look the same” with no visual distinction we spend more time decoding letters and words and less time understanding what we are reading.
8. Once you've reviewed the format for the Table of Contents, move to and activate the OK button by pressing Enter.

9. The Table of Contents is generated at the cursor point.



**Figure 212 Table of Contents generated using headings.**

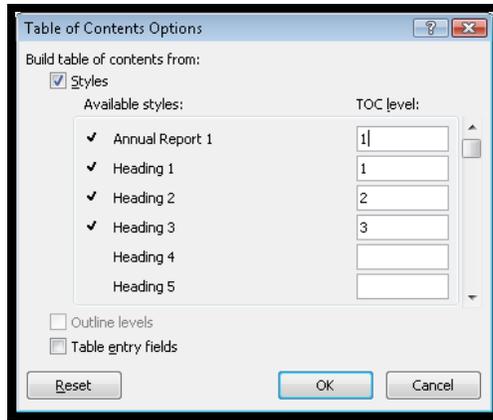
The levels of headings are nested beneath each other with level 1 headings out dented to the left margin. This is a quick and visual means of looking at the hierarchical structure of content in your document. A heading that does not follow in a hierarchical order can easily be moved to its rightful place using the Outlining tool or its level changed in the Print view of the document to reflect its proper place in the hierarchy of content.

## **Custom Styles in a Table of Contents**

If your document or template has custom heading styles, you need to let Word know what to do with them before you create the Table of Contents. In our example, there is an Annual Report 1 heading style that needs to be included in the Table of Contents.

To include custom styles in a Table of Contents:

1. Place your cursor where you want the Table of Contents.
2. Press Alt + S, T and choose “Insert Table of Contents.”
3. Activate the Options button in the Table of Contents dialog.
4. Another dialog opens showing you the styles in the document and their current level.
5. Add the appropriate number beside each custom style. For example Annual Report 1 would have the number 1 beside it; Annual report 2 would have the number 2 and so forth.
6. The styles are listed alphabetically.
7. Tab to and activate the OK button by pressing Enter.



**Figure 213 Options dialog for Table of Contents.**

When the Table of Contents is generated, the custom styles for headings will be included.

I use the Title style for my chapter headings and this style doesn't normally appear in the Table of Contents, or if it does, I am faced with the issue of not using it for the cover title or Table of Contents headings as I don't want them in my Table of Contents.

One of the things that contributes to an unprofessional looking document is the first item in Table of Contents being the title of the publication and the Table of Contents.

I create a "Cover Title" style and use it for my publication title and the Table of Contents page. I can then go into the options for a Table of Contents and use the Title style as level 1, the heading 1 style as level 2, and adjust the other styles accordingly. This puts the chapter titles at the left margin and nests all other headings under them.

When I get to the Bookmarks tab in the Adobe Conversion Settings dialog, I can add the document title or Cover Title style to the items I want made into Bookmarks. Remember that the Bookmarks in a PDF document have a different purpose than the Table of Contents in the document and the ability to navigate from heading to heading.

## Updating a Table of Contents

A Table of Contents can easily be updated by pressing the AppKey and choosing "Update Fields." A dialog will open and your choice is to just update the page numbers or to update the entire Table of Contents. I usually choose to update everything as a precaution against missing something.

**Note:** If you use captions for figures in a document or tables in a document a Table of Figures or Table of Tables can be generated using this same technique.

## Outlining Tool

If you are not familiar with using Outline view and the Outlining tool, you can switch to Outline view by choosing View, Outline.

Your document will immediately look a bit different. You will be able to see the hierarchy of headings. “Parent” headings will have a plus sign next to them if they are collapsed and a minus sign next to them if they are expanded.

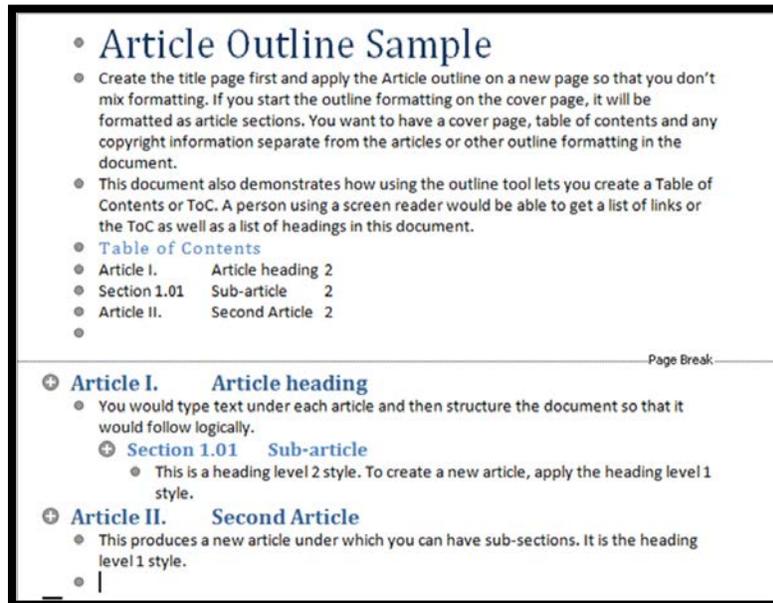


Figure 214 Word document in Outline view.

If you use the Bullets and Numbering tools to add an outline preface such as Chapter, Article, Section and so forth, you will see this reflected in the Outline view of the document.

You can drag or drop, cut and paste levels of the book which can help if content doesn't make sense or seem to follow a logical order when viewed using Outline.

This is a valuable tool for document authors.

## Alt Text on Images

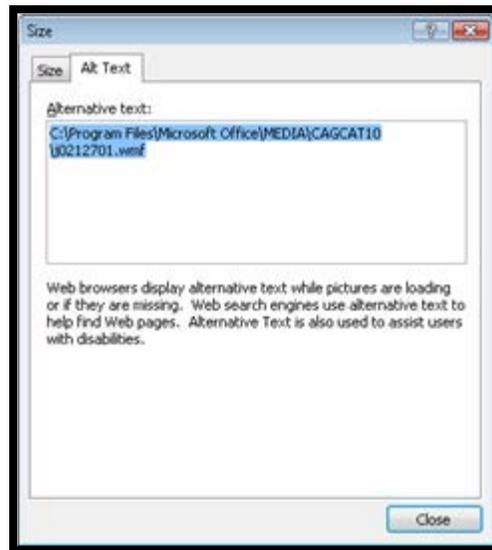
You can add the Alt Text to your images in Microsoft Word. The “bonus” is that if you repurpose the image from a Word document to a PowerPoint document or Excel document by copying and pasting, the Alt Text remains with the image so you don't have to retype it unless the image has a different context in each document.

**Note:** If you are using the Office Clipboard, you can hold up to 24 images or pieces of content on the Office Clipboard at once and repurpose them in other Office documents.

To add Alt Text to an image in Microsoft Word:

1. Make sure the image is selected.
2. Press the AppKey to open the context menu for the image.
3. Choose Size which is second from the bottom of the list.
4. Press Ctrl + Tab to move to the “Alt Text” tab.
5. Press Tab to move into the edit box and then type the Alt Text for the image.
6. Tab to and activate the Close button.

If you press Enter you will move to the next line in the edit field.



**Figure 215** Size dialog with Alt Text tab in focus.

Now is a good time to remind you that adaptive technology has a buffer into which goes the content of the document so it can be rendered to the person reading the document in a smoother manner. It is the difference between listening to a sentence read in pieces and listening to the entire sentence.

The purpose of Alt Text is to provide and alternate description of the image. All images and objects should be supported by surrounding content and should never be the content themselves. This lets you keep the Alt Text concise and meaningful.

If you put too much content into Alt Text for an image you run the risk of crashing the adaptive technology buffers which means that your documents become inaccessible. In some cases, I've seen so much Alt Text in for an image in a PDF document that the document cannot be opened as long as the adaptive technology is running. In other documents, I've seen single pages try to load and then crash either the adaptive technology, Adobe Reader/Acrobat or both. If someone can't open and read the PDF document...or the Word document...it is an inaccessible document.

## **Alt Text for Equations**

Until we have support for MathML in our general documents and PDF documents, we need to make sure that equations include Alt Text that fully details the equation.

Equations in Word are objects and as such require Alt Text. Without Alt Text, the person using a screen reader would hear "graphic."

Adaptive technology is not intuitive enough to read an equation, even if typed in a readable format. For example using +, -, /, and \* would be read to someone using adaptive technology as "plus, dash, slash, and star. Even a simple math equation such as "a+b" would be read where the "a" is pronounced like the word "a." This makes it difficult to understand a formula or scientific notation. As equations and scientific notation become more complicated, they require the "long hand" version to be provided in the Alt Text. For example "A squared times B squared plus C squared divided by the square root of 2 equals." Please note that I only passed grade ten math on the condition that I never take another math course...an agreement which I've honoured. <Grin>

If you are using the Equation Editor, you will need to provide the detailed equation as Alt Text while the caption can be a simple formula identifier such as "The formula for determining Area." In this instance the Alt Text and a caption would be different.

## **Captions for Images**

As well as using Alt Text, you should use captions for images whenever possible and appropriate. We forget that documents can be viewed either digitally or in hard copy or print. I don't know of any paper that lets you wave a finger over an image and shows you the Alt Text. If an image has printed with low toner, low colour, is a complex image and is confusing on paper, or has been photocopied from the original; details of the image may be difficult to see.

In these cases, a caption helps relate the image and its composition to the surrounding content.

You can have different Alt Text and caption text; you can also have a "Null" Alt Text." One of the discussions for captions and Alt Text is that a screen reader will pick up the text twice. This means that the information is repeated to someone who can't see the page. It is a decision the document author needs to make and ensure that the policy or standard is carried out in the entire organization for every document.

I do put the duplicate text for Alt Text and caption although sometimes I use the caption to expand a bit on the image. I do use a screen reader and can use a keyboard command to skip over things I don't want to dwell on; however, not all of the people who use adaptive technology are familiar with the keyboard commands or techniques for using what can be considered "non-navigational structures" to move around documents.

**Note:** When using adaptive technology as part of an extensive QA or audit process, don't "get fancy." Stick to the basics of the adaptive technology and don't assume that your end-users have a skill base beyond the basics.

To create a caption for a figure, image, or object in a Microsoft Word document:

1. Select the image, equation, or object.
2. Press the AppKey to open the context menu.
3. Choose "Insert Caption."
4. The Caption dialog opens and your focus is in the caption edit
5. I usually press the Spacebar once to give a bit more room between the figure number and the text of my caption to improve readability.
6. Tab to and activate the OK button using the Enter key.

You don't need to change anything in the Caption dialog unless you have document specific needs.

Make sure the caption is under the image, figure or object and not above it. Placing captions under images is the standard position; however, if you have document specific needs, you can place it above the image, figure or object.



**Figure 216** Caption dialog.

A caption for an equation should go at the bottom of the equation while a caption for a table should go at the top of the table. Putting the caption at the top of the table lets people know what kind of data they can expect in the following table. It helps connect the visual table structure to the expected content.

## Contextual Links

One of the most frustrating things for those of us using adaptive technology to listen to are long web addresses. Even if we take the time and have the patience to listen to a lot of gibberish that doesn't make sense, the final moments of reward for our patience is to hear "file001.html" or some other filename that will not give us any idea of where the link will take us.

The answer is to use contextual links in HTML, any application that lets you use a contextual link, and to add Alt Text to links in a PDF document if the links are not contextual.

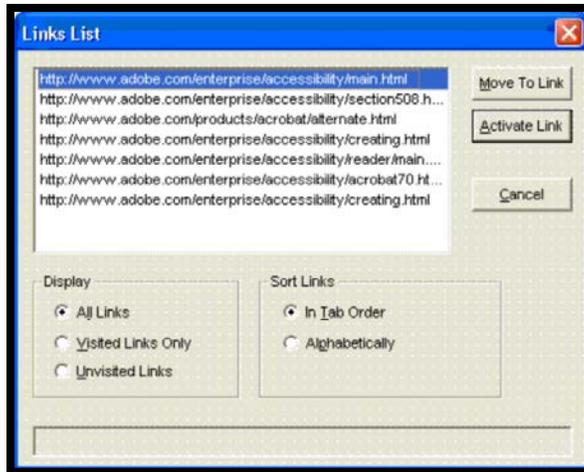
Most screen readers and some screen magnification tools have the ability to present the person reading a Word document or PDF document with a list of links in that document.

Those of us using those tools make use of first character navigation.

What does this mean?

The ability to press the first character of the topic or link we want and then move to it saves us a lot of time. For example, in the list of links for a Word document you would hear "[Karlen Communications web site](#)" instead of <http://www.karlencommunications.com>. I haven't provided footnotes for these two links because they are mirrors of each other so you have both the long web address and the contextual address in the same line of the paragraph. Notice how intrusive the long web address is to your reading.

You would be able to press K for Karlen Communications, A for Adobe Accessibility, M for Microsoft Accessibility and so forth.

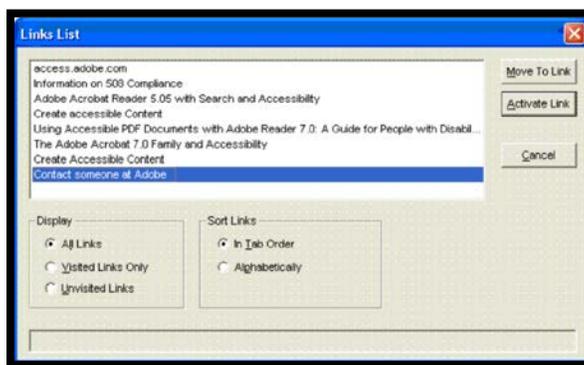


**Figure 217** List of links from the JAWS screen reader.

Consider the list of links in the preceding image. Remember one of the things we talked about early in this book was the need to start looking at document in a different way. We need to look at how information can be or will be accessed.

How much easier is it to find exactly what you are looking for or even to make sense of what is available in the document when you use contextual links?

Not only does this save time but it also enhances the readability of a paragraph. Consider the ever increasing length of web addresses and how people are forced to visually skip over them in order to finish the thought of the paragraph or sentence. For people with learning, cognitive or visual disabilities this often represents a break in the understanding. Even for people without disabilities, our ability to plunk a web address in the text where we want it available often disrupts the readability and flow of the thought and concept being presented.



**Figure 218** Contextual list of links.

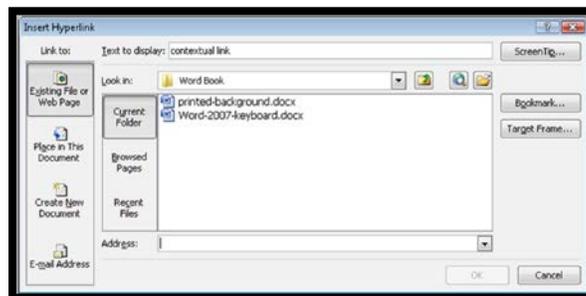
When a link occurs in the middle of a sentence or paragraph, it is also easier to read the “link in context” and to identify its relationship to surrounding content.

Some document authors fear that this approach will affect the way they write. You have to craft a sentence carefully so that a contextual link is appropriate for the paragraph and your writing style. Any adjustments you need to make to your writing style to use contextual links is a will help you become a better document author. It is the same as using voice recognition software...the immediate concern is that you will have to speak differently, however, once you are used to using voice recognition your own personality is still there. You may not slur as many words but the way you write using your voice has improved.

Another important technique in creating contextual links no matter what document format you are using is not to begin each link with phrases such as “click here to...” or Select this link to go to...” Remember that this approach to creating links impedes first character navigation. If each link begins with the letter “C” for “click here,” the person trying to navigate to a link will have to go through and read EVERY link in the document to find the one they want. It is as annoying as having to listen to “http://blah, blah, blah....” endlessly.

To create a link from text in a document:

1. Select the text you want to use as the link.
2. Press Ctrl + K.
3. The Create Hyperlink dialog opens.
4. Your focus will be in the edit box where you can either type in or paste a web address.
5. If you have a web page open and are in the Address Bar you will see the web address already filled in.
6. Once you’ve typed in the web address or pasted it into the edit box, Tab to and activate the OK button by pressing the Enter key.



**Figure 219 Create hyperlink dialog.**

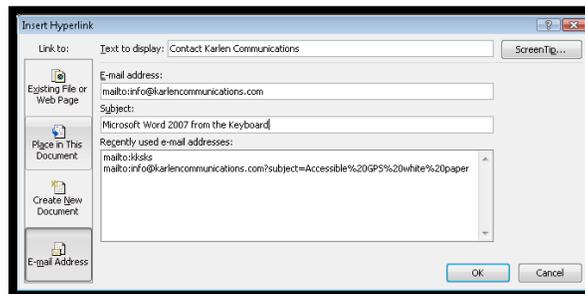
You can also create a link that will open the person’s e-mail client so that they can send you a message. This is handy in a PDF document because you can also fill in the subject line which lets you filter mail as it enters your Inbox.

To create an e-mail link:

1. Select the text to use for the link.
2. Press Ctrl + K.
3. The Create hyperlink dialog opens.
4. Press Alt + M to activate the “E-mail” button in the lower left of the dialog.
5. Type the e-mail address you want mail sent to.
6. Tab to the Subject edit box and type in a subject.
7. Tab to and activate the OK button by pressing Enter.

When someone activates this link in either a Word or tagged PDF document, their default e-mail client opens and both the To and Subject fields are already filled in. They just have to write the message text and send it. It is also easy to identify when it comes into your Inbox.

You can return to the External link button options by pressing Alt + X the next time you launch the dialog.



**Figure 220 E-mail hyperlink options in the Create hyperlink dialog.**

You can create links to other documents. If you are going to do this, it is a good idea to keep them all in the one folder so that they are easy to find and update if necessary.

## **Alternate Links**

One of the techniques I use for documents is to make use of the footnotes or endnotes in a document to provide the long web addresses. A person who is using adaptive technology can still get a list of links and use first character navigation for the general context of the link, but they can also get the full web address by accessing footnote or endnote information.

This technique is critical if you know the document will be printed or if you are going to allow printing of the document once it is converted to tagged PDF. Once again I do not know of any paper that lets you touch a link on a printed page and open a browser to view the linked to contents.

To insert a footnote or endnote in a Word 2007 document:

1. Place the cursor where the footnote or endnote should be. This is typically just after the text you want to note.
2. Press Alt + S, F for Footnote, or
3. Press Alt + S, E for Endnote.
4. You will be taken to the bottom of the page if you are inserting a footnote or the end of the document if you are inserting an endnote.
5. Type the reference and paste the web address.
6. Don't simply add the web address; include some text with it so the person looking at the footnote or endnote knows which web page the link refers to.
7. Use the Up Arrow to return to the document.
  - a. Of course you can click on the document if you are mouse dependent.

By using footnotes or endnotes, as I have done in this document, you can facilitate both uses of the document: digital and hard copy print.

## **Tables**

We all know that tables should not be used for design layout. This is important if you are going to repurpose your Word document to tagged PDF. It is also important for the accessibility of a Word document. Adaptive technology has specific keyboard commands for working with tables. These are different from the "every day keyboard commands for working with a document such as this one which does not use tables to format the document.

Many people who use adaptive technology, well, hate tables because they are overused, nested, created improperly so that even if you can use the table keyboard commands, you can't move around a table in any logical or meaningful order and they are completely frustrating. An analogy would be if you were blindfolded and put into a maize where you think you've figured out a way of navigating the maze but all of a sudden there is a maze within a maze, the rules change, you don't know what they are...how do you even begin to try and work out a strategy for getting out?

## Inserting Tables

There are some simple things you can do when working with tables to improve their accessibility. The first is to insert a table rather than draw it. By inserting a table you create a “uniform” table. You can easily make your table “non-uniform” and difficult or impossible to navigate, but you can at least begin with an accessible foundation.

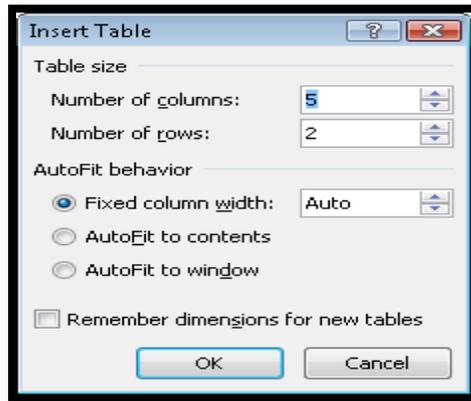
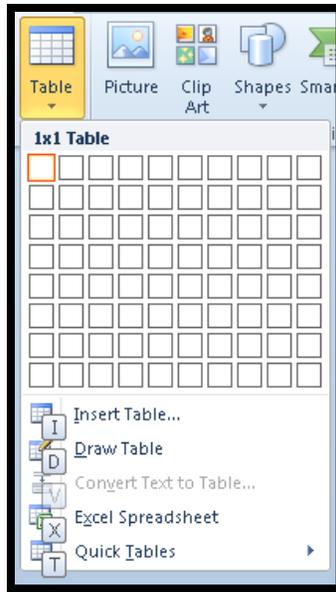


Figure 221 Insert Table dialog.

To insert a table into a document:

1. Press Alt + N, T and choose Insert Table.
  - a. You can also use the grid to identify columns and rows. This will also insert an accessible or uniform table.
2. A dialog opens where you can choose how many columns and rows the table will have.
3. Select the number of columns and rows, Tab to the OK button and press Enter.
4. The table is inserted into the document at the cursor point.



**Figure 222 Table Gallery to create uniform or standard table.**

The generic non adaptive technology keyboard commands for moving around tables in Word are:

- Alt + NumPad 5 to select the table.
- Tab to move to the next cell and select its contents.
- Shift + Tab to move to the previous cell and select its contents.
- Shift + Left, Right, Up or Down Arrow will extend the selection in the specified direction: left, right, up or down.
- Alt + Shift + Page Down to select the current column from the cursor point/selected cell to the end of the column.
- Alt + Shift + Page Up to select the current column from the cursor point/selected cell to the top of the column.
- Alt + Shift + End to select the current row from the cursor point/selected cell to the end of the row.
- Alt + Shift + Home to select the current row from the cursor point to the beginning of the row.
- Alt + Home moves you to the first cell in a row.
- Alt + End moves you to the last cell in a row.
- Alt + Page Up moves you to the first cell in a column.
- Alt + Page Down moves you to the last cell in a column.
- Alt + Shift + Down Arrow moves you one row down and selects the row.
- Alt + Shift + Up Arrow moves you one row up and selects the row

If you are using adaptive technology such as a screen reader, there are also commands for getting column and row title information as well as cell coordinates. The list of keyboard commands above

are not adaptive technology specific so you can use them to move around a table. This might help in understanding that in a table there is another layer of keyboard commands we need to use. If a document is laid out using a table, or if the table is not “standard” or “uniform” it becomes difficult to navigate.

Data tables need to be designed so that the relationship between cell content is easily rendered to the person using adaptive technology and to anyone visually accessing the table.

Two questions I have document authors ask themselves are:

What are the header rows for the table? [In Word 2003 you can only have one header row while in Word 2007 you can have more than one header row.]? If you can’t identify a header row for the entire table...a reference point for moving from cell to cell within that column, then maybe a table isn’t the right “format” for the content.

Can you put a caption on the table? If not, then a table structure is not the way to format the information.

The following images are from the book “Logical Document Structure Handbook: Word 2007.” They illustrate the problems in using tables for design layout. As we relate these problems to tagged PDF, we often see partially tagged information in a table. For example a row that goes on for several paragraphs with no content in cells to the left, blank cells used for visual spacing that are tagged as individual tables...the mistagging adventures can go on and on. Because adaptive technology such as screen readers announce that a person is entering a table and how many columns and rows it has which in turn tells the person reading the document that they will need to use their table keyboard commands, if the table is empty, contains many empty rows or columns, and has no header information, the accessibility of content and the usability of the document itself come into question.

Logical Document Structure Techniques	
Item	Description
Creating Custom Styles	
Why use custom styles?	It is important to use custom styles for elements of the document you want or need to change the look of.
Type of custom style.	It is also important that your custom style be based on the structural element you are trying to affect.  For example, if you are creating a custom heading, it needs to be based on the heading 1 through 9 styles, not the Normal paragraph style.
Create a custom style.	<ul style="list-style-type: none"> <li>• Select the text you want to create the style for.</li> <li>• Choose Format &gt; Styles and Formatting.</li> <li>• Activate the new styles button.</li> <li>• In the dialog box, make sure you change the "Style based on" to the structural element you want, for example Heading 1.</li> </ul>
Lists	In the cell above, the list was created using a tool other than bullets and numbering. This means that any adaptive technology will see this as paragraphs, not bulleted items or steps in a process.
Tables	

Figure 223 A table used for design layout.

In the preceding image, the first three rows in the table have been colour coded. Gridlines were shown to demonstrate the "structure" of this document. The first row is pink and is a header row. The second row is blue and is also a header row. The third row is yellow and is also a header row.

The actual size of this table is 6 [six] columns wide. In the first row, the pink one, the six columns have been merged to be one cell. In the second row, the blue one, the first three columns are merged and the last three are merged. In the third row, the yellow one, all six columns have been merged again. Visually this might imply a piece of heading information for the table which could be represented by the pink row. Visually the table then has two "sub headings" represented by the blue row and the yellow row...but wait!

At the end of the page we see another yellow row, a row where all six columns have been merged to indicate another visual heading. If we assume that the first yellow row has been tagged with a TH Tag representing a table header, how can we now tell the adaptive technology which is mechanical and not intuitive to ignore the first yellow row and now use the second yellow row?

Even visually this is confusing because the "content" associated with this new yellow title row begins on the second page of the document.

	items or steps in a process.
<b>Tables</b>	
Create a table.	Use Table > Insert not Table > Draw.
Table settings	Identify a heading row.
	Choose Table > Heading rows repeat. Make sure your cursor is in the first row of the table or the row you want to use as the

**Figure 224 The bad table design continues!**

Aha, I hear you now...just use the Enter key to force the yellow bit onto the next page or use a “table break” to put the yellow bit on the top of the second page.

Not so fast! If we continually press the Enter key to force the positioning of content, each blank line may be rendered to the person using adaptive technology. Imagine sitting listening to “blank, blank, blank, blank...” If we use a table break it means that a “new table” structure begins at the top of the second page which in turn means that the header rows are now part of the first table and not part of this second one. The yellow header has no relationship to the pink or blue header of the first table and stands alone.

But wait....there’s more!

On the second page of this document, remember the table was used to “design” an entire document, we see a change in the table structure itself.

	Select the table, then press the AppKey and choose Caption. Table captions are automatically inserted just above the table.			
<b>Checklist for Logical Document Structure</b>				
<b>Element</b>	<b>Doc 1</b>	<b>Doc 2</b>	<b>Doc 3</b>	<b>Doc 4</b>
Check each structural element you’ve used appropriately in your documents.				
Headings				
Lists				
Tables				
Images				
Equations				
<b>Universal Design</b>				
Web	Even on web pages, you need to use the tags or structural elements properly. For example, if you are creating a list, use the   tag to indicate a blank line between list items. If this doesn’t work, then adhere to the HTML rules, don’t break them.			

**Figure 225 The bad table continues to the second page of the document.**

Suddenly we have a data table! The document author has eliminated the sixth column, added a new pink merged row of cells indicating it is a table header, followed by a new blue row of five table header cells...yes we have five columns now instead of two! The new pink and blue header information is followed by a new yellow header row that sort of looks like a table summary?

The data table itself has five columns and five rows.

So which is the table header information? The choices are:

- The first three header rows on page 1.
- The second yellow header at the bottom of page 1.
- The new set of three table headers on page 2.

Confused? It gets even better!

Just after the data table which is part of the original table and not a nested table the table changes its structure again! [Don't even think about nesting tables!]

Now we have a pink table header but no blue or yellow header rows. Instead of two columns of content where the first three columns and last three columns are merged in each row as we found on the first page, we now have the first two columns and last four columns merged.

This will often go on in a document for its entire length. I've seen one row go on for five or six pages with no content in the first columns and only a small stream of content in the last column. Even for those of you who are visually accessing the content the usability and readability of the content is compromised. There is also the issue of all that wasted white space and paper while you watch a tiny stream of content flow down the right side of the pages.

Tables should be used to display data and not to format entire documents. The following techniques are for making data tables more accessible and usable. They are also techniques you can use if you insist on using tables to design entire documents.

## **Don't Allow Rows to Break Across Pages**

Many document authors will balk at this suggestion. There is a tool in Word that lets you prevent rows from breaking across pages. This means that if the content in one cell, one row will not fit on a page it cannot be presented in the table. This is a good way of keeping you honest with the content of a table cell and hopefully giving pause to consider that using a table for design layout isn't the best method.

To turn off the breaking of rows across pages which is on by default:

1. Select the table.
2. Press the AppKey and choose Table Properties.
3. Move to the Row tab.
4. Uncheck the check box to "allow rows to break across pages."

5. Tab to and activate the OK button by pressing Enter.

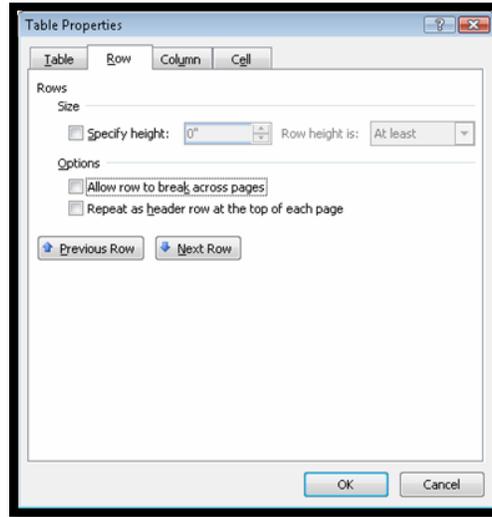


Figure 226 Table Properties dialog with Row tab in focus.

Using other formatting tools, you can make your publications interesting, well designed, and accessible.

## Header Rows Repeat

It is not good form to use “heading styles” in a table. If we think about using a table to format our document, this would eliminate a key component for navigation and creating a Table of Contents.

So what then are “headers?”

The header information in a table provides the key or legend to the relationships of the data in the table. You can create a style called “Table Header” which will give your tables a consistent look and feel but they should not be based on the heading level 1 through 11 styles.

Let’s consider why we use the heading level styles. The heading styles are used to indicate a change in topic, a hierarchy of the content in the document. In a table, we have column and row titles. If we were to use a heading style it would create confusion for the person reading the information in the table because, using the table navigation commands we move across a row in a table and not to content immediately under the current cell.

Table 4 Summary of sales for January and February 2009.

Salesperson	January	February
Karen	525	550
Barnaby	550	525

Salesperson	January	February
Olivia	500	550

If the text “Salesperson” were a heading level 1 style for example, the content under it would be either another heading 1 style in the form of “January” or another heading 1 style in the form of “Karen.” Logically this would not make sense to someone reading the information.

Table headers are “tagged differently” than heading styles and perform a different function. By identifying table headers, adaptive technology can tell someone in cell B3 that the salesperson Barnaby had sales of 550 in January. This information would not be available if we had used a heading style. A person using adaptive technology would just hear “cell B4 550.” The relationship is lost. This is a small sample table but if we were looking at a large complex data table, the person reading the data would just hear a series of cell coordinates and numbers.

Word 2007 lets you choose more than one row to be a column header. Neither version lets you identify row titles at the present time. This will need to be done in Adobe Acrobat.

The other advantage to having the header row repeat is that the table header information will be at the top of each page that the table spills over to. This helps people with learning, cognitive, or visual disabilities keep track of the relationship between the data they are looking at without having to go back to the start of the table to jog their memory about the column titles. When the document is converted to tagged PDF it will be this header row repeat identifier that will be used to create the <TH> or “Table Header” Tags in the PDF document. Although you will need to add additional table header rows for column and row titles, it will save you time in that the first row/column titles are already done.

I recognize that it is confusing. You have Heading Styles, Page Headers and Table Headers. This is another reason to use templates. You can implement the page headers or footers that contain page numbers, have specific styles for hierarchical content changes, and also have a consistent style for the column and row titles in any tables used in the document.

I do recognize that this does not cover complex data tables. When you create complex data tables much of the repair work will need to be done in Adobe Acrobat to sort out table header information.

To let the header row repeat:

1. Select the row or series of contiguous rows that are the header rows for the table.
2. Press the AppKey to open the context menu for the table.
3. Choose Table Properties.
4. Press Ctrl + Tab to move to the Row tab.
5. Check the check box to repeat as header row at the top of next page or press Alt + H.

6. Tab to and activate the OK button by pressing Enter.

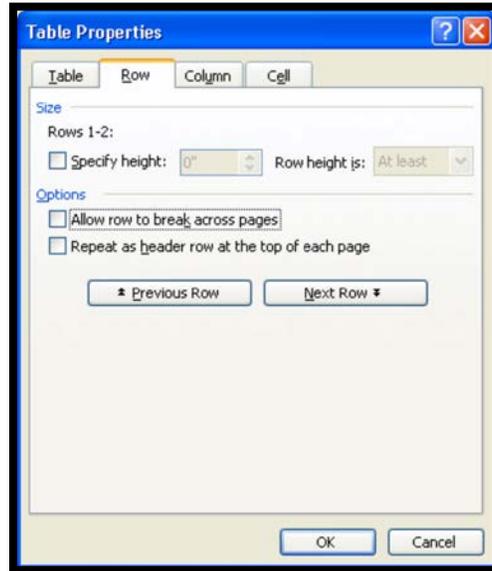


Figure 227 Table Properties dialog with Row tab in focus.

By using the “Header row repeat tool in Word, we can identify the column titles in a table.

This is also the tab that you use to uncheck the rows breaking across pages.

## Header Repairs in Acrobat

Once you have converted the Word document to tagged PDF, you can open the Tags Tree and use F2 Edit mode to make any <TD> or table data cells into <TH> cells. You can also use the table inspector for a more visual representation of the cells you are repairing.

## Adjust Cell Margins/Padding

Often in tables we tend to press the Enter key to create some visual space around text because we think it looks too crowded. When someone using adaptive technology enters a cell with a lot of blank lines and tries to navigate and read content line by line, every press of the Enter key you made is read as “blank, blank, blank...” If we hear one or two of these blank lines, we assume that the cell is empty and that for some reason the document author just kept pressing the Enter key. We make this assumption based on years of similar “spacing techniques” in other Word documents as well as HTML documents. In many HTML documents, instead of adjusting cell padding or the space around the text, document authors just press the Enter key.

In HTML there is a way to provide the visual spacing effect and not use the Enter key. There is also a tool for this in Word. It is the use of “cell margins.”

When you adjust cell margins you will be adjusting the cell margins for all cells in that row. You can choose to modify the cell margins for individual rows, several rows or for the entire table to give it a more uniform look and feel.

To adjust the cell margins:

1. Select the cell or row you want to modify.
2. I generally make this adjustment for the entire table so would select the table.
3. Press the AppKey and choose Table Properties.
4. Press Ctrl + Tab to move to the Cells tab.
5. Press Alt + the letter O to open the Options dialog.
6. Uncheck the check box that has all margins the same at the predetermined size.
7. You can then press Tab to move to the combo boxes where you can adjust the top, bottom, left or right cell margins. Do not use whole numbers. A good range to work within is .10 to .20.
8. Once you are finished, Tab to the OK button and press Enter to confirm your changes.

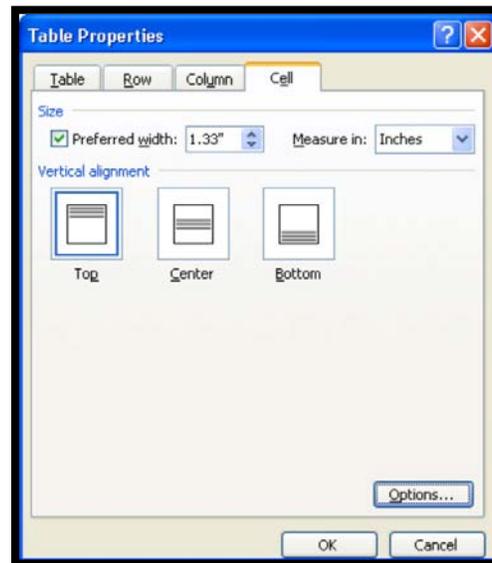
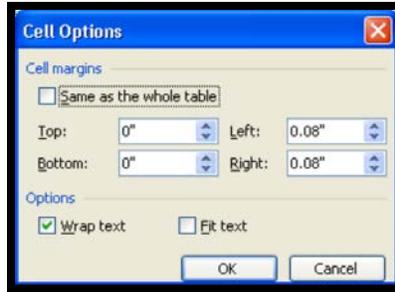


Figure 228 Table Properties dialog with Cells tab in focus.

**Note:** Do not use whole numbers for cell margins. I suggest beginning with something like .10 and going to a maximum of .30. If you start going over this number your table will look odd as there will be too much space around text. Using whole numbers can result in a message saying this is not a valid action. It would be similar to trying to set page margins wider than the page.



**Figure 229 Cell Options dialog.**

**Table 5 Summary of sales for January and February 2009 [Second Sample].**

Salesperson	January	February
Karen	525	550
Barnaby	550	525
Olivia	500	550

In the preceding table I’ve set the top and bottom cell margins at .20 to give you an idea of what this might look like. Typically I use the .10 inch cell margin as it gives some space but doesn’t make the table look awkward.

The table header is repeating as the table spans two pages.

### **Captions for Tables**

As with images and equations, we need to make sure tables have a caption. For tables, the caption should be above the table. This provides information for people with learning, cognitive or visual disabilities about what type of information they can expect in the table that follows. This information is also read to someone using a screen reader.

To add a caption to a table:

1. Select the table.

2. Press the AppKey to open the context menu for a table.
3. If you do not select the table, you will get a context menu for the text.
4. Choose Caption from the context menu.
5. The Caption dialog opens and your focus is in the caption edit box just after the words "Table #."
6. Each table will automatically be numbered as you add captions.
7. Type a caption for the table. A table caption is like the summary tag in HTML and provides a brief description of the contents of the table.
8. Tab to and activate the OK button by pressing the Enter key.



**Figure 230 Caption dialog with Table caption chosen.**

When you have a table selected, the choice will automatically be changed to a table caption. After this you will need to double check that the type of caption is changing for each element you are applying it to.

## Bulleted and Numbered Lists

One of the most mal formatted items in a Word document are bulleted or numbered lists. The main issue is once again the use of the Enter key to create space between bulleted or numbered list items.

Let's take a look at how adaptive technology renders a bulleted or numbered list.

- House
- Car
- Boat

When the preceding list is read it is read as "List start, bullet house, bullet car, bullet boat, list end."

If we use the Enter key to put space between the items, it will be read like this: “list start, bullet house, list end, blank, list start, bullet car, list end, blank, list start, bullet boat, list end.”

- House
  
- Car
  
- Boat

Not only is this a lot more “extraneous stuff” to listen to, but the relationship between the listed items is lost and broken. Although not critical in a bulleted list, it does become critical in understanding steps, instructions, or sequenced content. It is quite easy to lose your place while listening to each sequential item being announced in isolation from the rest of the sequenced content.

This can be repaired in Adobe Acrobat but it will take time. The goal is to minimize the amount of repairs to be done in Acrobat but also to make the Word document more readable. If the Enter key were used in the Word document to space the listed content, the person using adaptive technology would hear the constant list start and list end notifications.

How can we put some space around our listed items without creating an accessibility issue in both Word and tagged PDF?

The best way to do this is by selecting the entire bulleted or numbered list and using the Paragraph dialog to adjust spacing.

To add spacing beneath a bulleted or numbered list item:

1. Select the bulleted or numbered list.
2. Press Alt + H, P, G.
3. The Paragraph dialog opens.
4. Uncheck the check box to not have spacing between paragraphs of the same type.
5. Notice that the item above this indicates that there will be a space of 10 point below the bulleted or numbered list if this check box is unchecked.
6. Tab to and activate the OK button by pressing Enter.

The set of instructions above were adjusted using this method so that you can see the visual effect. In the previously spaced list when I press Ctrl + Up or Down Arrow to move from paragraph to

paragraph I now land on each sequential numbered item rather than the blank lines between the numbered items.

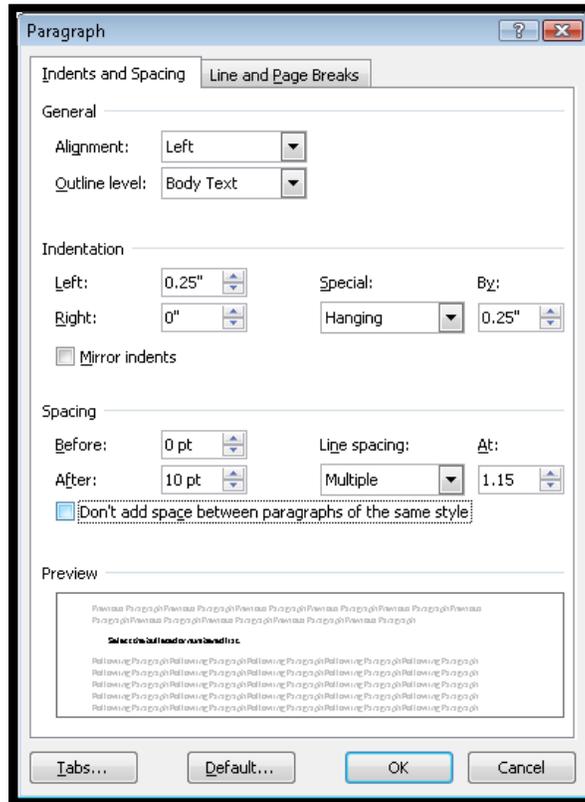


Figure 231 Paragraph dialog with Indents and Spacing tab in focus.

You can do this on the bulleted or numbered lists you want a bit of space around and not do it on bulleted or numbered lists you don't. Because the 10 point space beneath each bulleted or numbered list item is predetermined, the spacing will always be the same giving your document a more consistent look and feel.

Typically there is space before the first bulleted or numbered list item so we don't want to increase that. By allowing the 10 point spacing after each item, the bulleted or numbered list looks better and gives us the visual space effect we want while retaining the integrity of the list structure.

Here is where you begin to see the power of Word 2007. I used the Paragraph dialog to adjust the list spacing for an individual list. If, however, you want to adjust the list spacing for all bulleted or numbered lists in a document, modify the List Paragraph Style. Use the Styles Pane to do this. You still need to use the bullets and numbering icons from the Home Ribbon to apply bullets or numbers but they will all be spaced based on the List Paragraph Style. We'll look at this in the chapter on Bulleted and numbered lists in more detail.

## Converting the Word Document

Now that we have an accessible Word document we can use the Adobe PDF Menu item to convert the document to tagged PDF. We discussed the conversion settings in the chapter “text” and the settings should still be in place.

If you have custom heading styles in your document make sure they are identified in the Bookmarks tab of the Adobe Conversion settings.

Press Alt + B, S for Acrobat, Preferences. Then press Ctrl + Tab or Shift + Tab to move to the Bookmarks tab.

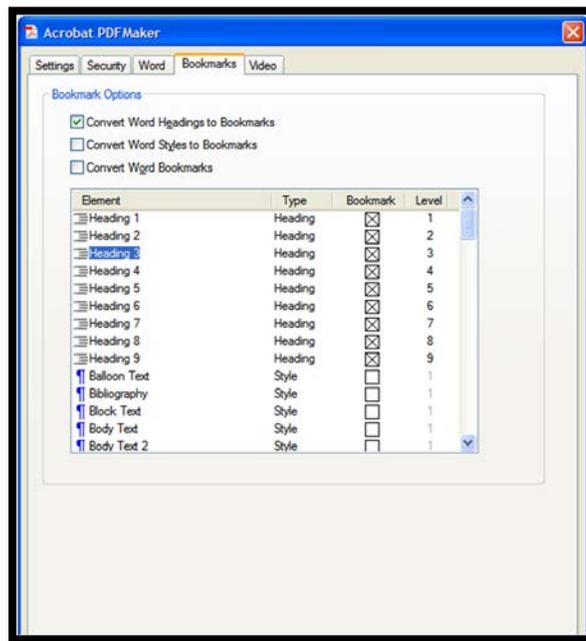


Figure 232 Bookmarks tab in the Adobe Conversion Settings dialog.

**Note:** That this is less reliable when a document comes from Word 2007 or 2010 than it was when it came from Word 2003. Adobe is aware of this and is working toward better Bookmark support. Until then you will have to do some Bookmark repairs in Acrobat.

Once this is done, press Alt + B, C to “Create PDF.”

**Note:** If you are working on a large document you will get a message saying that this process might take a while to complete and suggesting that if you choose not to Tag the document that it will go faster. The whole point is to create a tagged PDF so say “Yes” continue tagging the document. Then go for coffee, tea, lunch....

## Microsoft Office Save as PDF or XPS Add-in

Microsoft Office 2007 has an add-in that lets you save your Word document as a tagged PDF document without having Adobe Acrobat installed. Open Office has the same tagging capability but it is implemented in a different way.

You can [download the Save as PDF or SPS add-in](#)<sup>16</sup> from the Microsoft web site. It is a free plug-in.

Once the add-in is downloaded, close any Microsoft Office applications you have open, locate the downloaded file and press Enter to start the installation. Follow the installer and accept the defaults. Once the installation is complete you can launch your Office applications again.

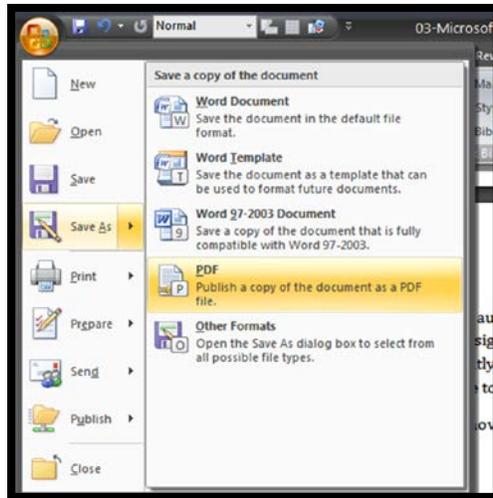
When you press Alt + F, F a new item will be in the save options, that of saving the document as PDF or XPS.

**Note:** XPS is a completely inaccessible file format and should be avoided.

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<sup>16</sup> Microsoft Save as PDF or XPS plug-in download page:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=4d951911-3e7e-4ae6-b059-a2e79ed87041&displaylang=en>



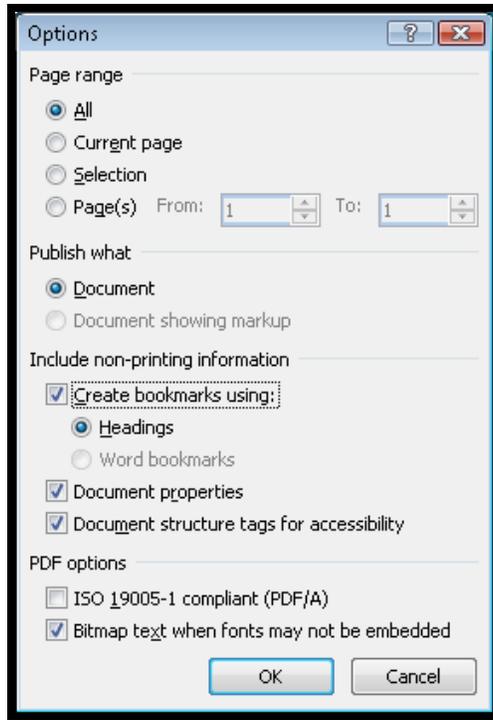
**Figure 233 Save as PDF or XPS in the Office Button menu.**

Make sure you are working with an accessible document in Word so that repairs are minimal.

Once you choose to save the document as PDF or XPS a standard “Save As....” dialog opens.

Before you activate the Save button, activate the Options button so you can turn on tagging and Heading/Bookmark identification.

The Options dialog opens.



**Figure 234 Save as PDF Options dialog.**

Make sure the check box to “Create bookmarks using is checked and that the radio button for Headings is chosen.

Also make sure that the check box for “Document structure tags for accessibility “is checked.

Tab to and activate the OK button by pressing Enter.

You can now save the document and Bookmarks will be generated from Heading styles and the document will be tagged.

You shouldn't have to change this unless you repair or reinstall Word or Office. If there are no headings in the document, this option will not be available in this PDF Options dialog.

## Excel 2007

We are now going to convert a simple spreadsheet with a chart into a tagged PDF document. A workbook or worksheet seems to break all the rules about using tables for design layout since a workbook or worksheet cannot be anything but “tables.” This means more repairs in Adobe Acrobat.

### Converting a Workbook or a Worksheet

By default, you will be converting a single worksheet, the one your focus is on. If you want to convert an entire workbook to a PDF document, choose Adobe PDF and press Enter on Convert Entire Workbook. Once this is selected, it will remain checked until you uncheck it.

The tags created when you convert an entire workbook show each worksheet as a <worksheet> tag with the child tags under it as shown in the image below. A <workbook> tag is created as the parent for the individual worksheets.

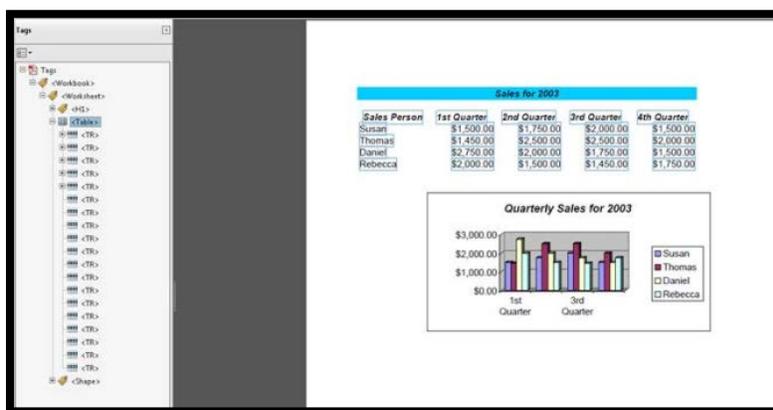


Figure 235 Excel workbook with repaired heading Tag.

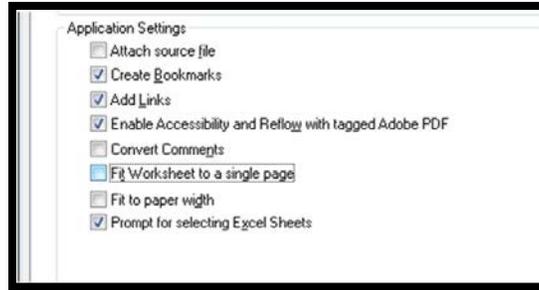
## Excel Conversion Settings

One of the questions I get asked a lot is how to present an entire worksheet on one page so that the relationship between the data in the worksheet is not lost. There are conversion settings for Excel just as there are conversion settings for Word and PowerPoint.

Let's walk through the conversion settings for Excel.

To view the conversion settings for Excel press Alt + B and choose Change Conversion Settings.

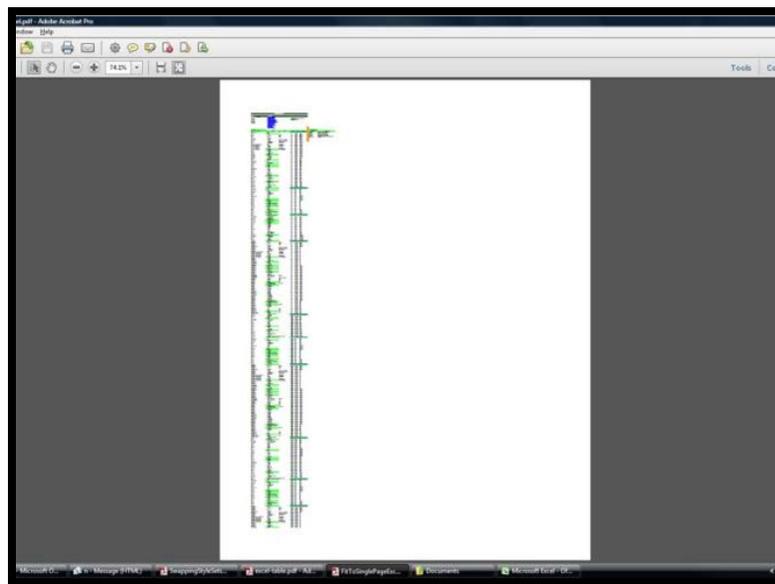
A dialog opens with fewer options than we have for Word. This is, of course, because we are in a different application with different accessibility needs.



**Figure 236 Excel specific conversion settings for tagged PDF.**

One of the things I am asked during workshops is how to fit one worksheet on a single tagged PDF page. When a document, worksheet or presentation is converted to PDF, the default behaviour for display is to create 8.5 by 11 inch visual pages. This is sometimes not practical for worksheets especially since we have to turn off the column and row titles [in Page Setup dialog]. Often we don't want to visually separate data into an unreadable layout. Viewing data that was meant to be displayed as a huge worksheet in a linear non-navigable format causes the data to lose its impact and meaning.

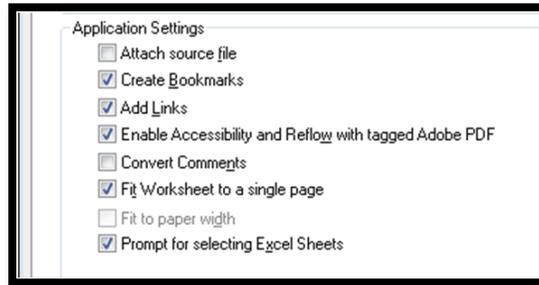
In the conversion settings for Excel there is the option to "Fit the worksheet to the page" which will retain the margins.



**Figure 237 Fit worksheet to page option.**

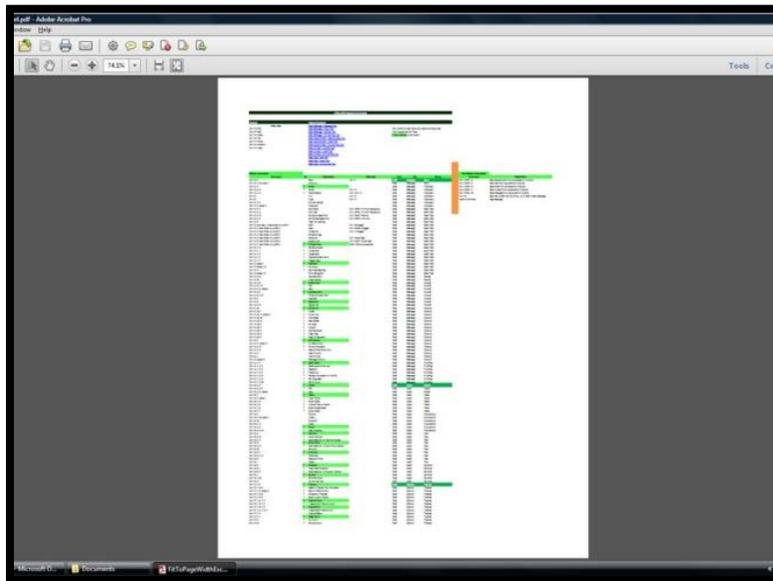
I talked earlier in this book about not being afraid to use the Zoom tool for performing repairs in tagged PDF documents. It is the same with Excel workbooks or worksheets you choose to try and fit on one page or piece of paper...don't be afraid to use the Zoom tool so that you can read the data.

When you choose the option to fit the worksheet to the page, the option to fit the worksheet to the paper is not available. The converse is true, when you choose to fit the worksheet to the paper; you cannot choose to fit the worksheet to the page.



**Figure 238 Excel Conversion Settings for Excel.**

When you choose to fit the worksheet to the paper, the results will be displayed as shown in the following image.



**Figure 239 Fit Worksheet to Paper option results.**

I do not have a worksheet larger than these ones so cannot advise on the results when worksheets are huge. These are the only options you have to try and fit worksheet content onto one continuous viewable area.

When you choose to create the PDF document, a dialog will open where you can choose which worksheets you want to convert to tagged PDF.

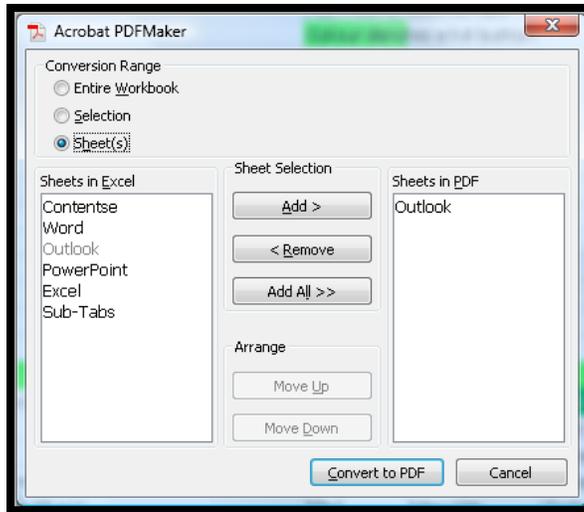


Figure 240 Excel convert to PDF dialog.

## Preparing the Worksheet for Conversion

If you are printing a hard copy of a worksheet, it is useful for your reader to have the titles of columns and rows appear on each printed page so that they have a point of reference for the data they are reviewing.

You turn the titles on in the File > Page Setup > Sheet tab.

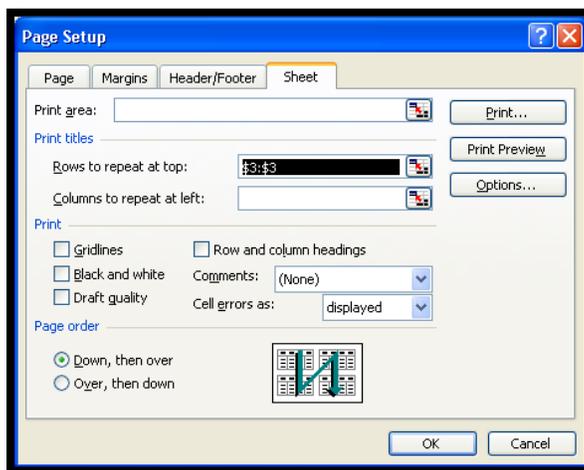
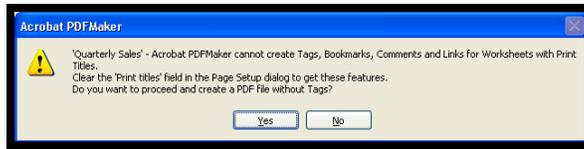


Figure 241 Page Setup dialog box in Microsoft Excel 2003 showing the "rows to repeat at top" edit box.

When you convert the sheet to a tagged PDF document, you will need to remove these. If you forget, you will have a dialog box reminding you that a PDF document can't be created as long as the titles feature is turned on.



**Figure 242 Message you will get when you try to convert a Microsoft Excel 2003 worksheet to tagged PDF without removing the "row to repeat at top" from Page Setup.**

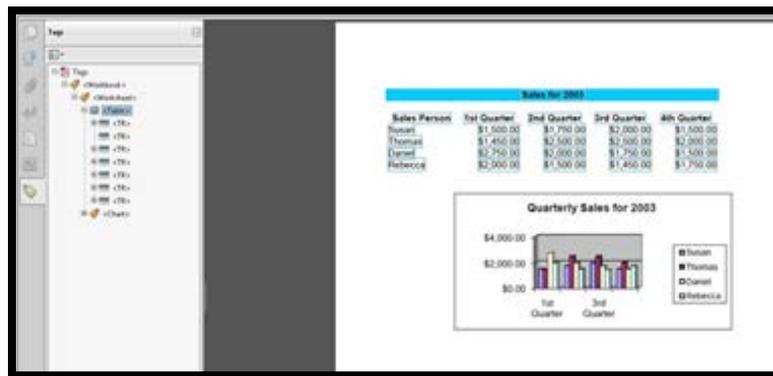
Anticipating your question, the titles will have to be manually identified once we create the PDF document.

You can leave page headers and footers on the worksheet.

Once the titles have been removed, choose Adobe PDF > convert to PDF.

When the worksheet opens in Adobe Acrobat, press F4 to view the tags tree. We've used a simple worksheet. If you have a more complicated worksheet, you might want to begin with the TouchUp Reading order tool.

Everything in the "table" is tagged as part of the table structure. The chart is tagged as a <Shape> which is the same as a <Figure> and will need Alt Text.



**Figure 243 Tags Tree showing that the table heading has been tagged as a table data cell and needs repair.**

Notice that at the beginning of the table structure, the heading hasn't been separated from the main table content. This needs to be done so that people using adaptive technology can identify the title of the table.

To add the table header Tags:

1. Select the <worksheet> tag. Turn on the Highlight Content.
2. Expand the Table tags in the Tags Tree.
3. Select the first <TR> or Table Row Tag.
4. Select the <TD> tag that has the information for the table title in it.

- Press F2 to go into edit mode.



Figure 244 Replace the TD Tag with an H1 Tag.

- Replace the TD with H1 and press Enter.
- Drag the <H1> Tag out of the table and position it just before the <Table> Tag in the Tags Tree.



Figure 245 Remove any empty TR or TD Tags.

- The <TR> Tag should now be empty and can be deleted.

We're now ready to modify the other <TD>Tags to be <TH> or table header Tags. This can be done in two ways: editing the individual Tags or by using the Table Editor in the TouchUp Reading Order Panel.

Normally we do not delete Tags; however, it is possible to delete Tags that are empty. A caveat to this is not to use the Delete key to tidy up the Tags Tree. If you are going to delete empty Tags make sure you save the document as a new version before you do. In the event that the deletion of even an empty Tag affects the logical reading order or the ability to get a clean accessibility full check, you want to be able to immediately go back to the last good repair in the document so you don't have to do all that work all over again.

**Note:** You never want to delete content from the visual document. If you have content in the visual document send it back to the document author or desktop publishing house to have it removed. Removing actual content from the visual page can affect other content on the visual page in a detrimental way. We'll discuss this when we look at desktop published documents.

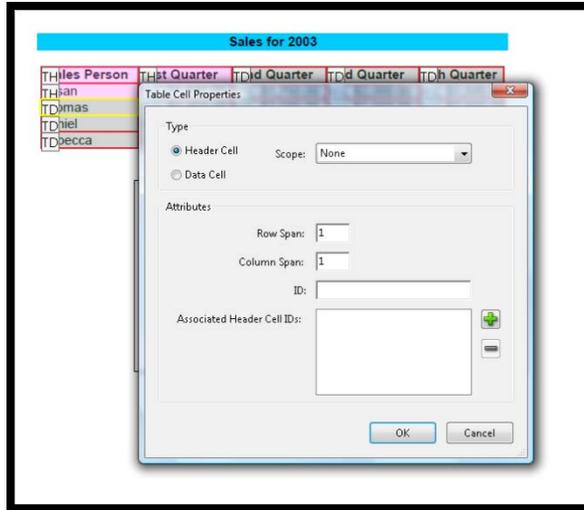
Now we need to identify the table headers which will replace the identification method used in Excel through the File > Page Setup > Sheet.

1. Select the first <TR> set in the Tags Tree. You will be able to see the corresponding PDF content with the Highlight content turned on.
2. Expand the <TR> containing the column titles.
3. For each <TD>, use the F2 key and edit them to show <TH> for table header.
  - a. You can copy the content of the Tag while in edit mode. For example once I repair one <TH> Tag and press Enter, I press F2 again which “selects” the entire Tag. I then press Ctrl + C to copy this and when I move to the next Tag that needs to be a <TH> Tag, I can simply press F2, Ctrl + V to paste and then Enter to reassign the Tag type. If you are working with documents that have a lot of TH or even LI [list items] that need repair this technique saves a lot of time.
4. Now that we have the column titles identified with their <TH> Tags, we need to make sure that the row titles have <TH> Tags. This will let adaptive technology look above and to the left/column 1 to provide relationship information as the table data itself is navigated.
5. Expand the second <TR> Tag.
6. Select the first <TD> Tag.
7. Press F2 to go into Edit mode.
8. Replace the letter D with an H.
9. Press Enter to confirm this change.
10. Do not modify the remaining <TD> cells in that row. They are table data cells.



Figure 246 Repair the TH Tag in the Tags Tree.

You can also make this repair using the Table Editor of the TouchUp Reading Order Panel.



**Figure 247 Repairing TH Tags in the Table Editor.**

I've changed the cell options to show some wonky colours so that the TH Tags are easier to see. As with the TouchUp Reading Order Panel you can use colour to enhance the visibility of Tag elements.

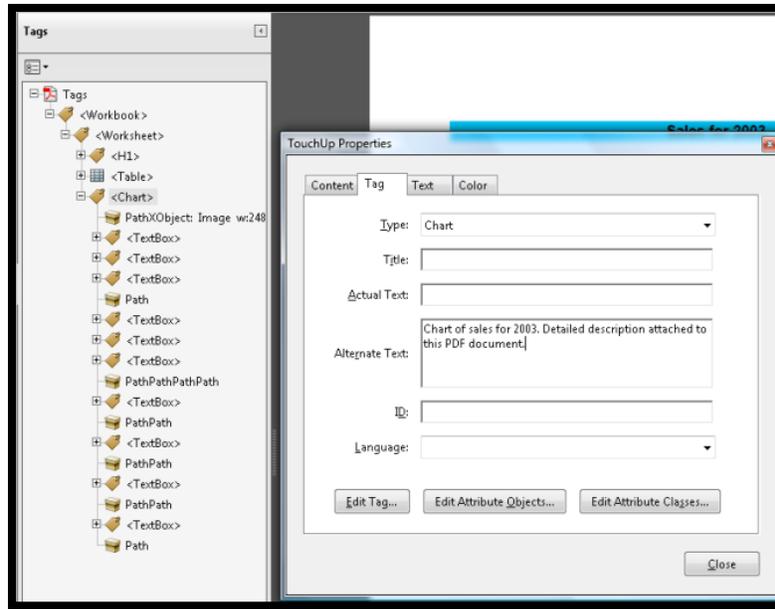
Sales for 2003				
Person	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Jan	\$1,500.00	\$1,750.00	\$2,000.00	\$1,500.00
Thomas	\$1,450.00	\$2,500.00	\$2,500.00	\$2,000.00
Liesel	\$2,750.00	\$2,000.00	\$1,750.00	\$1,500.00
Becca	\$2,000.00	\$1,500.00	\$1,450.00	\$1,750.00

**Figure 248 Repaired table with TH Tags visible in Table Editor.**

The last thing we need to do with this PDF document is to provide Alt Text for the chart.

The chart reflects a visualization of information people using screen readers have access to in the document. Because the information is available in another format, we can use Alt Text such as "Chart of information from the table above."

If there were no details about the information in the chart we would have to make a decision. Can we adequately describe the chart in a very few words or do we need to attach a Word or NotePad document with more details than would fit into an Alt Text attribute?



**Figure 249 Alt Text for chart in PDF document.**

I've expanded the <Chart> Tag so that you can see that some of the text for the chart was tagged as <Textbox>. Because this is all under the Chart Tag, the Alt Text will be read instead of the individual pieces of this chart which, out of context and on their own would not make sense to someone who can't see the chart.

To add the Alt Text for the chart Tag:

1. Select the <Chart> Tag not the content under it.
2. Press the AppKey to open the context menu.
3. Choose Properties which is at the bottom of the list so you can press the Up Arrow to move to it quickly.
4. The TouchUp Properties dialog opens.
5. Press Alt + R to move to the Alternate Text edit box.
6. Type in the Alt Text for the chart.
7. If the chart is in a different language, change the language. If the chart is in the language of the entire document, leave the language area as it is.
8. Press Alt + C to Close the TouchUp Properties dialog.

Generally, images, charts, diagrams and other visualizations of information need to support content not be content on their own. The information shown in visual representations should be available in a more readable format in the document.

I mentioned using attachments for complex images or diagrams such as the chart in this example if the chart information weren't available in the document. The following image shows this PDF document with an attachment describing the chart in detail. This type of attachment will follow the

PDF document wherever it goes and is available to anyone who is not able to understand the information displayed in chart form.

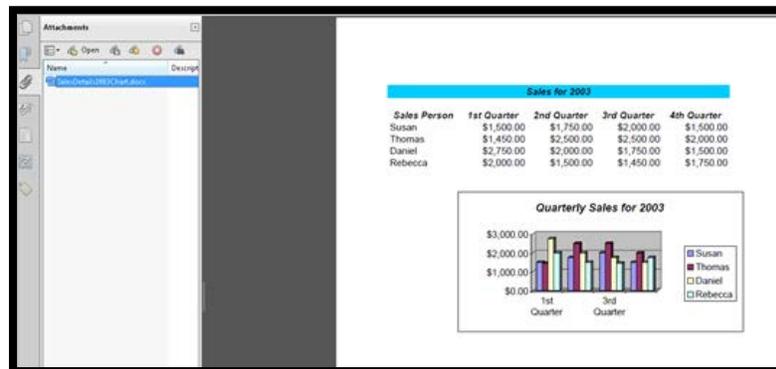


Figure 250 Attached description of a chart in a PDF document.

## Workbook Table of Contents

The sample workbook and worksheet for this topic was simple and clear. What happens if you have several sheets of data and large areas of the worksheet that contain data.

Going back to the days of Lotus 1-2-3 for DOS and my first course in how to use this application, we were taught that every workbook should have a Table of contents. It is something I still implement for larger workbooks with large amounts of data and several worksheets.

A good example is my Excel workbook that contains all the Ribbon Commands for Microsoft Office 2007. This is a complex workbook because it has information about the core ribbons, the Sub-Ribbons, and standard non-Ribbon keyboard commands for Word, Outlook, PowerPoint, and Excel.

How can I facilitate navigation to content as people need to look up keyboard commands?

Using named ranges and consistency of language, I created a Table of Contents on the first sheet and named that worksheet Table of Contents.



The screenshot shows a Microsoft Word 2007 worksheet titled "Word 2007 Keyboard Commands". The worksheet contains a table of contents for ribbon commands and a detailed table of ribbon commands with their shortcuts and descriptions.

Ribbon Commands	Ribbon	Group	M	Description	Alternate
Alt + H, V, P	Home	Clipboard	*	Paste Sub-Menu	Ctrl + V
Alt + H, V, S	Home	Clipboard	*	Paste SpecialDialog	Ctrl + Alt + V
Alt + H, X	Home	Clipboard		Cut	Ctrl + X
Alt + H, C	Home	Clipboard		Copy	Ctrl + C
Alt + H, F, P	Home	Clipboard		Format Painter	
Alt + H, F, letter O	Home	Clipboard		Clipboard	
Alt + H, F, F	Home	Font		Font Style	Ctrl + Shift + F = Font dialog
Alt + H, F, S	Home	Font		Font Size	Ctrl + Shift + P = Font dialog
Alt + H, F, G	Home	Font		Grow/Increase Font	Ctrl + Shift + Period
Alt + H, F, K	Home	Font		Shrink/Decrease Font	Ctrl + Shift + Comma
Alt + H, E	Home	Font		Clear Formatting	
Alt + H, Number 1	Home	Font		Bold	Ctrl + B/toggle
Alt + H, 2	Home	Font		Italic	Ctrl + letter I/toggle

Figure 252 Table of Contents on the Word worksheet.

## PowerPoint 2007

In general, slides are index cards for speakers and eye candy for the audience. They tend not to contain usable content as isolated documents and need the context of the speaker for any contextual basis of information.

Based on experience working with instructors, it should also be noted that PowerPoint is not a word processor.

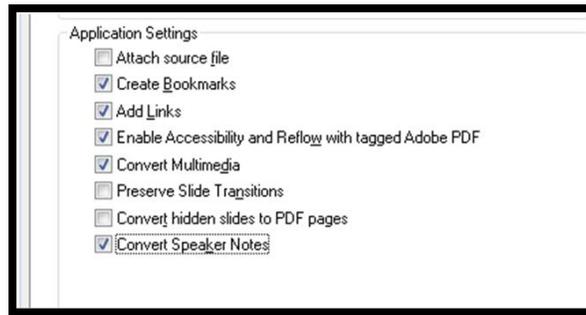
One of the improvements in tagging since Acrobat 7 is that the titles, subtitles, and headings in PowerPoint slides are now tagged properly. Of course this is "if" you are using the default placeholders on slides and not text boxes or shapes. Once again, the standard template containers for slide titles, subtitles and text need to be retained in the templates you develop for your organization. It is when we deviate from the standard and accessible structure that we end up with more repairs in Adobe Acrobat.

There is a tool in Microsoft Word that will let you send your Word document to PowerPoint and create the slides for you. The slides are basic and lack the "bling" or eye candy, but it is a good starting point to develop content for a presentation.

## PowerPoint Conversion Settings

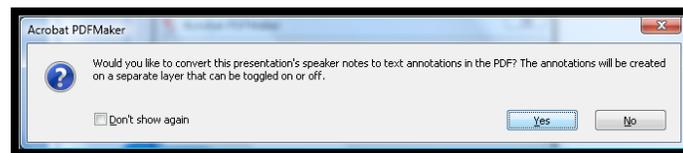
There are conversion settings for PowerPoint that let you optimize the accessibility of a presentation converted to tagged PDF.

In the Adobe conversion settings for PowerPoint there is a check box to turn off animations. This should be checked so that content is placed on individual pages without transitions.



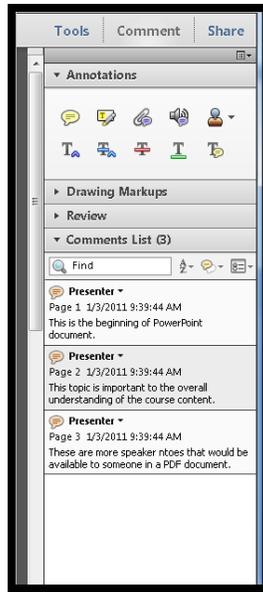
**Figure 253 PowerPoint conversion settings for tagged PDF.**

There is also the option to include Speaker Notes.



**Figure 254 Dialog to include speaker notes for PowerPoint document.**

Speaker Notes can be used in a presentation to provide additional information to the person using adaptive technology. They can be accessed in Adobe Reader by people using some types of adaptive technology. They are a good tool to use for providing supportive information to anyone. Speaker Notes don't have to be the verbatim version of the presentation.



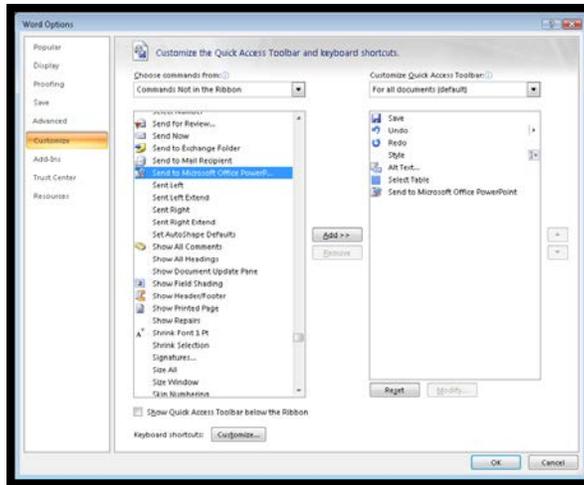
**Figure 255 Comments Toolbar in Acrobat.**

The Speaker Notes for each slide can be collapsed or expanded and each is displayed in a separate visual container in the Comments Toolbar. The Comments Toolbar can be shown or hidden by the person reading the tagged PDF document. Currently the content in the Comments Toolbar is not accessible to screen readers. Comments have not been accessible to screen readers for at least the past three or four versions of Acrobat. However, people using other forms of adaptive technology can access them. Remember the goal is to create documents that are more accessible to a broader audience base. It is hoped that with the next version of Acrobat and screen readers that Comments will finally be accessible to people using screen readers.

## **Create a Presentation in Word**

It is easy to create your presentation in Word and then send the content to PowerPoint.

In Word 2007, unlike Word 2003, we will need to put the “Send to PowerPoint” item on the QAT or Quick Access Toolbar first. Follow the instructions for putting the ASP or Apply Styles Pane on the QAT or Quick Access Toolbar. The “Send to PowerPoint” item can be found in the “Commands not on the Ribbons” list.



**Figure 256 Customize the QAT to send Word document to PowerPoint.**

To create a PowerPoint presentation in Word:

1. Open a new blank document. It doesn't have to be a template; it is the underlying structure that will be converted to the slide components.
2. Type the title for the second slide in the presentation.
3. We will add the title slide in PowerPoint.
4. Type the bullet points for the first slide or press the Enter key to move to the next line.
5. Select the text that you want to be the title of the second slide.
6. Press Ctrl + Alt + the number 1 to make it a heading level 1.
7. Select any bulleted items on "the slide" and make then heading level 2.
8. Repeat this process for each slide of the presentation: slide titles are heading level 1 while bullets are heading level 2.
9. Save your work.
10. Activate the "Send to PowerPoint" item placed on the QAT or Quick Access Toolbar.

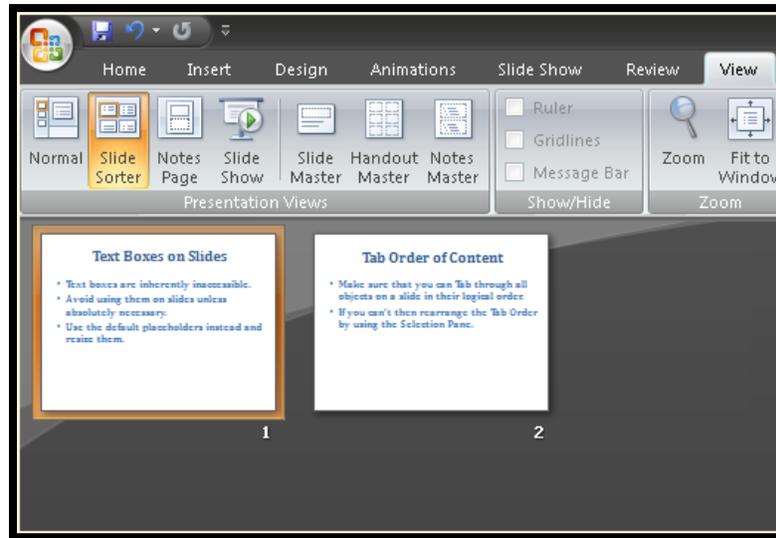
When you do this, the slide presentation is created. PowerPoint will open, the slides will be constructed and you are ready to add images and the title slide.

This lets you work on the content of your presentation without being distracted by visual design and bling. It also creates an accessible version of your presentation that can be sent to participants who can then access it on note taking devices or laptop computers or it can be Brailled.

To tidy up the Word document as an alternate format document, open the Styles pane, select all instances of heading level 2 and make then normal text once you've sent the document to PowerPoint.

## Finishing the Presentation in PowerPoint

Once the slide content has been sent to PowerPoint, switch to slide sorter view in PowerPoint by pressing Alt + V, then choosing Slide Sorter. .

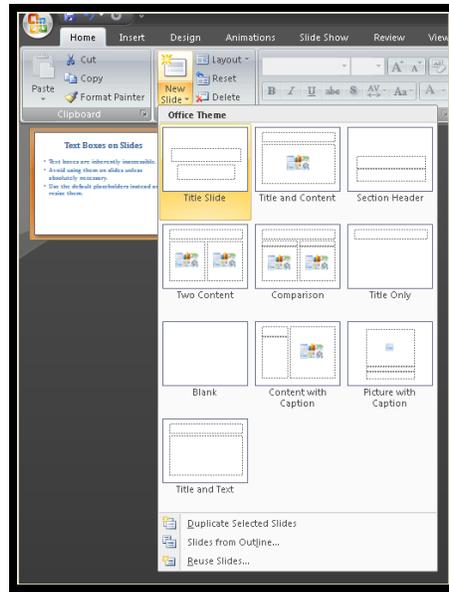


**Figure 257 Slide Sorter view once content is sent to PowerPoint.**

In Slide Sorter view use the keyboard because it is more accurate and faster to position the cursor just before the first slide.

To finish the slide presentation:

1. Choose Insert, Slide, and choose the Title Slide format.
2. If your cursor was just before the first slide, this is where the Title Slide will be placed.
3. If you were a bit off, you can drag the Title Slide to its position or cut and paste it there.



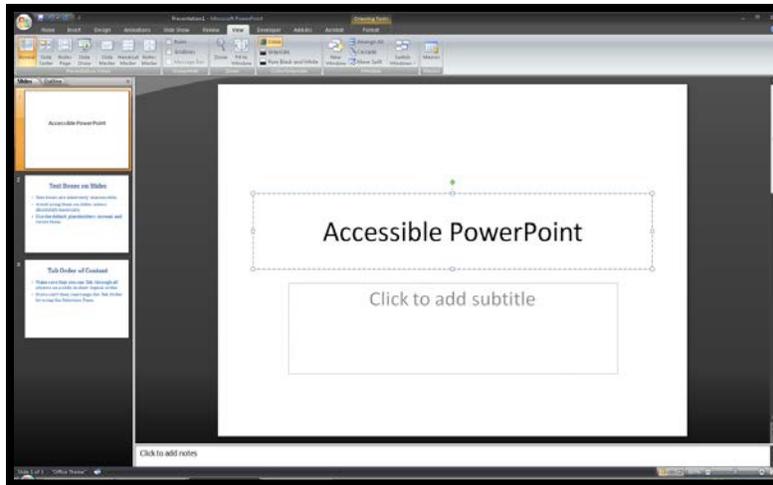
**Figure 258 Inserting the Title slide.**

4. Switch to Normal view by pressing Alt + V, then choosing Normal.
5. Press Tab to move into the Title placeholder.
6. Press Enter to activate Edit mode.
7. Type in the title of the presentation.
8. Press the Escape key once to get out of Edit mode.
9. Press the Tab key to move to the Subtitle placeholder.
10. Press Enter to activate Edit mode.
11. Type in The Subtitle information.
12. Press Escape to get out of Edit mode.

Now you can add the bling.

1. Press Alt + G for the Design Ribbon.
2. Press H for the Theme Gallery
3. Choose the Theme you want to use for the presentation.

Now you can add images, tables and other elements to the presentation.



**Figure 259 PowerPoint presentation before colour and design are added.**

Many people use text boxes in PowerPoint without knowing that text boxes are not accessible whether they are used in Word, PowerPoint, Excel or Outlook. Because they are objects that sort of float above the text layer of a document, the adaptive technology can't "see" them.



**Figure 260 Design Gallery in PowerPoint 2007.**

Many people think that if they use the File, Save As..., tool to save a PowerPoint presentation to an outline or RTF document that they are providing an accessible form of their presentation. If the presentation has text boxes, this is not true since none of the content in the text boxes will be in the RTF document. Only content in the Text or Content slide placeholders will be rendered to the RTF format.

If content from text boxes is to be made accessible it must be individually copied and pasted from every text box in the slide presentation into the RTF document or the Duxbury Braille translation software. This creates a lot of unnecessary repairs.

Because text boxes are floating objects, it is also unpredictable where they will appear in the Tags Tree when a slide presentation is converted to tagged PDF. This means more work in going through all Tags and more repairs to the tagged PDF.

By creating the outline in Word, you can then copy and paste images with Alt Text, or even just the Alt Text of images into the Word document which will make it easier if the document has to be Brailled. Tables can also be copied into the Word document.

## **Slide Master Template**

The use of the Slide Master tools, based on what I've been asked to repair in PowerPoint presentations, is a little known secret. Instead of using the Slide Master tools to create a presentation template containing all variances of formatting you'll need, default placeholders are deleted, text boxes and shapes are used instead, images are flung at slides randomly, everything is positioned and sized according to different measurements...well, you get the picture and so does your audience.

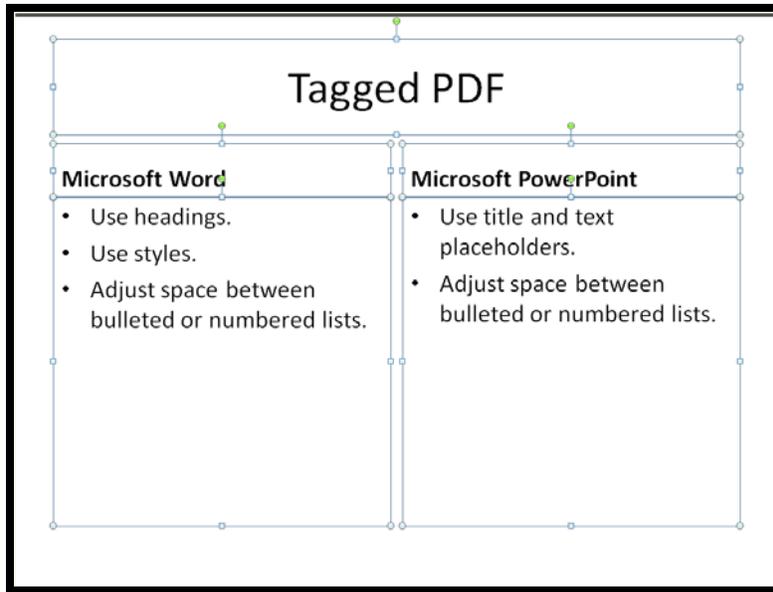
Any images that repeat on slides should be in the Slide Master. Any images that you will use for specific types of content should be on a slide template in the Slide Master. Any rearranging of the title or text placeholders should be in a slide in the Slide Master. You can also rename the different slide templates you develop.

The advantage to creating a comprehensive Slide Master set is that anyone creating slides for your organization will have a broader range of slides to choose from and the formatting of content will be uniform and consistent.

You can choose to use the template on a new PowerPoint document or, if you save your work as a Theme, you can apply that Theme and its accompanying slide layouts to an existing PowerPoint document.

I've repaired presentations where subtitles on slides have been different for every slide in the presentation. This detracts from the message of the presentation.

I've also seen comparative information crammed into the wrong slide format. There is a slide format that will let you have a "heading" for the two pieces of comparative information rather than using the two column slide.



**Figure 261 PowerPoint Comparison slide format.**

Notice that the headings for the two columns of comparative information are already in the slide. This means that you don't have to resize fonts or reposition bulleted lists so that they look awkward in each column. Remember that a slide is not a Word document but rather index cards for your presentation. Make sure that your audience can visually find the content and in this case, the content is also more accessible and readable.

Whenever you are working with a presentation or the Slide Master make sure that you can Tab through the objects or text placeholders on the page in the order that someone would read them.

## **Tab Order**

In the case of PowerPoint slides, the order in which the title and text placeholders are tabbed to is the order in which they are read or accessed by someone using a screen reader. For tagged PDF it may also affect the logical reading order of the resulting tagged PDF document.

In PowerPoint 2007 you can reorder the text placeholders or objects on a slide by using the Selection Pane.

To reorder objects/content on a slide:

1. Press Tab to move to the first object on the slide.
2. It will then have handles around it.
3. Press Alt + J, A, P to open the Selection Pane.



**Figure 262 Drawing Tools Format Sub-Ribbon containing Selection Pane.**

The Selection Pane opens to the right of the slide.

The logical reading order or the Tab Order of the objects on the slide will appear from bottom to top which is a bit counter intuitive since you expect that the first item in the Selection Pane will be the first item on the slide. It is the reverse. The objects are tabbed to from the bottom up. So the Title Placeholder will be the item “Title” in the Selection Pane.

The Selection Pane has up and down arrow buttons so you can move an object up or down in the Tab Order or logical reading order on the slide.

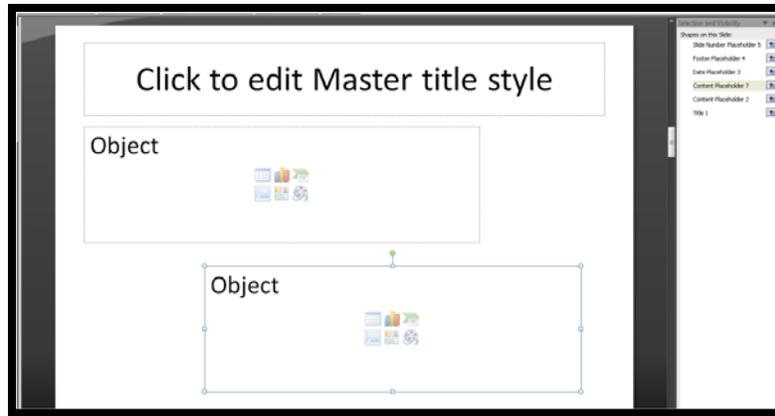
As you Tab through the objects, the corresponding item will be greyed in the Selection Pane. This lets you know which item is placed at which point in the Tab Order. For example, the second text placeholder we will insert onto a Slide Master in the next section was placed last on the slide so a person using a screen reader would have to access that content last on the slide.

We want people to access it after they’ve read the title and the first text placeholder content on the slide so we need to rearrange the Tab Order, the logical reading order of the slide objects.

Once the Selection Pane is opened, Tab to the second text placeholder on the slide. You will see that it is at the top of the list in the Selection Pane.

Use the Down Arrow to move it to the position third from the bottom.

This means that the content in this second text placeholder will be accessed immediately after the content in the first text placeholder. Thus if someone is using the keyboard to navigate through the contents of a slide they will hear them in a logical reading order.

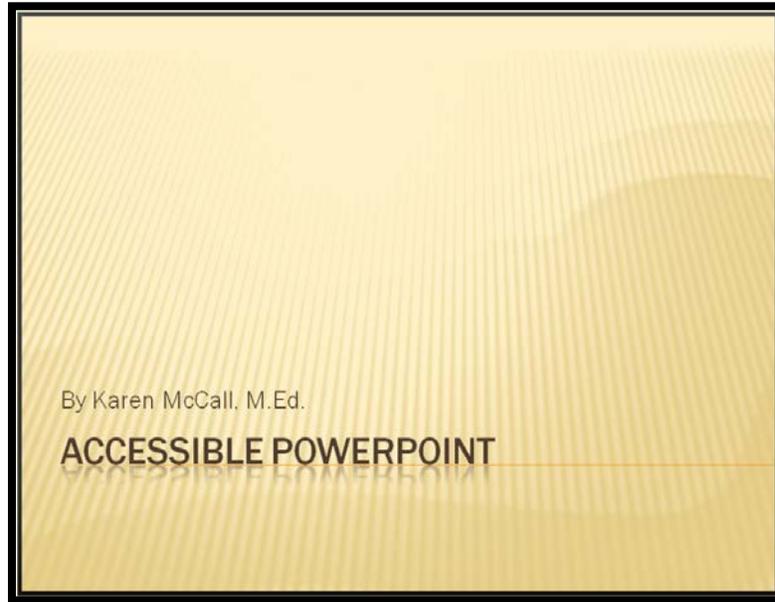


**Figure 263 Slide with Selection Pane open on the right.**

This will also affect the order in which the Tags are created in a PDF document. The tagging tools will follow the “logical” order you placed the content onto the slides. If you do not correct the Tab Order, you will need to repair this in Adobe Acrobat. In addition someone reviewing your PowerPoint presentation with adaptive technology will not be able to read slide content in a logical or meaningful order.

## Design Layout

There are several things to keep in mind when creating an accessible and usable PowerPoint presentation. Some of them are related to well-designed content.

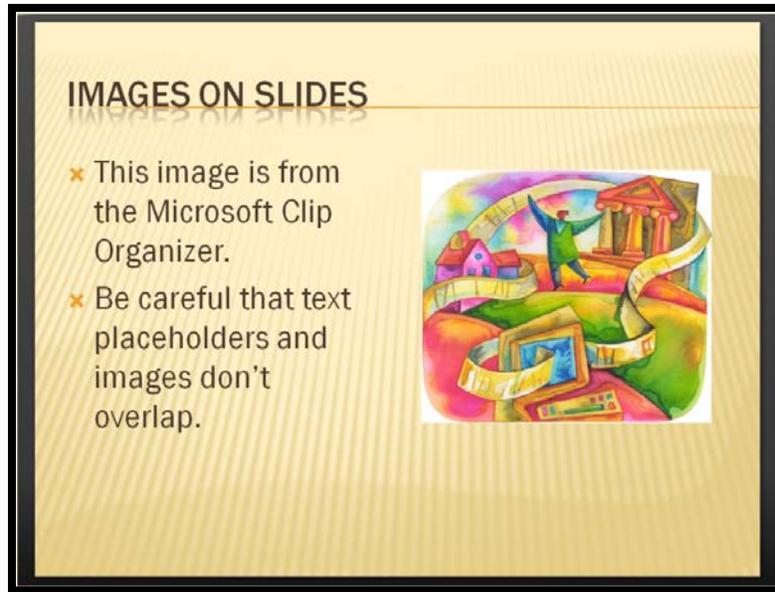


**Figure 264 PowerPoint slide design sample.**

First, take a close look at the slide design that you choose. Often I will start with one design and find that as content is added the design is not suitable. This happens even if I am designing a Slide Master. What seems like a good idea when you start out may change as you develop the template further.

This design has a mirrored image of title text, a background of wavy lines that I think mimic sand dunes or some abstract design, and thin text that becomes difficult to read as you move into the darker elements of the background design.

Some images won't look "nice" on this type of background design. This is one of the elements that has me look at other slide designs as I develop a presentation or template.



**Figure 265 Image on a slide that makes the slide look too busy and "noisy."**

The other serious accessibility issue with this choice of design is that the titles use "all caps" or all uppercase which is the most difficult font type to read for people with and without visual disabilities. Using uppercase for large or important pieces of content should be avoided.<sup>17</sup>

The foreground and background colours and designs are just as important as they were when we looked at Microsoft Word documents.

Remember not to use PowerPoint as a word processor. I know the individual slides look like they will hold a ton of text but they don't. The more text you add, the more you will have to adjust the font size. Initially this might seem like a good idea; however, as you decrease the font size to accommodate an essay on an index card, the spacing between the lines is also decreased resulting in text overlap which makes it difficult or impossible to read even projected on a screen.

The solution for text overlap is to divide the content and put it on another slide. You don't want your audience to just sit and look at one slide full of tiny text for half an hour.

Another issue is not to let images overwhelm the content. Images should be sized appropriately and not left to dominate the slide. Often in text heavy slides simply making the images smaller and making the text placeholder larger will help remove the text overlap described above.

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<sup>17</sup> Logical Document Structure Handbook: Word 2003 by Karen McCall.



**Figure 266 Slide where image dominates the content or message of the slide.**

In the preceding image, the text or substance of the slide is lost in the huge image on the right. By resizing the image to a smaller size and expanding the text placeholder, the content or message you are trying to give your audience becomes the focus not the picture of Barnaby.

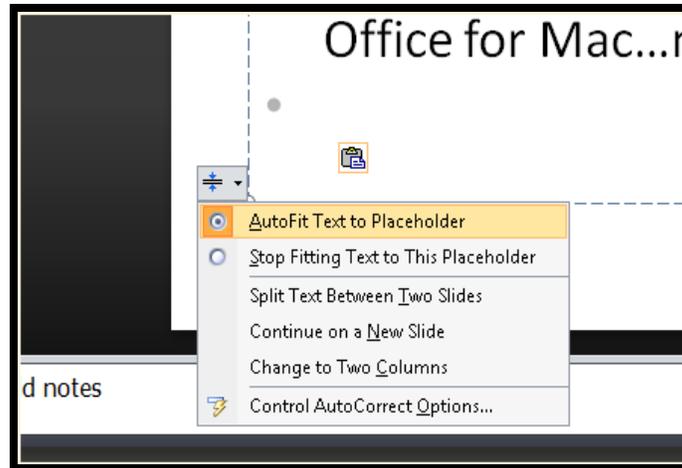
To resize an image on a slide

1. Select the image.
2. Press the AppKey to open the context menu.
3. Choose Format Picture, Format Object, or Format Shape which should be at the bottom of the context menu.
4. In the Format Picture, Object, or Shape dialog adjust the height or width of the image.
5. Tab to and activate the OK button by pressing the Enter key.

If you adjust height or width the other should automatically adjust.

Keep in mind that this image will be projected on a wall and doesn't need to be huge. You can test the presentation by using F5 to enter Slide show mode to view the ratio of the image to text on the slide.

There is a tool in PowerPoint to adjust the size of the text if you have one or two lines overlapping the default text placeholder. When content overflows the text placeholder, a small icon will appear at the bottom left of the text placeholder. One of the options is to adjust the text size. Use this for one or two line overlap and not to fit an essay on a slide. <Grin>



**Figure 267 Context menu in PowerPoint 2007 to automatically adjust the text in a text placeholder.**

Always take note of the presentation and the relationship to images and content and how much content you are trying to put on a slide. Avoid the use of text boxes whenever possible and use presentation templates to design presentations for your organization or specific audiences within your organization.

Most importantly, as with Word documents, you want to present a consistent and accessible look and feel to all your presentations.

## **Default Text Placeholders in Slide Masters**

It is important to use the default text placeholders when creating Slide Masters instead of text boxes.

Text boxes are inherently inaccessible whether you are using Word or PowerPoint, Excel or Outlook.

Why are text boxes inherently inaccessible?

Text boxes are not part of the main document text layer. They are objects that float above the text layer. Because they are not part of the text layer of documents, adaptive technology doesn't see them.

Imagine walking along the trail looking left, right and in front of you. Your feet touch the area you are walking on which means you "have access" to these parts of your surroundings.



**Figure 268** Photo of Jackson Trail Alberta copyright Karen McCall.

The clouds float above the area you are walking in as do birds and insects. The clouds, birds, insects, planes and other elements that you don't have access to would be comparable to the objects that are not in the text layer of a document. The "text layer" would be comparable to the area around you as you walk that you have access to.



**Figure 269** Photo of clouds taken from plane copyright Karen McCall.

Some adaptive technology such as the JAWS screen reader have keyboard commands for getting a list of objects in a document. You can navigate to an object such as a text box and sometimes read the contents.

But here is the problem.

If you are moving from object to object it is like being in an airplane skimming along the clouds. You can see the clouds and go in and out of them but you have no idea from looking at the clouds where you are. You don't have the ability to look down to see what might be below the clouds.



**Figure 270 Photo of clouds taken from plane to illustrate objects and layers.**

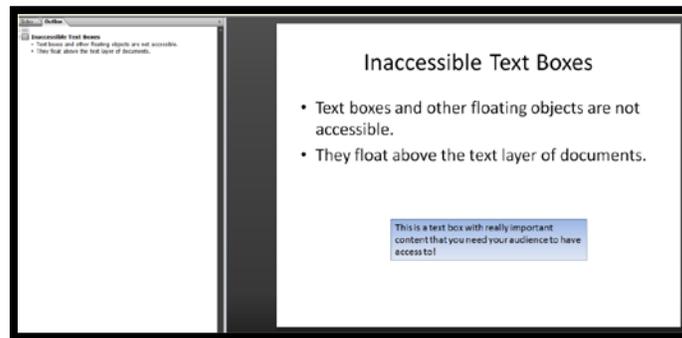
This is compounded with layered documents. It is like gliding between layers of clouds without knowing where you are or what you are “touching.” In some cases it is difficult to separate one layer of cloud from another. Similarly with layered documents it becomes difficult separating one layer of “content” from another.

So while you may be able to read the content in a text box, you have no mechanism to help you view what is under it or around it. Each "layer of the document lives in isolation of each other as experienced by adaptive technology.

In PowerPoint, although someone can Tab to each object or text box on a slide, the position of that information varies when the document is converted to tagged PDF. As with Word, text boxes are not part of the immediate text area of a slide. To check the accessibility of this content, switch to Outline view in PowerPoint. Anything that you do not see in this view will not be saved as part of the PowerPoint document and will have to be copied and pasted into the RTF or Outline document.

As an illustration, the following slide is shown in Outline view along the left of the PowerPoint window. The slide contains an accessible title placeholder, an accessible text placeholder and an inaccessible text box. If you are providing the outline or RTF version of a presentation to someone

as an accessible alternative, you will need to copy and paste all content from EVERY text box you've used in your presentation into the RTF file.



**Figure 271 A PowerPoint slide with a text box/blue object that is not accessible.**

The information visually identified with a blue border and blue gradient fill is in a text box which you will notice did not appear as text in the slide outline view on the left of the slide.

This is why we use the default text placeholders in a presentation. You can create the same effect but the content is accessible to adaptive technology.

Where do I find these accessible text placeholders?

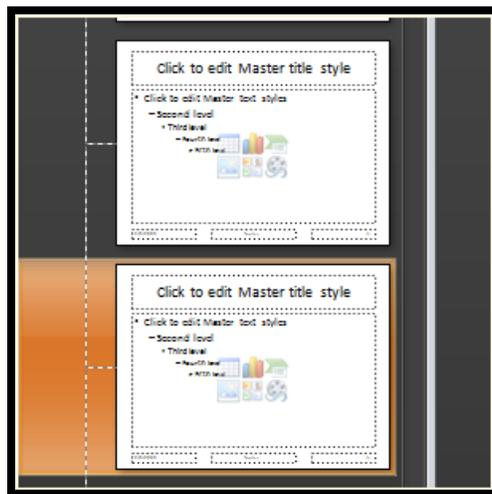
To use a default text placeholder instead of a text box in a Slide Master:

1. Save the blank slide presentation as a slide template.
2. Press F12 and choose PowerPoint Template as the file type.
3. Switch to Slide Master view by pressing Alt + W, M.
4. The Master Ribbon appears at the far left of the Ribbons.
5. Duplicate a slide. We will use this as the base for our new slide.
6. Select the slide in the pane on the left of the slide.
7. Press the AppKey and choose "Duplicate Slide."



**Figure 272 Context menu open to duplicate slide.**

Once the slide is duplicated, select the duplicate slide. The slide will be visible in the main slide area.



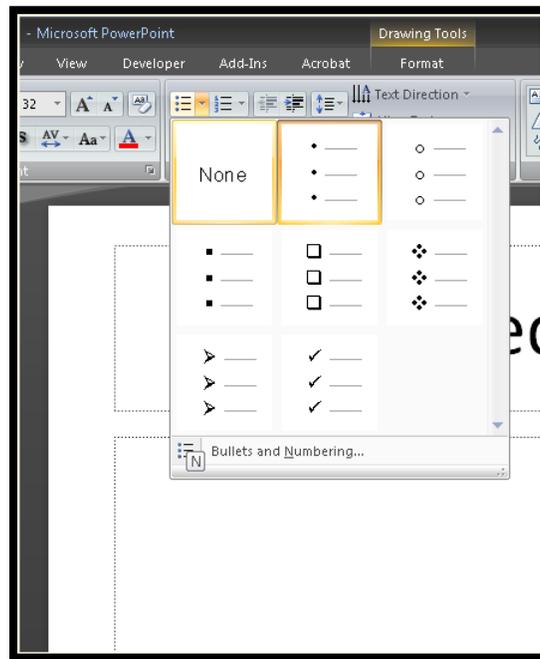
**Figure 273 Duplicate slide selected in navigation pane.**

In this sample I am going to make a slide with two text placeholders that will have paragraph text not bulleted text in them.

I find this is a need for many presenters.

The first thing to do is to remove the bulleted formatting from the top text placeholder.

Press Tab to put focus on the first text placeholder and then press Enter which will put you in Edit mode so that you can select and delete the sample contents/formatting.



**Figure 274** Bullet Gallery open.

What you are left with is the word “object” next to a bullet.

Next, press Alt + H, U to open the Bullets Gallery.

Choose “None” for the type of bullet.

This text placeholder will now have paragraph text rather than bulleted text.

Of course you can leave it as bulleted text but remember not to overfill the placeholder with content.

The next thing to do is to add the second text placeholder.

Press the Escape key until none of the placeholders on the slide has focus/handles around them.

Press Alt + M to put focus on the Slide Master Ribbon.

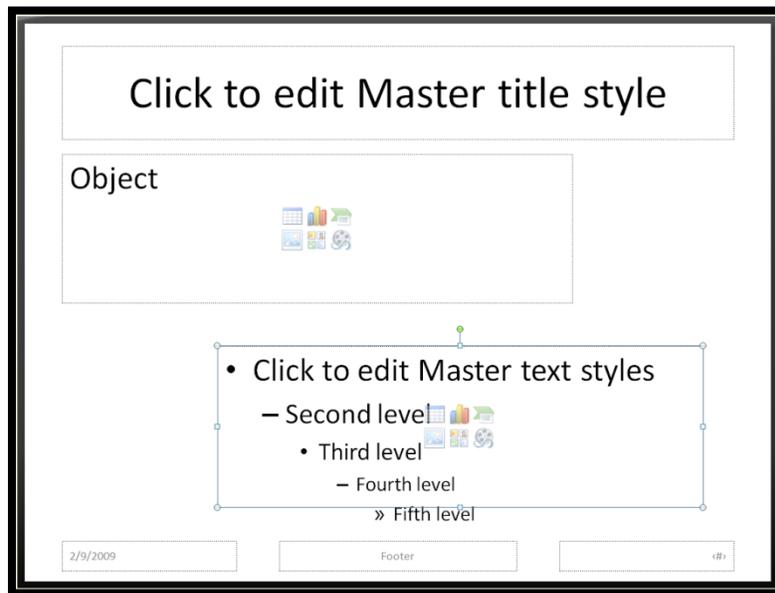
Press A to insert a Placeholder, then C for Content placeholder.



**Figure 275 Content selected as the type of placeholder to add to the slide.**

The placeholder will be inserted and may cover parts of the existing placeholders on the slide.

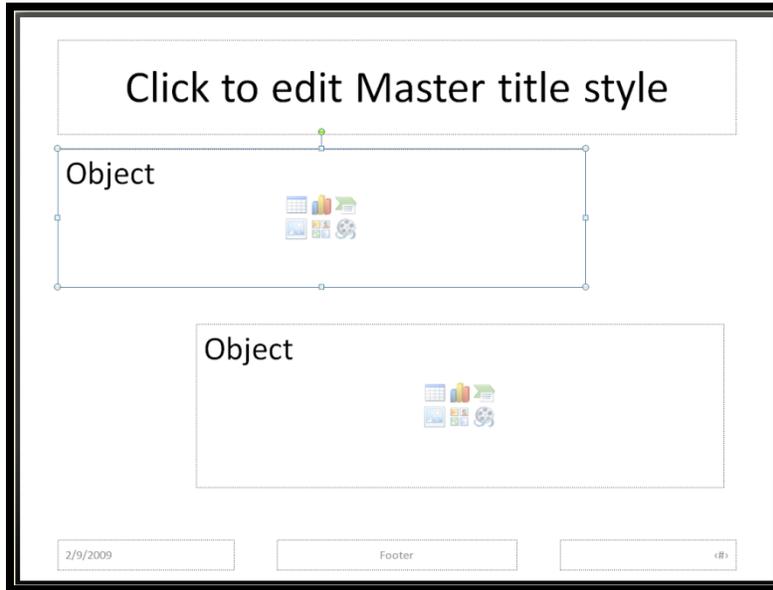
The easiest way to figure out which placeholder you are working with is to press the Tab key which will cycle you through all objects on the slide.



**Figure 276 Slide with new text placeholder.**

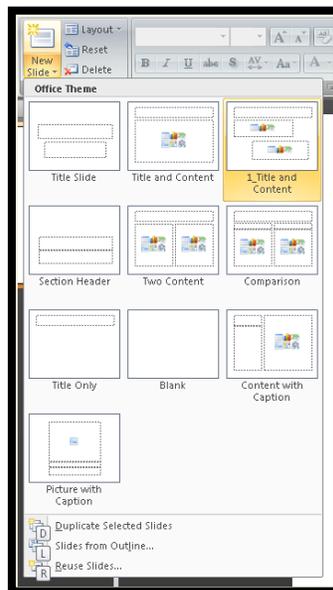
Repeat the process of removing the bulleted formatting for the new text placeholder.

Your slide now has two paragraph placeholders that are accessible.



**Figure 277 Slide with two accessible placeholders.**

When you return to the “Normal” view of the presentation, this slide will be available for you to insert into a presentation based on this template.



**Figure 278 List of slides available for a presentation.**

There is one more thing we can do to finish the process. We can rename the new slide format so that it is more meaningful to anyone who wants to use it.

To rename a slide you've created:

1. Select the slide in the Slide Master view.
2. Press the AppKey and choose Rename Layout from the context menu.

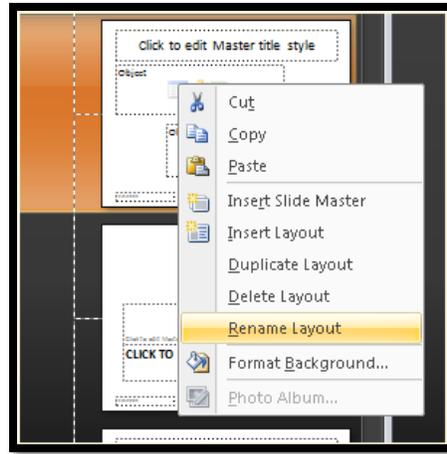


Figure 279 Context menu with renaming item selected.

3. A dialog opens. Your focus is in an edit box where you can rename the new slide layout.
4. In this case I've called it "Double Paragraph."

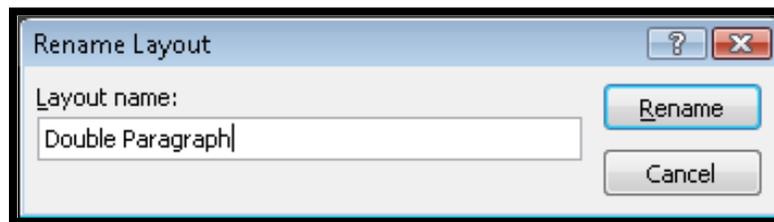
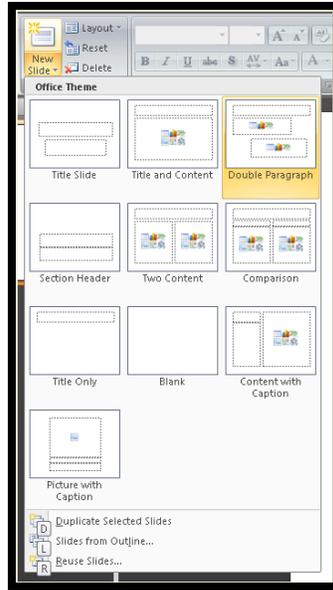


Figure 280 Rename Slide Layout dialog.

5. Type in the new name and then Tab to the Rename button and press Enter to confirm the new name.
6. Save the changes to the template.

Now when you go to insert a new slide in the "Normal" view, this slide will be one of them and its name will have more meaning to the presentation author.



**Figure 281 Slide layout renamed.**

There is currently no mechanism to insert a content placeholder or default text placeholder while you are in Normal view of the slide presentation. This has to be done in the Slide Master view.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

## **Title Placeholder**

In keeping with the theme that PowerPoint is not a word processor nor is it an endless document, we must address the amount of information placed in a title placeholder.

The purpose of the title placeholder or slide title is to provide a “brief and concise” heading for the content on the slide.

In looking at the Outline view of the presentation make sure that multiple slides don’t have exactly the same title. For example if you have four slides with the title “Tagged PDF” someone who is using adaptive technology would think that their adaptive technology is stuck and not progressing forward through the slides. This is especially true of someone using a screen reader.

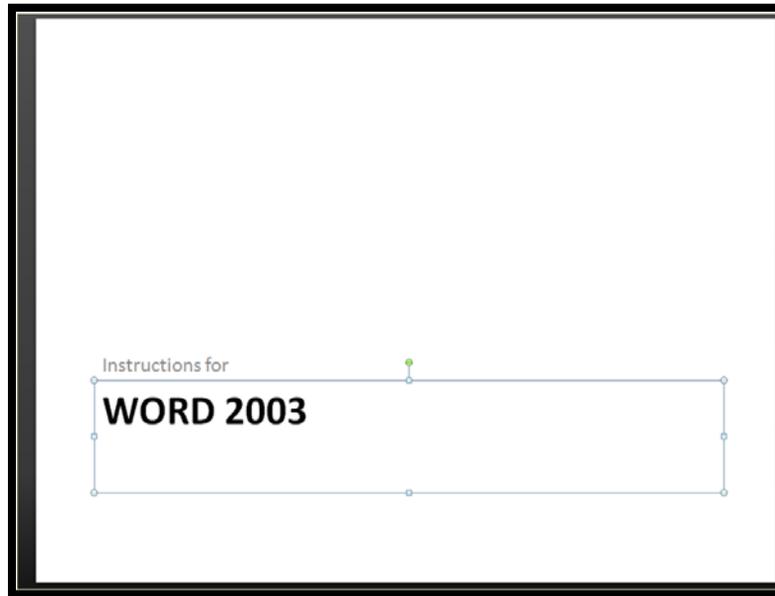
Using numbers after slide titles that are the same is acceptable. For example “Tagged PDF – 1.” Usually I use this type of numbering if slides have steps that can’t be contained on one slide and need to be carried over to another. A slide might have the instructional step and an image of the dialog or end result of an action.

By putting each step on a separate slide, the person who is trying to follow the steps will be presented with one step at a time which gives them time to examine the content at their own pace.

It is also not acceptable to have ten different font sizes and colours in a title placeholder. This is visually confusing to someone with a learning, cognitive, or visual disability.

Once again we are brought back to the design of the presentation. You can use a slide to identify large changes in topic or content. For example instead of putting the words “Word 2003” in every title placeholder for content that is related to Word 2003, using one slide that simply says “Word 2003” clearly identifies the subject of the following content.

PowerPoint even has a slide in its default template for this: Section Header slide.



**Figure 282 PowerPoint Section Header slide identifying instructions for Word 2003.**

This slide lets you add images if you want. If you don’t like this particular design for the Section Header slide, change it in the presentation template. In the Slide Master view of the presentation you can move the default placeholders around the slide to customize their position for the needs of your organization.

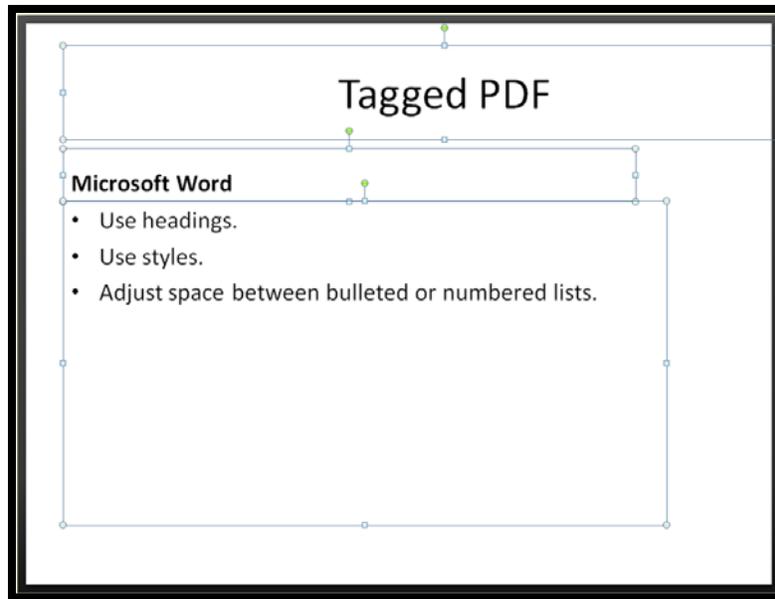
By using this tool in PowerPoint you won’t have to try and cram this text into every title placeholder for subsequent slides.

When you do try to cram repetitive information into a title placeholder the content of the slide, the actual title text for the slide gets lost in redundancy.

We’ve looked at using the Comparison format slide for presenting comparative information but within the Slide Master tools, you can create a slide with a “subtitle” that is also accessible because it uses the default title and text placeholders.

To create a different subtitle Slide Master:

1. In the Slide Master view, select the Comparisons slide format.
2. Duplicate this format using the AppKey and choosing to duplicate the slide format from the context menu.
3. On the duplicate version of the slide format, delete the second comparative title and text placeholders.
4. Resize the first set of comparative title and text placeholders to meet your needs.
5. You can also rename this new version of the slide to make it easier for others to know what to do with it.



**Figure 283 New slide with a subtitle in the Slide Master set.**

The preceding image shows the redesigned comparative slide to allow for the use of a subtitle for appropriate content. This slide becomes part of the Slide Master set for the presentation and anyone creating a presentation based on the set of Slides Master has access to it.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J], A, P].

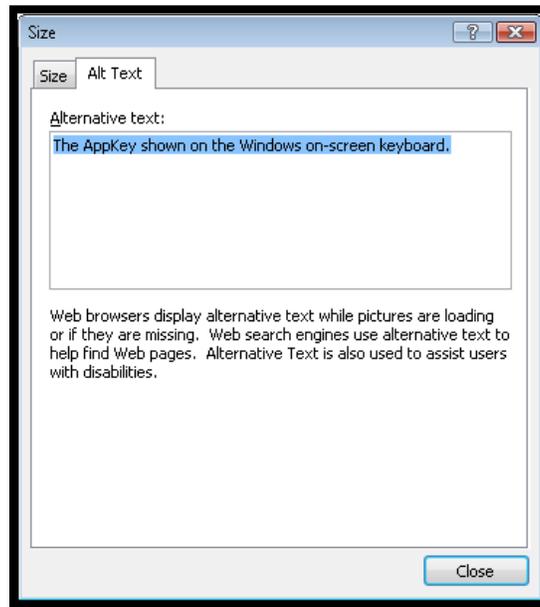
## **Adding Alt Text in PowerPoint**

You can easily add Alt Text in PowerPoint. The Alt Text will then be converted to the tagged PDF document making one less repair necessary.

To add Alt Text in PowerPoint:

1. Select the image or object.
2. Press the AppKey to open the context menu.
3. Choose Size and Position, Format Shape or Format Object.
4. Press Ctrl + Tab to move to the Alt tab.

5. Press Tab to move to the Alt Text edit area.
6. Type your Alt Text for the image.
7. Tab to and activate the OK button by pressing Enter.



**Figure 284 Alt Text tab in size and Position dialog.**

One comment while we are looking at Alt Text for images on slides. When the outline or RTF document is produced as an accessible alternative to a slide presentation, none of the Alt Text will be in the RTF document.

For slides where there is only an image, you can copy and paste the Alt Text into the RTF document so that people who need alternate format or Braille have access to Alt Text for diagrams, images, and objects.

Remember to use the default title and text placeholders for written content.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

**Note:** You can put the Alt Text dialog on the QAT or Quick Access Toolbar.

## Tables on Slides

When using a table on a slide, use the tools in PowerPoint to insert a table. Although we can't use the tools to create <TH> Tags, if we use non-standard tables, images of tables, or drawn tables, these will represent barriers to accessibility in the presentation and any subsequent tagged PDF documents you will need from this presentation.

**Note:** tables will need to be copied and pasted into the outline or RTF document if this is the alternate format needed by participants.

Don't use grouped objects to create the illusion of a table. Use the proper table structure. If you use grouped objects to create the illusion of a table, they will all need Alt Text as individual images both in the PowerPoint and subsequent tagged PDF documents. This means that the information will not be presented in table format to someone using adaptive technology such as a screen reader.

If you are using colour in tables, make sure there is a good contrast so that the data is readable.

## Links in Presentations

As with links in Microsoft Word, it is preferred that links be contextual rather than the full web addresses.

You also don't want to play around with the size of text used for links. In some presentations I've seen five or six font sizes on one slide in one text placeholder which is visually distracting and detracts from the message you are giving the audience. Your audience will be spending time concentrating on reading varied font sizes rather than listening to you explain what the points on the slide mean.

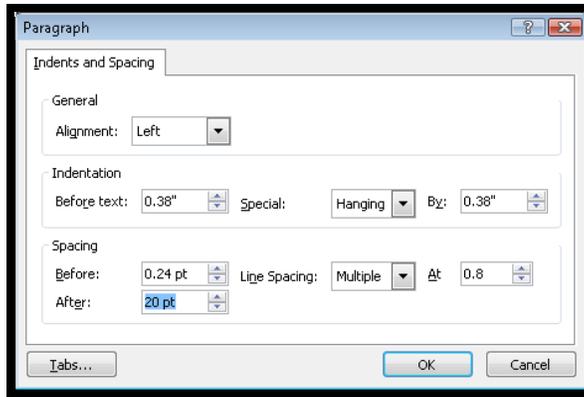
To add a contextual link for a PowerPoint slide select the text to be the link and press Ctrl + K to open the Create Hyperlink dialog. From this point the steps are the same as they are for Microsoft Word. You can link to a web page, document or other document.

## Bulleted Lists

Just as with Word, you don't use the enter key to create space between bulleted points in a PowerPoint slide presentation. Instead use the Paragraph dialog to add space below each bulleted item.

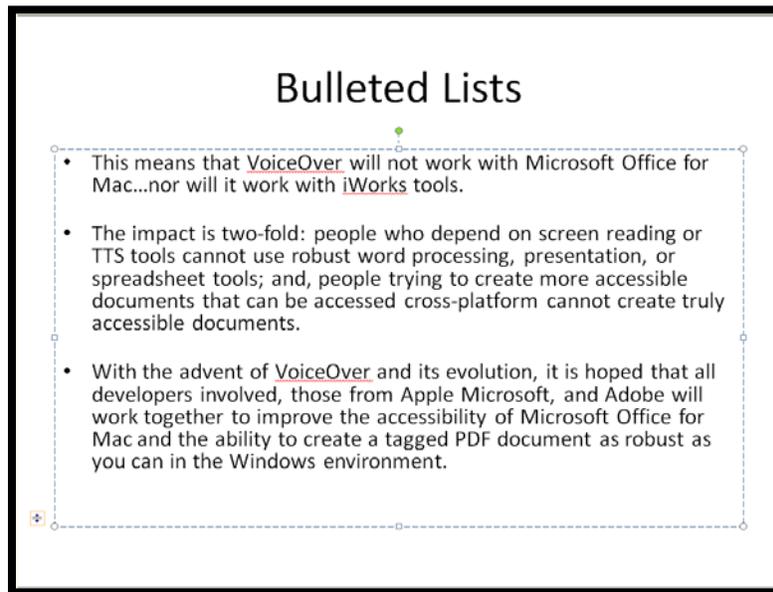
If you've put too much content into a slide and are readjusting the line spacing so that text doesn't overlap, choose "single" line spacing in the Paragraph dialog rather than "Multiple" which PowerPoint will do by itself when you ask it to cram too much content into one text placeholder.

To adjust the spacing between bulleted items choose Format, Paragraph.



**Figure 285 Paragraph dialog in PowerPoint.**

In the example above I've used a 20 point spacing which gives the typical amount of space between bulleted items that a press of the Enter key would.



**Figure 286 Bulleted list on a slide spaced using the Paragraph tools.**

As with Word, we added the spacing after each bulleted item. We know that the first bulleted item has enough space around it because it is the first one in the text placeholder and the text placeholder is positioned by default to allow space between the title placeholder and the text placeholder or content on the slide.

By using the spacing between the bulleted list items the list is not broken. This means that the content will be read as one list of three bulleted items rather than three lists of single items.

If you have a single piece of content on a slide, using bulleted text might not be the best way to present it. You can turn off the bullets by selecting the text in the text placeholder and choosing Format, Bullets and Numbering and then choosing “None.” You can then resize the text placeholder and position it where you want on the slide.

You can also create a slide template with a text placeholder that is not formatted for bullets or numbering by using the Slide Master to do this.

## **Grouped Objects**

Although you can create what appears to be charts and diagrams in PowerPoint using grouped objects, these don’t translate well into single objects with Alt Text. In some cases each individual object will require Alt Text when the presentation is converted to tagged PDF while in other cases having grouped objects on a slide makes it impossible for someone using a screen reader to figure out what the visual relationships are between the shapes.

One of the nifty tools with Microsoft OneNote is the ability to create screen clippings. If you have the ability turned on in OneNote, you can press Windows Key + S and then use the mouse to drag diagonally over an area of the screen and create what is a “screen clipping.”

For the images in this book that are not full screen images, I used screen clippings and then made the clippings PNG files using Macromedia Fireworks 8. As someone who does training material for clients this is a valuable tool and lets me create more meaningful content during a training session or prior to it. I can also visually demonstrate exactly what I am talking about.

Many of the repairs for grouped objects that I do involve taking a screen clipping of a group of objects on a slide and creating one image for which I can add Alt Text. I then delete the grouped objects, insert the image of them, and add the Alt Text.

This makes the slides more accessible and easier to organize the Tab Order of objects on a slide.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

## **Slide Numbers**

There is a tool for adding slide numbers that will automatically create a “Slide Number placeholder” that is more accessible than a text box with a number plunked into it.

Using the tool for adding slide numbers will also ensure that the numbering of slides in the presentation is consistent and sequential.

You’ll find this tool under Insert, Slide Number.

You can reformat the look and feel of the slide numbers in the Slide Master if you don’t like the default way they look on a slide.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

If you want more ideas and details on making PowerPoint documents accessible you will want to purchase the “Logical Document structure Handbook: PowerPoint 2007” book from Karlen Communications.

## Outlook 2007

The ability to convert individual messages to tagged PDF or to convert entire mail folders to tagged PDF is no longer available in Acrobat 9.

This was a very useful tool and one those of us who do use adaptive technology used frequently to archive messages and mail folders in a secure and accessible format. We can only hope that this ability returns with acrobat 10.

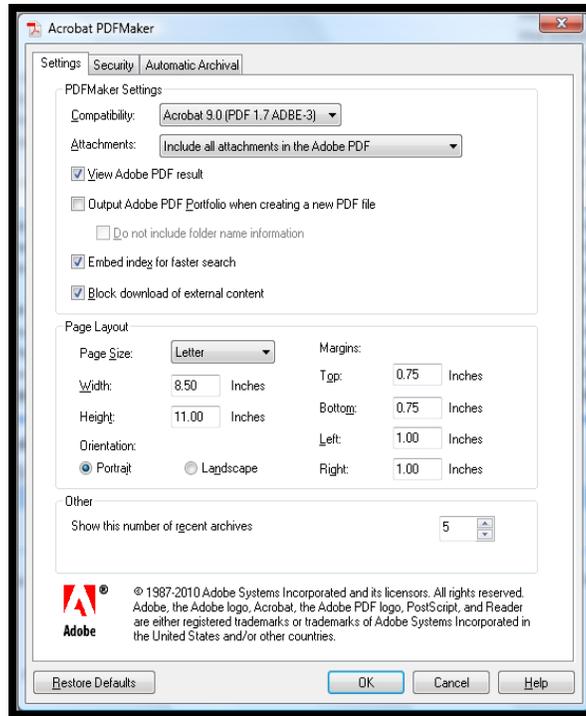
OK, so it didn't, despite an infinite amount of whining on my part.

There are two solutions to this:

1. Save the Outlook mail folder or message as a Portfolio which is still mostly inaccessible for those of us using screen readers. If you save a mail folder as a Portfolio you will need to Tag each and every mail message in the portfolio. This is terribly time consuming.
  - a. You need to open the Portfolio in Acrobat in order to tag each document. You can only Tag each document using the Tags Panel and the Tags Tree context menu. There is no Accessibility Toolbar when you open a Portfolio in Acrobat.
2. In the Acrobat conversion settings choose not to save as a Portfolio by default. This will save your mail folder or individual messages as plain old PDF documents that will open nicely in Acrobat and you will be able to Tag the entire PDF document of mail posts.

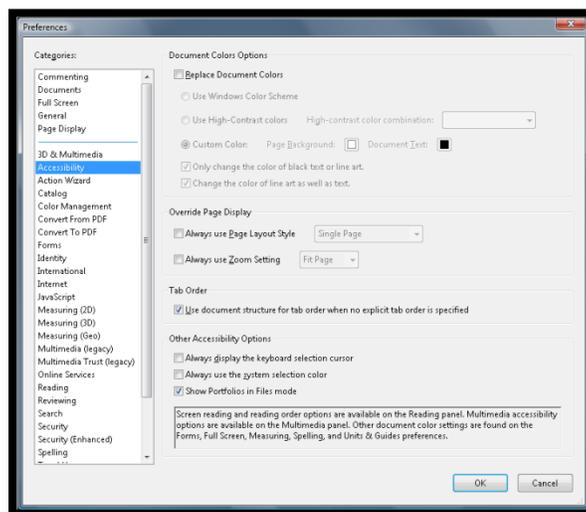
I recommend archiving every four months to keep the file sizes down to something that is manageable. My last archived folder was 823MB as it grew while I was hoping for the tagging ability in Acrobat X. It took almost an entire morning to first archive then Tag this PDF document. However, now I can search for project information, client posts or other information using the standard Search dialog instead of the Portfolio Flash based one.

In the Adobe conversion settings [only available on a 32-bit installation of Office 2010], uncheck the check box to output Adobe PDF Portfolio when creating a new PDF file. This will create a regular PDF file.



**Figure 287 Outlook conversions settings for Adobe add-in.**

In the Preferences for Acrobat and Reader, under Accessibility, check the check box to display Portfolio in Files mode. This will help a bit in accessing Portfolios in that they will open in Acrobat.



**Figure 288 Accessibility preferences in Adobe Acrobat or Reader turning off Portfolio mode.**

Portfolios will still open in a modified Portfolio format and the ability to search is not as accessible as it could be, but there is some navigation by showing Portfolios in files mode.

# Microsoft Publisher

There is good news and bad news for those of us using Publisher.

First, the bad news, you still can't create a tagged PDF using the Adobe Acrobat plug-in for Microsoft Office.

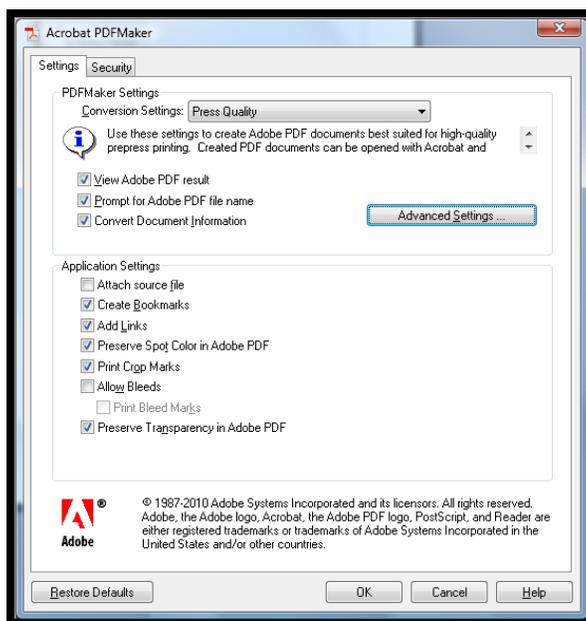


Figure 289 Conversion settings for Publisher and Acrobat X.

The good news?

If you build some of the structure into your Publisher document and then use the Microsoft Save as PDF or XPS plug-in, you will be able to create a structured tagged PDF document.

To begin with, I created a heading 1 style for my blank Publisher document. If you create a “custom” heading style, this will not work. It is sort of a convoluted process. You can create something like a Karlen 1 style but you can't easily base it on a Heading 1 style. In fact I couldn't find a way to do this. However, if you try to rename Karlen 1 to Heading 1 you are given a message dialog that says Heading 1 is a default style that cannot be used. Doesn't make sense but there you have it.

So, select some normal paragraph text and in the Formatting toolbar, in the Style list, type Heading 1. This makes the selected text a Heading 1 even though you can't see any difference in how it looks.

Go to the Format menu and open the Styles Pane. Heading 1 shows up in the list of styles. Select it and press the AppKey, then choose Modify. This will let you modify the look of the Heading 1 style. Go figure.



This means that Publisher 2007 is now a viable tool for creating accessible PDF if you use the Microsoft plug-in to publish the document to PDF and if you build the accessibility into the Publisher document itself.

**Note:** At the time of this revision I did not test tables and lists which are two key elements that often are created improperly or tagged improperly.

As with all PDF documents, make sure you have a QA or Quality Assurance audit process to ensure that PDF meet your organizations criteria for tagged accessible and usable PDF documents.

## Microsoft Office for Mac

At this point in time, you cannot create a fully accessible document in Microsoft Office for Mac in either the 2004 or 2008 versions. One significant lack of support is for Alt Text on images and objects.

Although VoiceOver is relatively usable on a Mac using the Leopard OS, there are few applications that are accessible. This is primarily due to the fact that they haven't had to be for several years. The Mac OS has not had a usable screen reader since the mid 1990's. The Mac OS is usable for augmentative communication devices for people requiring communication aids or alternate input devices, but has lagged far behind when it comes to support for people with sensory disabilities such as those who are blind or visually disabled.

This means that VoiceOver will not work with Microsoft Office for Mac...nor will it work with iWorks tools.

The impact is two-fold: people who depend on screen reading or TTS tools cannot use robust word processing, presentation, or spreadsheet tools; and, people trying to create more accessible documents that can be accessed cross-platform cannot create truly accessible documents.

With the advent of VoiceOver and its evolution, it is hoped that all developers involved, those from Apple Microsoft, and Adobe will work together to improve the accessibility of Microsoft Office for Mac and the ability to create a tagged PDF document as robust as you can in the Windows environment.

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# Microsoft Office 2010

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Much of the text in this chapter is repeated in the chapters on Microsoft Office 2003 and 2007. The barriers to accessibility are the same no matter which version of Office you are using. As a document author, you can control many of these issues and prevent the barriers in both an Office based document and a tagged PDF document. This chapter does use the Office 2010 and Acrobat 10 tools as there might be slight differences or new tools available to you.

As with Office 2007, in Office 2010 there are more tools for creating accessible documents than were in Office 2003. Office 2010 includes an Accessibility Checker which will be covered in this chapter. This is a tool not available in previous versions of Microsoft Office.

## Word 2010

In this book I've talked a lot about using templates and making sure your documents have the proper structure so that there is little or no repairs needed in the resulting tagged PDF document.

This chapter details how to do this. You may also want to purchase the "Logical Document Structure Handbook: Word 2010" edition for details on accessible and inaccessible document parts.

First, let's look at creating templates for documents.

## Creating Templates for Documents

When I talk about using styles for headings, many people say that they don't like the look of the inherent heading styles in Word or that their organization has specific criteria for what a heading in a document should look like.

In this book, I've created headings and titles that "I" like and can use effectively. The headings I use are the heading styles inherent in Microsoft Word. By using a template, in this case "Karlen Book" I can modify the look and feel of any of the document parts I use without affecting the Normal.dotx or normal document template Word uses when you create any new document.

By creating a template I can also use the inherent keyboard commands for applying heading levels to text. This saves time in that I don't have to go to the Apply Styles Pane or the Styles Pane, locate the style I want and select it. I can simply press Ctrl + Alt + number 1 when I select text to make the text a heading level 1. Any changes I've made to the Heading 1 style are applied. For other styles

such as a “Highlight Text” style I can put the Apply Styles Pane on the Quick Access toolbar and in one keyboard command, in my case Alt + 4, I can move to the Apply Styles Pane and type Highlight Text to apply that style. This too saves time.

A template can contain any “static” information such as disclaimers, contact information, preface content, and content that would remain the same with each iteration of the document.

One of the biggest problems in not developing and using a template for each of your ongoing publications is that the result is a hodge podge of formatting. Each time a different person reviews or revises content, they don’t know what formatting was used in previous versions so can’t easily apply it to the version of the document they are working on. Many people visually apply formatting by saying “if it looks sort of like the other stuff in the document it works for me!”

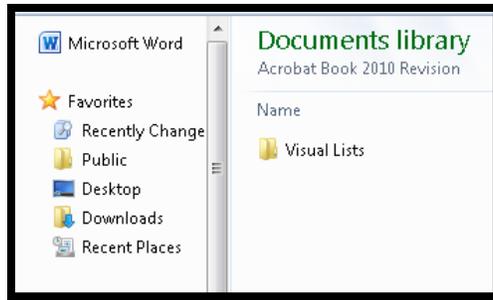
When you have a template for an annual report for example, all of the styles that will be used in that annual report are there in the template. The person creating or revising the document just has to apply them. Initially staff will need to be trained and there should be a style guide to go along with publications. In Word 2010 you can use Shift + F1 to show the Formatting Pane which will give you the formatting for selected text. This also helps to determine what formatting was used in past document so that a style for current documents can be created.

In workshops that I’ve done participants are always amazed at how much time they will save in using styles and templates and how good their documents look when finished. The fact that they are also building in accessibility is a “bonus.”

Just as with HTML, many people think that making Word documents more structured and “accessible” means more work when it really means less.

To create a template in Word 2010:

1. Open a blank document by pressing Ctrl + N.
2. Press F12 or choose File, Save As.
3. The Save As dialog opens.
4. Give your template a name. For example “Annual Report” without the quotation marks.
5. Press Tab to move to the “Save as Type” list and choose “Word Template.”
6. If your documents have macros you can choose “Macro Enabled Template” from the list.
7. You will need to choose the “Microsoft Word” link on the left of the list of documents in order to save the template with other available templates.
8. Once you activate the Microsoft Word link you are moved to the Microsoft folder in Documents and Settings/AppData. You may also need to open the actual Templates folder from the list of folders and files.



**Figure 292 Save as template dialog.**

9. Your document will be saved as a DOTX file which is the Office XML format.
10. If you are saving a macro enable template the extension will be slightly different to reflect the inclusion of macros.
11. Move to and Activate the Save button by pressing Enter, or press Alt + S to do the same thing.

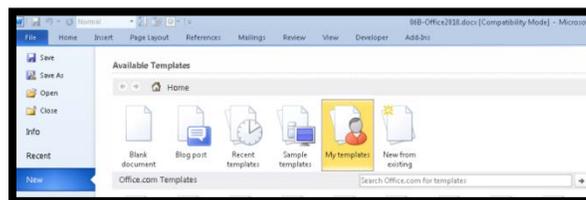
Now you can add text, change the base font set and size, change the colour of text, add a style for important information you want to call out, and modify any of the heading styles in the document. As long as you are working in the DOTX file, you are working on the template or the look and feel of the annual report [in this example].

## Using a Template

Once you have created your template it is easy to deploy over a network and use. You can place it on a server and give everyone access to it or you can place it in the Application Data, Microsoft, Templates folder for a user account on an individual workstation.

To open and use a template :

1. Press Alt + F, N for File, New.
2. The File/Backstage area opens.
3. Press Tab to move into the options for new documents.
4. Use The Arrow keys and Tab and Shift + Tab to move forward and backward through the areas of this backstage area.

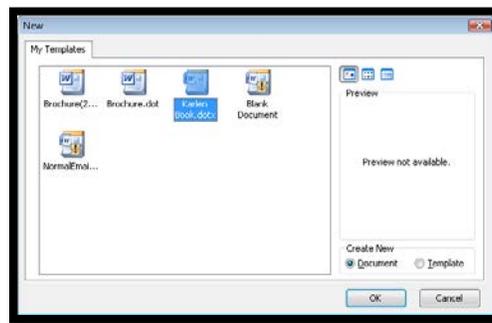


**Figure 293 New area in the File/Backstage area of Word 2010 with My Templates selected.**

5. Once you press Enter on the My Templates “button” the standard dialog opens showing you the available templates.
6. Use first character navigation to find the one you want.
7. For example I can use K to quickly find “Karlen Book.”
8. Press Enter to open a new document based on this template.

If you’ve recently worked on or used the template, it will show up in a list of recently used templates. Don’t confuse this with the list of recently used documents that you find under the File/Backstage area.

If you open the list of recently used documents and choose Annual Report.dotx, you will open the template itself. You want to make sure the document you are opening is Annual Report.DOCX This will retain the integrity of your template but let you rename the “working document” to something like “Annual Report 2009.DOCX.”



**Figure 294 Figure 3**

You can always open the template to make any changes needed based on your organizational standards, policies or to make changes in the look and feel of documents.

Text boxes are inherently inaccessible whether you are using Word or PowerPoint, Excel or Outlook.

Why are text boxes inherently inaccessible?

Text boxes float over the page because they are objects not part of the text layer of the document. Most of them cannot be put into focus using the keyboard so that the content is accessible to adaptive technology unless you can physically put the mouse cursor into the text.

Some screen readers do have the ability to list objects in a document and then let the end-user put focus into the text but because they are objects the process is similar to walking on stepping stones in a pond. You move from stone to stone without touching the water. In this metaphor you move from object to object/text box to text box without touching the surrounding content.

Imagine walking along the trail looking left, right and in front of you. Your feet touch the area you are walking on which means you “have access” to these parts of your surroundings.



**Figure 295 Photo of Jackson Trail Alberta copyright Karen McCall.**

The clouds float above the area you are walking in as do birds and insects. The clouds, birds, insects, planes and other elements that you don't have access to would be comparable to the objects that are not in the text layer of a document. The “text layer” would be comparable to the area around you as you walk that you have access to.



**Figure 296 Photo of clouds taken from plane copyright Karen McCall.**

Some adaptive technology such as the JAWS screen reader have keyboard commands for getting a list of objects in a document. You can navigate to an object such as a text box and sometimes read the contents.

But here is the problem.

If you are moving from object to object it is like being in an airplane skimming along the clouds. You can see the clouds and go in and out of them but you have no idea from looking at the clouds where you are. You don't have the ability to look down to see what might be below the clouds.

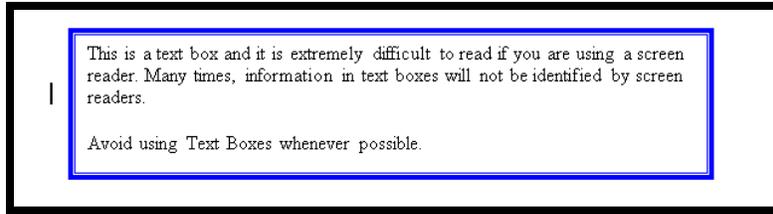


**Figure 297 Photo of clouds taken from plane to illustrate objects and layers.**

This is compounded with layered documents. It is like gliding between layers of clouds without knowing where you are or what you are “touching.” In some cases it is difficult to separate one layer of cloud from another. Similarly with layered documents it becomes difficult separating one layer of “content” from another.

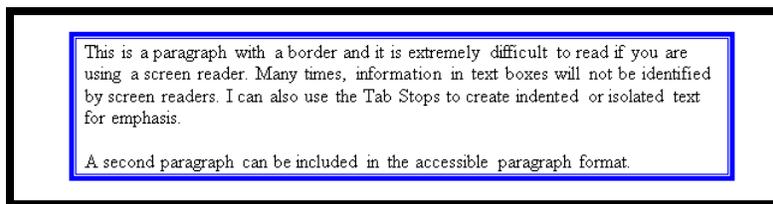
So while you may be able to read the content in a text box, you have no mechanism to help you view what is under it or around it. Each "layer of the document lives in isolation of each other as experienced by adaptive technology.

Text boxes are often used for quotations and other text that document authors want people to really notice and read.



**Figure 298 Text box showing cursor at the margin.**

Paragraph formatting is simple and easy, yet we often use the tools someone showed us during a “marketing of the software seminar” or a tool we found that “did the trick” when we needed a fabulous document done in five minutes.



**Figure 299 Paragraph Style used to visually isolate important content.**

In the preceding image a Paragraph Style was used to visually isolate important content. Some screen readers have the verbosity setting to allow for the identification of borders and shading. This aside the content is accessible and an end-user who is accessing your content non-visually will be able to read this important content.

Once you understand the formatting you can do using the basic tools in Word, you’ll find that these are easy to use...and you can create Custom Styles for formatting you apply frequently.

## **Styles and Custom Styles in Word**

Now that we understand the importance of templates and how easy they are to create, we need to look at what goes into a well-designed template.

There are elements or document parts we can build into a template that will let people using adaptive technology navigate a Word document easier spending less time trying to find content and more time reading the content...which is what we want in a document.

The first and foundation step toward a more accessible Word document and a Word document that can be tagged as PDF with little or no repairs in Acrobat is to use heading styles to denote content or topic changes.

Just as with HTML or web based documents, the use of headings in a Word document not only provides a method of visual navigation to content but an underlying structural navigation as well.

Headings are easy to use and easy to modify. The only “trick” to using them is to retain a hierarchical structure to your document.

What does this mean?

Maintaining a hierarchical integrity means that you move from a heading 1 to a heading 2 and not a heading 3 or 4. The logical progression of topics and sub-topics should be reflected in the heading levels you use in a document.

There are two tools in Word to help with this: a linked Table of Contents and the Outlining tool.

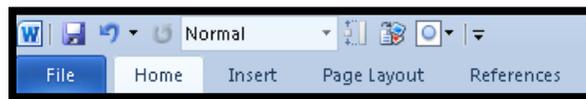
First, let’s apply heading styles to see how effective they can be.

To apply a heading style using the keyboard:

1. Select the text to be used for the heading.
  - a. Press Ctrl + Alt + the number 1 for a heading level 1.
  - b. Press Ctrl + Alt + 2 for a heading level 2.
  - c. Press Ctrl + Alt + 3 for a heading level 3.
2. Press the Home key to remove selection from the text.

I’ve only had one publication where I’ve had to use a heading level 4. In Word there are approximately 11 heading levels that will provide the structure you are looking for. You would apply a heading 4 through 11 by using the Apply Styles Pane or the Styles Pane.

In Word 2010 I would recommend that you put the ASP or Apply Styles Pane on the QAT or Quick Access Toolbar. This is the fastest way of applying a style using the keyboard. The Quick Styles Gallery, while accessible, does not allow for the use of first character navigation. This means you will have to use the arrow keys until you find the style you want. By using the ASP it is a quick keyboard command to get to it in the QAT and then you can either type in the style you want or use Alt + the Down Arrow to get the list of styles in the document.



**Figure 300 The ASP or Apply Styles Pane on the QAT or Quick Access Toolbar.**

To put the ASP on the QAT:

1. Press the Alt key to put focus in the Ribbon area of the application.
2. Press the Up Arrow to move into the QAT.
3. Press the Right Arrow until you reach the “Customize Toolbar” button.
4. This is the button on the right of the QAT.
5. Press Enter to open the context menu for the QAT.
6. Choose “More Commands.”

7. You can also press Alt + F, T for the File/Backstage area, Options and choose the Quick Access Toolbar from the list of categories.

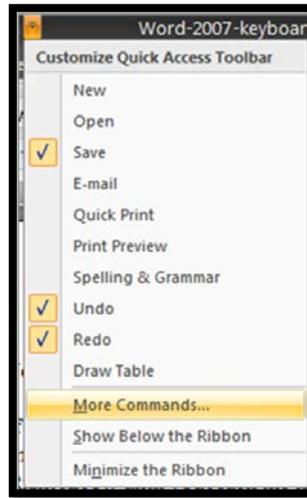


Figure 301 More Commands button on the QAT.

8. This opens the Word Options dialog.
9. Your focus should be in the list of types of commands available.
10. Use Alt + Down Arrow to open the list of types of commands and choose “Commands not on the Ribbons.”

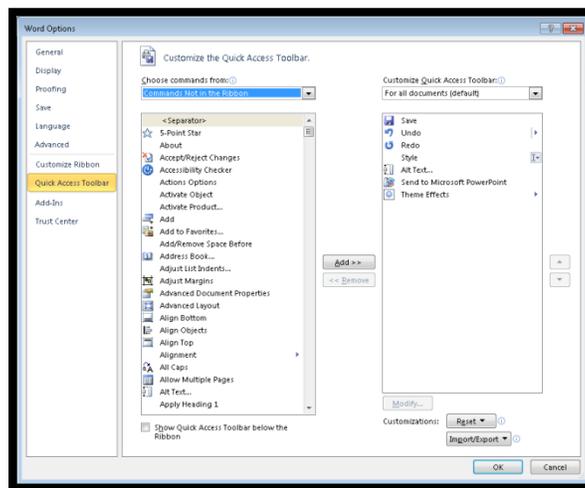


Figure 302 List of available commands that are not on the Ribbons in Word.

11. Choose the command “Styles.” Be careful not to choose one of the other style based tools. You are looking for the single word “Styles.”
12. You can use first character navigation to find this.
13. Press Alt + A to add Styles to the list of items on the QAT.

14. Make sure it is available to all documents.
15. Tab to and activate the OK button by pressing Enter.

Now, when you press Alt + 4 you will access the ASP or Apply Styles Pane using the keyboard and can easily apply a style. The keyboard command will be Alt + 4 if this is the first item you've added to the QAT or Quick Access Toolbar. Each subsequent item will have a sequential keyboard command. You can also rearrange the order of items on the QAT in the Customize Toolbars dialog by moving items up or down.

You could press Alt + F, T to open the Word Options dialog and then press Q to move to the Quick Access Toolbar category. Pressing Tab would take you into the Customize options. In Word 2010 you also have the ability to create a customized Ribbon which is why I chose to demonstrate the ability to customize the QAT or Quick Access Toolbar using the QAT itself. It is less confusing and takes you right to where you want to be.

You can add other tools to the QAT or Quick Access Toolbar. I would suggest adding "Select Table" which can be found in "All Commands. And "Send to PowerPoint" which can also be found under All Commands.

The ASP or Apply Style Pane can also be used independently of the QAT or Quick Access Toolbar. On its own it is a floating pane over the document.



**Figure 303 ASP or Apply Styles Pane as a floating dialog.**

To apply a heading style using the Apply Styles Pane or ASP if it is not on the QAT or Quick Access Toolbar:

1. Select the text you want to apply the heading to.
2. Press Ctrl + Shift + S to Open the ASP dialog which floats above the document.
3. Press the Alt + Down Arrow to open the list of styles.
4. Press the letter H to move to the first style beginning with that letter.
5. Use the Down Arrow to find the heading level you are looking for.
6. You can also type the name of the style or begin typing it and have auto-complete attempt to match the characters to a style.
7. Press Enter to apply the heading style you want.
8. Focus is returned to your document.

The ASP is still floating over the document.

You can leave it open or close it until you need it again.

To close the ASP press Ctrl + Shift + S to return focus to it, then press Alt + Spacebar while the ASP is in focus, then press C for Close.

Press the Home key to remove selection from the text.

In both methods I suggest you select the text you want to apply formatting to first. This prevents the overlapping of formatting which often results in repairs when you get to the PDF document. If you have ever looked at the Tags for a poorly formatted PDF from Word document and seen an <H1> Tag with no content, it is a result of overlapping formatting or formatting that was turned on but not turned off at the right point in the document.

## Quick Styles Gallery

In Word 2010 for those of you who are mouse dependent, we also have the Quick Styles Gallery.

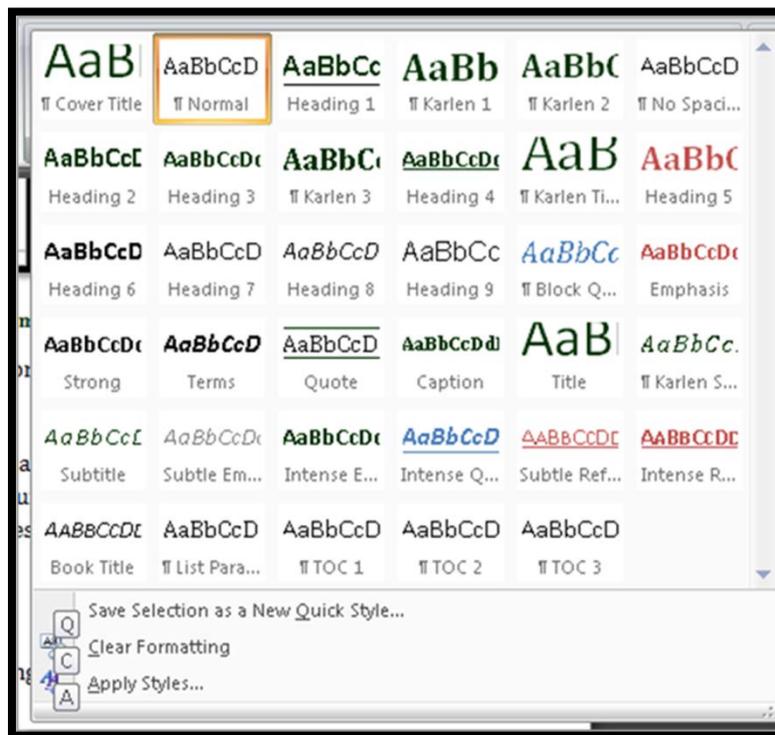
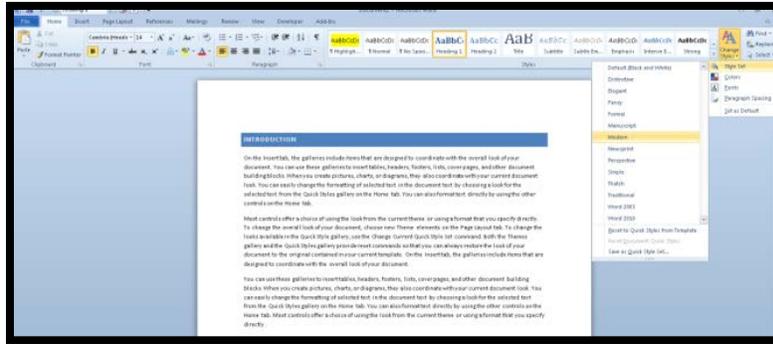


Figure 304 Quick Styles Gallery in Word 2007.

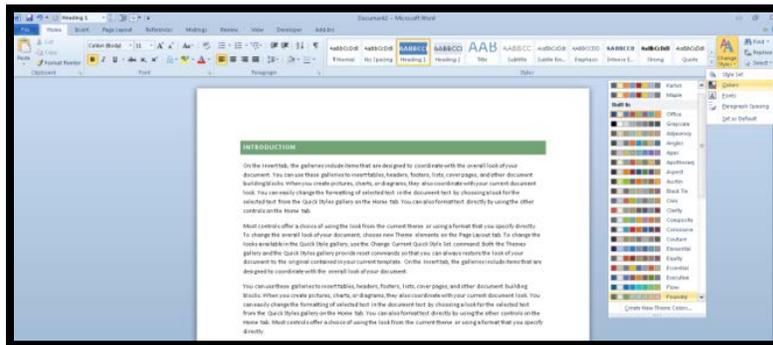
The Quick Styles Gallery is on the Home Ribbon.





**Figure 307 Document showing the Modern font set.**

We are still using the default Word 2010 colour scheme but have changed the font set for this document. We can even change the colour scheme to something like “Foundry” as shown in the following image.



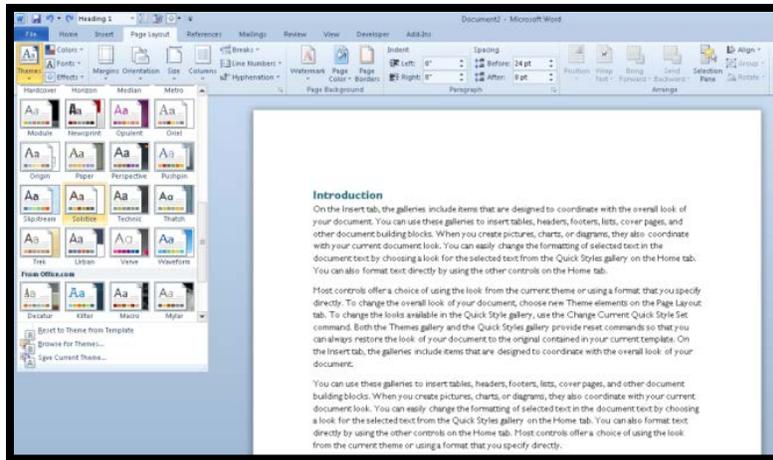
**Figure 308 Document with Modern font set and Foundry colour scheme.**

We can choose any combination for any document we are working on. When creating a template we can achieve an overall look and feel and then make minor adjustments to meet our needs. We can then save the changes as a new theme to be used in all Office 2010 applications.

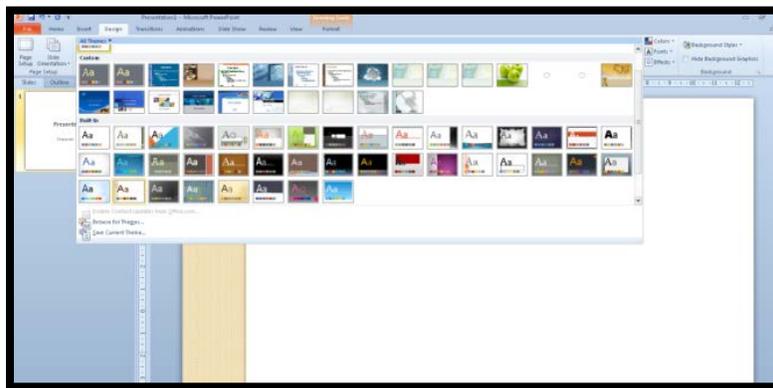
What do I mean by this?

Office 2010 has default Themes for documents, presentations, and workbooks. If you turn on the ability to update Microsoft Office you will get additional Themes when they are available. By using Themes you can mix and match document parts until you get something you like. Keep in mind that not all of these colour schemes will be high contrast or even readable. Make your choices wisely.

Using Themes you can have the same look and feel for all documents. Take an Annual Report for example. If I choose Solstice in Word, I can also choose Solstice in PowerPoint and Excel which ensures that when I present Word documents, PowerPoint documents and Excel workbooks they will look the same.

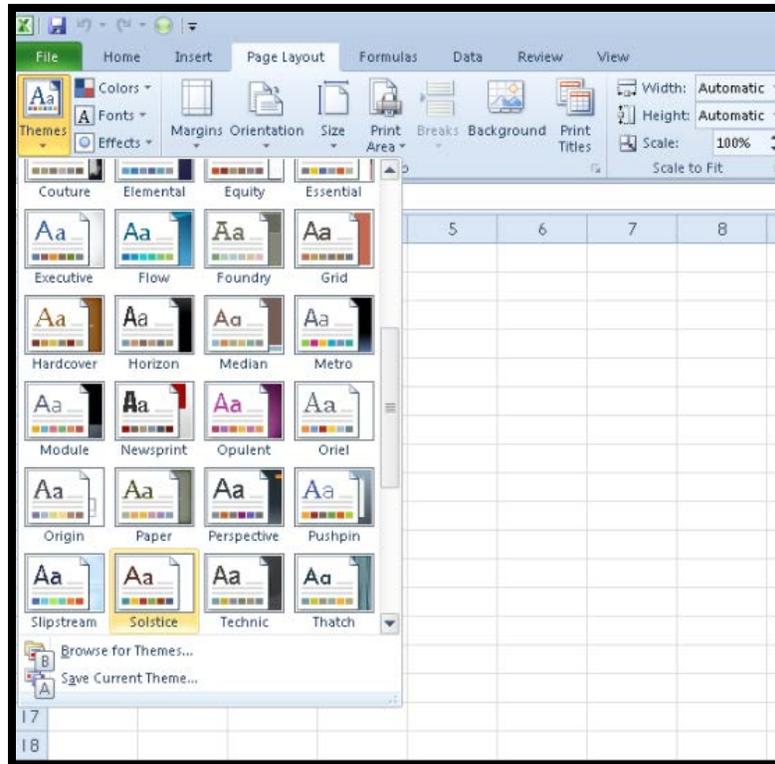


**Figure 309 Themes Gallery in Word 2007.**



**Figure 310 Theme Gallery in PowerPoint 2007.**

The Solstice Theme is available in Word, PowerPoint, and Excel. If we develop Themes for our own organization, they can be used throughout all documents we create. We can build in accessibility and consistency of formatting into even the colours used in all our Office 2010 documents. By applying styles, when we change Themes, the structural integrity is intact; it is just the visual appearance we are changing.



**Figure 311 Figure 20**

How easy is that?

There is more detail on creating and using Themes for Word or PowerPoint in the books:

- Logical Document Structure Handbook: Word 2007.
- Logical Document Structure Handbook: Word 2007 Legal Edition
- Logical Document Structure Handbook: Word 2010.
- Logical Document Structure Handbook: Word 2010 Legal Edition.
- Logical Document Structure Handbook: PowerPoint 2007.
- Logical Document Structure Handbook: PowerPoint 2010.

All are available through the [Karlen Communications products page](http://karlencommunications.com/products.htm)<sup>18</sup>. There is a detailed “how to” document on the Karlen Communication web site on how to create your own Style Set to use with Word documents.

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<sup>18</sup> Karlen Communication Products page: <http://karlencommunications.com/products.htm>

## Consistent use of Headings

We got a bit side-tracked and now must get back on task.

We were talking about using headings and how they are used as navigational structures for people using adaptive technology such as screen readers.

The reason I have you select the text you want to apply a heading style to...or any style for that matter, is that it helps define the content to which the style will be applied. Many people turn on formatting or a style, type and then turn it off. But many people also forget to turn off formatting or a style until they visually see that they forgot to do so. In these cases, if there was a blank line between the formatting/style and the newly typed content, it is also formatted using the style.

This becomes a navigational barrier when we are talking about headings.

If a blank line is formatted as a heading style, it will be put in the list of headings that someone using a screen reader can get from a Word document.

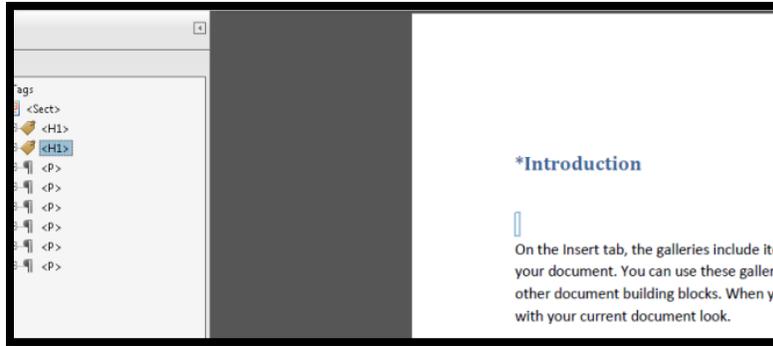


**Figure 312** List of headings in a PDF document showing empty heading Tags.

While recent versions of screen readers might accommodate for the blank line formatted as a heading, this is not true when the document is converted to tagged PDF. A person trying to navigate the documents using headings would find blank lines that have been identified as headings or high level topic changes in the document. This wastes a lot of time in trying to find specific content and being able to easily and quickly navigate to it.

What does this look like in the Tags Tree of a PDF document?

In the Tags Tree you would see the heading Tags for the document but the line in the document that was formatted for a heading would have an “empty line” or content associated with it.



**Figure 313 Tags Tree showing heading Tag with no content.**

The Highlight Content was turned on in Adobe Acrobat for this sample document so you can see the Tag for the corresponding blank line in the document.

It is easy to forget to turn off formatting which is why I make the recommendation that you select what you want to format and then apply the formatting to it.

## **Modifying Heading Styles**

What if you don't like the way the headings look? How can I use headings that match my document design?

I recommend not modifying the normal blank document headings. There is no reset button per se in Word or Microsoft Office. The easiest way to restore the default template formatting is to delete it from the Templates folder before you launch Word and once Word is launched it will rebuild the Normal.dot. Of course this removes all of your styles and customization. Another good reason to create document specific templates!

I will assume that you are working with the Annual Report DOTX or template file.

In a template you can change the inherent styles because they will only apply to that template.

The first step in modifying a style is to create text and select it. Again I do this because then I remember to remove the formatting and delete the text before saving the document. It also lets me see immediately what the changes look like in the document and I can choose to keep going or to modify the style again.

To modify a heading style:

1. With some text selected and a heading style 1 applied by pressing Ctrl + Alt + the number 1, Press Alt + H, F, Y which will open the Styles pane on the right of your document.
2. One of the reasons for selecting the text and applying the style we want to modify is that when we open the Styles pane it will be selected so we don't have to spend time hunting for it.

3. Press F6 to move focus back to the Styles pane if focus is lost. Use Tab and Shift + Tab to move around the pane and the Up and Down arrows to move through the various styles. In our case, Heading 1 is selected and this is the style we want to modify.
4. Press the AppKey to open the context menu and choose Modify for the Heading 1 Style.

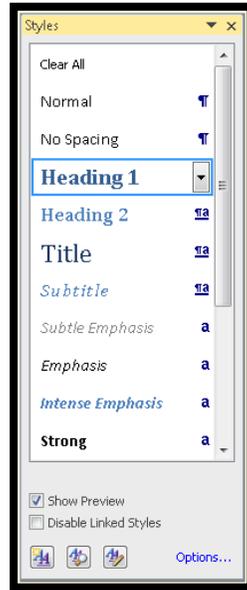


Figure 314 Styles pane in Word 2007.

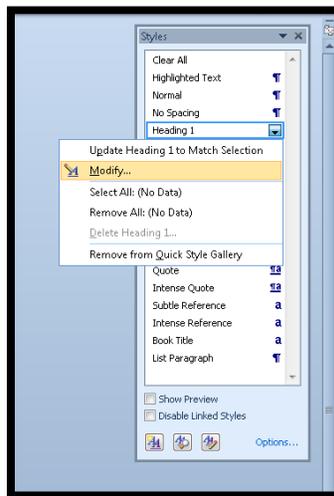


Figure 315 Modify Style context menu item.

5. The Modify Style dialog opens with all the options for the Heading 1 style.
6. You can change any of the attributes including fonts, colour, size, bold, underline, or Italic.

7. A caution is not to over format. In the book “Logical Document structure Handbook: Word 2010” the digital document conventions/standards are discussed as well as the dangers of over formatting.

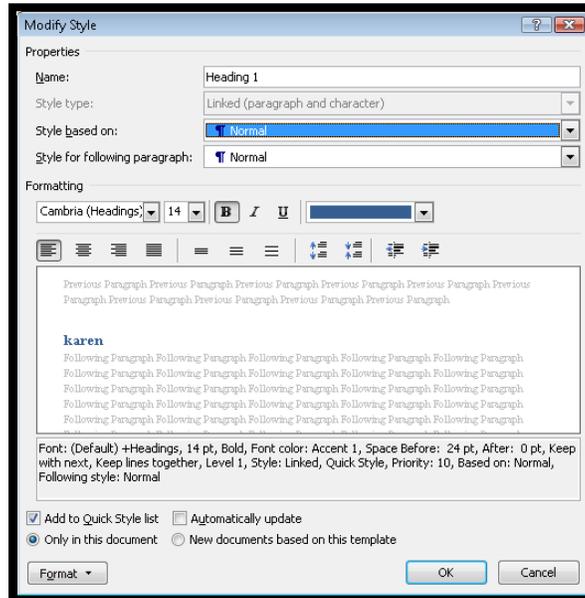
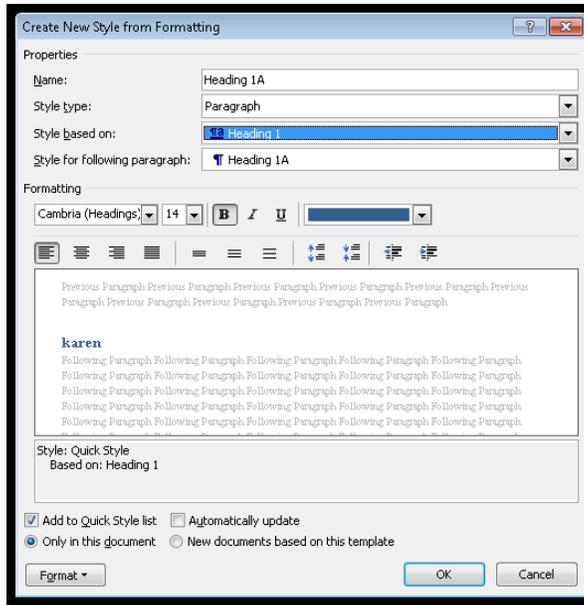


Figure 316 Modify style dialog in Word 2003.

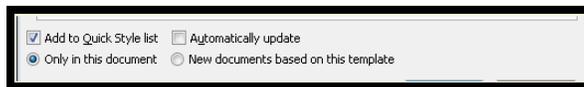
When working with the default heading styles, the style they will be based on is the “normal” paragraph style. When you are creating a new heading style, it needs to be based on an existing heading style.



**Figure 317 Create New Style dialog showing the Heading 1 as the style based on.**

As you apply changes to the style, you can see them reflected in the sample area of the dialog. It is still a good idea to have the text selected and the base style applied so that when you activate the OK button you see it immediately in the document.

There are two check boxes at the bottom of the Modify Style or Create New Style dialog. One is to add the style to the Quick Style Gallery and the other is to automatically update the style when you make a change to it. You can decide whether you want the new style to be in the Quick Style Gallery. If you are mouse dependent you'll want to do this.



**Figure 318 Area of Modify or New Style dialog where you can check to automatically update styles.**

The other check box to “automatically update” is something you’ll need to give some serious thought to. My recommendation is not to check this option. What I find it does is to update all iterations of the style in the document and the template. At first this might seem useful, however, if I am working on a new document based on this template and insert a page break before one heading so that it is placed on the top of the next page, all of my headings at that level are automatically updated to start at the top of a new page. This creates nightmares in formatting some documents. In many cases I’ve had to go back and recreate the original template so it was usable again...this time not checking the check box to automatically update.

The two radio buttons are to only use the style modification in this document or to let the document template have access to the modification. If you are working on a template, you'll want to make sure that all documents based on this template have access to the changes you made to the styles.

**Note:** Remember to only modify the inherent styles of a template and not the Normal.DOTX which is your new blank document in Word.

## Custom Styles

There may be times when you want more than one look and feel for a level 1 heading. For example in a preface you might want one look for headings while in the main body of a document you want another. But you want the headings to provide the hierarchical structure of each section of the document. This is done by using custom styles.

The critical thing to remember about creating a custom style is that it has to be based on an existing style in order for the structural integrity of documents to be retained. For example if you call something "Heading 1A" and it is based on the normal body text rather than the heading level 1 structure, it will be a plain paragraph in terms of structure and not a true heading. You won't be able to use it to create a Table of Contents or Bookmarks in a tagged PDF document without performing manual tagging.

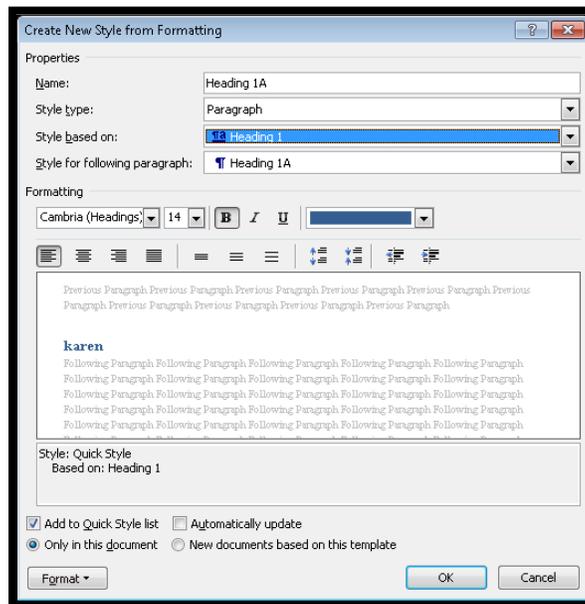


Figure 319 Create New Style dialog showing new heading style based on existing heading.

This is another reason to create some text and format it with the style you want to create the custom style for. You won't have to look through the long list of styles in the Style based on list in order to find the one you want to base the new one on. This is another time saver.

To create a custom style:

1. Type some text in your template.
2. Format it with the heading level or other formatting structure that you want.
3. Open the Styles Pane by pressing Alt + H, F, Y.
4. Make sure that your chosen style is the one selected in the Styles Pane.
5. Sometimes you might inadvertently press a key that would remove the selection or focus from the sample formatting.
6. Activate the New Style button at the bottom left of the Styles pane.
7. The "New Style" dialog opens and you are in the edit box where you can type in the name of the new style and then completely change the look and feel of this heading level 1 style if you need to.

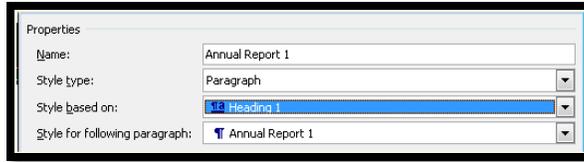
I suggest giving the new style a name that will correspond to its place in the hierarchy of the document. For example "Heading 1A" or "Heading Preface." By naming it something that begins with the word heading, it will be placed in the Styles pane near the original heading 1 which will make it easier to find. In our example, I've named the custom heading "Annual Report 1" which is another way of identifying it as a heading level 1. It will be placed alphabetically in the list of styles which means that if you are using the ASP or Apply Styles Pane or the styles Pane it will not be near the styles beginning with the letter "H."

This needs to be worked out in the design of the template. What are the naming conventions your organization will use?

You cannot use Ctrl + Alt + 1 to apply your custom heading to text; however, you can create a shortcut key to do so if you want. Once the custom heading is in the list of styles for the document, it can easily be found in the ASP or Apply Styles Pane.

When the Annual Report 1 style is based on the Heading 1 style, all of the underlying structural recognition for a heading level 1 is in place in this dialog. This includes spacing before and after the text. You can change this if you want.

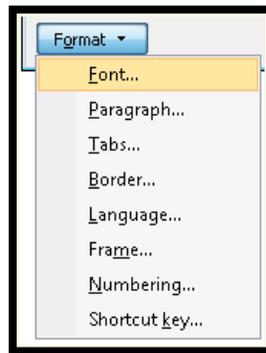
This lets you customize the design of Annual Report 1 and retains the underlying structure of the heading so it will be "recognized" when the document is repurposed to tagged PDF.



**Figure 320 Properties area of the new Style dialog.**

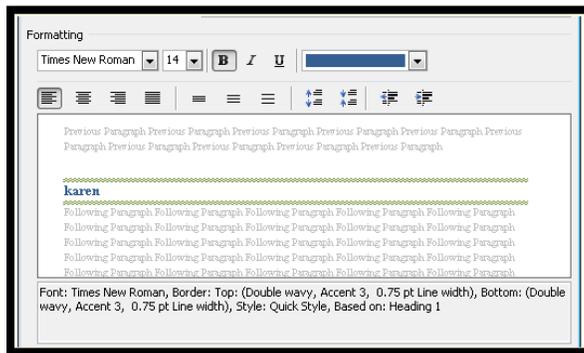
Use the Format button to add a border or shading or indent the text.

Do not use a Paragraph Frame as this is an inaccessible document element similar to a text box.



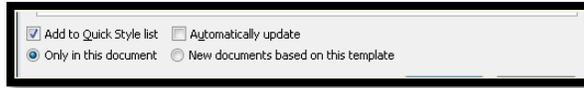
**Figure 321 Format button options for customizing styles.**

As you add attributes to the style, they are reflected in both a visual view of the style and a list of the attributes of the style.



**Figure 322 Formatting area of the New Style dialog.**

Once you have the new style looking the way you want, decide whether to add it to the Quick Styles Gallery, do not check the check box to automatically update, and make sure the radio button to use the style for all documents based on the template is selected. Then activate the OK button in the lower right of the dialog.



**Figure 323 Area of the New Style dialog where you can choose to have the style used for all documents based on this template.**

Your new style has been added to the template and the text that was selected will reflect how it will look in your document.

The sample used for this demonstration is not typically what you would consider visually pleasing but it does illustrate how a style can be customized or even modified.

An important element to consider is the use of colour and shading when formatting text. People with colour deficits will have problems reading text if the contrast between the text and its background don't have a good contrast. The following paragraph is this one but formatted with poor contrast which makes it difficult for anyone to read even if they don't have a visual disability.

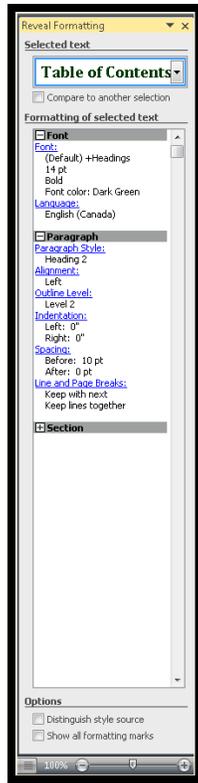
This paragraph has been rendered unreadable by the use of borders and shading. It is a copy of the previous paragraph. An important element to consider is the use of colour and shading when formatting text. People with colour deficits will have problems reading text if the contrast between the text and its background don't have a good contrast.

The paragraph above uses colours from the normal document palette in Word 2010. While colours in a document palette may complement each other we need to be attentive to the readability of our documents.

Modify and customize styles in templates to ensure that your documents look the way you want but still retain the hierarchical structure that headings and other document parts provide.

## **Format Inspector**

In Word 2010 you can select text in a document and then press Shift + F1 to open the Format Inspector pane. The Format Inspector is the Microsoft equivalent to Reveal Codes in WordPerfect...sort of.



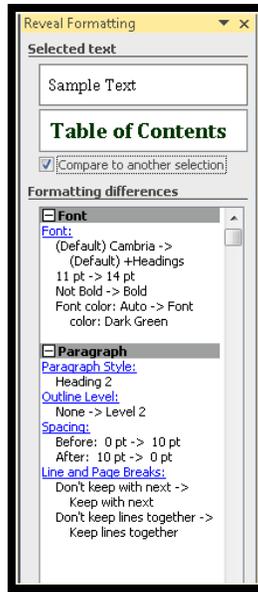
**Figure 324 Word Format Inspector pane.**

All of the information about the formatting used for the Heading 2 in this document is shown. I selected the "Table of Contents" heading to illustrate the Format Inspector.

One of the tools in the Format Inspector is the ability to compare the current formatting to another selection.

Once you check the check box to compare the text to another selection, another "box" is visible. Move to the other piece of text and select it.

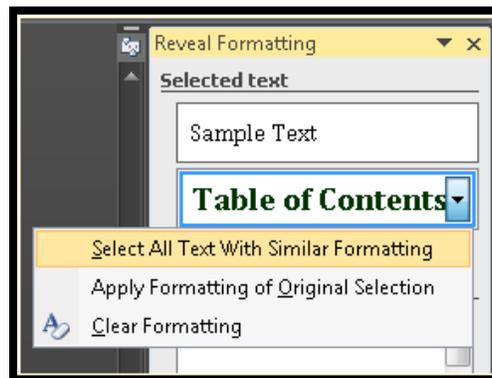
Press F6 to move into the Format Inspector pane and the differences in the formatting are shown.



**Figure 325 Format Inspector showing formatting comparison.**

At this point you can make some repairs to bring similar looking formatting into line for consistency in the document.

Press the AppKey on the formatting you want to use for all text of a similar level in the document.



**Figure 326 Format Inspector comparing two pieces of text with the context menu for repairs open.**

You can clear formatting for all instances of formatting you determine to be unwanted or you can uniformly apply the formatting from the original selection to the compared formatting. This saves time when you have documents with many editors and many variations of one style.

## Building Blocks

In Word 2010 as in Word 2007, Building Blocks replace the old “AutoText” tool but provide more flexibility. For example I could put the metaphor for text boxes that I used in this document into the Building Blocks and it would be available to me in any document. I can save formatting or insert the text only and have it adopt the formatting of the destination document.

There are several categories of Building Blocks:

- Cover Pages.
- Equations.
- General.
- Bibliography.
- Header.
- Footer.

This is not the complete list. Anything that is in a Gallery is kept in the Building Blocks file for Word.

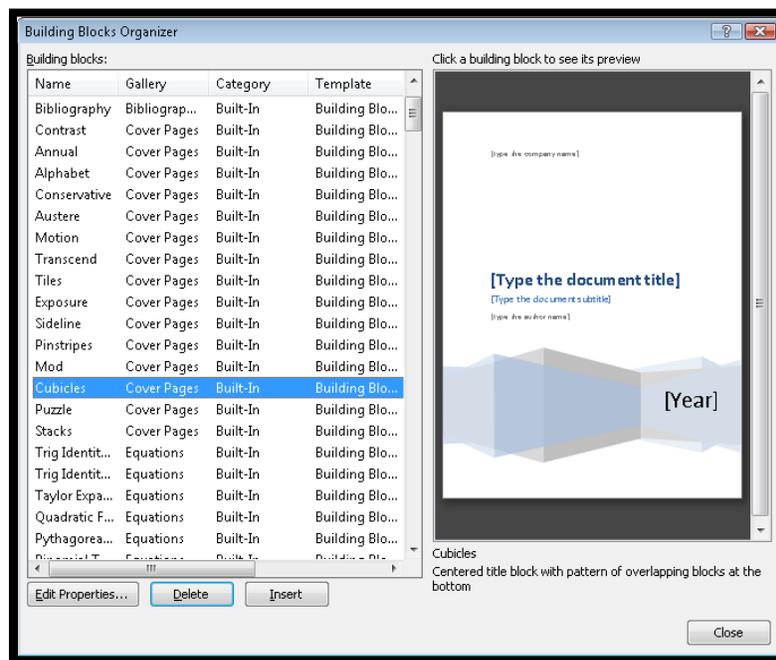


Figure 327 Quick Parts/Building Blocks Organizer dialog.

If there is standard information you might not want to use in a template for a specific document because you use it throughout documents created by your organization, use the Building Blocks instead. Just as with templates, they can be deployed over a server or inserted onto individual computers.

**Note:** Not all Building Blocks are accessible. Many of the cover pages and other pre-formatted documents use text boxes or Content Controls which are inherently inaccessible. Content Controls are used instead of form controls in Office 2010. [To create an accessible form use the legacy controls.]

How do Building Blocks work?

In this example I've typed "Karlen Communications" and inserted the Karlen Communications logo just under the words. I've selected the text and the image.

Press Alt + N, Q to open the Quick Parts Gallery and sub-menu.

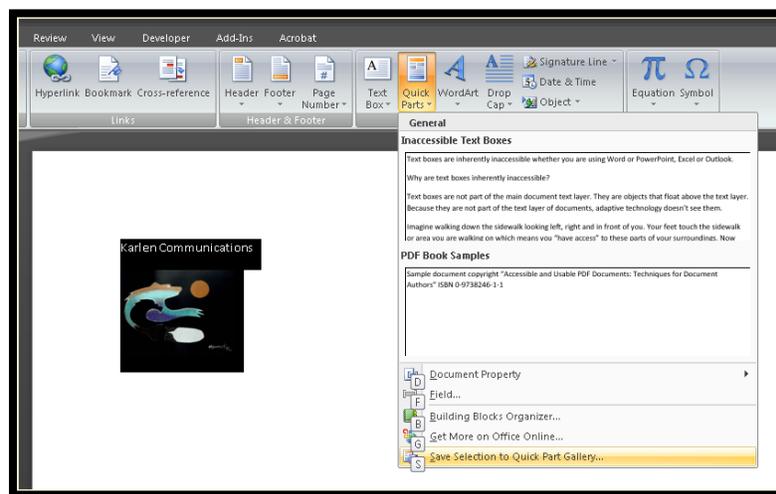
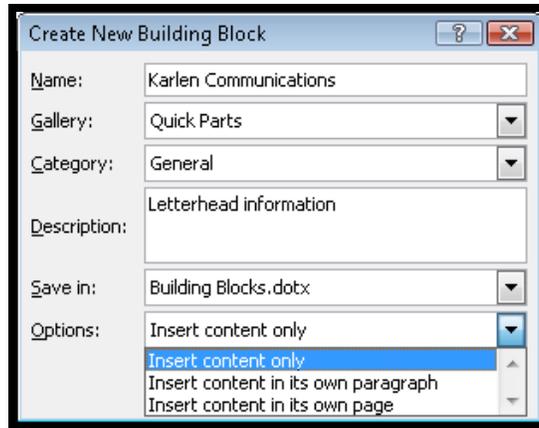


Figure 328 Selected content and Quick Parts Gallery and sub-menu open.

To create a Building Block:

1. Create some static text or document part – something you will use repeatedly for documents.
2. Select the static document part.
3. Choose Save to Quick Parts Gallery from the sub-menu.
4. A dialog opens where you can provide a name for the Quick Part/Building Block as well as other information.



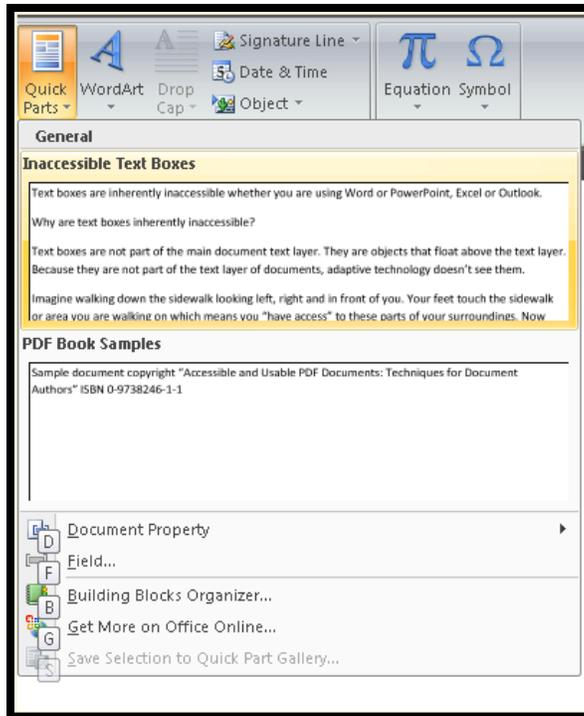
**Figure 329 Create new Building Block dialog.**

1. The options for the new Building Block are:
  - a. Insert content only.
  - b. Insert content in its own paragraph.
  - c. Insert content in its own page.
2. Once you've reviewed all elements of the Create new Building Block dialog, Tag to the OK button and activate it by pressing Enter.
3. Your new Building Block will be in the Building Block Gallery when you press Alt + N, Q again.
4. When you close the document you will be asked if you want to save the new Building Block to the template you are working with.



**Figure 330 Save Building Block dialog.**

The following image is of the metaphor for text boxes that I added to my Building Blocks.



**Figure 331 Quick Parts Gallery with newly added building Block.**

Building Blocks, used in conjunction with templates are a powerful tool to help provide consistency and accessibility in documents.

Remember not to create or use Building blocks that have inaccessible content such as text boxes or Content Controls.

## Table of Contents

One of the advantages to using headings, as mentioned earlier, is that you can use the headings to create a Table of Contents for your documents. When a linked Table of Contents is created, it not only gives you a hierarchical view of your document, but it also improves navigation and will be converted to a linked Table of Contents in the tagged PDF document.

To create a Table of Contents:

1. Place your cursor where you want the Table of Contents to be generated.
2. Usually I set this up by creating the subtitle “Table of Contents” or “Contents.” It can be on a new page or if the document is short, on the title page.
3. Press Alt + S, T and choose “Insert Table of Contents.”
4. The Table of Contents tab should be the one in focus.

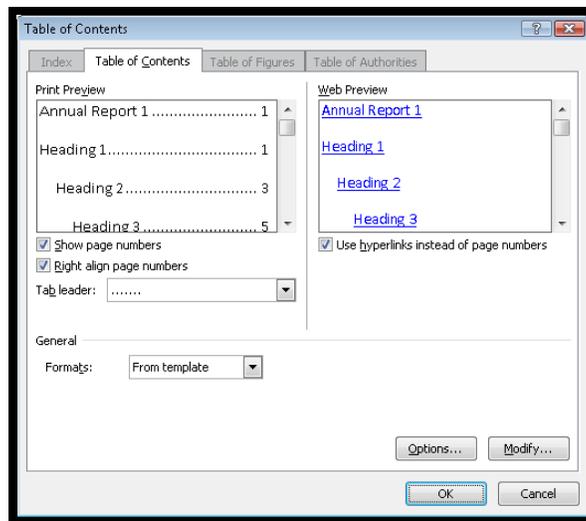


Figure 332 Table of Contents dialog.

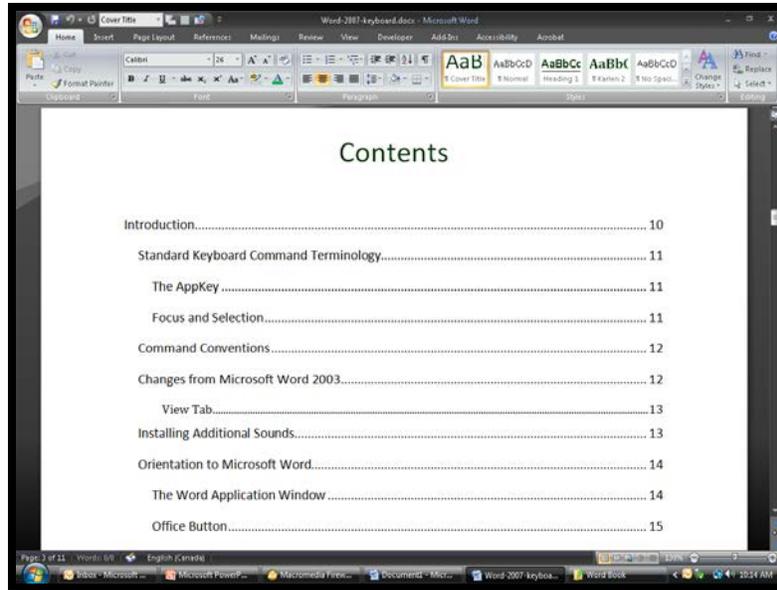
The Table of Contents is linked by default and you want to retain that setting.

Dot leaders from the topic title to the page number are preferable for readability. Placing the page number immediately after the topic title is visually confusing for people with learning, cognitive or visual disabilities. Screen readers will read the line of dots as an ellipses so the person using a screen reader will not hear all of the dots across the page.

Try to avoid text or formatting that is all capital letters. All capitals or uppercase text is the most difficult to read for people with and without disabilities because it removes our ability to use word prediction skills. This means we can't recognize words by their shape. If all the letters “look the same” with no visual distinction we spend more time decoding letters and words and less time understanding what we are reading.

Once you've reviewed the format for the Table of Contents, move to and activate the OK button by pressing Enter.

The Table of Contents is generated at the cursor point.



**Figure 333 Table of Contents generated using headings.**

The levels of headings are nested beneath each other with level 1 headings out dented to the left margin. This is a quick and visual means of looking at the hierarchical structure of content in your document. A heading that does not follow in a hierarchical order can easily be moved to its rightful place using the Outlining tool or its level changed in the Print view of the document to reflect its proper place in the hierarchy of content.

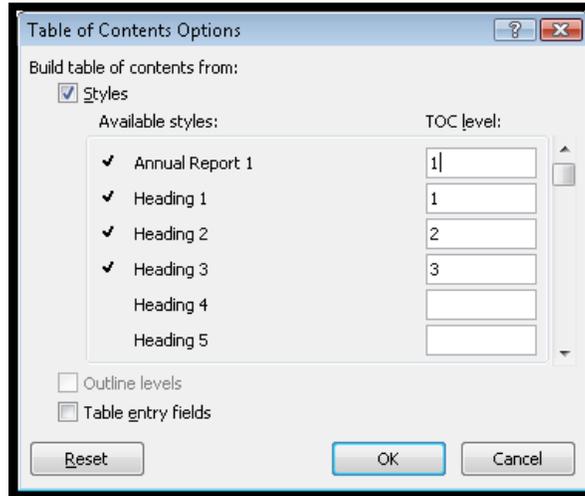
## **Custom Styles in a Table of Contents**

If your document or template has custom heading styles, you need to let Word know what to do with them before you create the Table of Contents. In our example, there is an Annual Report 1 heading style that needs to be included in the Table of Contents.

To include custom styles in a Table of Contents:

1. Place your cursor where you want the Table of Contents.
2. Press Alt + S, T and choose "Insert Table of Contents."
3. Activate the Options button in the Table of Contents dialog.
4. Another dialog opens showing you the styles in the document and their current level.
5. Add the appropriate number beside each custom style. For example Annual Report 1 would have the number 1 beside it; Annual report 2 would have the number 2 and so forth.
6. The styles are listed alphabetically.

7. Tab to and activate the OK button by pressing Enter.



**Figure 334 Options dialog for Table of Contents.**

When the Table of Contents is generated, the custom styles for headings will be included.

I use the Title style for my chapter headings and this style doesn't normally appear in the Table of Contents, or if it does, I am faced with the issue of not using it for the cover title or Table of Contents headings as I don't want them in my Table of Contents.

One of the things that contributes to an unprofessional looking document is the first item in Table of Contents being the title of the publication and the Table of Contents.

I create a "Cover Title" style and use it for my publication title and the Table of Contents page. I can then go into the options for a Table of Contents and use the Title style as level 1, the heading 1 style as level 2, and adjust the other styles accordingly. This puts the chapter titles at the left margin and nests all other headings under them.

**Note:** Remember that in Word 2010 you will only see the Acrobat conversion settings with the Bookmarks tab if you are using a 32 bit version of Word. Also note that as of Office 2007 there is not a consistent rendering of headings to Bookmarks using the Adobe Acrobat add-in.

## Updating a Table of Contents

A Table of Contents can easily be updated by pressing the AppKey and choosing “Update Fields” or pressing the letter U.” A dialog opens and your choice is to just update the page numbers or to update the entire Table of Contents. I usually choose to update everything as a precaution against missing something.

**Note:** If you use captions for figures in a document or tables in a document a Table of Figures or Table of Tables can be generated using this same technique. Both options are found on the References Ribbon. The keyboard command for updating them is the same as for a Table of Contents – your cursor is placed in the Table of Figures or Table of Tables , the AppKey is pressed and you choose Update Fields.

## Outlining Tool

If you are not familiar with using Outline view and the Outlining tool, you can switch to Outline view by choosing View, Outline.

Your document will immediately look a bit different. You will be able to see the hierarchy of headings. “Parent” headings will have a plus sign next to them if they are collapsed and a minus sign next to them if they are expanded.

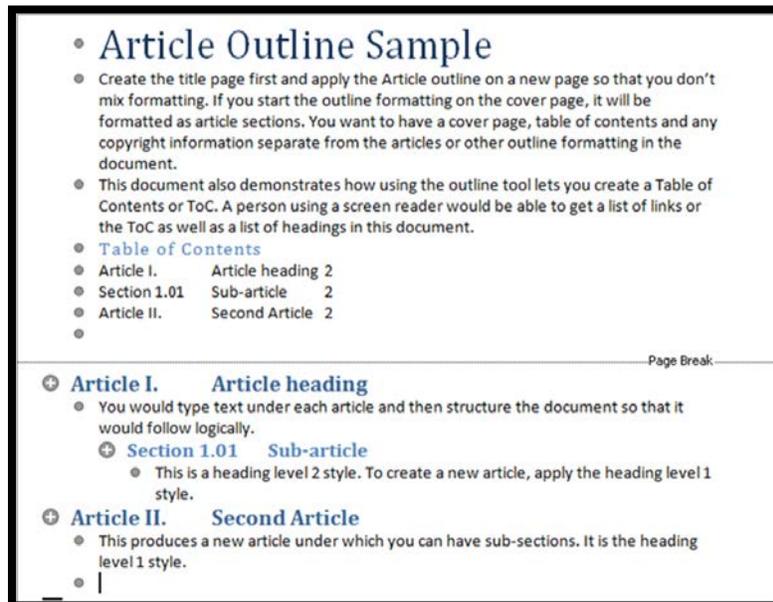


Figure 335 Word document in Outline view.

If you use the Bullets and Numbering tools to add an outline preface such as Chapter, Article, Section and so forth, you will see this reflected in the Outline view of the document.

You can drag and drop or use the keyboard to cut and paste levels of the book to other places in the “structure” or logical reading order which can help if content doesn’t make sense or seem to follow a logical order when viewed using Outline.

This is a valuable tool for document authors.

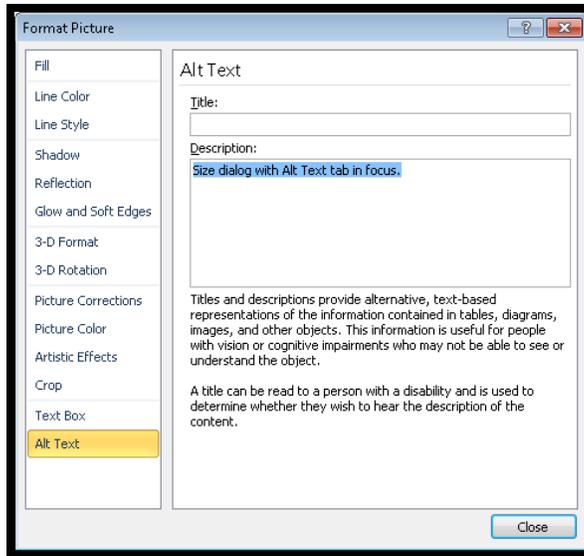
## Alt Text on Images

You can add the Alt Text to your images in Microsoft Word. The “bonus” is that if you repurpose the image from a Word document to a PowerPoint document or Excel document by copying and pasting, the Alt Text remains with the image so you don’t have to retype it unless the image has a different context in each document.

**Note:** If you are using the Office Clipboard, you can hold up to 24 images or pieces of content on the Office Clipboard at once and repurpose them in other Office documents.

To add Alt Text to an image in Microsoft Word 2010:

1. Make sure the image is selected.
2. Press the AppKey to open the context menu for the image.
3. Choose Format Picture which is the last item in the list.
4. Press Tab to move to the categories for formatting the picture.
5. Press the letter A for Alt Text or press the End key to move to the last item in the categories list.
6. Press Tab until you move into the edit box for Description and then type the Alt Text for the image. You can also add a title for the image.
7. Once you’ve typed the Alt Text, if you press Enter you will move to the next line in the edit field.
8. Tab to and activate the Close button.



**Figure 336 Format Picture dialog showing Alt Text category selected.**

In Word 2010 you have the option of adding a "Title" as well as a "Description."

Now is a good time to remind you that adaptive technology has a buffer into which goes the content of the document so it can be rendered to the person reading the document in a smoother manner. It is the difference between listening to a sentence read in pieces and listening to the entire sentence.

The purpose of Alt Text is to provide an alternate description of the image. All images and objects should be supported by surrounding content and should never be the content themselves. This lets you keep the Alt Text concise and meaningful.

If you put too much content into Alt Text for an image you run the risk of crashing the adaptive technology buffers which means that your documents become inaccessible. In some cases, I've seen so much Alt Text in for an image in a PDF document that the document cannot be opened as long as the adaptive technology is running. In other documents, I've seen single pages try to load and then crash either the adaptive technology, Adobe Reader/Acrobat or both. If someone can't open and read the PDF document...or the Word document...it is an inaccessible document.

## **Alt Text for Equations**

Until we have support for MathML in our general documents and PDF documents, we need to make sure that equations include Alt Text that fully details the equation.

Equations in Word are objects and as such require Alt Text. Without Alt Text, the person using a screen reader would hear "graphic."

Adaptive technology is not intuitive enough to read an equation, even if typed in a readable format. For example using +, -, /, and \* would be read to someone using adaptive technology as "plus, dash,

slash, and star. Even a simple math equation such as “a+b” would be read where the “a” is pronounced like the word “a.” This makes it difficult to understand a formula or scientific notation. As equations and scientific notation become more complicated, they require the “long hand” version to be provided in the Alt Text. For example “A squared times B squared plus C squared divided by the square root of 2 equals.” Please note that I only passed grade ten math on the condition that I never take another math course...an agreement which I’ve honoured. <Grin>

If you are using the Equation Editor, you will need to provide the detailed equation as Alt Text while the caption can be a simple formula identifier such as “The formula for determining Area.” In this instance the Alt Text and a caption would be different.

## Captions for Images

As well as using Alt Text, you should use captions for images whenever possible and appropriate. We forget that documents can be viewed either digitally or in hard copy or print. I don’t know of any paper that lets you wave a finger over an image and shows you the Alt Text. If an image has printed with low toner, low colour, is a complex image and is confusing on paper, or has been photocopied from the original; details of the image may be difficult to see.

In these cases, a caption helps relate the image and its composition to the surrounding content.

You can have different Alt Text and caption text; you can also have a “Null” Alt Text.” One of the discussions for captions and Alt Text is that a screen reader will pick up the text twice. This means that the information is repeated to someone who can’t see the page. It is a decision the document author needs to make and ensure that the policy or standard is carried out in the entire organization for every document.

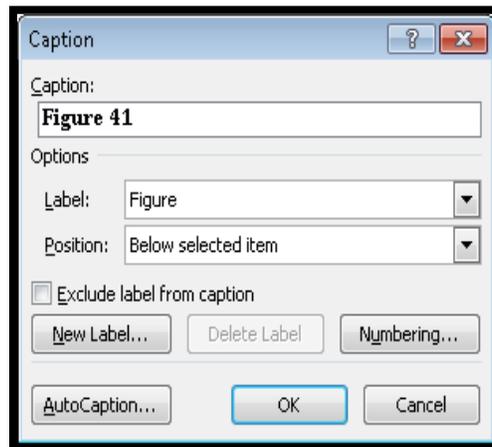
I do put the duplicate text for Alt Text and caption although sometimes I use the caption to expand a bit on the image. I do use a screen reader and can use a keyboard command to skip over things I don’t want to dwell on; however, not all of the people who use adaptive technology are familiar with the keyboard commands or techniques for using what can be considered “non-navigational structures” to move around documents.

**Note:** When using adaptive technology as part of an extensive QA or audit process, don’t “get fancy.” Stick to the basics of the adaptive technology and don’t assume that your end-users have a skill base beyond the basics or “what is automatically read” to them.

To create a caption for a figure, image, or object in a Microsoft Word document:

1. Select the image, equation, or object.
2. Press the AppKey to open the context menu.
3. Choose “Insert Caption.”
4. The Caption dialog opens and your focus is in the caption edit
5. I usually press the Spacebar once to give a bit more room between the figure number and the text of my caption to improve readability.
6. Tab to and activate the OK button using the Enter key.
7. You don’t need to change anything in the Caption dialog unless you have document specific needs.

Make sure the caption is under the image, figure or object and not above it. Placing captions under images is the standard position; however, if you have document specific needs, you can place it above the image, figure or object. Captions are typically placed above tables to let someone know what type of data they will be reading through.



**Figure 337 Caption dialog.**

A caption for an equation should go at the bottom of the equation while a caption for a table should go at the top of the table. Putting the caption at the top of the table lets people know what kind of data they can expect in the following table. It helps connect the visual table structure to the expected content.

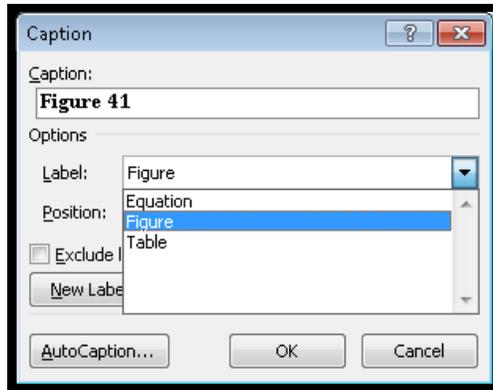


Figure 338 Caption dialog showing list of caption options.

## Contextual Links

One of the most frustrating things for those of us using adaptive technology to listen to are long web addresses. Even if we take the time and have the patience to listen to a lot of gibberish that doesn't make sense, the final moments of reward for our patience is to hear "file001.html" or some other filename that will not give us any idea of where the link will take us.

The answer is to use contextual links in HTML, any application that lets you use a contextual link, and to add Alt Text to links in a PDF document if the links are not contextual.

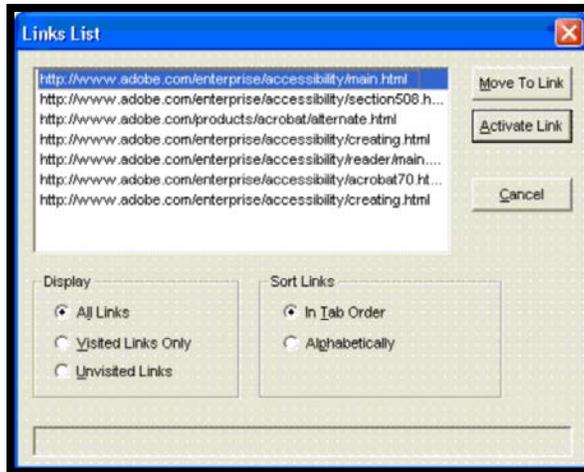
Most screen readers and some screen magnification tools have the ability to present the person reading a Word document or PDF document with a list of links in that document.

Those of us using those tools make use of first character navigation.

What does this mean?

The ability to press the first character of the topic or link we want and then move to it saves us a lot of time. For example, in the list of links for a Word document you would hear "[Karlen Communications web site](#)" instead of <http://www.karlencommunications.com>. I haven't provided footnotes for these two links because they are mirrors of each other so you have both the long web address and the contextual address in the same line of the paragraph. Notice how intrusive the long web address is to your reading.

You would be able to press K for Karlen Communications, A for Adobe Accessibility, M for Microsoft Accessibility and so forth.

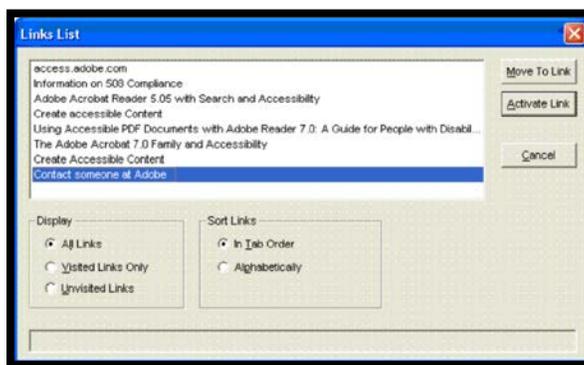


**Figure 339** List of links from the JAWS screen reader.

Consider the list of links in the preceding image. Remember one of the things we talked about early in this book was the need to start looking at documents in a different way. We need to look at how information can be or will be accessed.

How much easier is it to find exactly what you are looking for or even to make sense of what is available in the document when you use contextual links?

Not only does this save time but it also enhances the readability of a paragraph. Consider the ever increasing length of web addresses and how people are forced to visually skip over them in order to finish the thought of the paragraph or sentence. For people with learning, cognitive or visual disabilities this often represents a break in the understanding. Even for people without disabilities, our ability to plunk a web address in the text where we want it available often disrupts the readability and flow of the thought and concept being presented.



**Figure 340** Contextual list of links.

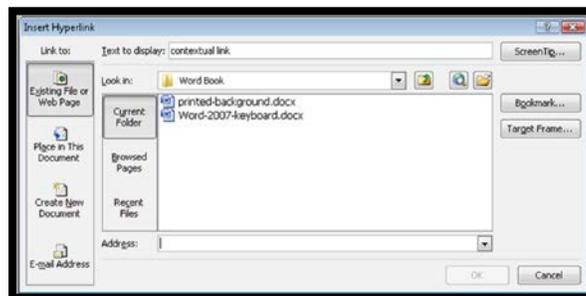
When a link occurs in the middle of a sentence or paragraph, it is also easier to read the “link in context” and to identify its relationship to surrounding content.

Some document authors fear that this approach will affect the way they write. You have to craft a sentence carefully so that a contextual link is appropriate for the paragraph and your writing style. Any adjustments you need to make to your writing style to use contextual links is a will help you become a better document author. It is the same as using voice recognition software...the immediate concern is that you will have to speak differently, however, once you are used to using voice recognition your own personality is still there. You may not slur as many words but the way you write using your voice has improved.

Another important technique in creating contextual links no matter what document format you are using is not to begin each link with phrases such as “click here to...” or Select this link to go to...” Remember that this approach to creating links impedes first character navigation. If each link begins with the letter “C” for “click here,” the person trying to navigate to a link will have to go through and read EVERY link in the document to find the one they want. It is as annoying as having to listen to “http://blah, blah, blah....” endlessly.

To create a link from text in a document:

1. Select the text you want to use as the link.
2. Press Ctrl + K.
3. The Create Hyperlink dialog opens.
4. Your focus will be in the edit box where you can either type in or paste a web address.
5. If you have a web page open and are in the Address Bar you will see the web address already filled in.
6. Once you’ve typed in the web address or pasted it into the edit box, Tab to and activate the OK button by pressing the Enter key.



**Figure 341 Create hyperlink dialog.**

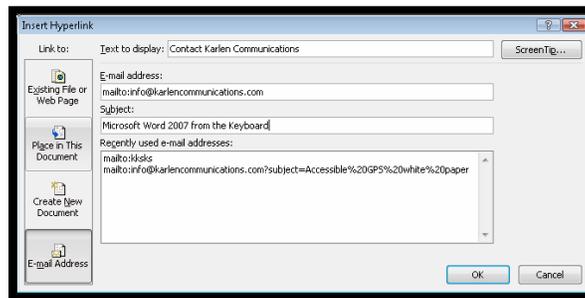
You can also create a link that will open the person’s e-mail client so that they can send you a message. This is handy in a PDF document because you can also fill in the subject line which lets you filter mail as it enters your Inbox.

To create an e-mail link:

1. Select the text to use for the link.
2. Press Ctrl + K.
3. The Create hyperlink dialog opens.
4. Press Alt + M to activate the “E-mail” button in the lower left of the dialog.
5. Type the e-mail address you want mail sent to.
6. Tab to the Subject edit box and type in a subject.
7. Tab to and activate the OK button by pressing Enter.

When someone activates this link in either a Word or tagged PDF document, their default e-mail client opens and both the To and Subject fields are already filled in. They just have to write the message text and send it. It is also easy to identify when it comes into your Inbox.

You can return to the External link button options by pressing Alt + X the next time you launch the dialog.



**Figure 342 E-mail hyperlink options in the Create hyperlink dialog.**

You can create links to other documents. If you are going to do this, it is a good idea to keep them all in the one folder so that they are easy to find and update if necessary. If you choose to link to other documents they must be available to anyone reading the source document. You can't link out to other documents and not have them available outside of an Intranet.

## Alternate Links

One of the techniques I use for documents is to make use of the footnotes or endnotes in a document to provide the long web addresses. A person who is using adaptive technology can still get a list of links and use first character navigation for the general context of the link, but they can also get the full web address by accessing footnote or endnote information.

This technique is critical if you know the document will be printed or if you are going to allow printing of the document once it is converted to tagged PDF. Once again I do not know of any paper that lets you touch a link on a printed page and open a browser to view the linked to contents.

To insert a footnote or endnote in a Word 2010 document:

1. Place the cursor where the footnote or endnote should be. This is typically just after the text you want to note.
2. Press Alt + S, F for Footnote, or
3. Press Alt + S, E for Endnote.
4. You will be taken to the bottom of the page if you are inserting a footnote or the end of the document if you are inserting an endnote.
5. Type the reference and paste the web address.
6. Don't simply add the web address; include some text with it so the person looking at the footnote or endnote knows which web page the link refers to.
7. Use the Up Arrow to return to the document.

Of course you can click on the document if you are mouse dependent.

By using footnotes or endnotes, as I have done in this document, you can facilitate both uses of the document: digital and hard copy print.

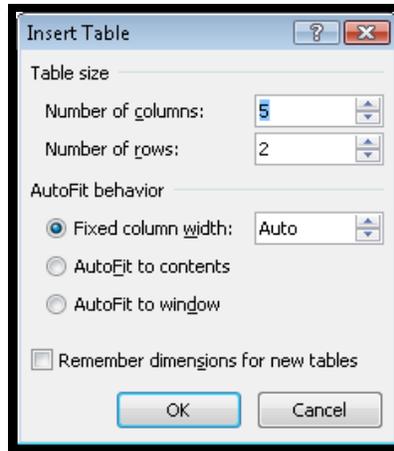
## **Tables**

We all know that tables should not be used for design layout. This is important if you are going to repurpose your Word document to tagged PDF. It is also important for the accessibility of a Word document. Adaptive technology has specific keyboard commands for working with tables. These are different from the "every day keyboard commands for working with a document such as this one which does not use tables to format the document.

Many people who use adaptive technology hate tables because they are overused, nested, created improperly so that even if you can use the table keyboard commands, you can't move around a table in any logical or meaningful order and they are completely frustrating. An analogy would be if you were blindfolded and put into a maize where you think you've figured out a way of navigating the maze but all of a sudden there is a maze within a maze, the rules change, you don't know what they are...how do you even begin to try and work out a strategy for getting out?

## **Inserting Tables**

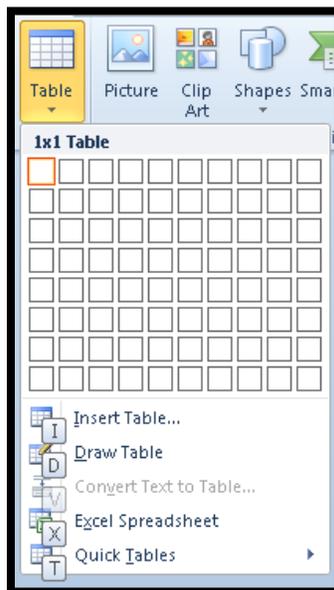
There are some simple things you can do when working with tables to improve their accessibility. The first is to insert a table rather than draw it. By inserting a table you create a "uniform" table. You can easily make your table "non-uniform" and difficult or impossible to navigate, but you can at least begin with an accessible foundation.



**Figure 343 Insert Table dialog.**

To insert a table into a document:

1. Press Alt + N, T and choose Insert Table. There is also a Table Grid Gallery under the Table option.
2. You can use the grid to identify columns and rows. This will also insert an accessible or uniform table.
3. A dialog opens where you can choose how many columns and rows the table will have.
4. Select the number of columns and rows, Tab to the OK button and press Enter.
5. The table is inserted into the document at the cursor point.



**Figure 344 Table Gallery.**

The generic non adaptive technology keyboard commands for moving around tables in Word are:

- Alt + NumPad 5 to select the table.
- Tab to move to the next cell and select its contents.
- Shift + Tab to move to the previous cell and select its contents.
- Shift + Left, Right, Up or Down Arrow will extend the selection in the specified direction: left, right, up or down.
- Alt + Shift + Page Down to select the current column from the cursor point/selected cell to the end of the column.
- Alt + Shift + Page Up to select the current column from the cursor point/selected cell to the top of the column.
- Alt + Shift + End to select the current row from the cursor point/selected cell to the end of the row.
- Alt + Shift + Home to select the current row from the cursor point to the beginning of the row.
- Alt + Home moves you to the first cell in a row.
- Alt + End moves you to the last cell in a row.
- Alt + Page Up moves you to the first cell in a column.
- Alt + Page Down moves you to the last cell in a column.
- Alt + Shift + Down Arrow moves you one row down and selects the row.
- Alt + Shift + Up Arrow moves you one row up and selects the row

If you are using adaptive technology such as a screen reader, there are also commands for getting column and row title information as well as cell coordinates. The list of keyboard commands above are not adaptive technology specific so you can use them to move around a table. This might help in understanding that in a table there is another layer of keyboard commands we need to use. If a document is laid out using a table, or if the table is not “standard” or “uniform” it becomes difficult to navigate.

Data tables need to be designed so that the relationship between cell content is easily rendered to the person using adaptive technology and to anyone visually accessing the table.

Two questions I have document authors ask themselves are:

What are the header rows for the table? [In Word 2003 you can only have one header row while in Word 2010 you can have more than one header row.]? If you can't identify a header row for the entire table...a reference point for moving from cell to cell within that column, then maybe a table isn't the right “format” for the content.

Can you put a caption on the table? If not, then a table structure is not the way to format the information.

The following images are from the book “Logical Document Structure Handbook: Word 2010.” They illustrate the problems in using tables for design layout. As we relate these problems to tagged PDF, we often see partially tagged information in a table. For example a row that goes on for several paragraphs with no content in cells to the left, blank cells used for visual spacing that are tagged as individual tables...the mistagging adventures can go on and on. Because adaptive technology such as screen readers announce that a person is entering a table and how many columns and rows it has which in turn tells the person reading the document that they will need to use their table keyboard commands, if the table is empty, contains many empty rows or columns, and has no header information, the accessibility of content and the usability of the document itself come into question.

Logical Document Structure Techniques	
Item	Description
Creating Custom Styles	
Why use custom styles?	It is important to use custom styles for elements of the document you want or need to change the look of.
Type of custom style.	It is also important that your custom style be based on the structural element you are trying to affect.  For example, if you are creating a custom heading, it needs to be based on the heading 1 through 9 styles, not the Normal paragraph style.
Create a custom style.	<ul style="list-style-type: none"> <li>• Select the text you want to create the style for.</li> <li>• Choose Format &gt; Styles and Formatting.</li> <li>• Activate the new styles button.</li> <li>• In the dialog box, make sure you change the “Style based on” to the structural element you want, for example Heading 1.</li> </ul>
Lists	In the cell above, the list was created using a tool other than bullets and numbering. This means that any adaptive technology will see this as paragraphs, not bulleted items or steps in a process.
Tables	

Figure 345 A table used for design layout.

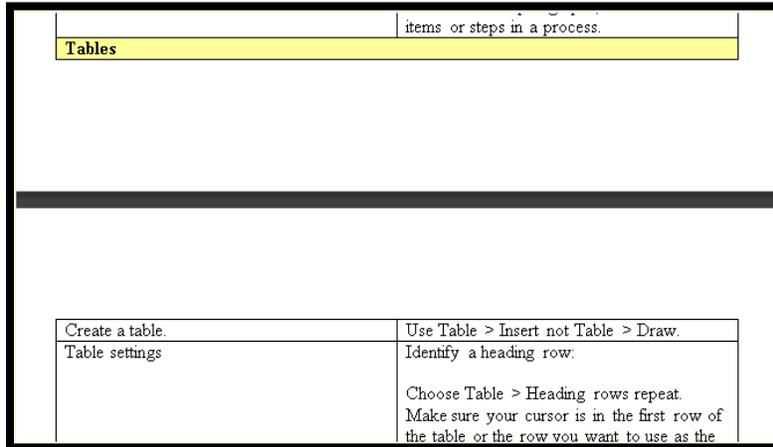
In the preceding image, the first three rows in the table have been colour coded. Gridlines were shown to demonstrate the “structure” of this document. The first row is pink and is a header row. The second row is blue and is also a header row. The third row is yellow and is also a header row.

The actual size of this table is 6 [six] columns wide. In the first row, the pink one, the six columns have been merged to be one cell. In the second row, the blue one, the first three columns are merged and the last three are merged. In the third row, the yellow one, all six columns have been merged again. Visually this might imply a piece of heading information for the table which could be represented by the pink row. Visually the table then has two “sub headings” represented by the blue row and the yellow row...but wait!

At the end of the page we see another yellow row, a row where all six columns have been merged to indicate another visual heading. If we assume that the first yellow row has been tagged with a TH

Tag representing a table header, how can we now tell the adaptive technology which is mechanical and not intuitive to ignore the first yellow row and now use the second yellow row?

Even visually this is confusing because the “content” associated with this new yellow title row begins on the second page of the document.



The image shows a document with a table at the top. The table has two columns. The first column contains the word "Tables" in a yellow background. The second column contains the text "items or steps in a process." Below the table, there is a thick horizontal line representing a table break. At the bottom of the document, there is another table with two columns. The first column contains the text "Create a table." and "Table settings". The second column contains the text "Use Table > Insert not Table > Draw.", "Identify a heading row.", "Choose Table > Heading rows repeat.", and "Make sure your cursor is in the first row of the table or the row you want to use as the".

**Figure 346 The bad table design continues!**

Aha, I hear you now...just use the Enter key to force the yellow bit onto the next page or use a “table break” to put the yellow bit on the top of the second page.

Not so fast! If we continually press the Enter key to force the positioning of content, each blank line may be rendered to the person using adaptive technology. Imagine sitting listening to “blank, blank, blank, blank...” If we use a table break it means that a “new table” structure begins at the top of the second page which in turn means that the header rows are now part of the first table and not part of this second one. The yellow header has no relationship to the pink or blue header of the first table and stands alone.

But wait...there’s more!

On the second page of this document, remember the table was used to “design” an entire document, we see a change in the table structure itself.

		Select the table, then press the AppKey and choose Caption. Table captions are automatically inserted just above the table.		
<b>Checklist for Logical Document Structure</b>				
<b>Element</b>	<b>Doc 1</b>	<b>Doc 2</b>	<b>Doc 3</b>	<b>Doc 4</b>
Check each structural element you've used appropriately in your documents.				
Headings				
Lists				
Tables				
Images				
Equations				
<b>Universal Design</b>				
Web		Even on web pages, you need to use the tags or structural elements properly. For example, if you are creating a list, use the   tag to indicate a blank line between list items. If this doesn't work, then adhere to the HTML rules, don't break them.		

Figure 347 The bad table continues to the second page of the document.

Suddenly we have a data table! The document author has eliminated the sixth column, added a new pink merged row of cells indicating it is a table header, followed by a new blue row of five table header cells...yes we have five columns now instead of two! The new pink and blue header information is followed by a new yellow header row that sort of looks like a table summary?

The data table itself has five columns and five rows.

So which is the table header information? The choices are:

- The first three header rows on page 1.
- The second yellow header at the bottom of page 1.
- The new set of three table headers on page 2.

Confused? It gets even better!

Just after the data table which is part of the original table and not a nested table the table changes its structure again! [Don't even think about nesting tables!]

Now we have a pink table header but no blue or yellow header rows. Instead of two columns of content where the first three columns and last three columns are merged in each row as we found on the first page, we now have the first two columns and last four columns merged.

This will often go on in a document for its entire length. I've seen one row go on for five or six pages with no content in the first columns and only a small stream of content in the last column. Even for those of you who are visually accessing the content the usability and readability of the content is compromised. There is also the issue of all that wasted white space and paper while you watch a tiny stream of content flow down the right side of the pages.

Tables should be used to display data and not to format entire documents. The following techniques are for making data tables more accessible and usable. They are also techniques you can use if you insist on using tables to design entire documents.

## Don't Allow Rows to Break Across Pages

Many document authors will balk at this suggestion. There is a tool in Word that lets you prevent rows from breaking across pages. This means that if the content in one cell, one row will not fit on a page it cannot be presented in the table. This is a good way of keeping you honest with the content of a table cell and hopefully giving pause to consider that using a table for design layout isn't the best method.

To turn off the breaking of rows across pages which is on by default:

1. Select the table.
2. Press the AppKey and choose Table Properties.
3. Move to the Row tab.
4. Uncheck the check box to "allow rows to break across pages."
5. Tab to and activate the OK button by pressing Enter.

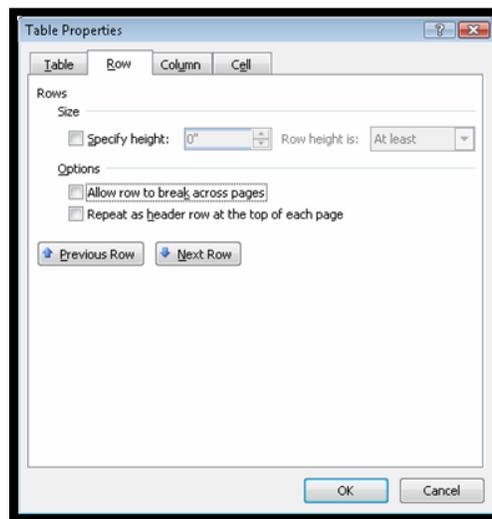


Figure 348 Table Properties dialog with Row tab in focus.

Using other formatting tools, you can make your publications interesting, well designed, and accessible.

## Header Rows Repeat

It is not good form to use "heading styles" in a table. If we think about using a table to format our document, this would eliminate a key component for navigation and creating a Table of Contents.

So what then are "headers?"

The header information in a table provides the key or legend to the relationships of the data in the table. You can create a style called "Table Header" which will give your tables a consistent look and feel but they should not be based on the heading level 1 through 11 styles.

Let's consider why we use the heading level styles. The heading styles are used to indicate a change in topic, a hierarchy of the content in the document. In a table, we have column and row titles. If we were to use a heading style it would create confusion for the person reading the information in the table because, using the table navigation commands we move across a row in a table and not to content immediately under the current cell.

**Table 6 Summary of sales for January and February 2009.**

Salesperson	January	February
Karen	525	550
Barnaby	550	525
Olivia	500	550

If the text "Salesperson" were a heading level 1 style for example, the content under it would be either another heading 1 style in the form of "January" or another heading 1 style in the form of "Karen." Logically this would not make sense to someone reading the information.

Table headers are "tagged differently" than heading styles and perform a different function. By identifying table headers, adaptive technology can tell someone in cell B3 that the salesperson Barnaby had sales of 550 in January. This information would not be available if we had used a heading style. A person using adaptive technology would just hear "cell B4 550." The relationship is lost. This is a small sample table but if we were looking at a large complex data table, the person reading the data would just hear a series of cell coordinates and numbers.

Word 2010 lets you choose more than one row to be a column header. Neither version lets you identify row titles at the present time. This will need to be done in Adobe Acrobat.

The other advantage to having the header row repeat is that the table header information will be at the top of each page that the table spills over to. This helps people with learning, cognitive, or visual disabilities keep track of the relationship between the data they are looking at without having to go back to the start of the table to jog their memory about the column titles. When the document is converted to tagged PDF it will be this header row repeat identifier that will be used to create the <TH> or "Table Header" Tags in the PDF document. Although you will need to add additional table header rows for column and row titles, it will save you time in that the first row/column titles are already done.

I recognize that it is confusing. You have Heading Styles, Page Headers and Table Headers. This is another reason to use templates. You can implement the page headers or footers that contain page numbers, have specific styles for hierarchical content changes, and also have a consistent style for the column and row titles in any tables used in the document.

I do recognize that this chapter does not cover complex data tables. When you create complex data tables much of the repair work will need to be done in Adobe Acrobat to sort out table header information.

To let the header row repeat:

1. Select the row or series of contiguous rows that are the header rows for the table.
2. Press the AppKey to open the context menu for the table.
3. Choose Table Properties.
4. Press Ctrl + Tab to move to the Row tab.
5. Check the check box to repeat as header row at the top of next page or press Alt + H.
6. Tab to and activate the OK button by pressing Enter.

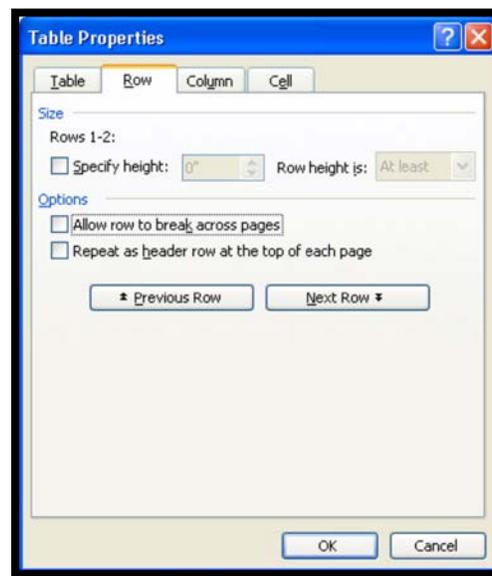


Figure 349 Table Properties dialog with Row tab in focus.

By using the “Header row repeat tool in Word, we can identify the column titles in a table.

This is also the tab in Table Properties that you use to uncheck the rows breaking across pages.

## Header Repairs in Acrobat

Once you have converted the Word document to tagged PDF, you can open the Tags Tree and use F2 Edit mode to make any <TD> or table data cells into <TH> cells. You can also use the table inspector for a more visual representation of the cells you are repairing. You can also use the TouchUp Reading Order tool Table Editor to do this and add scope and/or table ID attributes to a cell.

## **Adjust Cell Margins/Padding**

Often in tables we tend to press the Enter key to create some visual space around text because we think it looks too crowded. When someone using adaptive technology enters a cell with a lot of blank lines and tries to navigate and read content line by line, every press of the Enter key you made is read as “blank, blank, blank...” If we hear one or two of these blank lines, we assume that the cell is empty and that for some reason the document author just kept pressing the Enter key. We make this assumption based on years of similar “spacing techniques” in other Word documents as well as HTML documents. In many HTML documents, instead of adjusting cell padding or the space around the text, document authors just press the Enter key.

In HTML there is a way to provide the visual spacing effect and not use the Enter key. There is also a tool for this in Word. It is the use of “cell margins.”

When you adjust cell margins you will be adjusting the cell margins for all cells in that row. You can choose to modify the cell margins for individual rows, several rows or for the entire table to give it a more uniform look and feel.

To adjust the cell margins:

1. Select the cell or row you want to modify.
2. I generally make this adjustment for the entire table so would select the table.
3. Press the AppKey and choose Table Properties.
4. Press Ctrl + Tab to move to the Cells tab.
5. Press Alt + the letter O to open the Options dialog.
6. Uncheck the check box that has all margins the same at the predetermined size.
7. You can then press Tab to move to the combo boxes where you can adjust the top, bottom, left or right cell margins.
8. Once you are finished, Tab to the OK button and press Enter to confirm your changes.



Figure 350 Table Properties dialog with Cells tab in focus.

**Note:** Do not use whole numbers for cell margins. I suggest beginning with something like .10 and going to a maximum of .30. If you start going over this number your table will look odd as there will be too much space around text. Using whole numbers can result in a message saying this is not a valid action. It would be similar to trying to set page margins wider than the page.

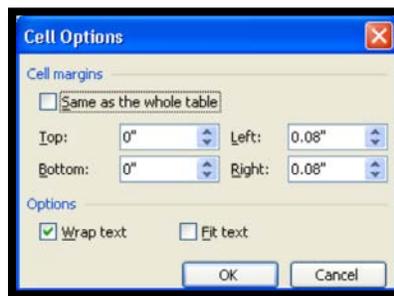


Figure 351 Cell Options dialog.

Table 7 Summary of sales for January and February 2009 [Second Sample].

Salesperson	January	February
-------------	---------	----------

Salesperson	January	February
Karen	525	550
Barnaby	550	525
Olivia	500	550

In the preceding table I've set the top and bottom cell margins at .20 to give you an idea of what this might look like. Typically I use the .10 inch cell margin as it gives some space but doesn't make the table look awkward.

## Captions for Tables

As with images and equations, we need to make sure tables have a caption. For tables, the caption should be above the table. This provides information for people with learning, cognitive or visual disabilities about what type of information they can expect in the table that follows. This information is also read to someone using a screen reader.

To add a caption to a table:

1. Select the table.
2. Press the AppKey to open the context menu for a table.
3. If you do not select the table, you will get a context menu for the text.
4. Choose Caption from the context menu.
5. The Caption dialog opens and your focus is in the caption edit box just after the words "Table #."
6. Each table will automatically be numbered as you add captions.
7. Type a caption for the table. A table caption is like the summary tag in HTML and provides a brief description of the contents of the table.
8. Tab to and activate the OK button by pressing the Enter key.



**Figure 352** Caption dialog with Table caption chosen.

When you have a table selected, the choice will automatically be changed to a table caption. After this you will need to double check that the type of caption is changing for each element you are applying it to.

## Bulleted and Numbered Lists

One of the most mal formatted items in a Word document are bulleted or numbered lists. The main issue is once again the use of the Enter key to create space between bulleted or numbered list items.

Let's take a look at how adaptive technology renders a bulleted or numbered list.

- House
- Car
- Boat

When the preceding list is read it is read as “List start, bullet house, bullet car, bullet boat, list end.”

If we use the Enter key to put space between the items, it will be read like this: “list start, bullet house, list end, blank, list start, bullet car, list end, blank, list start, bullet boat, list end.”

- House
  
- Car
  
  
- Boat

Not only is this a lot more “extraneous stuff” to listen to, but the relationship between the listed items is lost and broken. Although not critical in a bulleted list, it does become critical in understanding steps, instructions, or sequenced content. It is quite easy to lose your place while listening to each sequential item being announced in isolation from the rest of the sequenced content.

This can be repaired in Adobe Acrobat but it will take time. The goal is to minimize the amount of repairs to be done in Acrobat but also to make the Word document more readable. If the Enter key were used in the Word document to space the listed content, the person using adaptive technology would hear the constant list start and list end notifications.

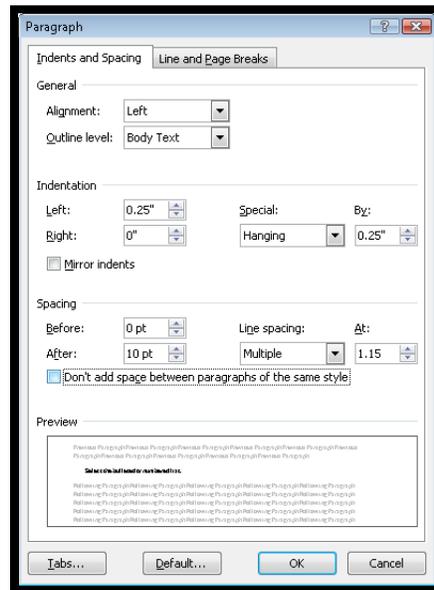
How can we put some space around our listed items without creating an accessibility issue in both Word and tagged PDF?

There are two methods you can use to do this. The first method will only change the spacing for the selected bulleted or numbered list. The second method will change spacing for all bulleted or numbered lists in your document. Again this is a useful tool for working with a specific template.

To add spacing beneath items in a specific bulleted or numbered list:

1. Select the bulleted or numbered list.
2. Press Alt + H, P, G.
3. The Paragraph dialog opens.
4. Uncheck the check box to not have spacing between paragraphs of the same type.
5. Notice that the item above this indicates that there will be a space of 10 points below the bulleted or numbered list if this check box is unchecked.
6. Tab to and activate the OK button by pressing Enter.

The set of instructions above were adjusted using this method so that you can see the visual effect. In that list when I press Ctrl + Up or Down Arrow to move from list item to list item I now land on each sequential numbered item rather than a blank lines between the items.



**Figure 353 Paragraph dialog with Indents and Spacing tab in focus.**

You can do this on the bulleted or numbered lists you want a bit of space around and not do it on bulleted or numbered lists you don't. Because the 10 point space beneath each bulleted or numbered list item is predetermined, the spacing will always be the same giving your document a more consistent look and feel.

Typically there is space before the first bulleted or numbered list item so we don't want to increase that. By allowing the 10 point spacing after each item, the bulleted or numbered list looks better and gives us the visual space effect we want while retaining the integrity of the list structure.

The second method is to modify the spacing for the List Paragraph Style.

You can do this from either the Quick Styles Gallery or the Apply Styles Pane. The List Paragraph Style determines the attributes for the bulleted or numbered lists in the document. You would still use the Home Ribbon Bullet or Numbering icons/buttons however when you do, the List Paragraph Style will use your modified spacing automatically.

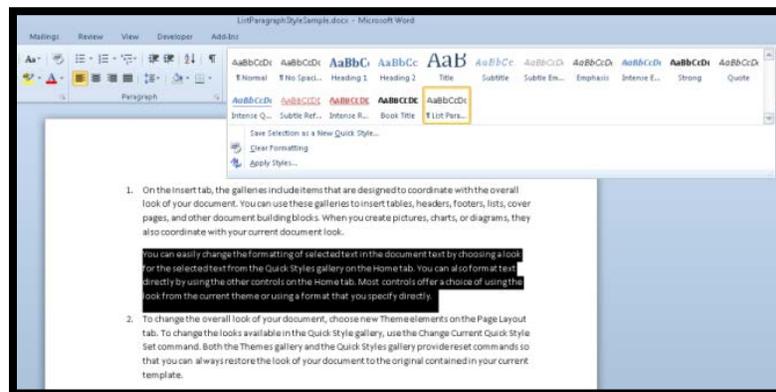
To modify the List Paragraph Style:

1. I recommend selecting a list or list item.
2. Press Alt + H, F, Y to open the Styles Pane.
3. Press the AppKey on the List Paragraph Style.
4. Choose Modify.

5. When the Modify dialog opens choose the Format button by pressing Alt + letter O.
6. From the context menu under the Format button choose Paragraph.
7. From this point on the instructions are the same as for modifying the spacing of an individual list in a document.
8. Uncheck the checkbox “Don’t add spacing after paragraphs of the same style.”
9. Tab to and activate the OK button.
10. In the Modify Style dialog choose whether to have this change implemented for this document or documents based on this template.
11. Do not automatically update styles.
12. Tab to and activate the OK button.

Your lists in the document will now have spacing after each list item.

One tip for creating those sort of sub-paragraphs for a bulleted item is to select the paragraph you want to be part of a bulleted or numbered list item and apply the List Paragraph Style to it. This will ensure that any sub-items are formatted in the same way as the bulleted or numbered list items and you don’t have to guess at the formatting



**Figure 354 List Paragraph Style applied to a sub-item for a list item.**

When the document is tagged as a PDF document you would simply move the paragraph into the <LI> Tag for that list item. For more information on this technique see the chapter on Bulleted and Numbered Lists in this book.

## Viewing a List of Headings in a Document

Word 2010 lets you view a list of headings in your documents so that you can do a quick check to make sure that all of the text and topic changes you want as headings are indeed headings and to check the hierarchy of content at a glance. The tool is the old document map.

The way to view the headings in your document is to press Alt + W, K which opens the Navigation Pane from the View Ribbon.

When the Navigation Pane opens the headings button is active by default. You can also view the document by pages or search results. The Navigation Pane is the same pane that opens when you press Ctrl + F to Find content in your Word 2010 document.

The Navigation Pane is accessible using the keyboard and the JAWS screen reader. You can use the Arrow keys to move through the headings in the document and press Enter on one to go to that piece of content.

To close the Navigation Pane you can:

- Press Escape while in the Navigation Pane, or;
- Press Ctrl + Spacebar then C for Close while in the Navigation Pane., or;
- Press Alt + W, K to move to the View Ribbon and uncheck the Navigation Pane check box.



**Figure 355 Navigation Pane showing headings in this document.**

Word 2010 has a tool that lets you import or export styles from one document to another. This tool is covered in depth in the Logical Document Structure Handbook: Word 2010 or Logical Document Structure Handbook: Word 2010 Legal Edition. You can find the tool under the Manage Styles button in the Styles Pane.

## Table Descriptions in Office 2010

If you look at the Office 2010 “What’s New” document you’ll see reference to “table descriptions” as something that is new to Office 2010 applications. There is no other information about what table descriptions are. If you go to the application help topics and type in table description you’ll get a variety of results none of which are related to table descriptions...or you’ll get “no results” found.

I assumed based on my knowledge of accessible document design that this feature would be similar to a table summary that could be added to a table. Finally I went to the Microsoft Office MVP’s for Word who diligently searched with me to find the answer.

There is a document on [Alt Text for tables](#)<sup>19</sup>. Sigh.

This is a topic on the Karlen Communications Blog if you are not near this book and need the information.

This is a new feature and not yet supported by adaptive technology.

## Table Descriptions in Word

Word 2010 lets you add Alt Text or a “table description” to tables in Word.

In Word 2010 place the cursor in a table cell and select the table by pressing Alt + J, L, K, T for the Table Tools, Layout Sub-Ribbon, Select, Table.

Once the Table is selected you can press the AppKey or Right mouse click on the table and choose Table Properties. Table Properties is the last item in the context menu which means you can press the Up arrow once to get to it.

Press Enter to open the Table Properties dialog. The last tab is called Alt text. You can get to it by pressing Ctrl + Tab to move forward through the Table Properties tabs or by pressing Ctrl + Shift + Tab to move backward through the Table properties tabs.

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<sup>19</sup> Microsoft Office 2010 web site, article on Alt Text for Tables: <http://office.microsoft.com/en-us/support/add-alternative-text-to-a-shape-picture-chart-table-smartart-graphic-or-other-object-HA010354748.aspx>

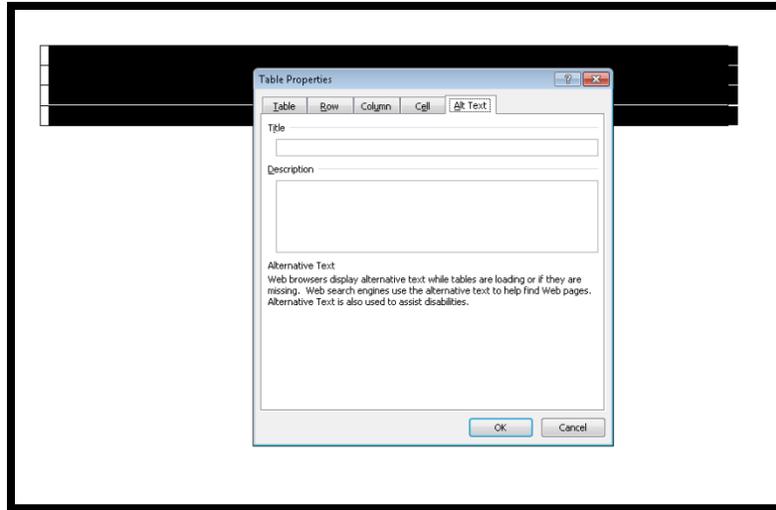


Figure 356 Alt text for tables in Word.

## Table Descriptions in Excel

To add Alt text to a table in Excel, select the table and press the AppKey. Select the Table item in the context menu and then choose

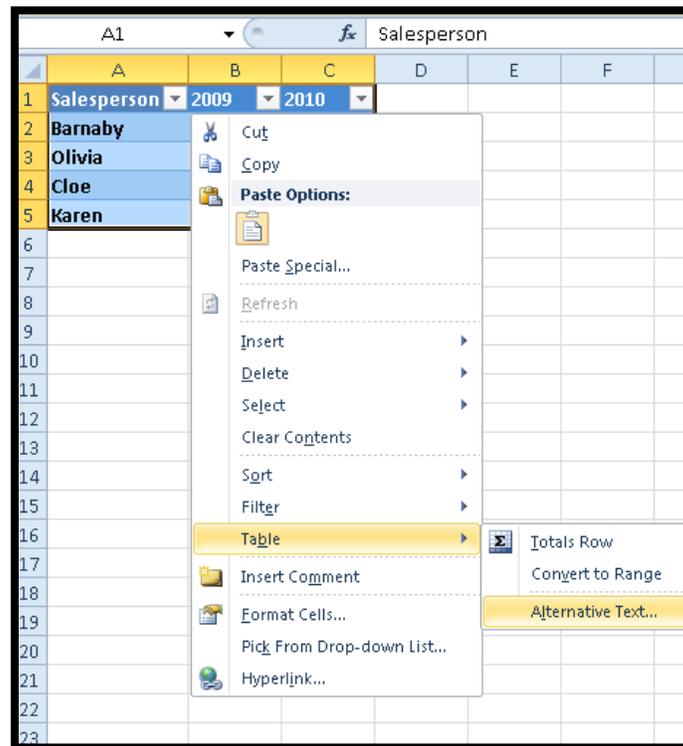


Figure 357 Context menu for Alt Text for an Excel table.

Once you choose to add Alt Text for a table in Excel, the Alt Text dialog of Office 2010 opens and you can add a title and/or a description.

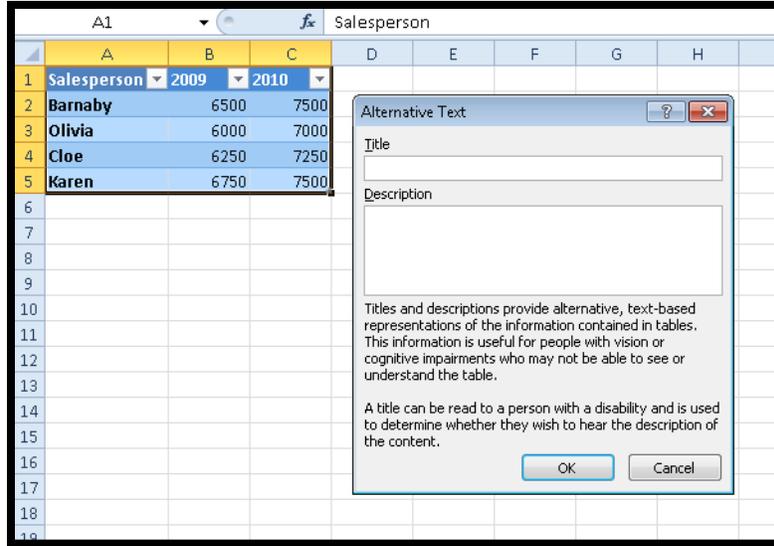


Figure 358 Alt Text dialog for table in Excel.

## Table Descriptions in PowerPoint 2010

To add a table description or Alt Text for a table in PowerPoint select the table and choose Format Table from the context menu. Once the Format Table dialog opens choose Alt text from the categories. You can add a title and/or a description for the table.

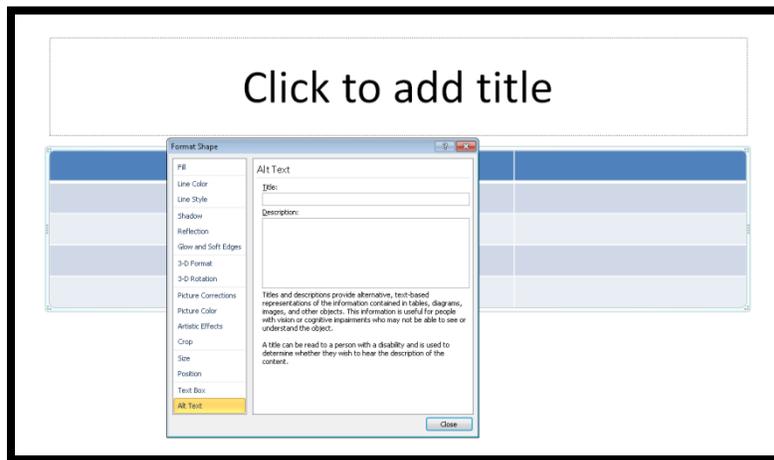


Figure 359 Alt Text dialog for a table in PowerPoint.

## Table Descriptions in Publisher 2010

Although the what's new document indicates that the table description or Alt Text for Tables is available in "applications" it doesn't specify which ones. Publisher is the exception. The framework for this tool is available in Publisher but you can't actually add a table description or Alt Text for tables in Publisher.

If you create a table in Publisher, select it and press the AppKey you'll see "Format Table." When the Format Table dialog opens there is an old "Web" tab that is not available no matter what you do. So hopefully in the next release of Office we'll be able to add table descriptions or Alt text for tables in Publisher.

## Accessibility Checker in Word 2010

Microsoft Office 2010 has a [built-in "Accessibility Checker"](#)<sup>20</sup> to help you identify problems with your documents. The accessibility checker is available in Excel, PowerPoint and Word.

The accessibility checker is a mechanical tool and is not a substitute for a thorough review of the document or learning how to create more accessible and well-structured documents. It will however, identify images with no Alt Text. It won't identify visual representations of headings that do not have the underlying heading level structure.

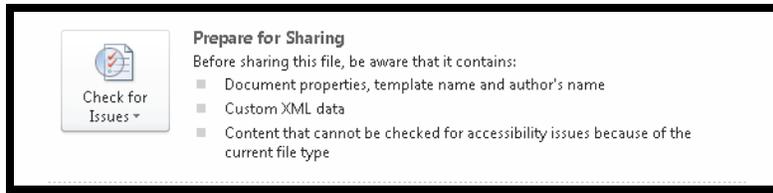
The article on the Microsoft site indicates that there are three key areas that the accessibility checker looks at:

- Images missing Alt Text.
- Unreadable content such as a table that has SEVERAL BLANK CELLS AND/OR COMPLEX FORMATTING.
- Unreadable content due to an illogical reading order [for example the order of objects on a slide].

The accessibility details of the document you are working on are always available to you through the Backstage area under the Info category and the Prepare for Sharing options.

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<sup>20</sup> Microsoft 2010 Accessibility Investment and Document Accessibility article:  
<http://blogs.technet.com/b/office2010/archive/2010/01/07/office-2010-accessibility-investments-document-accessibility.aspx>



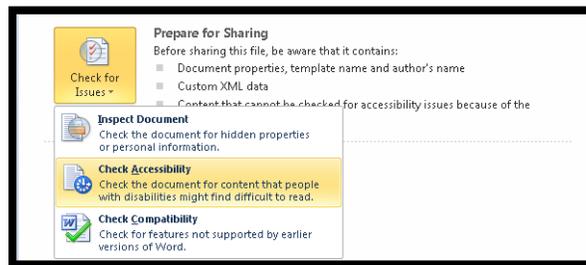
**Figure 360 Accessibility results at a glance in the Prepare for Sharing area of the Info category.**

At that point you, as the document author can run the accessibility checker. Remember that the elements the mechanical checker finds may be OK and accessible. When reviewing the results of an accessibility check you will need to make decisions about document structure and content and either make repairs or continue along the publishing stream.

**Note:** The Accessibility Check seems to only work on documents in the 2010 DOCX document format. I had documents in the 2007 DOCX format and got the result that the checker couldn't check the document.

To perform an accessibility check in Word:

1. Press Alt + F, letter I, letter I for File/Backstage, Info and Check for Issues in the Prepare for Sharing options.
2. When the sub-menu opens use the Down Arrow once to find "Check Accessibility."



**Figure 361 Check Accessibility item in the sub-menu of Prepare for Sharing.**

When the Accessibility Pane opens to the right of your document there are a few areas of problems that you can navigate through.

You can use the arrow keys to move through the items in the Accessibility check results. Press F6 to move into the results if you lose focus.

If you press Enter on any item listed in the accessibility check results you will be taken to that element in the document. Review the element for accessibility and make a decision as to whether it

is an accessible element or not. Then move on to the next element in the Accessibility Check Pane results.



Figure 362 Results from an Accessibility Check.

## Converting the Word Document to Tagged PDF

Now that we have an accessible Word document we can use the Adobe PDF Menu item to convert the document to tagged PDF. We discussed the conversion settings in the chapter “text” and the settings should still be in place. Remember you will only have access to this tool if you are using a 32-bit installation of Microsoft Office.

**Note:** For Word 2007 and 2010 the conversion of styles other than the heading styles in a Word document is hit and miss. The conversion of custom heading styles is not consistent or reliable using Acrobat 10 with Word 2007 or 2010.

To convert the Word document press Alt + B, C to “Create PDF” if you are using a 32-bit version of Word.

The initial release of Acrobat X did not have support for a 64-bit version of Microsoft Office 2010. The first service pack or patch might include this. Make sure you update Acrobat X when updates are available to ensure you have the best tools for working with tagged PDF documents.

**Note:** If you are working on a large document you may get a message saying that this process might take a while to complete and suggesting that if you choose not to Tag the document that it will go faster. The whole point is to create a tagged PDF so say “Yes” continue tagging the document. Then go for coffee, tea, lunch....

## Microsoft Office Save as PDF or XPS Plug-in

Microsoft Office 2010 has a built-in add-in that lets you save your Word document as a tagged PDF document without having Adobe Acrobat installed.

**Note:** XPS is a completely inaccessible file format and should be avoided.

Make sure you are working with an accessible document in Word so that repairs are minimal.

To save your Word document as a tagged PDF document:

1. Press F12 to open the Save As dialog.
2. I usually keep the same filename to avoid confusion and to be able to locate the PDF version quickly if I need to.
3. Tab to the Files of Type list and choose PDF.
4. Parts of the Save As dialog will change and you will see an Options button in it. The keyboard command to activate the Option button is Alt + letter O.
5. Make sure the check box to create Bookmarks is checked.
6. make sure that the check box for “Document structure tags for accessibility “is checked.
  - a. In turn this will let you create those Bookmarks using either heading styles in Word or Bookmarks in Word. If you’ve used proper styles in Word choose the option to use Word headings.
7. Tab to and activate the OK button.

Press Alt + S to save the document as a tagged PDF document.

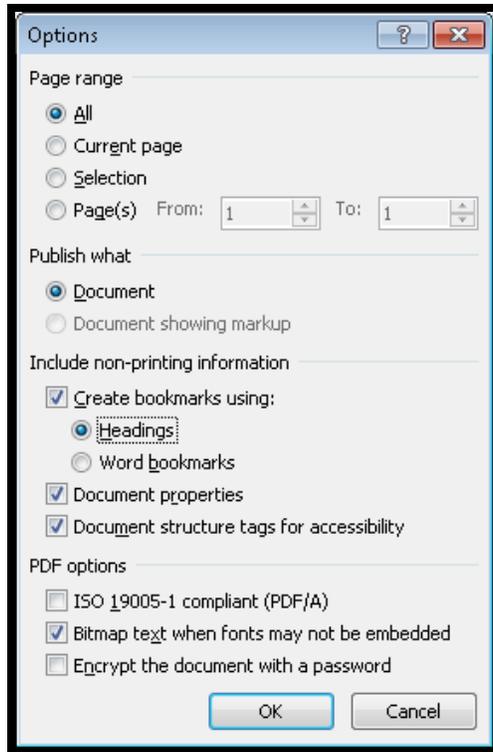


Figure 363 PDF Options dialog in Word 2007.

You shouldn't have to change this unless you repair or reinstall Word or Office. If there are no headings in the document, this option will not be available in the PDF Options dialog.

## Tagged PDF from Save as PDF Plug-in

It is necessary to note that the current version of the Save as PDF add-in as well as Acrobat X tends to put all image or <figure> Tags at the top of the Tags Tree no matter where they are placed in the document. This requires some repair time in Adobe Acrobat to put the images in their logical reading order.

Adobe acrobat 10 tends to also do this with some documents and has the additional problem of identifying table gridlines as patpathpath or parts of figure elements rather than putting them in the background where they should be. In previous versions of Acrobat this was not an issue.

Acrobat 10 also tends to treat the Picture Styles such as the ones I've used in this document to surround images as independent images separate from the image they are surrounding. This means repair time in Adobe Acrobat to put the Picture Styles in the background.

Both the identification of the errant pathpathpath table gridlines and the errant Picture Style tagging will have to be repaired in the Content panel. The pathpathpath will not show up in the TouchUp Reading Order panel. The errant Picture style tagging will show up as images without Alt

Text in an accessibility full check but will not show up as images with no Alt Text in the TouchUp Reading Order panel.

We'll look at the errant pathpathpath table gridlines in the chapter on tables and the errant Picture Style tagging in the chapter on Acrobat repair tools.

Most of these issues are legacy ones from Acrobat9 that still remain with acrobat 10.

## **Excel 2010**

One of the most important accessibility features you can add to your Excel workbook is to create a table of contents on the first worksheet in the document. You can easily create a linked table of contents using named ranges or specific cell locations.

### **Linked Table of Contents for Workbooks**

It is easy to create a linked table of contents for an Excel workbook or worksheet. You can either use named ranges or cell locations to create your table of contents. Just as with a table of contents in Word, some planning needs to take place. For example you need to determine what you are going to link to or go to in the Excel document. What are the critical pieces of information that someone would want or need to access on a regular basis?

We are now going to convert a simple spreadsheet with a chart into a tagged PDF document. A workbook or worksheet seems to break all the rules about using tables for design layout since a workbook or worksheet cannot be anything but "tables." This means more repairs in Adobe Acrobat.

### **Converting a Workbook or a Worksheet**

By default, you will be converting a single worksheet, the one your focus is on. If you want to convert an entire workbook to a PDF document, choose Adobe PDF and press Enter on Convert Entire Workbook. Once this is selected, it will remain checked until you uncheck it.

The tags created when you convert an entire workbook show each worksheet as a <worksheet> tag with the child tags under it as shown in the image below. A <workbook> tag is created as the parent for the individual worksheets.

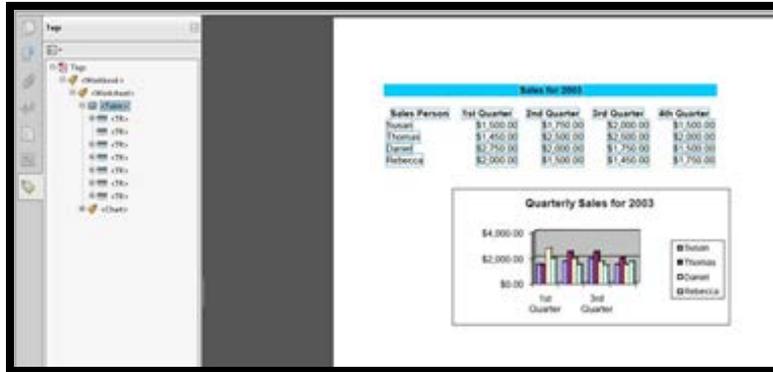


Figure 364 Excel workbook as a tagged PDF document.

## Excel Conversion Settings

One of the questions I get asked a lot is how to present an entire worksheet on one page so that the relationship between the data in the worksheet is not lost. There are conversion settings for Excel just as there are conversion settings for Word and PowerPoint.

Let's walk through the conversion settings for Excel.

To view the conversion settings for Excel press Alt + B and choose Change Conversion Settings.

A dialog opens with fewer options than we have for Word. This is, of course, because we are in a different application with different accessibility needs.

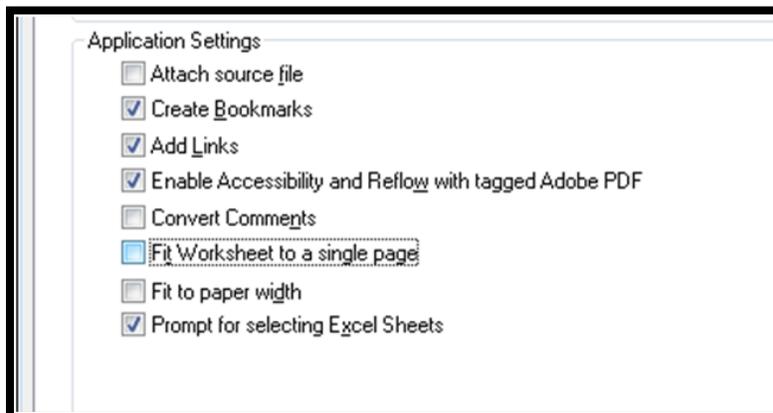
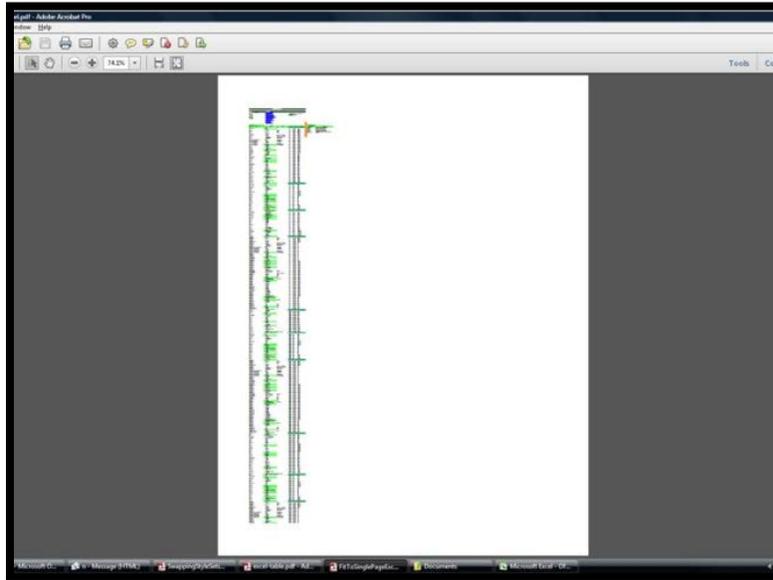


Figure 365 Excel specific conversion settings for tagged PDF.

One of the things I am asked during workshops is how to fit one worksheet on a single tagged PDF page. When a document, worksheet or presentation is converted to PDF, the default behaviour for display is to create 8.5 by 11 inch visual pages. This is sometimes not practical for worksheets especially since we have to turn off the column and row titles [in Page Setup dialog]. Often we don't want to visually separate data into an unreadable layout. Viewing data that was meant to be

displayed as a huge worksheet in a linear non-navigable format causes the data to lose its impact and meaning.

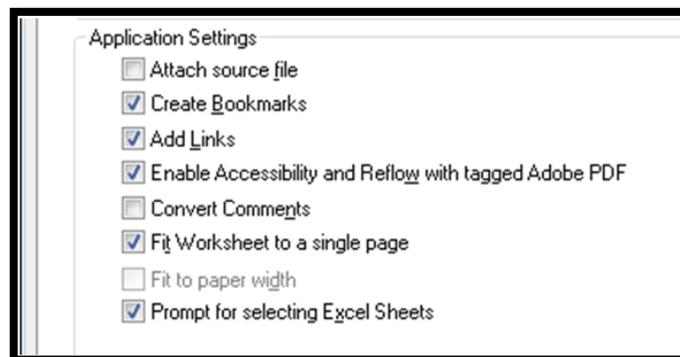
In the conversion settings for Excel there is the option to “Fit the worksheet to the page” which will retain the margins.



**Figure 366 Fit worksheet on single page option.**

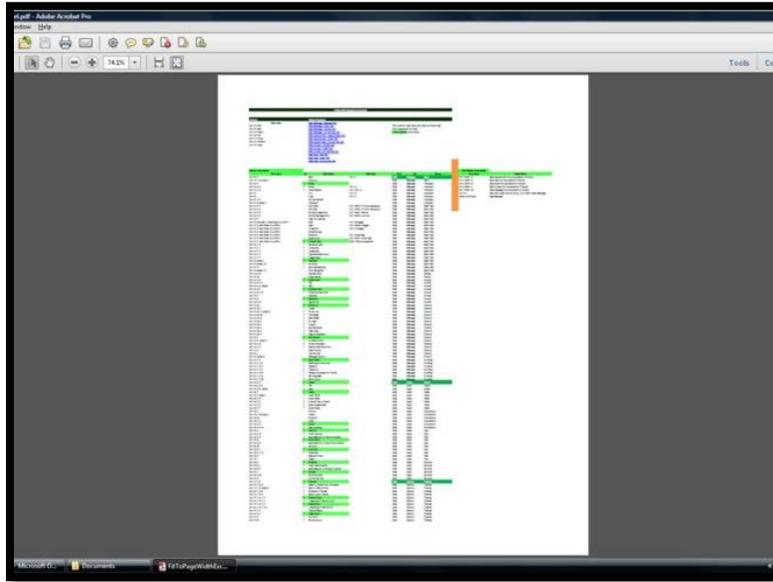
I talked earlier in this book about not being afraid to use the Zoom tool for performing repairs in tagged PDF documents. It is the same with Excel workbooks or worksheets you choose to try and fit on one page or piece of paper...don't be afraid to use the Zoom tool so that you can read the data.

When you choose the option to fit the worksheet to the page, the option to fit the worksheet to the paper is not available. The converse is true, when you choose to fit the worksheet to the paper; you cannot choose to fit the worksheet to the page.



**Figure 367 PDF Conversion Settings for Excel.**

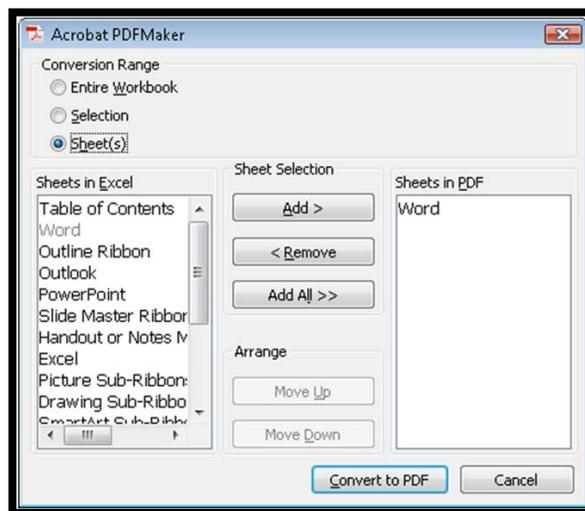
When you choose to fit the worksheet to the paper, the results will be displayed as shown in the following image.



**Figure 368 Excel Fit to Page Width option.**

I do not have a worksheet larger than these ones so cannot advise on the results when worksheets are huge. These are the only options you have to try and fit worksheet content onto one continuous viewable area.

When you choose to create the PDF document, a dialog will open where you can choose which worksheets you want to convert to tagged PDF.

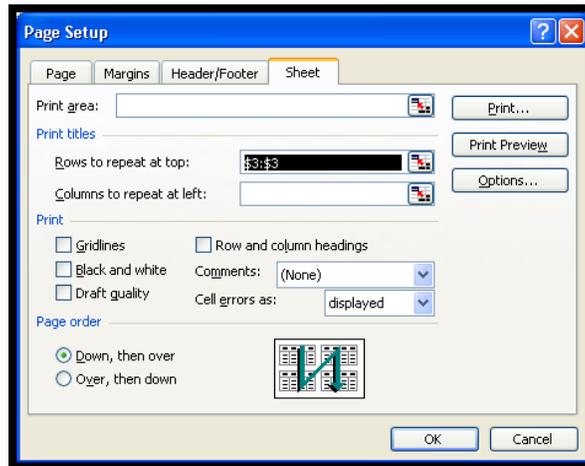


**Figure 369 Excel convert to PDF dialog.**

## Preparing the Worksheet for Conversion

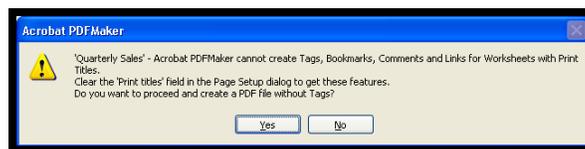
If you are printing a hard copy of a worksheet, it is useful for your reader to have the titles of columns and rows appear on each printed page so that they have a point of reference for the data they are reviewing.

You turn the titles on in the File > Page Setup > Sheet tab.



**Figure 370** Page Setup dialog box in Microsoft Excel 2003 showing the "rows to repeat at top" edit box.

When you convert the sheet to a tagged PDF document, you will need to remove these. If you forget, you will have a dialog box reminding you that a PDF document can't be created as long as the titles feature is turned on.



**Figure 371** Message you will get when you try to convert a Microsoft Excel 2003 worksheet to tagged PDF without removing the "row to repeat at top" from Page Setup.

Anticipating your question, the titles will have to be manually identified once we create the PDF document.

You can leave page headers and footers on the worksheet.

Once the titles have been removed, choose Adobe PDF > convert to PDF.

When the worksheet opens in Adobe Acrobat, press F4 to view the tags tree. We've used a simple worksheet. If you have a more complicated worksheet, you might want to begin with the TouchUp Reading order tool.

Everything in the “table” is tagged as part of the table structure. The chart is tagged as a <Shape> which is the same as a <Figure> and will need Alt Text.

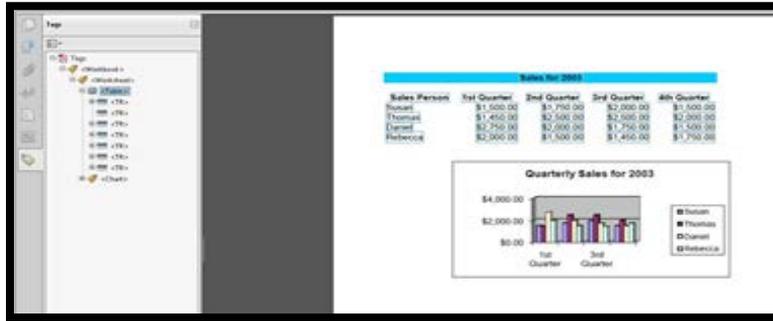


Figure 372 Tags Tree showing that the table heading has been tagged as a table data cell and needs repair.

Notice that at the beginning of the table structure, the heading hasn’t been separated from the main table content. This needs to be done so that people using adaptive technology can identify the title of the table.

To add the table header Tags:

1. Select the <worksheet> tag. Turn on the Highlight Content.
2. Expand the Table tags in the Tags Tree.
3. Select the first <TR> or Table Row Tag.
4. Select the <TD> tag that has the information for the table title in it.
5. Press F2 to go into edit mode.



Figure 373 Replace the TD Tag with an H1 Tag.

6. Replace the TD with H1 and press Enter.
7. Drag the <H1> Tag out of the table and position it just before the <Table> Tag in the Tags Tree.



**Figure 374 Remove any empty TR or TD Tags.**

8. The <TR> Tag should now be empty and can be deleted.

We're now ready to modify the other <TD>Tags to be <TH> or table header Tags. This can be done in two ways: editing the individual Tags or by using the Table Editor in the TouchUp Reading Order Panel.

Normally we do not delete Tags; however, it is possible to delete Tags that are empty. A caveat to this is not to use the Delete key to tidy up the Tags Tree. If you are going to delete empty Tags make sure you save the document as a new version before you do. In the event that the deletion of even an empty Tag affects the logical reading order or the ability to get a clean accessibility full check, you want to be able to immediately go back to the last good repair in the document so you don't have to do all that work all over again.

**Note:** You never want to delete content from the visual document. If you have content in the visual document send it back to the document author or desktop publishing house to have it removed. Removing actual content from the visual page can affect other content on the visual page in a detrimental way. We'll discuss this when we look at desktop published documents.

Now we need to identify the table headers which will replace the identification method used in Excel through the File > Page Setup > Sheet.

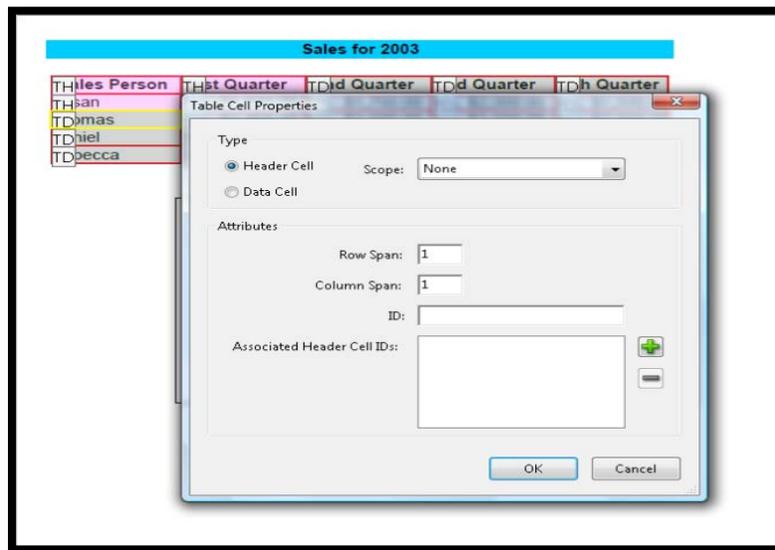
1. Select the first <TR> set in the Tags Tree. You will be able to see the corresponding PDF content with the Highlight content turned on.
2. Expand the <TR> containing the column titles.
3. For each <TD>, use the F2 key and edit them to show <TH> for table header.
  - a. You can copy the content of the Tag while in edit mode. For example once I repair one <TH> Tag and press Enter, I press F2 again which "selects" the entire Tag. I then press Ctrl + C to copy this and when I move to the next Tag that needs to be a <TH> Tag, I can simply press F2, Ctrl + V to paste and then Enter to reassign the Tag type. If you are working with documents that have a lot of TH or even LI [list items] that need repair this technique saves a lot of time.

4. Now that we have the column titles identified with their <TH> Tags, we need to make sure that the row titles have <TH> Tags. This will let adaptive technology look above and to the left/column 1 to provide relationship information as the table data itself is navigated.
5. Expand the second <TR> Tag.
6. Select the first <TD> Tag.
7. Press F2 to go into Edit mode.
8. Replace the letter D with an H.
9. Press Enter to confirm this change.
10. Do not modify the remaining <TD> cells in that row. They are table data cells.



**Figure 375 Repair the TH Tag in the Tags Tree.**

You can also make this repair using the Table Editor of the TouchUp Reading Order Panel.



**Figure 376 Repairing TH Tags in the Table Editor.**

I've changed the cell options to show some wonky colours so that the TH Tags are easier to see. As with the TouchUp Reading Order Panel you can use colour to enhance the visibility of Tag elements.

Sales for 2003				
Person	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Jan	\$1,500.00	\$1,750.00	\$2,000.00	\$1,500.00
Thomas	\$1,450.00	\$2,500.00	\$2,500.00	\$2,000.00
Niel	\$2,750.00	\$2,000.00	\$1,750.00	\$1,500.00
Becca	\$2,000.00	\$1,500.00	\$1,450.00	\$1,750.00

Figure 377 Repaired table with TH Tags visible in Table Editor.

The last thing we need to do with this PDF document is to provide Alt Text for the chart.

The chart reflects a visualization of information people using screen readers have access to in the document. Because the information is available in another format, we can use Alt Text such as “Chart of information from the table above.”

If there were no details about the information in the chart we would have to make a decision. Can we adequately describe the chart in a very few words or do we need to attach a Word or NotePad document with more details than would fit into an Alt Text attribute?

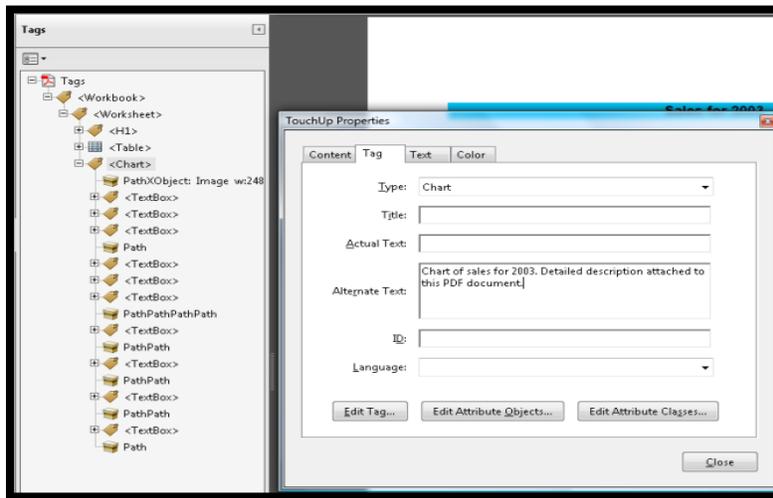


Figure 378 Alt Text for chart in PDF document.

I’ve expanded the <Chart> Tag so that you can see that some of the text for the chart was tagged as <Textbox>. Because this is all under the Chart Tag, the Alt Text will be read instead of the individual pieces of this chart which, out of context and on their own would not make sense to someone who can’t see the chart.

To add the Alt Text for the chart Tag:

1. Select the <Chart> Tag not the content under it.
2. Press the AppKey to open the context menu.

3. Choose Properties which is at the bottom of the list so you can press the Up Arrow to move to it quickly.
4. The TouchUp Properties dialog opens.
5. Press Alt + R to move to the Alternate Text edit box.
6. Type in the Alt Text for the chart.
7. If the chart is in a different language, change the language. If the chart is in the language of the entire document, leave the language area as it is.
8. Press Alt + C to Close the TouchUp Properties dialog.

Generally, images, charts, diagrams and other visualizations of information need to support content not be content on their own. The information shown in visual representations should be available in a more readable format in the document.

I mentioned using attachments for complex images or diagrams such as the chart in this example if the chart information weren't available in the document. The following image shows this PDF document with an attachment describing the chart in detail. This type of attachment will follow the PDF document wherever it goes and is available to anyone who is not able to understand the information displayed in chart form.

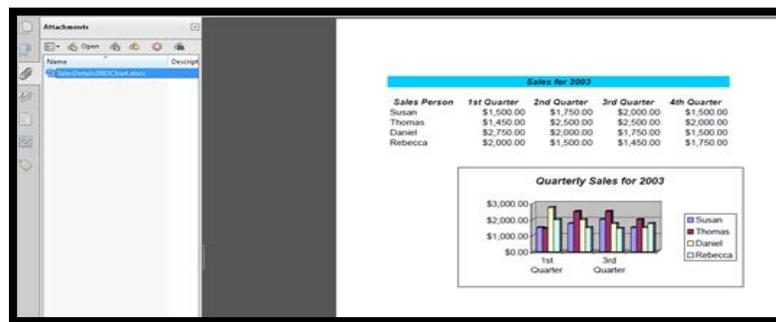


Figure 379 Attached description of a chart in a PDF document.

## Workbook Table of Contents

The sample workbook and worksheet for this topic was simple and clear. What happens if you have several sheets of data and large areas of the worksheet that contain data.

Going back to the days of Lotus 1-2-3 for DOS and my first course in how to use this application, we were taught that every workbook should have a Table of contents. It is something I still implement for larger workbooks with large amounts of data and several worksheets.

A good example is my Excel workbook that contains all the Ribbon Commands for Microsoft Office 2010. This is a complex workbook because it has information about the core ribbons, the Sub-Ribbons, and standard non-Ribbon keyboard commands for Word, Outlook, PowerPoint, and Excel.

How can I facilitate navigation to content as people need to look up keyboard commands?

Using named ranges and consistency of language, I created a Table of Contents on the first sheet and named that worksheet Table of Contents.

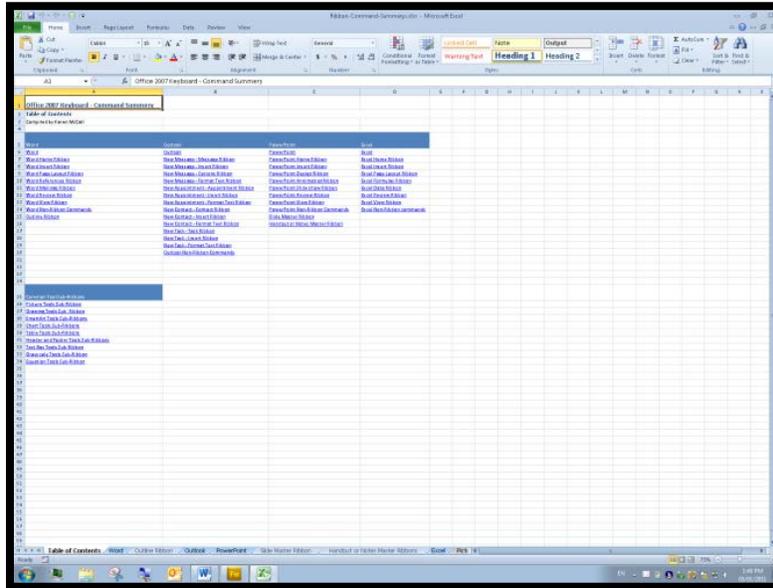


Figure 380 Table of Contents on the first sheet in an Excel workbook.

On each subsequent worksheet I included a “mini Table of Contents” just for that worksheet.

If a person is using a screen reader, they can get a list of links on this Table of Contents page and quickly move to the content they need. If a person is not using adaptive technology, the Table of Contents also lets them find information quickly.

The Table of Contents on each named sheet lets a person using a screen reader skim through the worksheets and then get a list of links for that worksheet and navigate to the content they need. For anyone not using adaptive technology, finding the specific keyboard commands is also easier.

Creating named ranges to make linking content easier, creating a Table of Contents and a sheet specific Table of Contents, and naming worksheets appropriately all contribute to the accessibility of the Excel workbook and to the resulting tagged PDF.

**Note:** You create links in Excel by using Ctrl + K on selected text in a cell and then linking to the Bookmark in the workbook. Of course you can also link to outside content.]

Keyboard Shortcut	Description	Menu Path
Alt + F	File	File
Alt + H	Home	Home
Alt + I	Insert	Insert
Alt + J	Layout	Layout
Alt + K	References	References
Alt + L	Send To Mobile Device	Send To Mobile Device
Alt + M	Mailings	Mailings
Alt + N	Review	Review
Alt + O	Options	Options
Alt + P	Page Layout	Page Layout
Alt + Q	QuickTime	QuickTime
Alt + R	References	References
Alt + S	Sent To My Computer	Sent To My Computer
Alt + T	Tools	Tools
Alt + W	Window	Window
Alt + X	Workbooks	Workbooks
Alt + Y	Workbooks	Workbooks
Alt + Z	Workbooks	Workbooks

Figure 381 Table of Contents on the Word worksheet.

## Accessibility Checker in Excel 2010

Office 2010 has an accessibility checker for Word, PowerPoint and Excel documents. There is an article on [how the Office 2010 accessibility checker works](http://blogs.technet.com/b/office2010/archive/2010/01/07/office-2010-accessibility-investments-document-accessibility.aspx)<sup>21</sup> at the Microsoft Office blog.

It should be remembered that the accessibility checker is mechanical and not a substitute for human review and repair of documents.

To access the accessibility checker press Alt + F, letter I for File/Backstage area, Info.

Press letter I again to move to and open the Check Issues button .

<sup>21</sup> Office 2010 Accessibility Checker article on Office blog:

<http://blogs.technet.com/b/office2010/archive/2010/01/07/office-2010-accessibility-investments-document-accessibility.aspx>

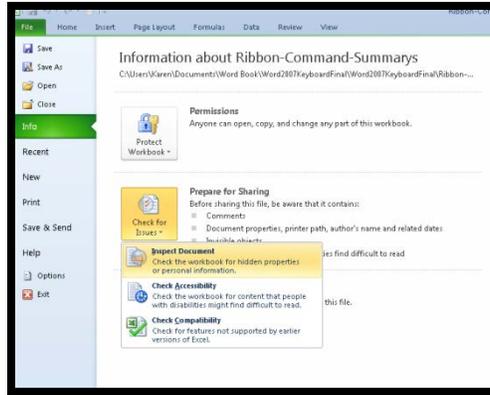


Figure 382 Excel accessibility check from the Backstage area.

Press the Down Arrow to the Check Accessibility option and press enter.

The Accessibility Check pane opens to the right of the document.

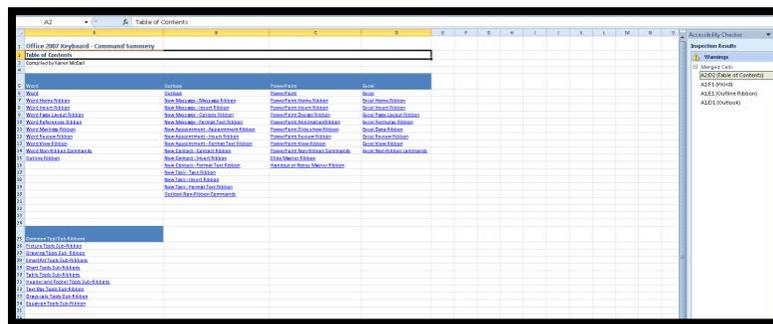


Figure 383 Accessibility Check results in Excel 2010.

In the preceding image merged cells, which is a category for you to look at, are shown for review. This lets you take a closer look at merged cells to see if the content under them or around them will still be accessible and if the merging of cells makes sense related to the worksheet data. In this case the merged cells were used to provide more space for the heading on the worksheet and as the document author I decided to leave them as they are since they don't affect the accessibility of the rest of the content on the worksheet.

If there were images or objects with no Alt Text, they would be identified in the accessibility check.

## PowerPoint 2010

In general, slides are index cards for speakers and eye candy for the audience. They tend not to contain usable content as isolated documents and need the context of the speaker for any contextual basis of information.

Based on experience working with instructors, it should also be noted that PowerPoint is not a word processor.

One of the improvements in tagging since Acrobat 7 is that the titles, subtitles, and headings in PowerPoint slides are now tagged properly. Of course this is “if” you are using the default placeholders on slides and not text boxes or shapes. Once again, the standard template containers for slide titles, subtitles and text need to be retained in the templates you develop for your organization. It is when we deviate from the standard and accessible structure that we end up with more repairs in Adobe Acrobat.

There is a tool in Microsoft Word that will let you send your Word document to PowerPoint and create the slides for you. The slides are basic and lack the “bling” or eye candy, but it is a good starting point to develop content for a presentation.

## PowerPoint Conversion Settings

There are conversion settings for PowerPoint that let you optimize the accessibility of a presentation converted to tagged PDF.

In the conversion settings for PowerPoint there is a check box to turn off animations. This should be checked so that content is placed on individual pages without transitions.

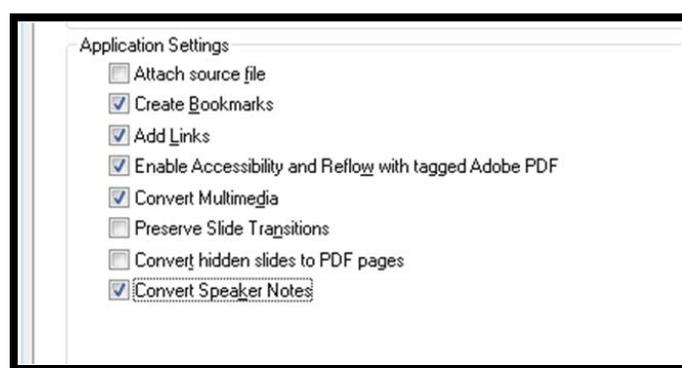
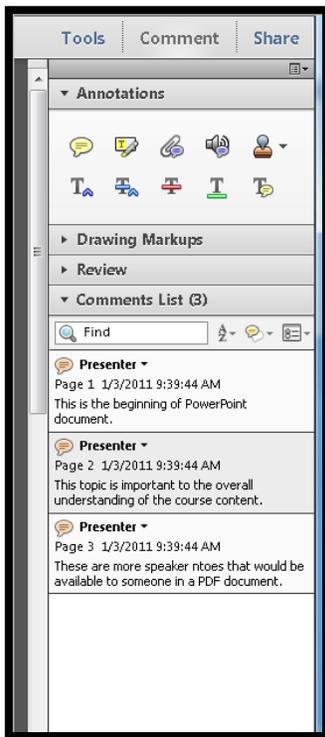


Figure 384 PowerPoint conversion settings for tagged PDF.

There is also the option to include Speaker Notes. Speaker Notes can be used in a presentation to provide additional information to the person using adaptive technology. They can easily be accessed in Adobe Reader by people using adaptive technology. They are a good tool to use for

providing supportive information to anyone. Speaker Notes don't have to be the verbatim version of the presentation.



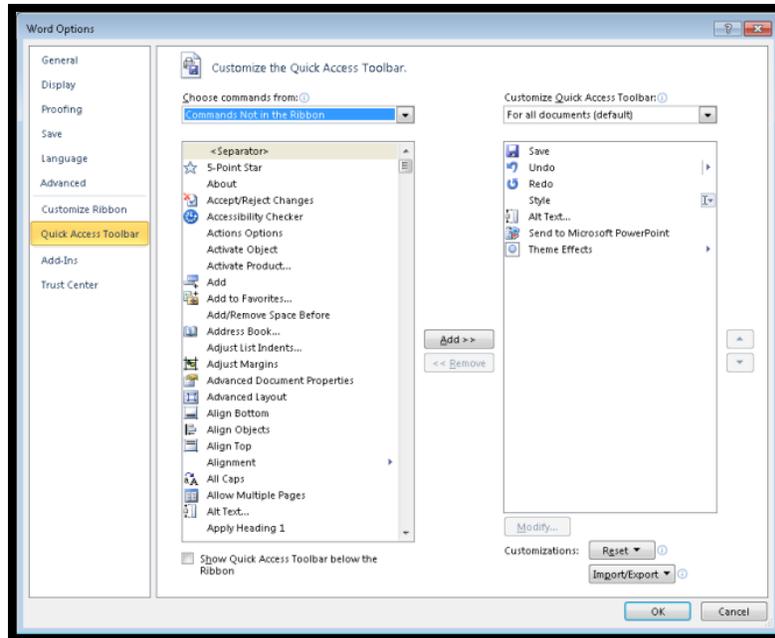
**Figure 385 Comments for speaker notes in a tagged PDF from PowerPoint document.**

The Speaker Notes for each slide can be collapsed or expanded and each is displayed in a separate visual container in the Comments Toolbar. The Comments Toolbar can be shown or hidden by the person reading the tagged PDF document.

## **Create a Presentation in Word**

It is easy to create your presentation in Word and then send the content to PowerPoint.

In Word 2010, unlike Word 2003, we will need to put the “Send to PowerPoint item on the QAT or Quick Access Toolbar first. Follow the instructions for putting the ASP or Apply Styles Pane on the QAT or Quick Access Toolbar. The “Send to PowerPoint” item can be found in the “Commands not on the Ribbons” list.



**Figure 386 Customize the QAT to send Word document to PowerPoint.**

To create a PowerPoint presentation in Word:

1. Open a new blank document. It doesn't have to be a template; it is the underlying structure that will be converted to the slide components.
2. Type the title for the second slide in the presentation.
3. We will add the title slide in PowerPoint.
4. Type the bullet points for the first slide or press the Enter key to move to the next line.
5. Select the text that you want to be the title of the second slide.
6. Press Ctrl + Alt + the number 1 to make it a heading level 1.
7. Select any bulleted items on "the slide" and make then heading level 2.
8. Repeat this process for each slide of the presentation: slide titles are heading level 1 while bullets are heading level 2.
9. Save your work.
10. Activate the "Send to PowerPoint" item placed on the QAT or Quick Access Toolbar.

When you do this, the slide presentation is created. PowerPoint will open, the slides will be constructed and you are ready to add images and the title slide.

This lets you work on the content of your presentation without being distracted by visual design and bling. It also creates an accessible version of your presentation that can be sent to participants who can then access it on note taking devices or laptop computers or it can be Brailled To tidy up the Word document as an alternate format document, open the Styles pane, select all instances of heading level 2 and make then normal text once you've sent the document to PowerPoint.

## Finishing the Presentation in PowerPoint

Once the slide content has been sent to PowerPoint, switch to slide sorter view in PowerPoint by pressing Alt + V, then choosing Slide Sorter. . This is where not being able to provide you with images of PowerPoint 2003 might create some issues for you. My apologies.

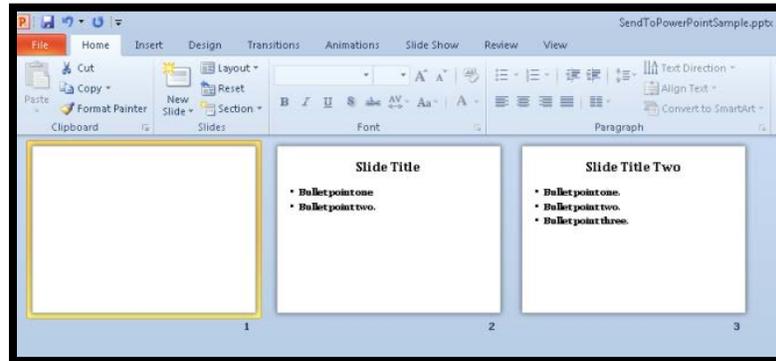
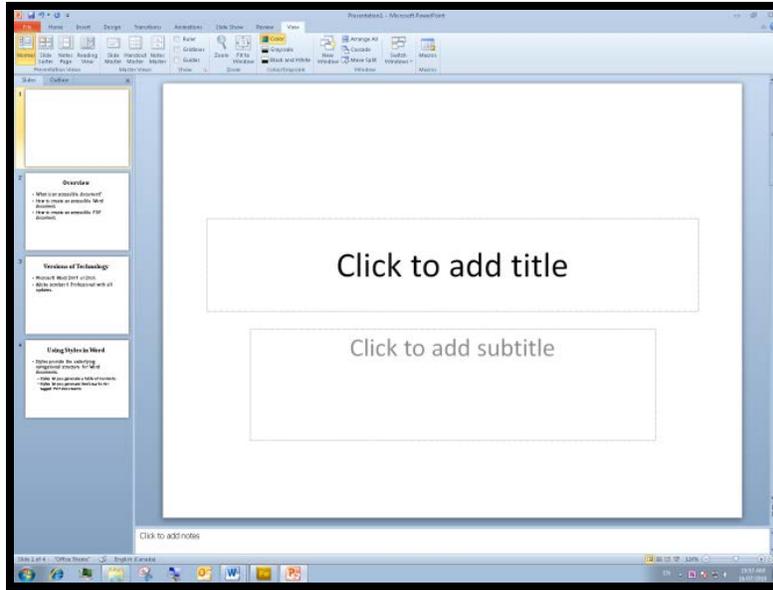


Figure 387 Slide Sorter view in PowerPoint 2010 showing title slide added.

In Slide Sorter view use the keyboard because it is more accurate and faster to position the cursor just before the first slide.

To finish the slide presentation:

1. Choose Insert, Slide, and choose the Title Slide format.
2. If your cursor was just before the first slide, this is where the Title Slide will be placed.
3. If you were a bit off, you can drag the Title Slide to its position or cut and paste it there.
4. Switch to Normal view by pressing Alt + V, L for View, Normal.
5. Press Tab to move into the Title placeholder.
6. Press Enter to activate Edit mode.
7. Type in the title of the presentation.
8. Press the Escape key once to get out of Edit mode.
9. Press the Tab key to move to the Subtitle placeholder.
10. Press Enter to activate Edit mode.
11. Type in The Subtitle information.
12. Press Escape to get out of Edit mode.
13. Now you can add the bling.
14. Press Alt + G for the Design tab and then press H for the Themes Gallery.
15. Choose the Theme you want to use for the presentation.
16. Now you can add images, tables and other elements to the presentation.



**Figure 388 Slide presentation before Theme has been applied.**

Many people use text boxes in PowerPoint without knowing that text boxes are not accessible whether they are used in Word, PowerPoint, Excel or Outlook. Because they are objects that sort of float above the text layer of a document, the adaptive technology can't "see" them.



**Figure 389 PowerPoint 2010 Design Gallery.**

Many people think that if they use the File, Save As..., tool to save a PowerPoint presentation to an outline or RTF document that they are providing an accessible form of their presentation. If the presentation has text boxes, this is not true since none of the content in the text boxes will be in that RTF document. Only content in the standard slide placeholders will be rendered to the RTF format.

If content from text boxes is to be made accessible it must be individually copied and pasted from every text box in the slide presentation into the RTF document or the Duxbury Braille translation software. This creates a lot of unnecessary repairs.

Because text boxes are floating objects, it is also unpredictable where they will appear in the Tags Tree when a slide presentation is converted to tagged PDF. This means more work in going through all Tags and more repairs to the tagged PDF.

## **Slide Master Template**

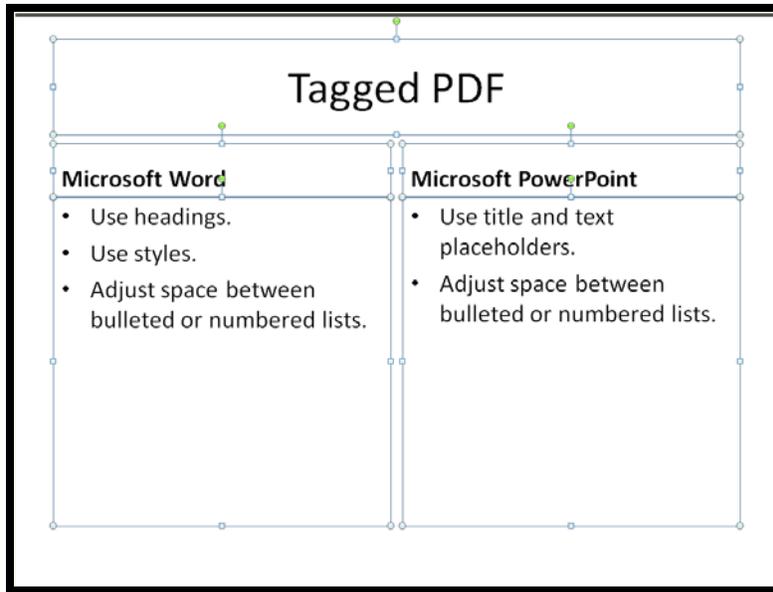
The use of the Slide Master tools, based on what I've been asked to repair in PowerPoint presentations, is a little known secret. Instead of using the Slide Master tools to create a presentation template containing all variances of formatting you'll need, default placeholders are deleted, text boxes and shapes are used instead, images are flung at slides randomly, everything is positioned and sized according to different measurements...well, you get the picture and so does your audience.

Any images that repeat on slides should be in the Slide Master. Any images that you will use for specific types of content should be on a slide template in the Slide Master. Any rearranging of the title or text placeholders should be in a slide in the Slide Master. You can also rename the different slide templates you develop.

The advantage to creating a comprehensive Slide Master set is that anyone creating slides for your organization will have a broader range of slides to choose from and the formatting of content will be uniform and consistent.

I've repaired presentations where subtitles on slides have been different for every slide in the presentation. This detracts from the message of the presentation.

I've also seen comparative information crammed into the wrong slide format. There is a slide format that will let you have a "heading" for the two pieces of comparative information rather than using the two column slide.



**Figure 390 PowerPoint Comparison slide format.**

Notice that the headings for the two columns of comparative information are already in the slide. This means that you don't have to resize fonts or reposition bulleted lists so that they look awkward in each column. Remember that a slide is not a Word document but rather index cards for your presentation. Make sure that your audience can visually find the content and in this case, the content is also more accessible and readable.

Whenever you are working with a presentation or the Slide Master make sure that you can Tab through the objects or text placeholders on the page in the order that someone would read them.

## **Tab Order**

In the case of PowerPoint slides, the order in which the title and text placeholders are tabbed to is the order in which they are read or accessed by someone using a screen reader. For tagged PDF it may also affect the logical reading order of the resulting tagged PDF document.

In PowerPoint 2010 you can reorder the text placeholders or objects on a slide by using the Selection Pane.

To reorder objects/content on a slide:

1. Press Tab to move to the first object on the slide.
2. It will then have handles around it.
3. Press Alt + J, A, P to open the Selection Pane.



**Figure 391 Selection Pane on the Format Ribbon in PowerPoint 2010.**

The Selection Pane opens to the right of the slide.

The logical reading order or the Tab Order of the objects on the slide will appear from bottom to top which is a bit counter intuitive since you expect that the first item in the Selection Pane will be the first item on the slide. It is the reverse. The objects are tabbed to from the bottom up. So the Title Placeholder will be the item “Title” in the Selection Pane.

The Selection Pane has up and down arrow buttons so you can move an object up or down in the Tab Order or logical reading order on the slide.

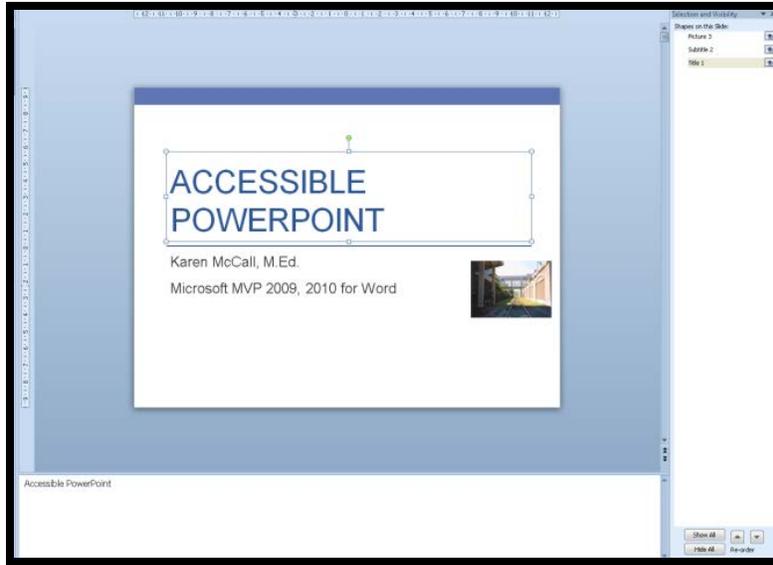
As you Tab through the objects, the corresponding item will be greyed in the Selection Pane. This lets you know which item is placed at which point in the Tab Order. For example, the second text placeholder we will insert onto a Slide Master in the next section was placed last on the slide so a person using a screen reader would have to access that content last on the slide.

We want people to access it after they’ve read the title and the first text placeholder content on the slide so we need to rearrange the Tab Order, the logical reading order of the slide objects.

Once the Selection Pane is opened, Tab to the second text placeholder on the slide. You will see that it is at the top of the list in the Selection Pane.

Use the Down Arrow to move it to the position third from the bottom.

This means that the content in this second text placeholder will be accessed immediately after the content in the first text placeholder. Thus if someone is using the keyboard to navigate through the contents of a slide they will hear them in a logical reading order.

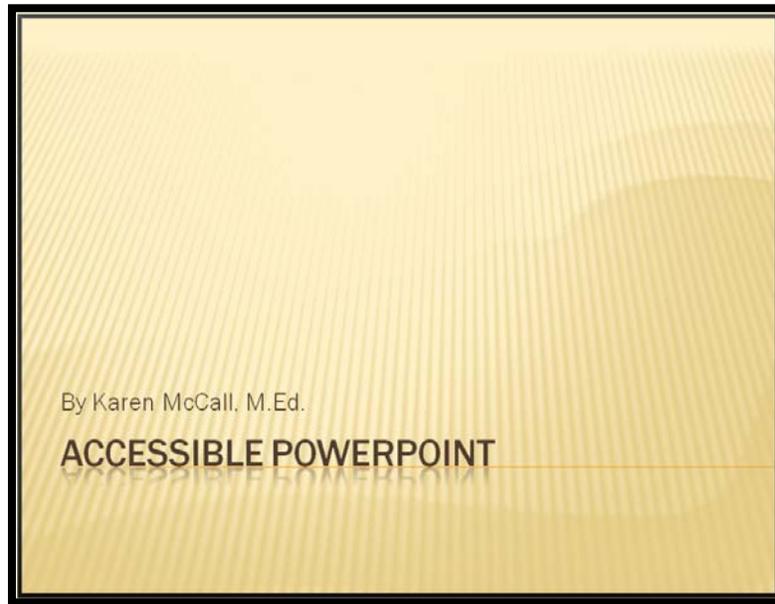


**Figure 392 Selection Pane open in PowerPoint 2010.**

This will also affect the order in which the Tags are created in a PDF document. The tagging tools will follow the “logical” order you placed the content onto the slides. If you do not correct the Tab Order, you will need to repair this in Adobe Acrobat. In addition someone reviewing your PowerPoint presentation with adaptive technology will not be able to read slide content in a logical or meaningful order.

## Design Layout

There are several things to keep in mind when creating an accessible and usable PowerPoint presentation. Some of them are related to well-designed content.



**Figure 393 PowerPoint slide design sample.**

First, take a close look at the slide design that you choose. Often I will start with one design and find that as content is added the design is not suitable. This happens even if I am designing a Slide Master. What seems like a good idea when you start out may change as you develop the template further.

This design has a mirrored image of title text, a background of wavy lines that I think mimic sand dunes or some abstract design, and thin text that becomes difficult to read as you move into the darker elements of the background design.

Some images won't look "nice" on this type of background design. This is one of the elements that has me look at other slide designs as I develop a presentation or template.



**Figure 394 Image on a slide that makes the slide look too busy and "noisy."**

The other serious accessibility issue with this choice of design is that the titles use “all caps” or all uppercase which is the most difficult font type to read for people with and without visual disabilities. Using uppercase for large or important pieces of content should be avoided.<sup>22</sup>

The foreground and background colours and designs are just as important as they were when we looked at Microsoft Word documents.

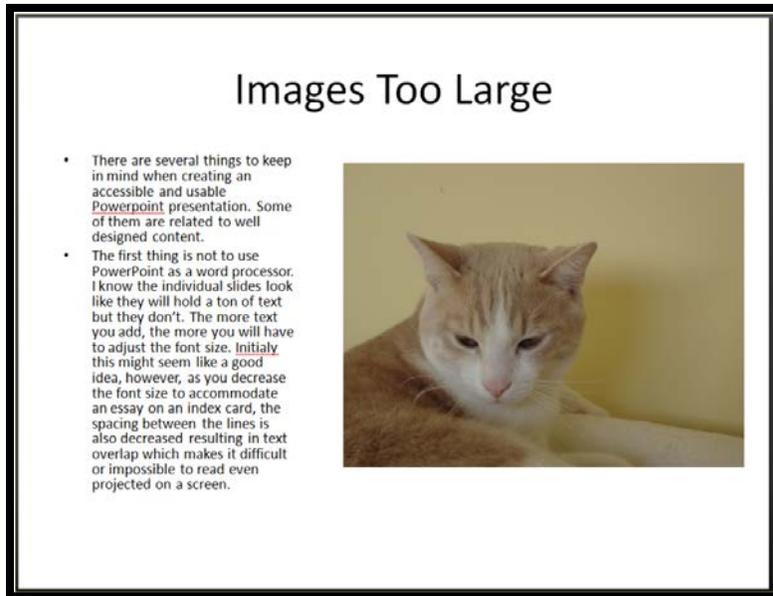
Remember not to use PowerPoint as a word processor. I know the individual slides look like they will hold a ton of text but they don't. The more text you add, the more you will have to adjust the font size. Initially this might seem like a good idea; however, as you decrease the font size to accommodate an essay on an index card, the spacing between the lines is also decreased resulting in text overlap which makes it difficult or impossible to read even projected on a screen.

The solution for text overlap is to divide the content and put it on another slide. You don't want your audience to just sit and look at one slide full of tiny text for half an hour.

Another issue is not to let images overwhelm the content. Images should be sized appropriately and not left to dominate the slide. Often in text heavy slides simply making the images smaller and making the text placeholder larger will help remove the text overlap described above.

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22 Logical Document Structure Handbook: Word 2003 by Karen McCall.



**Figure 395 Slide where image dominates the content or message of the slide.**

In the preceding image, the text or substance of the slide is lost in the huge image on the right. By resizing the image to a smaller size and expanding the text placeholder, the content or message you are trying to give your audience becomes the focus not the picture of Barnaby.

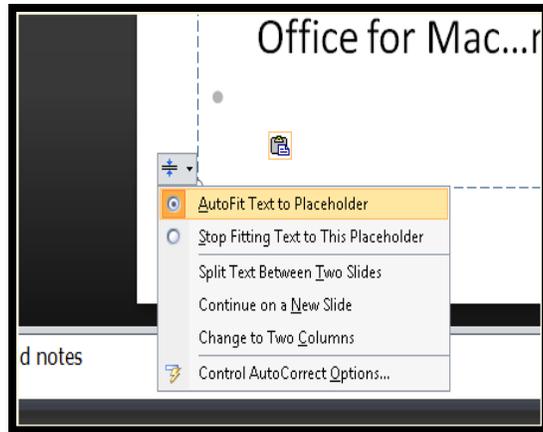
To resize an image on a slide

1. Select the image.
2. Press the AppKey to open the context menu.
3. Choose Format Picture, Format Object, or Format Shape which should be at the bottom of the context menu.
4. In the Format Picture, Object, or Shape dialog adjust the height or width of the image.
5. Tab to and activate the OK button by pressing the Enter key.

If you adjust height or width the other should automatically adjust. If they don't you will have to check the check box for the ratio of the height to width.

Keep in mind that this image will be projected on a wall and doesn't need to be huge. You can test the presentation by using F5 to enter Slide show mode to view the ratio of the image to text on the slide.

There is a tool in PowerPoint to adjust the size of the text if you have one or two lines overlapping the default text placeholder. When content overflows the text placeholder, a small icon will appear at the bottom left of the text placeholder. One of the options is to adjust the text size. Use this for one or two line overlap and not to fit an essay on a slide. <Grin>



**Figure 396 Context menu in PowerPoint 2007 to automatically adjust the text in a text placeholder.**

Always take note of the presentation and the relationship to images and content and how much content you are trying to put on a slide. Avoid the use of text boxes whenever possible and use presentation templates to design presentations for your organization or specific audiences within your organization.

Most importantly, as with Word documents, you want to present a consistent and accessible look and feel to all your presentations.

## **Default Text Placeholders in Slide Masters**

It is important to use the default text placeholders when creating Slide Masters instead of text boxes.

Text boxes float over the page because they are objects not part of the text layer of the document. Most of them cannot be put into focus so that the content is accessible to adaptive technology unless you can physically put the mouse cursor into the text.

Some screen readers do have the ability to list objects in a document and then let the end-user put focus into the text but because they are objects the process is similar to walking on stepping stones in a pond. You move from stone to stone without touching the water. In this metaphor you move from object to object/text box to text box without touching the surrounding content.

Why are text boxes inherently inaccessible?

Text boxes are not part of the main document text layer. They are objects that float above the text layer. Because they are not part of the text layer of documents, adaptive technology doesn't see them.

Imagine walking along the trail looking left, right and in front of you. Your feet touch the area you are walking on which means you "have access" to these parts of your surroundings.



**Figure 397** Photo of Jackson Trail Alberta copyright Karen McCall.

The clouds float above the area you are walking in as do birds and insects. The clouds, birds, insects, planes and other elements that you don't have access to would be comparable to the objects that are not in the text layer of a document. The "text layer" would be comparable to the area around you as you walk that you have access to.



**Figure 398** Photo of clouds taken from plane copyright Karen McCall.

Some adaptive technology such as the JAWS screen reader have keyboard commands for getting a list of objects in a document. You can navigate to an object such as a text box and sometimes read the contents.

But here is the problem.

If you are moving from object to object it is like being in an airplane skimming along the clouds. You can see the clouds and go in and out of them but you have no idea from looking at the clouds where you are. You don't have the ability to look down to see what might be below the clouds.

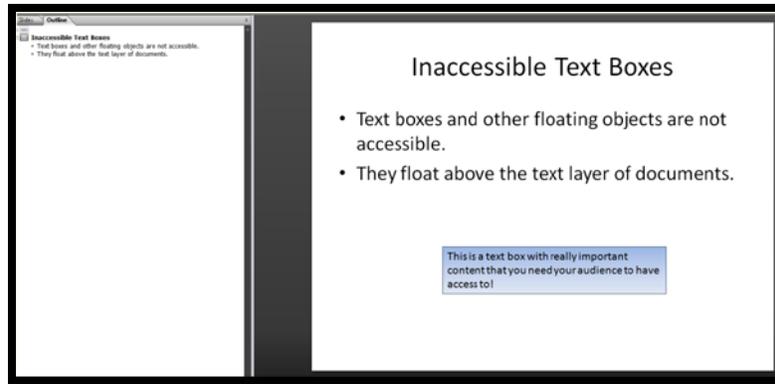


**Figure 399 Photo of clouds taken from plane to illustrate objects and layers.**

This is compounded with layered documents. It is like gliding between layers of clouds without knowing where you are or what you are “touching.” In some cases it is difficult to separate one layer of cloud from another. Similarly with layered documents it becomes difficult separating one layer of “content” from another.

So while you may be able to read the content in a text box, you have no mechanism to help you view what is under it or around it. Each "layer of the document lives in isolation of each other as experienced by adaptive technology.

The default “Text” or “Content” placeholders are accessible. As an illustration, the following slide is shown in Outline view along the left of the PowerPoint window. The slide contains an accessible title placeholder, an accessible text placeholder and an inaccessible text box. If you are providing the outline or RTF version of a presentation to someone as an accessible alternative, you will need to copy and paste all content from EVERY text box you’ve used in your presentation into the RTF file.



**Figure 400 A PowerPoint slide with a text box/blue object that is not accessible.**

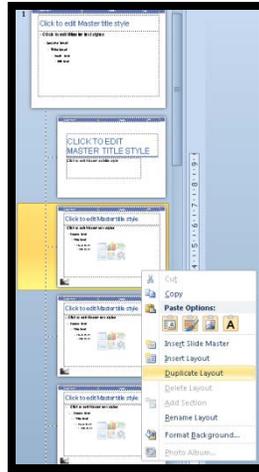
The information visually identified with a blue border and blue gradient fill is in a text box which you will notice did not appear as text in the slide outline view on the left of the slide.

This is why we use the default text placeholders in a presentation. You can create the same effect but the content is accessible to adaptive technology.

Where do I find these accessible text placeholders?

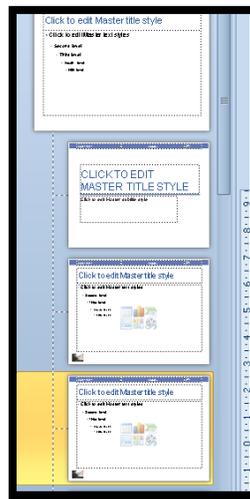
To use a default text placeholder instead of a text box in a Slide Master:

1. Save the blank slide presentation as a slide template.
2. Press F12 and choose PowerPoint Template as the file type.
3. Switch to Slide Master view by pressing Alt + W, M.
4. The Master Ribbon appears at the far left of the Ribbons.
5. Duplicate a slide. We will use this as the base for our new slide.
6. Select the slide in the pane on the left of the slide.
7. Press the AppKey and choose "Duplicate Slide."



**Figure 401 Context menu open to duplicate slide.**

Once the slide is duplicated, select the duplicate slide. The slide will be visible in the main slide area.



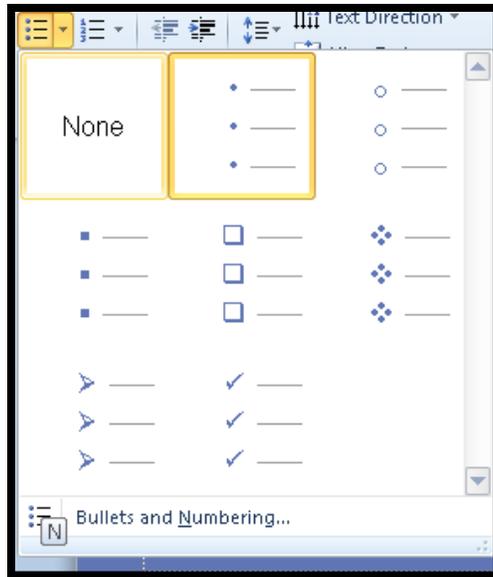
**Figure 402 Duplicate slide selected in navigation pane.**

In this sample I am going to make a slide with two text placeholders that will have paragraph text not bulleted text in them.

I find this is a need for many presenters.

The first thing to do is to remove the bulleted formatting from the top text placeholder. This is not the title placeholder, but the placeholder with the bulleted items in it.

Press Tab to put focus on the first text placeholder. Press Enter for edit mode and select the second level bullets to the end of the automatic content on the slide. Leave the text for the first level bullet.



**Figure 403 Bullets set to "none" for slide format.**

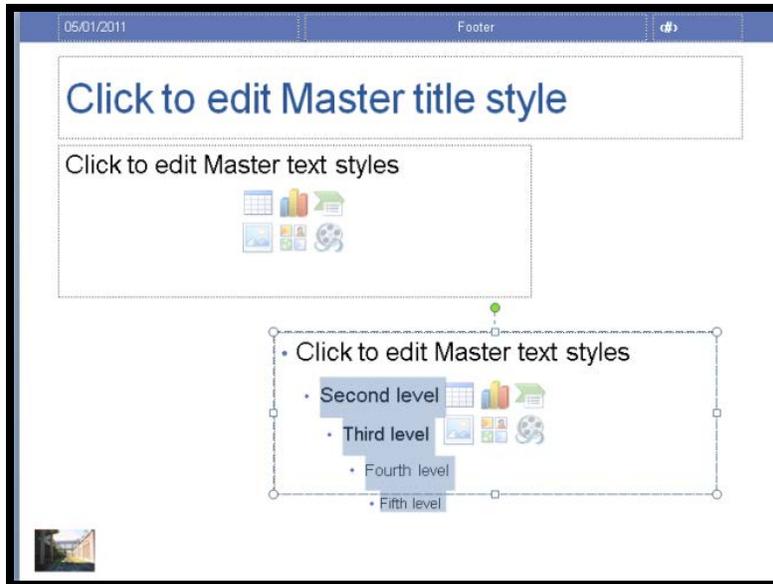
1. Delete the text you have selected so that the first bulleted item is the only text in the placeholder.
2. This will be the prompt for anyone adding content to the placeholder.
3. Select the contents of the text placeholder by pressing Alt + A. This will ensure that none of the bulleted formatting is left over on any spaces or blank lines.
4. Next, press Alt + H, U to open the Bullets Gallery.
5. Choose "None" for the type of bullet.
6. This text placeholder will now have paragraph text rather than bulleted text.
7. Of course you can leave it as bulleted text but remember not to overfill the placeholder with content.
8. The next thing to do is to add the second text placeholder.
9. Press the Escape key until none of the placeholders on the slide has focus/handles around them.
10. Press Alt + M to put focus on the Slide Master Ribbon.
11. Press A to insert a Placeholder, then C for Content placeholder.



**Figure 404 Content selected as the type of placeholder to add to the slide.**

The placeholder will be inserted and may cover parts of the existing placeholders on the slide.

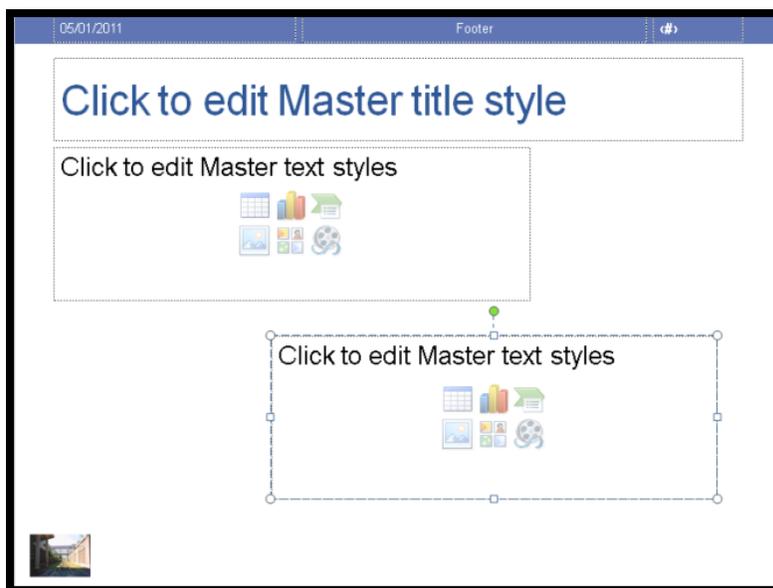
The easiest way to figure out which placeholder you are working with is to press the Tab key which will cycle you through all objects on the slide.



**Figure 405 Slide with new text placeholder.**

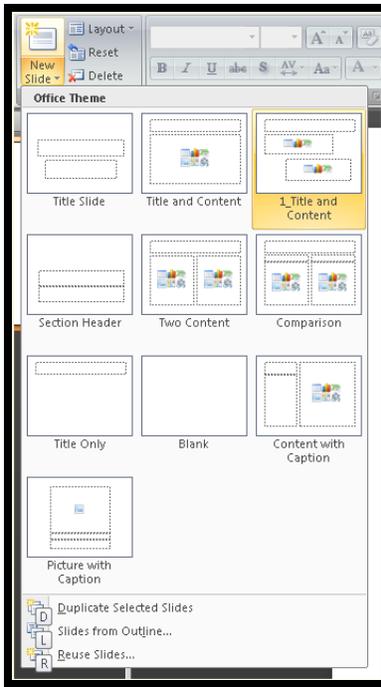
Repeat the process of removing the bulleted formatting for the new text placeholder.

Your slide now has two paragraph placeholders that are accessible.



**Figure 406 Slide with two accessible placeholders.**

When you return to the “Normal” view of the presentation, this slide will be available for you to insert into a presentation based on this template.

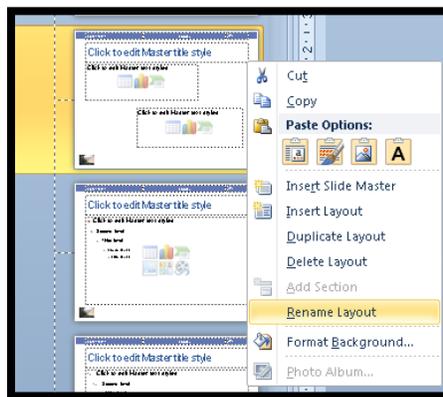


**Figure 407 List of slides available for a presentation.**

There is one more thing we can do to finish the process. We can rename the new slide format so that it is more meaningful to anyone who wants to use it.

To rename a slide you've created:

1. Select the slide in the Slide Master view.
2. Press the AppKey and choose Rename Layout from the context menu.



**Figure 408 Context menu with renaming item selected.**

3. A dialog opens. Your focus is in an edit box where you can rename the new slide layout.

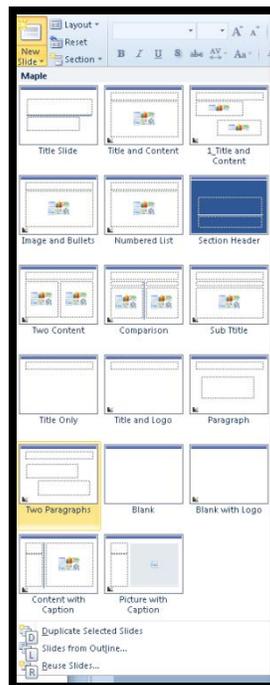
4. In this case I've called it "Double Paragraph."



**Figure 409 Rename Slide Layout dialog.**

5. Type in the new name and then Tab to the Rename button and press Enter to confirm the new name.
6. Save the changes to the template.

Now when you go to insert a new slide in the "Normal" view, this slide will be one of them and its name will have more meaning to the presentation author.



**Figure 410 Slide layout renamed.**

There is currently no mechanism to insert a content placeholder or default text placeholder while you are in Normal view of the slide presentation. This has to be done in the Slide Master view.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P] before you switch to Normal view..

## **Title Placeholder**

In keeping with the theme that PowerPoint is not a word processor nor is it an endless document, we must address the amount of information placed in a title placeholder.

The purpose of the title placeholder or slide title is to provide a “brief and concise” heading for the content on the slide.

In looking at the Outline view of the presentation make sure that multiple slides don't have exactly the same title. For example if you have four slides with the title “Tagged PDF” someone who is using adaptive technology would think that their adaptive technology is stuck and not progressing forward through the slides. This is especially true of someone using a screen reader.

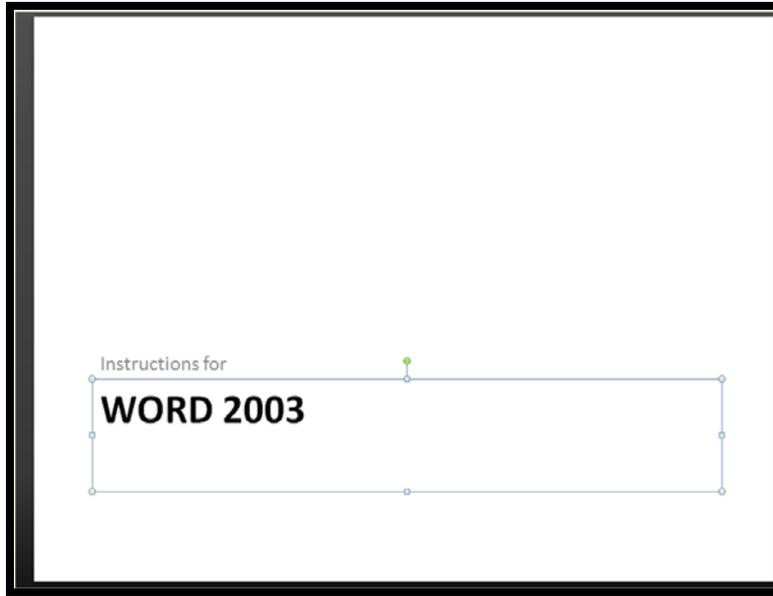
Using numbers after slide titles that are the same is acceptable. For example “Tagged PDF – 1.” Usually I use this type of numbering if slides have steps that can't be contained on one slide and need to be carried over to another. A slide might have the instructional step and an image of the dialog or end result of an action.

By putting each step on a separate slide, the person who is trying to follow the steps will be presented with one step at a time which gives them time to examine the content at their own pace.

It is also not acceptable to have ten different font sizes and colours in a title placeholder. This is visually confusing to someone with a learning, cognitive, or visual disability.

Once again we are brought back to the design of the presentation. You can use a slide to identify large changes in topic or content. For example instead of putting the words “Word 2003” in every title placeholder for content that is related to Word 2003, using one slide that simply says “Word 2003” clearly identifies the subject of the following content.

PowerPoint even has a slide in its default template for this: Section Header slide.



**Figure 411 PowerPoint Section Header slide identifying instructions for Word 2003.**

This slide lets you add images if you want. If you don't like this particular design for the Section Header slide, change it in the presentation template. In the Slide Master view of the presentation you can move the default placeholders around the slide to customize their position for the needs of your organization.

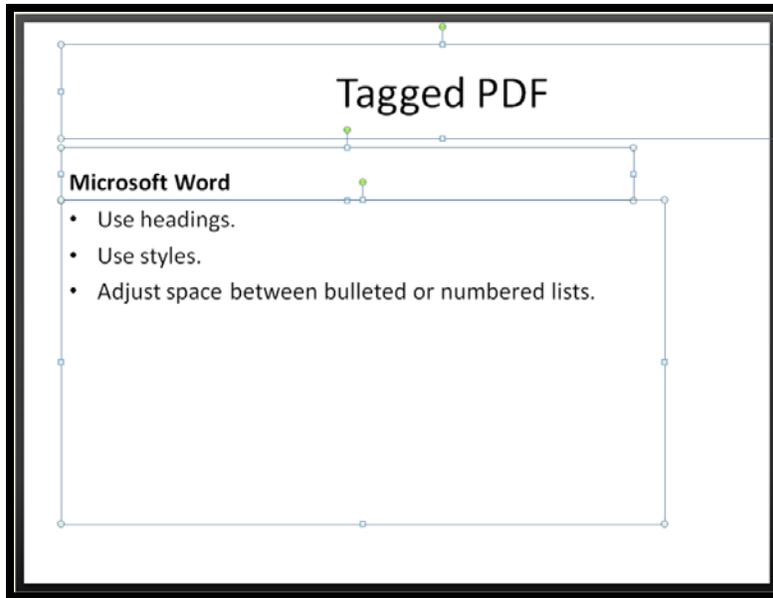
By using this tool in PowerPoint you won't have to try and cram this text into every title placeholder for subsequent slides.

When you do try to cram repetitive information into a title placeholder the content of the slide, the actual title text for the slide gets lost in redundancy.

We've looked at using the Comparison format slide for presenting comparative information but within the Slide Master tools, you can create a slide with a "subtitle" that is also accessible because it uses the default title and text placeholders.

To create a different subtitle Slide Master:

1. In the Slide Master view, select the Comparisons slide format.
2. Duplicate this format using the AppKey and choosing to duplicate the slide format from the context menu.
3. On the duplicate version of the slide format, delete the second comparative title and text placeholders.
4. Resize the first set of comparative title and text placeholders to meet your needs.
5. You can also rename this new version of the slide to make it easier for others to know what to do with it.



**Figure 412** New slide with a subtitle in the Slide Master set.

The preceding image shows the redesigned comparative slide to allow for the use of a subtitle for appropriate content. This slide becomes part of the Slide Master set for the presentation and anyone creating a presentation based on the set of Slides Master has access to it.

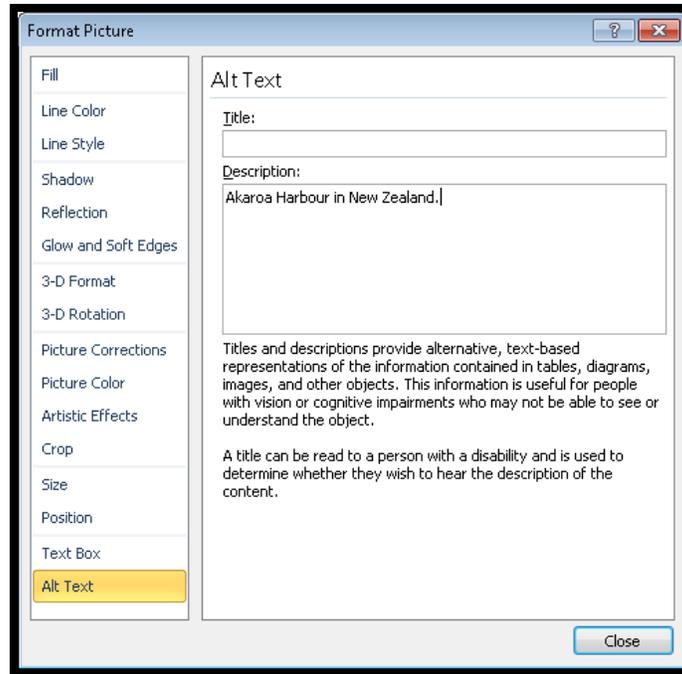
Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

## **Adding Alt Text in PowerPoint**

You can easily add Alt Text in PowerPoint. The Alt Text will then be converted to the tagged PDF document making one less repair necessary.

To add Alt Text in PowerPoint:

1. Select the image or object.
2. Press the AppKey to open the context menu.
3. Choose Format Picture, Format Shape or Format Object.
4. What you see as the last item on the context menu will depend on what type of object you added to the slide.
5. In the Format Picture, Shape or Object dialog, press Tab to move to the list of categories on the left side of the dialog.
6. Press the End key to move to the last category which is Alt Text.
7. Press Tab twice to move to the Description edit area.
8. Type your Alt Text for the image.
9. Tab to and activate the Close button by pressing Enter. There is no keyboard command to do this quickly.



**Figure 413 Format Picture dialog with Alt Text category shown.**

One comment while we are looking at Alt Text for images on slides. When the outline or RTF document is produced as an accessible alternative to a slide presentation, none of the Alt Text will be in the RTF document.

For slides where there is only an image, you can copy and paste the Alt Text into the RTF document so that people who need alternate format or Braille have access to Alt Text for diagrams, images, and objects.

Another option is to include more detailed descriptions in the Notes area. I've mentioned this before and here is an image of what I mean.



**Figure 414 Slide with image and description in Notes area.**

If you are generating an RTF document for Braille, you can simply copy and paste the information from the Notes area into the RTF document.

Remember to use the default title and text placeholders for written content.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

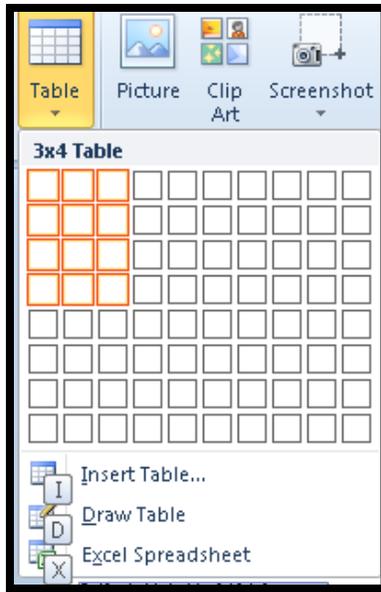
**Note:** You can put the Alt Text dialog on the QAT or Quick Access Toolbar.

## Tables on Slides

When using a table on a slide, use the tools in PowerPoint to insert a table. Although we can't use the tools to create <TH> Tags, if we use non-standard tables, images of tables, or drawn tables, these will represent barriers to accessibility in the presentation and any subsequent tagged PDF documents you will need from this presentation.

**Note:** tables will need to be copied and pasted into the outline or RTF document if this is the alternate format needed by participants. If you've used the proper table structure the table should convert nicely to Braille or DAISY format.

To insert a table onto a slide press Alt + N, T to open the Table Gallery. You can use either the Column and Row Gallery or the Insert Table item on the sub-menu.



**Figure 415 Insert Table on slide showing cells in the table Gallery selected.**

Once the table is inserted onto the slide you can add the data. As with other types of documents, tables should not be used for layout on a slide. Tables should always be used to display data effectively.



**Figure 416 Table inserted on slide using Insert Ribbon.**

Don't use grouped objects to create the illusion of a table. Use the proper table structure. If you use grouped objects to create the illusion of a table, they will all need Alt Text as individual images

both in the PowerPoint and subsequent tagged PDF documents. This means that the information will not be presented in table format to someone using adaptive technology such as a screen reader.

If you are using colour in tables, make sure there is a good contrast so that the data is readable.

## Links in Presentations

As with links in Microsoft Word, it is preferred that links be contextual rather than the full web addresses.

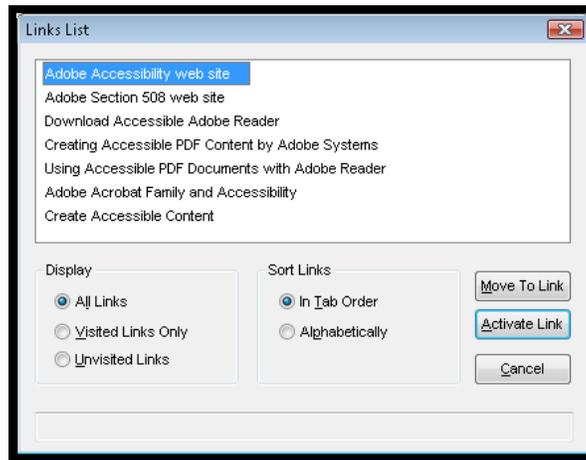


Figure 417 List of contextual links from the JAWS screen reader.

If the PowerPoint document is to be distributed as RTF, you will need to provide these contextual links as links in the RTF document. It is a good idea to put the long URL or web address in the Notes area for the slide.

You don't want to play around with the size of text used for links. In some presentations I've seen five or six font sizes on one slide in one text placeholder which is visually distracting and detracts from the message you are giving the audience. Your audience will be spending time concentrating on reading varied font sizes rather than listening to you explain what the points on the slide mean.

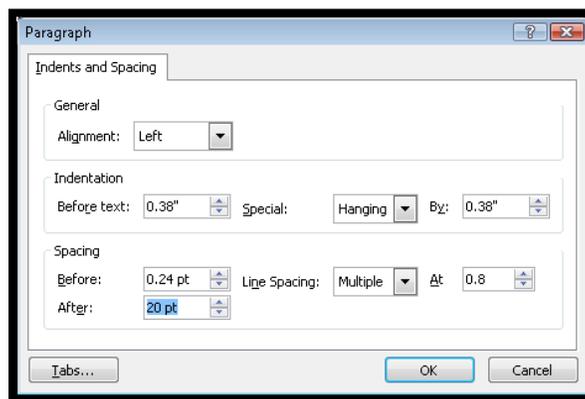
To add a contextual link for a PowerPoint slide select the text to be the link and press Ctrl + K to open the Create Hyperlink dialog. From this point the steps are the same as they are for Microsoft Word. You can link to a web page, document or other document.

## Bulleted Lists

Just as with Word, you don't use the enter key to create space between bulleted points in a PowerPoint slide presentation. Instead use the Paragraph dialog to add space below each bulleted item.

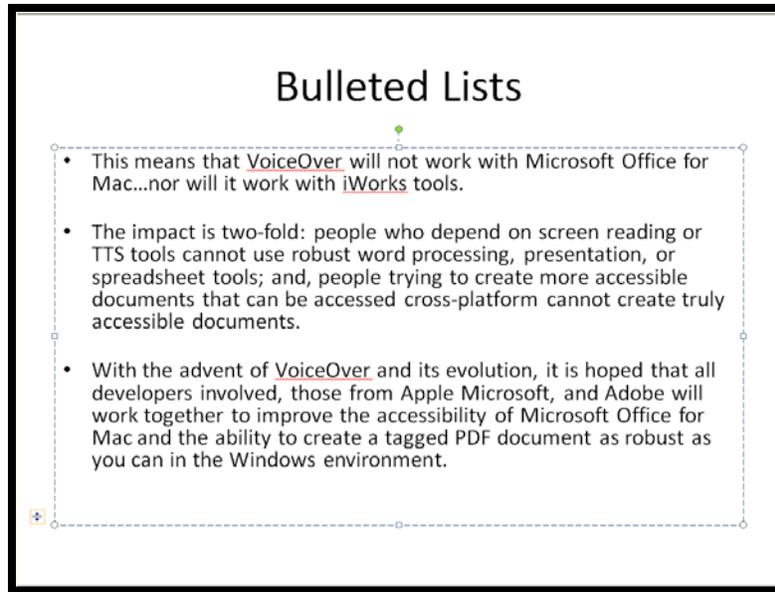
If you've put too much content into a slide and are readjusting the line spacing so that text doesn't overlap, choose "single" line spacing in the Paragraph dialog rather than "Multiple" which PowerPoint will do by itself when you ask it to cram too much content into one text placeholder.

To adjust the spacing between bulleted items choose Format, Paragraph.



**Figure 418 Paragraph dialog in PowerPoint.**

In the example above I've used a 20 point spacing which gives the typical amount of space between bulleted items that a press of the Enter key would.



**Figure 419** Bulleted list on a slide spaced using the Paragraph tools.

As with Word, we added the spacing after each bulleted item. We know that the first bulleted item has enough space around it because it is the first one in the text placeholder and the text placeholder is positioned by default to allow space between the title placeholder and the text placeholder or content on the slide.

By using the spacing between the bulleted list items the list is not broken. This means that the content will be read as one list of three bulleted items rather than three lists of single items.

If you have a single piece of content on a slide, using bulleted text might not be the best way to present it. You can turn off the bullets by selecting the text in the text placeholder and choosing Format, Bullets and Numbering and then choosing "None." You can then resize the text placeholder and position it where you want on the slide.

You can also create a slide template with a text placeholder that is not formatted for bullets or numbering by using the Slide Master to do this.

## **Grouped Objects**

Although you can create what appears to be charts and diagrams in PowerPoint using grouped objects, these don't translate well into single objects with Alt Text. In some cases each individual object will require Alt Text when the presentation is converted to tagged PDF while in other cases having grouped objects on a slide makes it impossible for someone using a screen reader to figure out what the visual relationships are between the shapes.

One of the nifty tools with Microsoft OneNote is the ability to create screen clippings. If you have the ability turned on in OneNote, you can press Windows Key + S and then use the mouse to drag diagonally over an area of the screen and create what is a “screen clipping.”

For the images in this book that are not full screen images, I used screen clippings and then made the clippings PNG files using Macromedia Fireworks 8. As someone who does training material for clients this is a valuable tool and lets me create more meaningful content during a training session or prior to it. I can also visually demonstrate exactly what I am talking about.

Many of the repairs for grouped objects that I do involve taking a screen clipping of a group of objects on a slide and creating one image for which I can add Alt Text. I then delete the grouped objects, insert the image of them, and add the Alt Text.

This makes the slides more accessible and easier to organize the Tab Order of objects on a slide.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

There is a document with more details on how to use either the Snipping Tool in Windows 7 and Vista or the Windows Clipping Tool in Microsoft OneNote on the Karlen Communications web site. The article is called “[Adding Accessible Images to Documents](#)<sup>23</sup>” that details instructions on how to do this.

## Slide Numbers

There is a tool for adding slide numbers that will automatically create a “Slide Number placeholder” that is more accessible than a text box with a number plunked into it.

Using the tool for adding slide numbers will also ensure that the numbering of slides in the presentation is consistent and sequential.

You’ll find this tool under Insert, Slide Number.

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<sup>23</sup> Adding Images to Documents:

<http://karlencommunications.com/adobe/AddImagesToTrainingMaterialCourse.pdf>

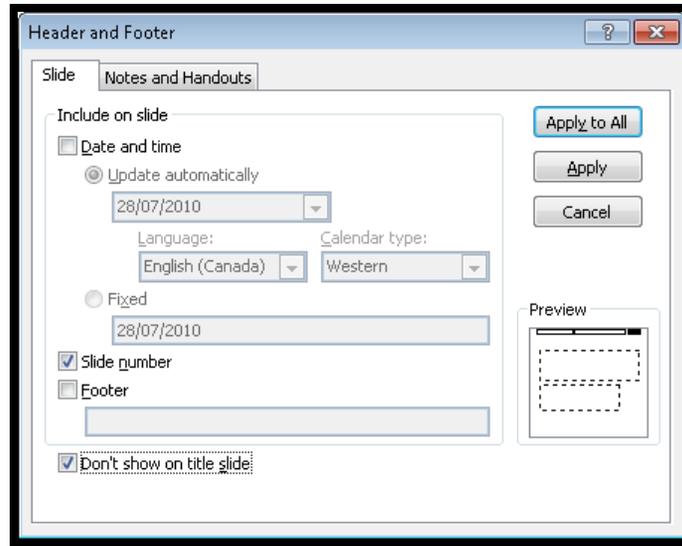


Figure 420 Header and Footer dialog where you show slide numbers.

You can reformat the look and feel of the slide numbers in the Slide Master if you don't like the default way they look on a slide.

Remember to check the Tab Order of the slide objects using the Selection Pane [Alt + J, A, P].

## Accessibility Checker in PowerPoint 2010

PowerPoint 2010 has an accessibility checker to help you make more accessible PowerPoint documents. This is not a substitute for your own ability to create and review PowerPoint documents for accessibility. It is a mechanical tool that looks for specific items according to specific algorithms.

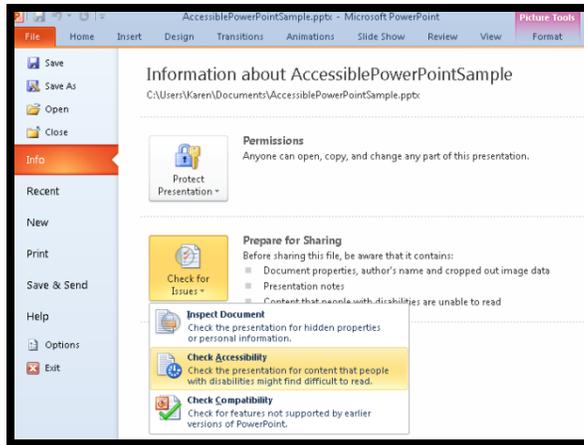
There is a [detailed article on how the accessibility checker works](#)<sup>24</sup> on the Microsoft blog site.

To check your PowerPoint document for accessibility:

1. Press Alt + F, letter I for the File/Backstage area, Info.

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<sup>24</sup> How the accessibility checker works from the Microsoft Office blog:  
<http://blogs.technet.com/b/office2010/archive/2010/01/07/office-2010-accessibility-investments-document-accessibility.aspx>



**Figure 421 PowerPoint 2010 Accessibility Checker.**

2. Press letter I for “Check Issues” and then Down Arrow twice for the “Check Accessibility” option.
3. A pane will open to the right of the slide showing some of the problems that can affect the accessibility of the document.



**Figure 422 PowerPoint 2010 accessibility check results.**

- As you move through the items found and either click on them or press Enter, the slide will be shown and the accessibility problem selected.

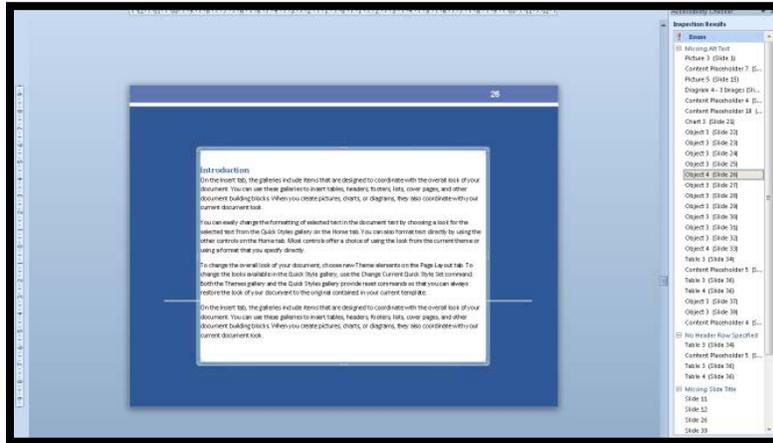


Figure 423 Object with no Alt Text found in PowerPoint accessibility check.

In this case the “object” is an inserted Word document onto the slide. Alt Text for this might be “Inserted Word document” which would provide information on the object as someone encounters it. The Word document itself is accessible if the person is accessing the PowerPoint document in PPTX format but not if the PowerPoint document is being accessed in slide show view. This slide is a good illustration of when to attach a file to the PDF document. This object should be given Alt Text.

On another slide, Alt Text is missing from an image. Again Alt Text would be required for the image.

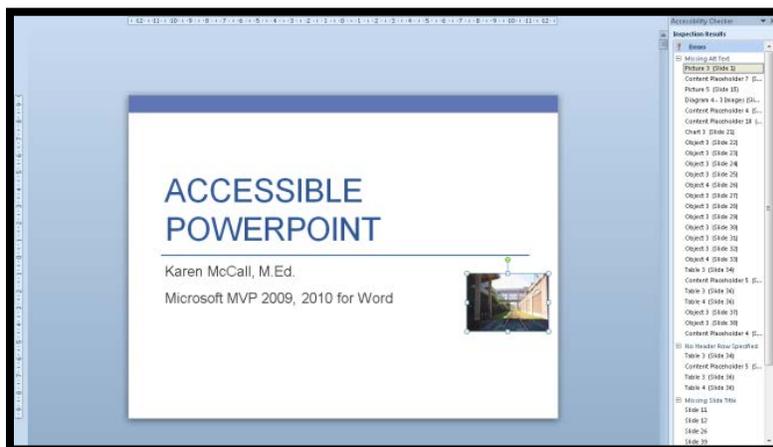


Figure 424 PowerPoint image with no Alt Text flagged by accessibility check.

The accessibility checker is not a substitute for “human intervention” and knowledge in making more accessible Word, PowerPoint or Excel documents. It is a mechanical tool.

## Outlook 2010

The ability to convert individual messages to tagged PDF or to convert entire mail folders to tagged PDF is no longer available in Acrobat 9.

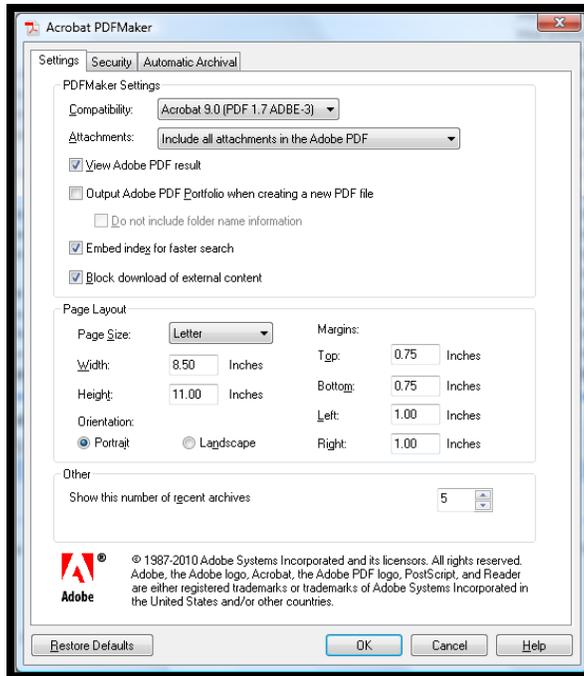
This was a very useful tool and one those of us who do use adaptive technology used frequently to archive messages and mail folders in a secure and accessible format. We can only hope that this ability returns with acrobat 10.

OK, so it didn't, despite an infinite amount of whining on my part.

There are two solutions to this:

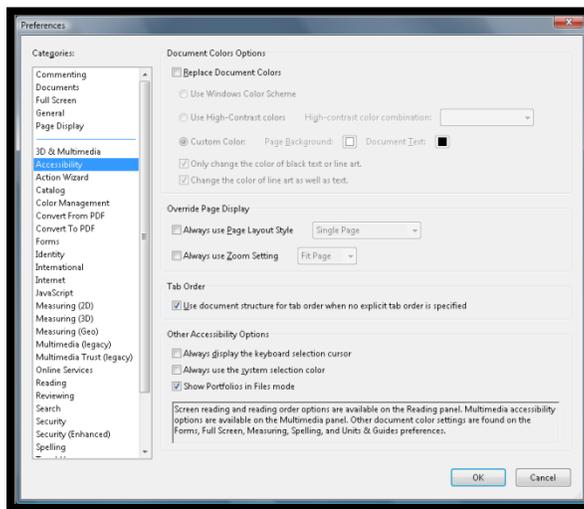
3. Save the Outlook mail folder or message as a Portfolio which is still mostly inaccessible for those of us using screen readers. If you save a mail folder as a Portfolio you will need to Tag each and every mail message in the portfolio. This is terribly time consuming.
  - a. You need to open the Portfolio in Acrobat in order to tag each document. You can only Tag each document using the Tags Panel and the Tags Tree context menu.  
There is no Accessibility Toolbar available when you open a Portfolio in Acrobat.
4. In the Acrobat conversion settings choose not to save as a Portfolio by default. This will save your mail folder or individual messages as plain old PDF documents that will open nicely in Acrobat and you will be able to Tag the entire PDF document of mail posts.

In the Adobe conversion settings [only available on a 32-bit installation of Office 2010], uncheck the check box to output Adobe PDF Portfolio when creating a new PDF file. This will create a regular PDF file.



**Figure 425 Outlook conversions settings for Adobe add-in.**

In the Preferences for Acrobat and Reader, under Accessibility, check the check box to display Portfolio in Files mode. This will help a bit in accessing Portfolios in that they will open in Acrobat.



**Figure 426 Accessibility preferences in Adobe Acrobat or Reader turning off Portfolio mode.**

Portfolios will still open in a modified Portfolio format and the ability to search is not as accessible as it could be, but there is some navigation by showing Portfolios in files mode.

I recommend archiving every four months to keep the file sizes down to something that is manageable. My last archived folder was 823MB as it grew while I was hoping for the tagging ability in Acrobat X. It took almost an entire morning to first archive then Tag this PDF document. However, now I can search for project information, client posts or other information using the standard Search dialog instead of the Portfolio Flash based one.

## Publisher 2010

There is good news and bad news for those of you using Publisher.

First, you still can't create a tagged PDF from Publisher using the Adobe Acrobat add-in for Microsoft Office.

The good news?

If you build the structure into your Publisher document and then use the Microsoft Save as PDF or XPS plug-in, you will be able to create a structured tagged PDF document.

This works a bit differently in 2010 than it did in 2007 so if you created styles in Publisher called H1 and LI as I suggested in the chapter on Office 2007, these will now not convert to the proper Tags. The inherent heading styles such as "Heading 1" will now convert to an H1 Tag and if you use the button on the Home Ribbon to create a list, the list will convert properly. This information is critical if you are trying to work with Publisher 207 documents in Publisher 2010.

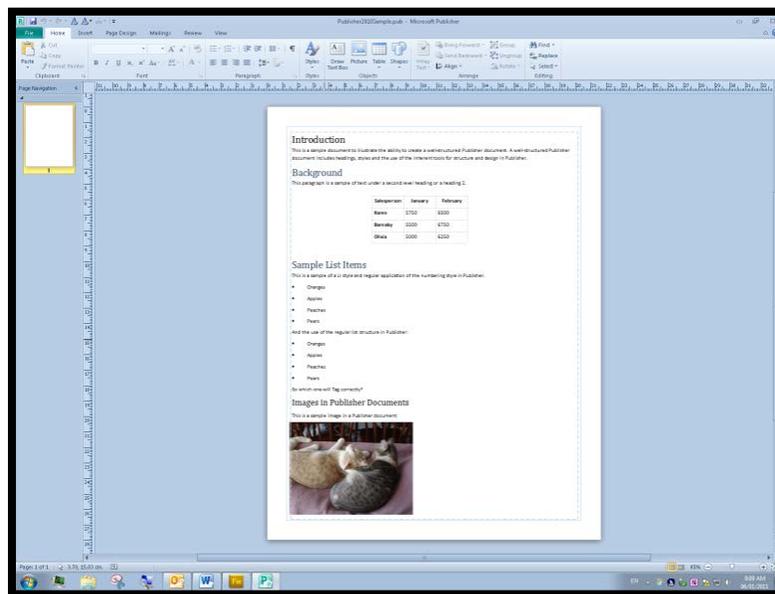


Figure 427 Publisher 2010 with document open.

I used the styles inherent in Publisher and also used the technique I outlined for Publisher 2007 [created a style called H1 and one called LI]. I then added some text, a table, a list or two and an image. I was able to give the image Alt Text as I could in Publisher 2007.

When I used the Microsoft capability to save the document as a tagged PDF document, the table and the image were tagged at the bottom of the page rather than in their logical reading order. Of course in the example shown in the preceding image, the picture was the last thing on the page.

When I did resize the image and add text after it, the table and the image were still the last two items in the Tags Tree. I had to move them to their logical place in the Tags Tree/reading order.

For the table, TH Tags will have to be added for column and row titles. However the list that I created using the inherent list structure in Publisher did get tagged properly.

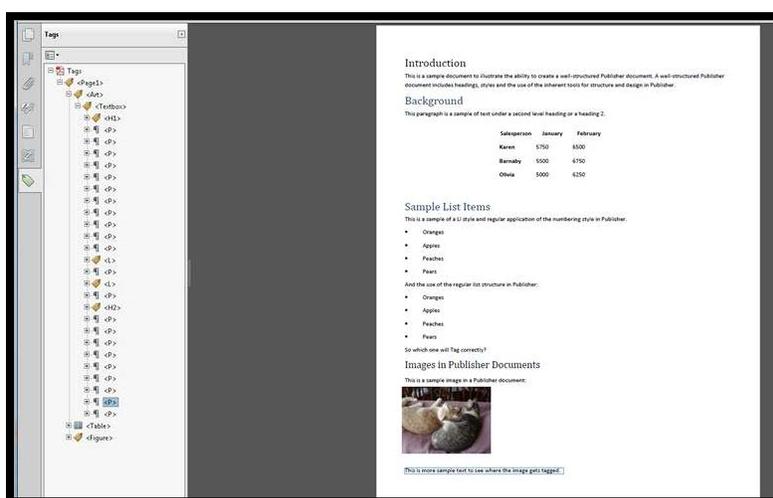


Figure 428 Publisher 2010 document showing incorrect order of Tags in Tags Tree.

This means that Publisher 2010 is a viable tool for creating accessible PDF if you use the Microsoft add-in to publish the document to PDF and if you build the accessibility into the Publisher document itself.

As with all PDF documents, make sure you have a QA or Quality Assurance audit process to ensure that PDF meet your organizations criteria for tagged accessible and usable PDF documents.

## Microsoft Office for Mac

At this point in time, you cannot create a fully accessible document in Microsoft Office for Mac in the 2011 version. One significant lack of support is for Alt Text on images and objects.

Although VoiceOver is relatively usable on a Mac using the Leopard OS, there are few applications that are accessible. This is primarily due to the fact that they haven't had to be for several years. The

Mac OS has not had a usable screen reader since the mid 1990's. The Mac OS is usable for augmentative communication devices for people requiring communication aids or alternate input devices, but has lagged far behind when it comes to support for people with sensory disabilities such as those who are blind or visually disabled.

Office for Mac 2011 does have some access to Outlook/formerly Entourage e-mail client. However access is not consistent and the use of VoiceOver seems to be dependent on being able to use the mouse effectively. Word, PowerPoint and Excel are still not accessible using VoiceOver. This means that VoiceOver will not work with Microsoft Office for Mac in any functional way for someone who is blind or dependent on VoiceOver for access..

The impact is two-fold: people who depend on screen reading or TTS tools cannot use robust word processing, presentation, or spreadsheet tools; and, people trying to create more accessible documents that can be accessed cross-platform cannot create truly accessible documents.

With the continued evolution of both VoiceOver and Office for Mac, it is hoped that all developers involved, those from Apple Microsoft, and Adobe will work together to improve the accessibility of Microsoft Office for Mac and the ability to create a tagged PDF document as robust as you can in the Windows environment.

As of the release of SP1 for Office for Mac 2011 you now have the ability to add Alt Text to images. This SP Release is only a few days old at the time this book was released. The Office for Mac applications still are not accessible if you need to use VoiceOver but now document authors can add Alt Text to their images.

The ability to add Alt Text to images in Office for Mac is found in the Format Picture options dialog. You have the same choice of title and or description for images. Keep in mind that Office for Mac is still not accessible using VoiceOver. However if you're creating accessible PDF this is a greatly needed and long-time asked for tool.

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# Save as PDF or XPS

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Microsoft [Office 2007 has a downloadable Save as PDF or XPS add-in](#)<sup>25</sup> that will let you save the document, workbook, worksheet or presentation as a tagged PDF document.

This add-in is built into Office 2010 which means you don't have to download and install it.

**Note:** The XPS file format is completely inaccessible and should be avoided. There is no accessible viewer for this format. If the XPS file is opened in a browser it is inaccessible to adaptive technology. Again, avoid this format when creating documents.

There can be some issues with the Save as PDF or XPS add-in related to tagged PDF documents.

Images in a document can be placed at the top of the Tags Tree rather than their logical place in the Tags Tree. This is also true of the Adobe add-in. For example if you have a figure on page 5 of the document it will be the first item in the Tags Tree instead of being with the rest of the content on page 5. Another anomaly with both add-ins is that <figure> Tags will appear at the bottom of the page rather than their logical place in the reading order of the page.

If you've used captions for images in your documents it is easier to put the images into the background as Artifacts than to try and drag them around the Tags Tree to their logical place in the document. People using adaptive technology will have access to the caption information so will know that there is an image and what the image is. Hopefully the image supports surrounding content and is not content itself.

The other issue is with DOC formatted documents. If you use Picture Styles for images they will be tagged as images without Alt Text. If you use the DOCX format you will not have this repair.

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<sup>25</sup> Office 2007 Save as PDF or XPS add-in:

<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=4d951911-3e7e-4ae6-b059-a2e79ed87041&displaylang=en>

If the Picture Styles are tagged as images without Alt Text it becomes extremely difficult to identify them as opposed to the image itself when trying to put the Picture Style into the background as an Artifact. If you are working in the DOC format and are going to use the Save as PDF or XPS add-in I recommend not using Picture Styles.

What are Picture Styles?

This book uses Picture Styles on the images. They are borders that add effects to images.

## Word Options

When you save a Word document as a tagged PDF document using the Save as PDF or XPS add-in you will need to set these options before activating the Save button.

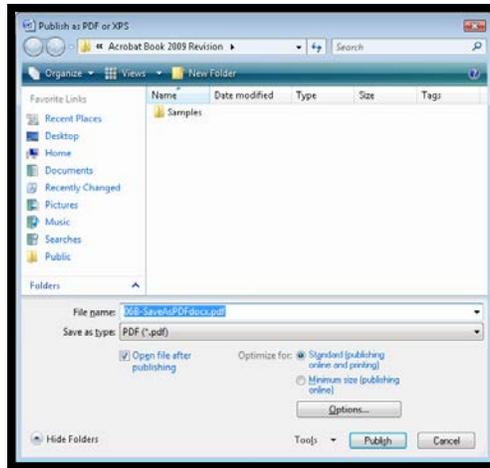
To open the Save as PDF or XPS dialog in Word 2007 press Alt + F, F, P.

In Word 2010 although there is an item for PDF under the “Save and Send” Backstage area, the best way to ensure that the document is tagged is to press F12 to open the Save As dialog and choose PDF from the Files of Type list. You can then go into the options and make sure that the headings will be converted to Bookmarks.



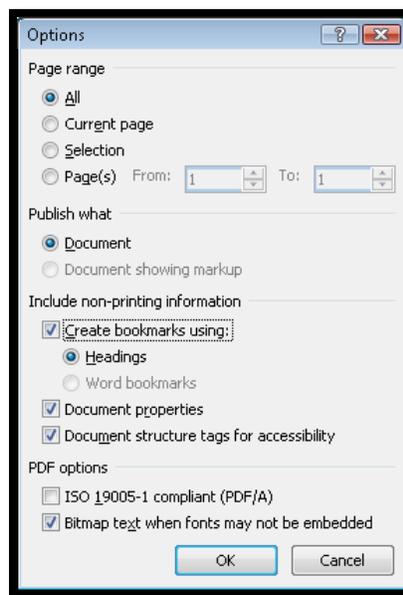
Figure 429 Save as PDF or XPS Office Button menu.

In Word 2007 using the Office Button method opens a dialog with an “Options” button in the lower right. It also lets you determine where you will save the document. As with saving PDF documents using Adobe Acrobat I recommend that you keep the same filename and location as the source document. You can easily move a copy of the tagged PDF or to another location if needed. Keeping both documents together lets you easily update Word document then quickly save it to tagged PDF.



**Figure 430 Save as PDF dialog.**

In the Options dialog choose to add the Bookmarks based on headings in the document.



**Figure 431 Save as PDF Options dialog.**

The PDF options dialog is the same for both Word 2007 and 2010. If you've used the Title style you will have to repair this in Acrobat. The Title and Subtitle styles are not classified as "headings." They will appear in the document as <P> Tags. Use F2 to go into edit mode and make the P an H1.

If you've used some of the Word effects such as Picture Styles but have saved the document down to a Word 2003 or earlier format this will create some repair issues in the resulting tagged PDF. Typically the Picture Styles will be tagged as images without Alt Text. They may not show up in the Tags Tree. They will not show up in the Order Panel or TouchUp Reading Order panel but will be

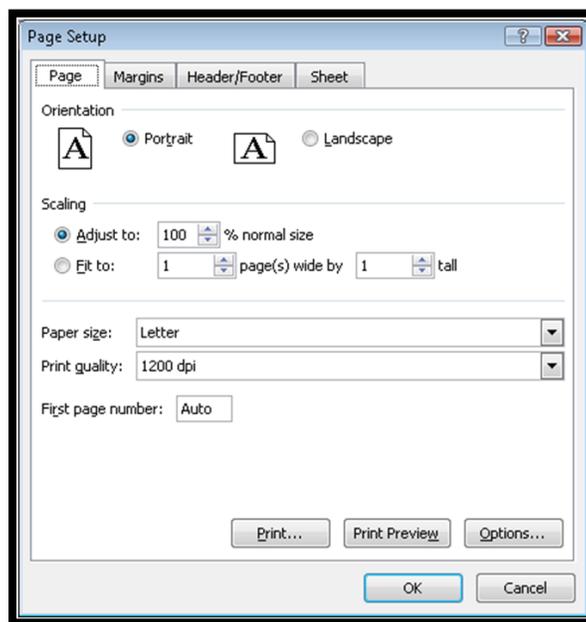
identified when you perform an Accessibility Full Check. You will need to go into the Content panel in the Navigation Panes to find them and redefine them as Artifacts. This can take a long time and add costs to the process. If you are working in a document that will be saved down to an earlier version of Word don't use Effects or some of the building blocks available to you for DOCX documents.

## Excel Options

In Excel 2007 and 2010 if you want to try and fit all of a worksheet on one page in a PDF document, you will need to identify this in the Page Layout dialog first.

Press Alt + P, S, P to open the standard Page Layout dialog.

Move to the Page tab if it isn't in focus.



**Figure 432 Excel Print Layout dialog.**

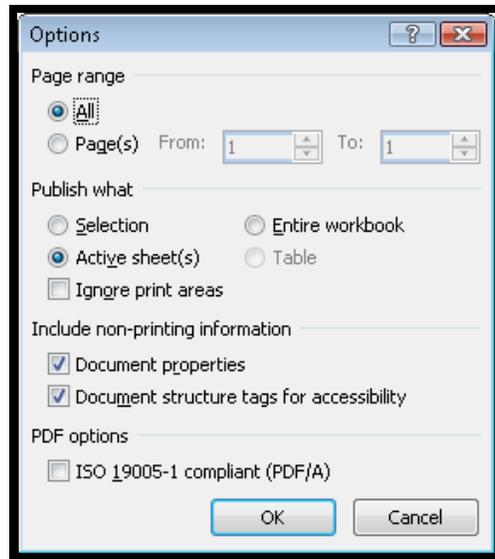
Under "Scaling" you'll see the option to adjust the scale to a percentage of the original size of the worksheet. The default is 100%. You can put the percentage down to 3 or 4 percent which means that when the worksheet opens in Adobe Acrobat or Reader the person reading the document will have to increase the zoom or magnification to around 800 or more

Try a couple of percentage values until you find the one that works best for your worksheet.

You can also try to orient the worksheet using landscape instead of portrait to see if this helps content fit better.

Once you have the values set, in Excel 2007 you can press Alt + F, F, P to use the Save as PDF or XPS add-in. You may need to choose PDF as the file type

In Excel 2010 press F12 to open the Save As dialog and choose PDF from the Files of Type list.



**Figure 433 Excel Save as PDF Options dialog.**

There is an options dialog for this tool in both Excel 2007 and 2010 but the defaults work well.

Make sure that the “Document structure tags for accessibility” is checked.

Tab to and activate the OK button by pressing Enter.

Once you choose what format of the presentation to convert to PDF you can then activate the Publish button in the main Save as PDF or XPS dialog.

**Note:** At this time, if you create linked content in an Excel 2007 workbook the links are not created when you convert the document to tagged PDF. They are in Word and PowerPoint but not Excel. In Excel they are tagged as P or paragraphs. This too will need repairs. It is still recommended that you create the linked Table of Contents for a workbook or worksheet because it improves the overall accessibility and ability to navigate the workbook and its contents. As the Save as PDF tool evolves you will be able to have linked content properly tagged.

In Excel 2007 and 2010 you can apply heading styles to areas of the worksheet. However, they do not convert as H or heading Tags. You will have to use the Highlight Content and manually add the H Tag and its value.

You may also have to add Alt Text to charts or elements that you were not able to add Alt Text to in the Excel workbook.

## PowerPoint Options

This topic looks at producing a tagged PDF from the Slide, Handout, Notes, and Outline views of a PowerPoint presentation. The sample file uses an image and effects intensive presentation template. This template is typical of slide templates that come with PowerPoint 2007.

We were able to effectively use the slides themselves and the Notes in Adobe Acrobat to create an optimally accessible tagged PDF document. However this is not currently possible using the Microsoft Save as PDF or XPS add-in.

If you used simple uncomplicated colours without using the effects available to you in PowerPoint 2007 you would get better results in the tagging using the Save as PDF or XPS add-in. However, we do love our “bling.” Using the Microsoft Save as PDF or XPS add-in there is no “accessible” tagged output.

In PowerPoint we can save our presentations as tagged PDF by using the Microsoft Save as PDF or XPS add-in. This will correctly Tag the slide presentation.



**Figure 434 PowerPoint Save as PDF or XPS Office Button menu.**

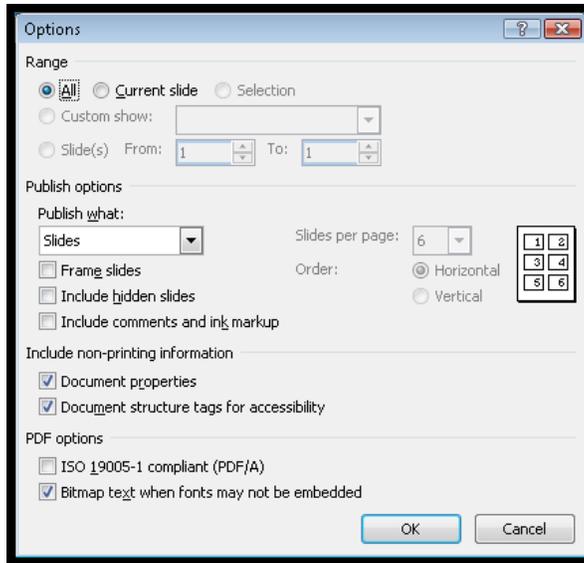
In PowerPoint 2007 Press alt + F, F, P to open the Save as PDF dialog. You may need to choose PDF as the file type.

In PowerPoint 2010 press F12 and choose PDF from the Files of Type list.

There is an Options button in the lower right that lets you choose settings for converting the PowerPoint to PDF.

You can open the Options dialog by pressing Alt + the letter O.

By default you will be saving the slides to tagged PDF. This will create the most accessible PDF document. That is, if you've created an accessible PowerPoint presentation.



**Figure 435 PowerPoint Save as PDF Options dialog.**

Make sure that the option to have the “Document structure tags for accessibility” is checked.

Tab to and activate the OK button by pressing Enter.

Activate the Publish button in the main Save as PDF or XPS dialog to complete the process.

## Slides

This is the default view of the presentation that will be tagged. This will tag the slide content only. It does not include the Notes or any other information.

When the slides are converted to tagged PDF there are several problems that will need to be manually repaired. These include the background being tagged as <Span> instead of being an Artifact; any shadow or line effects being tagged as <Span> instead of being Artifacts; and having the text on slides being tagged without headings or H1 Tags inserted.

The <Span> Tags have either pathpathpath or XObject content under them so can't just be deleted. They will need to be redefined as Artifacts using the Order Panel/TouchUp Reading Order Tool or the Content panel. These repairs will need to be made to EVERY slide in the presentation.

Again, if you do not use complex image heavy backgrounds or effects in PowerPoint 2007 you are less likely to see these problems. The more complex the slide graphics and effects the more manual repairs you'll need to make in Adobe Acrobat



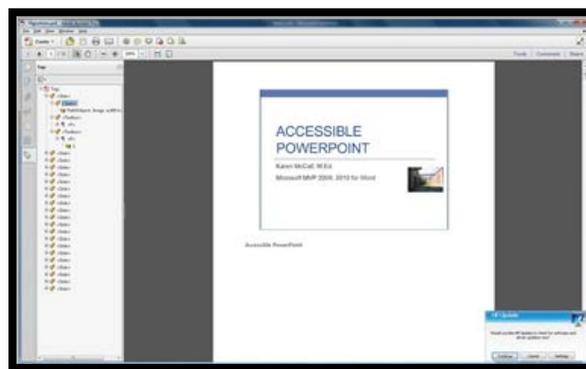
Currently this is not a viable conversion tool because of the incurred cost of repairs to the tagged PDF document.

## Notes

In Adobe Acrobat we were able to convert the Speaker Notes to comments in the resulting tagged PDF document. The slide content was properly tagged and the Comments are accessible. This gave us another tool for providing additional content to someone using adaptive technology or the general audience for the tagged PDF.

Unlike Adobe Acrobat, the Save as PDF add-in does not allow you to save the Notes in an accessible format without eliminating access to the slide content itself. This may be because the Save as PDF or XPS add-in is tied to the Print dialog. This relationship between the Save as PDF or XPS add-in and the Print dialog gets confusing because when we looked at the conversion of Handouts the text on slides was somewhat accessible. When we choose to convert the Notes, it is not.

When the Notes are tagged, the slides themselves become images although they are not properly tagged as images but are tagged as <Span> elements.



**Figure 438 PowerPoint notes tagged as PDF document.**

This means that they will need to be put in the background as Artifacts. You could choose to edit the Tags so that they are figure Tags. This would depend on how many slides there are and how much time/cost would be involved. By making them figures, you would need to provide them with Alt Text.

There is no indication to the person using adaptive technology that they are on another slide. Since headings aren't used in the Speaker Notes section, everything is plain paragraphs with no ability to navigate to a specific slide or topic for clarification.

If we were allowed to apply heading styles to content in the Notes area, we would be able to add navigational structures to the tagged PDF to compensate for the lack of slide content available to adaptive technology. The only "solution" would be to create visual headings that could then be tagged once the Notes format of the presentation was tagged.

I do not support or condone the creation of inaccessible content.

I would recommend that the slide title be copied into the Notes area but left unformatted. I can then make the text H1 Tags in Acrobat. Remember the text will be used to provide the navigational structures for adaptive technology. It does not need formatting flung at it so that it is larger, bold or multicoloured.

Currently this is not a viable conversion tool because of the incurred cost of repairs to the tagged PDF document.

## Outline

It would seem “natural” to create a tagged PDF of the outline of a presentation. This would seem to be the most accessible version of a tagged PDF. It is not for two main reasons.

1. There are no images in an outline view of a presentation. This means that any images directly related to content such as diagrams, charts or tables will not be tagged or in the Outline tagged PDF.
2. If you have used shapes or text boxes they will not appear in an outline of the presentation.

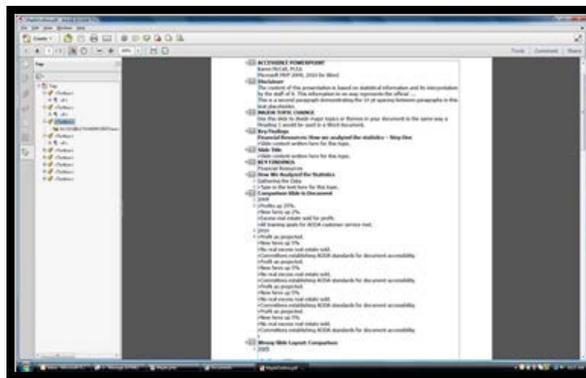


Figure 439 PowerPoint outline as tagged PDF document.

When the Outline view of the PowerPoint document was tagged the contents of an entire page were tagged as one huge paragraph. This will need to be repaired so that the slide titles are headings and any slide content is a P Tag under it. Outline view of a PowerPoint document is not a good use of tagged PDF.

The Outline view saved in RTF format is primarily for alternate format such as Braille although even then content in shapes and text boxes will need to be copied and pasted in the RTF document before being sent to a program such as the Duxbury Braille Translation software...and Duxbury does not support RTF so the document will have to be saved as a DOC format.

Currently this is not a viable conversion tool because of the incurred cost of repairs to the tagged PDF document.

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# Bullets and Numbering Basics

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I've decided to devote an entire chapter on the subject of bulleted and numbered lists in a PDF document. Although there is some information in previous chapters, this chapter will consolidate the information and provide more detailed insight into how to effectively use a bulleted and numbered lists in both Word based and subsequently accessible tagged PDF documents.

Bullets and numbering can make a document more readable and understandable or it can be a readability nightmare. Often bullets are used as "decorative elements" rather than to link like items in a list.

When text is formatted as bulleted or numbered items there is a visual relationship that let's someone reading the document know that bullet point one is related to bullet point two and so forth. For numbered steps, keeping that relationship is critical in understanding what to do first, second, third and so on so that a step in a process is not overlooked.

This relationship is provided to someone who can't see the bulleted or numbered list if the bulleted or numbered list is formatted properly.

Properly formatted bulleted or numbered lists:

- Use standard bullets or numbering not images, non-Unicode symbols or other inaccessible elements.
- Are not single bullet or numbered items.
- Bullets are not used in headings.
- Have proper spacing as opposed to pressing the Enter key to space bulleted or list items.

In the list above the four items describe the characteristics of a well-structured bulleted or numbered list.

A list by its very use implies more than one item.

When someone using a screen reader comes upon the list above in the document they are told they are entering a list of three bulleted items. There are settings in some screen readers to notify the person when they are moving from a first level bullet or number to a sub-bullet or number [a second level bullet or number]. Does this sound familiar? Think back to the use of Heading Styles

and the moving from Heading 1 to Heading 2 and so forth. The key is that people using screen readers have access to the same visual representation of the document "but" only if the underlying structure is there for each document element.

## List Paragraph Style

There is some confusion around the relationship between the List Paragraph Style and the use of the Bullets, Numbers and Outline buttons on the Home Ribbon in Microsoft Word.



**Figure 440 Bullets, Numbers and Outline buttons from the Home Ribbon.**

Until Word 2007 there was no easily identifiable "List Paragraph Style." Now we can see the List Paragraph Style on the Quick Styles Gallery or by looking at the Apply Styles Pane when working in a list item.



**Figure 441 List Paragraph selected from Quick Styles Gallery.**

Why do we need these two seemingly separate formatting tools? What is the relationship between the two tools? Which one should I use? Does using one create a more accessible document over using the other?

To create a properly bulleted or numbered list use the Bullets or Numbering buttons from the Home Ribbon. That is what applies the proper formatting or structure to the bulleted or numbered list.

If you want to change the look and feel of all bulleted and numbered lists in a document you modify the List Paragraph Style from either the Quick Styles Gallery or the Styles Pane. You also use the List Paragraph Style to format/structure a paragraph that might be part of a bulleted or numbered list item but does not have a bullet next to it. We'll see an example of that in this chapter.

By having these two tools Word gives you the ability to either modify the spacing or look and feel of a single list or to modify the spacing or look and feel of every list in a document. If you are simply adjusting the spacing for a single list it is OK not to create a separate List Paragraph Style.

[Remember NOT to use the Enter key to add spacing between bulleted or numbered items.]

Once you apply the bulleted or numbered list format that you want for a group of related items you may want or need to make some adjustments for spacing or indentation. There are two ways to do this, both using the same Paragraph dialog tool. However one method only affects the currently selected list and the other affects all lists in the document.

## Format a Single List in a Document

Using this method you only affect the spacing for the selected list in the document. This technique is useful if you have numbered instructions that are text heavy and you feel that adding space between the list items would make the instructions stand out more and be more readable to someone trying to follow them.

To format a single list in the document:

1. Select a list of items you've formatted using the Bullets, Numbering or Outline tools.
2. Press Alt + H, P, G to open the Paragraph dialog.
3. Adjust the spacing or indentation for the selected list by unchecking the check box "Don't add space between paragraphs of the same style."
  - a. When you do this the default spacing below the paragraph will default to 10 point which is usually enough for a visual separation of the bulleted or numbered points..
4. Tab to and activate the OK button to confirm the changes for this list only.

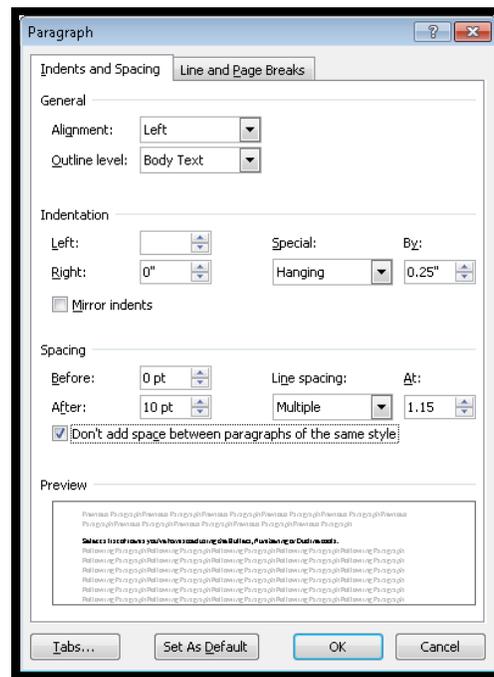


Figure 442 Paragraph Dialog in Word.

Typically you don't need to add space before a bulleted or numbered list because there is default spacing before the first list item. You only need to add the spacing after each bulleted or numbered list item to gain the visual effect you want.

## Format all Lists with the Same Spacing

Using this method all lists in the document or all text that the List Paragraph Style is applied to, will have the same spacing after each bulleted or numbered item. As with the first method, you typically don't add spacing before each bulleted or numbered point as this creates a visually awkward looking list and there is a default spacing before the first list item which then only requires spacing after each bulleted or numbered list item to gain the visual effect you want.

To format all lists in the document:

1. From the Quick Styles Gallery or the Styles Pane select the List Paragraph Style.
2. Press the AppKey and choose to Modify the Style.
3. When the Modify Style dialog opens press Alt + letter O to open the Format options.
4. Choose Paragraph from the list which opens the Paragraph dialog.
5. Adjust the spacing and indentation for all lists in the document.
6. Tab to and activate the OK button to confirm the changes to the Paragraph formatting for the List Paragraph Style.
7. Choose whether to apply the changes to this document only or to the document template so that other documents you will create based on this template will have the same List Paragraph formatting.
8. Tab to and activate the OK button to confirm the changes to the List Paragraph Style.

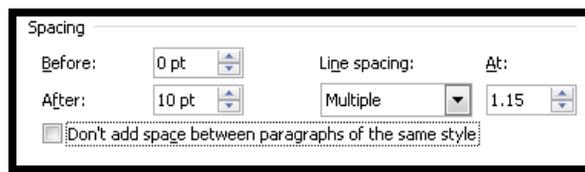


Figure 443 Close-up of the Spacing settings in the paragraph dialog.

If you choose to modify the List Paragraph Style you can also change the font, font size, text colour and other formatting for all lists in the document.

Each time you create a list the List Paragraph Style is applied to the text. The two tools are connected however you can apply the list Paragraph Style to text on its own. It will not associate a bullet or numbering Style with the text but it is a valid Style to apply.

If you apply the List Paragraph Style without using bullets or numbers keep in mind that someone using a screen reader or using screen magnification will still "see" that formatted text as a list if they have their screen reader set to identify changes in styles. For screen readers the Style name "List Paragraph" is provided to them. Hearing this they may think that there is a list that cannot be found,

is broken, their screen reader is not working properly and other problems exist which will cause the end-user to stop reading and go into troubleshooting mode. For someone using screen magnification, they may think that their technology is being overwhelmed and some of the visual formatting is not being rendered to them. As with someone using a screen reader, they will stop reading and go into troubleshooting mode to try and find the problem.

Having said this, using the List Paragraph Style if you have a paragraph of text under a bulleted or numbered list item would be an appropriate use of the List Paragraph Style. The advantage in this instance would be that the text would be formatted properly to nest under the bulleted or numbered list item as shown in the following image.

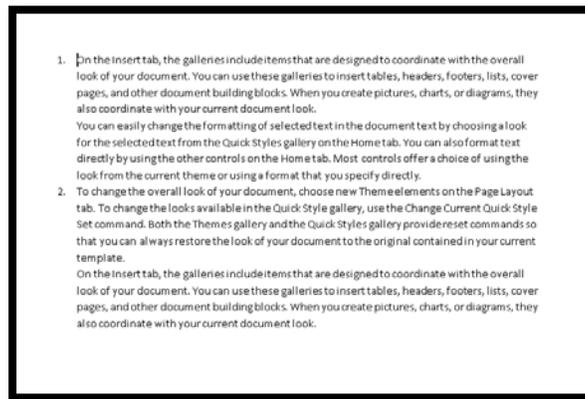


Figure 444 List with sub-text formatted as List Paragraph.

This means that you don't have to guess at the formatting for additional content under a bulleted or numbered list item. The look and feel would automatically reflect a bulleted or numbered list item.

For the text in the preceding image, the List Paragraph Style was identified to a screen reader. This is a perfect example of an instance where you may want to adjust the spacing after each List Paragraph Style so that the content is more readable and discernable.

However, without the use of the Bullet or Numbering icons on the Home Ribbon, when this document is converted to tagged PDF, the List Paragraph Style is interpreted as a regular paragraph and not part of the list itself.

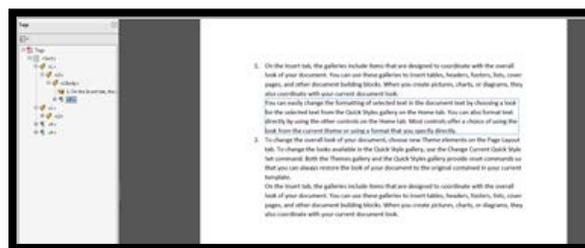


Figure 445 Tagged PDF showing List Paragraph Style converted as regular paragraph text.

Once again we need to consider how someone is going to access the document. If it is in Word the List Paragraph Style information will be available to someone using a screen reader. If the document is going to be converted to tagged PDF, using the List Paragraph Style will ensure consistent formatting. We will need to make a minor repair in the PDF document to nest the <resulting P> Tags under their appropriate <LI> Tags.

When reading through the document using a screen reader in Word it is not until the end-user asks for formatting information that the use of the List Paragraph Style is provided to them. However, for consistency and structure it is recommended that the List Paragraph Style be used when nesting information under a bulleted or numbered list item when that content is not its own bulleted or numbered item.

The following image shows the repair for the addition of a sub-text to a bulleted or numbered item.

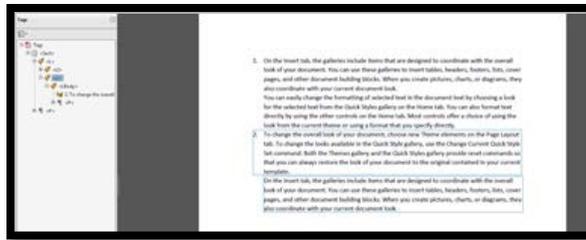


Figure 446 Repaired list in PDF document.

## Creating a Well Structured List

Without the underlying structure, as with Headings, the bulleted or numbered lists would be presented as paragraphs of text each one having no more or less position or role in the document than any other. With the list structure, the content is set apart and presented as brief points of concise interest.

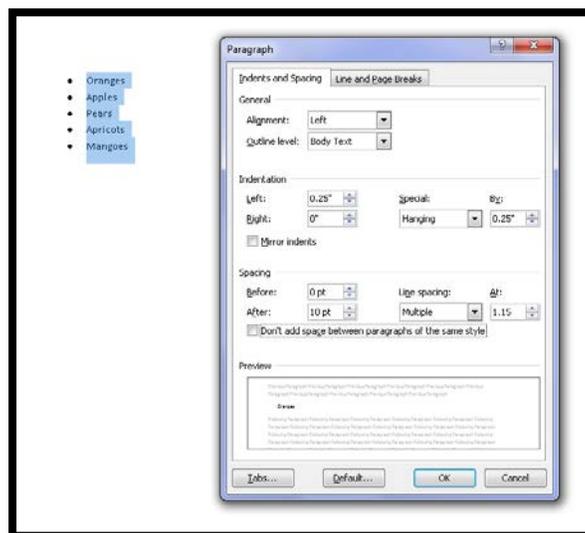
Let's take a closer look at the problems created when lists are not used correctly in a document.

- Oranges
  
- Apples
  
- Pears
- Apricots
- Mangoes

**Figure 447 List spaced using Enter key.**

When the Enter key was pressed after the first and second bulleted items it "broke" the list structure so that oranges is one list, apples is a second list and pears, apricots and mangoes is a third list.

The intent of the document author was that this is one list of fruit that is spaced more generously than the standard spacing before or after list items. The reality is that the fruits are no longer "related" to each other except for the pears, apricots and mangoes.



**Figure 448 Paragraph dialog shown over selected list in document.**

You can either choose to modify the spacing for this list only or for all lists in the document [by modifying the List Paragraph Style in Word].

In Word the setting that affects the spacing of a paragraph is in the Paragraph dialog and is the check box "Don't add space between paragraphs of the same Style." When you do this a default spacing of 10 points is added after each list item. This should be enough space for the visual effect you are looking for.

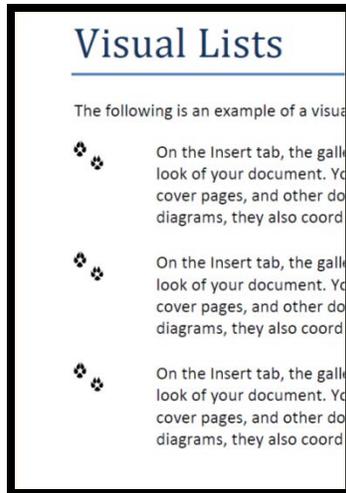


**Figure 449 Properly spaced list.**

## **Images as Bullets**

In this example the visual representation of a list was created in Word however this is a technique commonly used for documents that are created in InDesign. The problems are the same unless you identify the bulleted or numbered text with your defined list paragraph style in InDesign and then make the repairs in Acrobat. InDesign CS5 does not consistently add the parent <L> Tag while working in Adobe InDesign. This is still a repair you will need to do in Acrobat.

If the Word document you are creating is ONLY going to be used to create a tagged PDF and NO one will get the Word document, you could use images as bullets such as in the following image. If there is a chance that the Word document will be distributed, do not use this method of creating a list in Word!



**Figure 450 Visual list created without using list structure.**

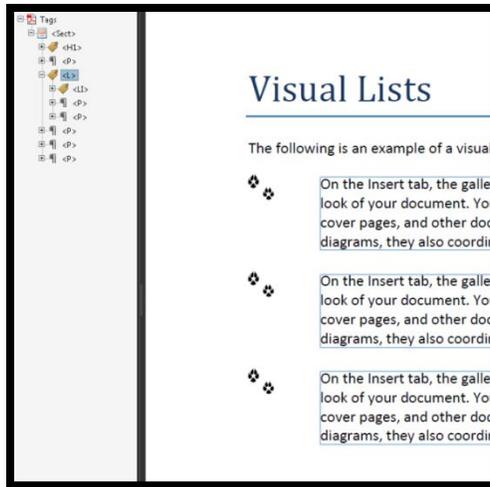
Why the caveat?

Although the image of the list looks “pretty” it is not a list structure. Each point is a paragraph with no relationship to other visual list elements.

In a tagged PDF document we could make the following repairs:

Make the images of the paw prints Artifacts so that screen readers would ignore them. It is not necessary to give them Alt Text of “bullet” since we will be adding the <L> and <LI> Tags to provide the list structure. It is the Tags and the proper use of the Tags that will identify this as a list to someone reading this document who can’t see it.

You could include the images within the individual <LI> Tags but consider whether it is necessary to the understanding of the content to do so. With the proper list structure someone who can’t see the document would hear “list of 3 items, bullet list 1 and then the content of the first bulleted list item.” Is it necessary or distracting to hear “list of 3 items, bullet list item, graphic paw print bullet, and then the content of the bulleted item.”



**Figure 451 Repaired list in a tagged PDF document.**

The Highlight Content was turned on so that the list elements could be seen better. The images have been reassigned as Artifacts or pieces of the background. If someone is not using adaptive technology they will see the visual representation of a list but if someone is reading the document with adaptive technology such as a screen reader they will know that this is a list because the structure was added.

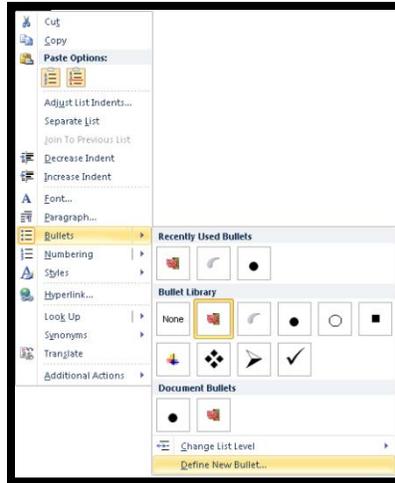
This technique of adding bullets should only be used if there is no possibility that the Word version of the document is provided to clients, customers, staff or students. Within the Word environment this is an inaccessible list.

Can we use images as bullets using the tools in Word?

The answer is yes and no. The negative part of this is to ensure that whatever you use as a bullet is a Unicode character or it will be flagged in an Accessibility Full Check in the PDF document.

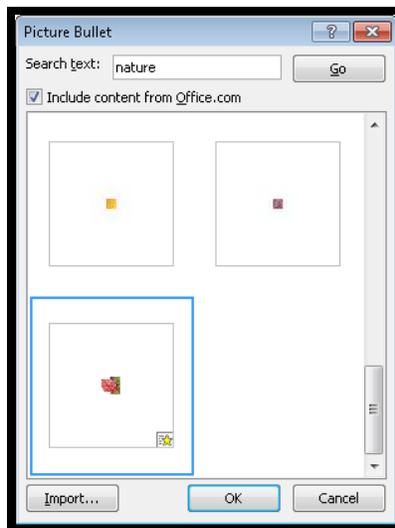
To create picture bullets in Word 2007 and 2010:

1. Create your list of items and select them.
2. Press Alt + H, U for the Bullets formatting on the Home Ribbon.
3. Instead of choosing one of the bullets you see, choose the last item in the menu which is "Define new bullet."
  - a. The following image shows the same option from the context menu of a selected bulleted list.



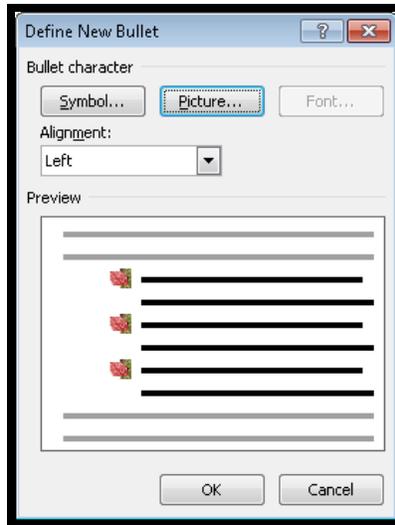
**Figure 452 Define new bullet option from the context menu of an existing list.**

4. A Define Bullets dialog opens. Tab until you find the Picture button and press Enter. This will open a Picture Bullet dialog where you can choose the image you want as bullets for the selected list.
  - a. You can also do this when modifying the List Paragraph Style if you want all bullets in the document to have the same picture. Keep in mind not to go overboard on pictures as bullets. Use this tool sparingly so you don't visually distract from the content.



**Figure 453 Picture Bullets dialog.**

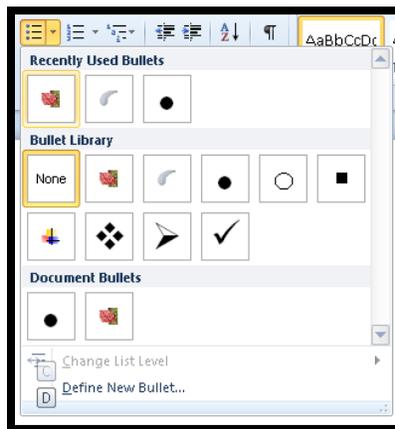
5. Once you've chosen your picture to use as bullets for the selected list, Tab to and activate the OK button. This returns you to the define Bullets dialog where you can see the pictures applied as bullets.



**Figure 454 Define Bullets dialog with picture bullets chosen.**

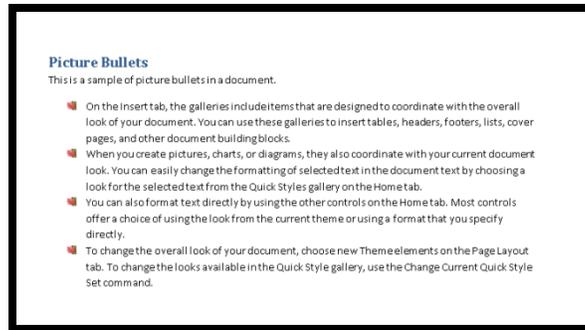
6. Tab to the OK button and press Enter to apply the picture bullets to the selected list.

The Picture based bullets will now be available to you when you access the Bullets Gallery.



**Figure 455 Bullets Gallery showing picture bullets.**

This will create a proper list. When you are performing an Accessibility Full Check in Acrobat you may have to make the images Artifacts, however with the pictures used for this sample they were made Artifacts by default while the list structure was retained. This meant no repairs.



**Figure 456 Picture bullets applied to a list in Word.**

Whether you're trying to create an effect with picture bullets or by spacing the bullet items, make sure that you are using the tools in the application you're working in to provide the optimal accessibility support.

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# Tables and PDF Documents

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As with the chapter on bulleted and numbered lists, I felt that an entire chapter should be devoted to discussing accessible tables and complex tables. There is information in previous chapters in this book on creating accessible tables however this chapter consolidates information and provides more detailed insight into how to properly Tag tables in PDF documents.

Some legislation states that data tables must be correctly identified and/or tagged. Tagging might refer to converting content created in a word processor to either HTML or PDF content. If the legislation intends that all tables used in word processed documents are data tables, a lot of document authors who use the table structure for design layout will face major problems in making their documents compliant. Tables used for design and presentation aren't data tables.

Being correctly identified or tagged is different than ensuring that all structural elements of a document are identified or have tags. You can have a table identified or tagged, but you will be unable to apply "correct" identification or tagging to the table structure because of how the table has been used in a document.

## Table Structure in Word

Now that we have an idea of what the structure of a correct or proper data table is, let's look at what a proper or correct table structure consists of in a word processed document. Here we will find similar components for data tables.

Data tables are used to display comparative data either simple or complex. The key to creating an accessible table is to ensure that no matter where in the table someone who can't see the table is, they can get the information they need to determine what it is they are reading.

A properly structured data table might look like this:

**Table 8 Properly structured table in Microsoft Word 2003.**

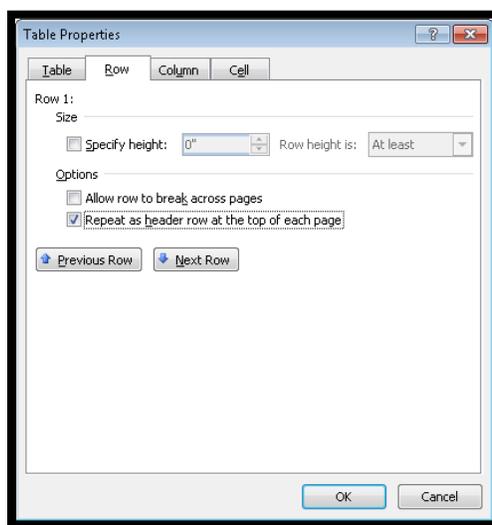
<b>Salesperson</b>	<b>First Quarter</b>	<b>Second Quarter</b>	<b>Third Quarter</b>
<b>Data cell</b>	Data cell	Data cell	<b>Data cell</b>
<b>Data cell</b>	Data cell	Data cell	<b>Data cell</b>
<b>Data cell</b>	Data cell	Data cell	<b>Data cell</b>
<b>Data cell</b>	Data cell	Data cell	<b>Data cell</b>

Salesperson	First Quarter	Second Quarter	Third Quarter
Data cell	Data cell	Data cell	Data cell

In the above table, the Header row has been visually set apart by using bold and centering. The Header row has also been structurally identified by selecting the row, choosing Table Layout and then choosing Header Row Repeat from the Table Layout Ribbon. The keyboard commands are Alt + J, L, J. This means that in the unlikely event that this data table is divided over two pages, the column Headers will display on the second page. When the document is converted to tagged PDF it is the “signal” for the header row to repeat that will be used to identify a <TH> or table header Tag.

This is not the same as Heading Styles and Heading Styles should not be used in a table.

The steps are in this book in detail after the general discussion about tables.



**Figure 457 Header Row Repeat table option.**

Unfortunately at the present time there is no mechanism for identifying the row titles in a table created in Word. This repair too will need to be done manually in a tagged PDF document.

On the other hand in Word 2007 and 2010 you can select more than one consecutive header row in a table. Accessibility is always evolving.

In Word, most of the high level screen readers such as JAWS provide tools for someone selecting the column to use for row titles. This type of "meeting halfway" by both Microsoft and the adaptive technology developers facilitate better access to document parts in transition.

The preceding table has been further structured by selecting the table and choosing Table Properties > Rows, and un-checking “allow rows to break across pages.” This keeps you honest as a document author. If the amount of information in a row breaks across a page, you need to redesign

the way the information is displayed. Some people can't follow the text in a row if it breaks across a page. Even if a cell doesn't have a lot of information, not letting the row break across pages helps with the readability and usability of a document.

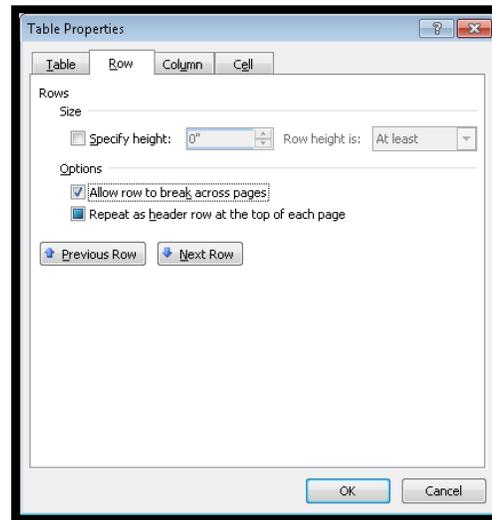


Figure 458 Allow Row to Break Across Pages table option.

## Tables for Design or Presentation

This topic looks at how we misuse the table structure in our documents. If we know that a proper table structure includes a Header row or column and a caption, how would you add these elements to a table that spans 20 pages, has multiple types of content, multiple Headers, split and merged cells, and deleted cells for visual effect? A table can have only one Header row and one caption. Although in Word 2007 it is possible to identify more than one Header row, keep in mind that this information is going to be provided to someone using a screen reader for every cell the Header information applies to.

Simple formats are often the best. Just because we can put information in a table for presentation doesn't mean that this is the best way to present the information or to read it. Often we find that information plunked into a table is not readable in any logical manner.

Document design is important before you start formatting.

The following table begins with 6 columns and 125 rows. In the original document worked on this one table went on with similar "formatting" for 68 pages.

Logical Document Structure Techniques	
Item	Description
<b>Creating Custom Styles</b>	
Why use custom styles?	It is important to use custom styles for elements of the document you want or need to change the look of.
Type of custom style.	It is also important that your custom style be based on the structural element you are trying to affect.  For example, if you are creating a custom heading, it needs to be based on the heading 1 through 9 styles, not the Normal paragraph style.
Create a custom style.	<ul style="list-style-type: none"> <li>• Select the text you want to create the style for.</li> <li>• Choose Format &gt; Styles and Formatting.</li> <li>• Activate the new styles button.</li> <li>• In the dialog box, make sure you change the "Style based on" to the structural element you want, for example Heading 1.</li> </ul>
Lists	In the cell above, the list was created using a tool other than bullets and numbering. This means that any adaptive technology will see this as paragraphs, not bulleted items or steps in a process.
<b>Tables</b>	
Create a table.	Use Table > Insert not Table > Draw.
Table settings	Identify a heading row.  Choose Table > Heading rows repeat. Make sure your cursor is in the first row of the table or the row you want to use as the

**Figure 459 Horrid table design used for layout.**

As we see, the table quickly loses four of its columns and appears to have three "headers" before we get to the information in the table. If this table were to go on for pages and pages, which of these three header rows would you use as the title or Header row of the table? How can we swap out the first yellow row which is a visual "topic change" with the yellow row at the bottom of the page which also is visually indicating it is a topic change? Adaptive technology is not "psychic" in knowing that the topic change should now be read instead of the originally coloured topic header. Word processors are not designed to identify row titles. They are only designed to identify column headers or column titles.

But wait, things quickly change on page two.

Create a table	Use Table > Insert not Table > Draw			
Table settings	Identify a heading row  Choose Table > Heading rows repeat Make sure your cursor is in the first row of the table or the row you want to use as the heading row to repeat on subsequent pages.  Also select the table using Table > Select > Table and in the row tabbed pane un-check the "allow rows to break across pages."  If content in a row has to break across a page, you need to rethink why you are using a table and not lower level headings and paragraphs.			
Table captions	Tables should be captioned. This identifies the table number and lets people know what kind of information to expect as they read through the table.  Select the table, then press the AppKey and choose Caption. Table captions are automatically inserted just above the table.			
<b>Checklist for Logical Document Structure</b>				
Element	Doc 1	Doc 2	Doc 3	Doc 4
Check each structural element you've used appropriately in your documents.				
Headings				
Lists				
Tables				
Images				
Equations				
<b>Universal Design</b>				
Web	Even on web pages, you need to use the tags or structural elements properly. For example, if you are creating a list, use the   tag to indicate a blank line between list items. If this doesn't work, then adhere to the HTML rules, don't break them.			
Print	Although print documents aren't formatted the same as digital documents, it is critical to use the structure for the format you are working with. Even in print documents, we usually look for similar heading styles to let us know that what we are looking at has it's own unique place in the document.			

Figure 460 Continuation of table used for layout.

At the top of page 2 of this horrid table there are no visual headers or topic changes. Remember, it was at the bottom of the first page. The "table" suddenly decides it IS a data table and deletes some columns and adds yet more header rows.

We've now lost one column, but the table purpose/structure has changed to that of a data table displaying a check list for accessibility. Then, yet another format comes along. We have another header, but the two columns we are presented with aren't the same two as in the beginning of the table and "column 1" is now smaller than column 2. I've left the grid lines on in this example to demonstrate the illogical structure of the document; however, typically, these would be turned off.



The following example is of how we tend to format agendas for meetings. Once again, ask yourself what the Header row is and what the caption is for this table.

9:00 AM	Introduction and Outline
9:15-10:30 AM	Main topic discussion begins
10:30-10:45 AM	Break
10:45-100 Noon	Wrap up of the morning's discussions

**Figure 462 Table structure used for agenda.**

Using Tabs would give you the same effect and be more readable and navigable. However, is this the best design for an agenda?

With Word 2007 you can now select more than one row as the header row of the table. In the following sample table this still presents a problem in that there is no scope attribute for the column titles in blue that span more than one column. If this document is sent to Adobe Acrobat as a tagged PDF document, the scope can be added using the Table Editor tool.

It should be noted that at the time this book was printed there was no screen reader that could read multiple column or row titles. This doesn't mean that we can ignore the standards and capabilities of making tables more accessible. It does, however, point out the folly of trying to make documents adaptive technology compliant.

**Table 9 Table with two Header rows, split cells and one column with no Header.**

Day of the Week	Toronto		Calgary	
	Winter	Summer	2Winter	Summer
Sunday	5	25	1	22
Monday	3	31	2	25
Tuesday	4	30	2	27
Wednesday	4	24	4	23
Thursday	3	25	5	24
Friday	2	23	2	25
Saturday	5	25	0	25

Which of the first two rows would you designate as the Header row? What would you do with the two blank cells that were merged for visual effect in the upper left hand corner?

Table 10 Average daily temperature in degrees Celsius.

Days of the Week	Toronto - Winter	Toronto- Summer	Calgary - Winter	Calgary - Summer
Sunday	5	25	1	22
Monday	3	31	2	25
Tuesday	4	30	2	27
Wednesday	4	24	4	23
Thursday	3	25	5	24
Friday	2	23	2	25
Saturday	5	25	0	25

With the table above, a person using a screen reader will be able to designate both column and row titles/headers and ask the screen reader for the relationship of the information in cell C5.

Remember that at this time only one column and row title will be read to the person using a screen reader, however, this table is more accessible. Keep in mind that we are also making documents accessible for people with learning, cognitive and visual disabilities.

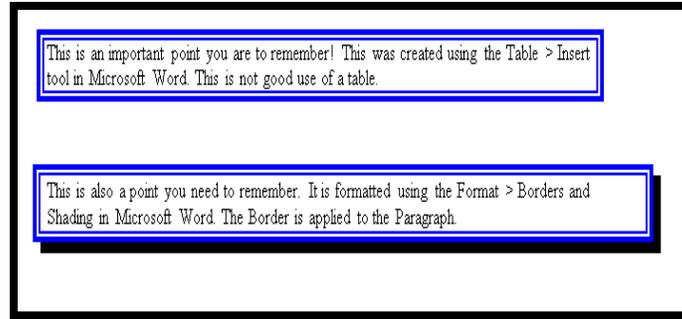
If the only information someone using a screen reader can get is the number four without being able to know what day or what city, or what time of the year it relates to; or even that these are average daily temperatures, how usable “and” accessible was the original table?

Also remember to support the information contained in a table in the surrounding text of the document. Don’t use tables or images out of context or gratuitously.

The next demonstration of a misuse of tables is prevalent in both word processing and HTML. It is the use of a one cell table to isolate an important piece of information.

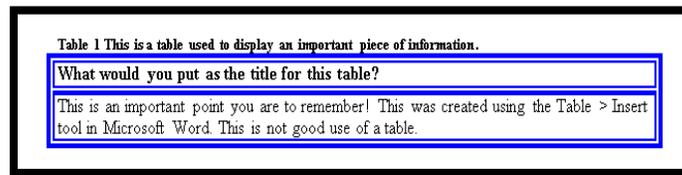
The following image shows a single cell table used to display something the author has identified as important and worthy of note. The single cell has been decorated with a blue border to make it stand out.

The lower part of the image shows the same text but instead of using a table to present this as important, the borders and shading tool in Word was used for the same effect. By using borders and Shading, I also had access to the shadow effect which is not available when using the borders and shading for table cells.



**Figure 463 Single cell table on top with paragraph formatted text on bottom.**

If we were to provide a Header row and caption for the single cell table, the result would be something like this:



**Figure 464 Single cell table with caption.**

Once we can visualize or even listen to this type of table with a screen reader, we can quickly see that using a paragraph with a border is more efficient and effective. In HTML you can achieve the same effect using an external Style sheet [CSS]. With both word processing and HTML, you can create a Custom Style that will also include different fonts, font sizes, margins and indents.

I know what some of you are thinking about the next Heading...text boxes! Just say no!

## **Text Boxes- Just Say No!**

Some document authors use text boxes instead of single cell tables to isolate information or to create an effect for text. Text boxes are very difficult to navigate if you are using adaptive technology and they may not convert well into other formats.

Text boxes float over the page because they are objects not part of the text layer of the document. Most of them cannot be put into focus so that the content is accessible to adaptive technology unless you can physically put the mouse cursor into the text.

Some screen readers do have the ability to list objects in a document and then let the end-user put focus into the text but because they are objects the process is similar to walking on stepping stones in a pond. You move from stone to stone without touching the water. In this metaphor you move from object to object/text box to text box without touching the surrounding content.

Why are text boxes inherently inaccessible?

Text boxes are not part of the main document text layer. They are objects that float above the text layer. Because they are not part of the text layer of documents, adaptive technology doesn't see them.

Imagine walking along the trail looking left, right and in front of you. Your feet touch the area you are walking on which means you "have access" to these parts of your surroundings.



**Figure 465**Photo of Jackson Trail Alberta copyright Karen McCall.

The clouds float above the area you are walking in as do birds and insects. The clouds, birds, insects, planes and other elements that you don't have access to would be comparable to the objects that are not in the text layer of a document. The "text layer" would be comparable to the area around you as you walk that you have access to.



**Figure 466 Photo of clouds taken from plane copyright Karen McCall.**

Some adaptive technology such as the JAWS screen reader have keyboard commands for getting a list of objects in a document. You can navigate to an object such as a text box and sometimes read the contents.

But here is the problem.

If you are moving from object to object it is like being in an airplane skimming along the clouds. You can see the clouds and go in and out of them but you have no idea from looking at the clouds where you are. You don't have the ability to look down to see what might be below the clouds.

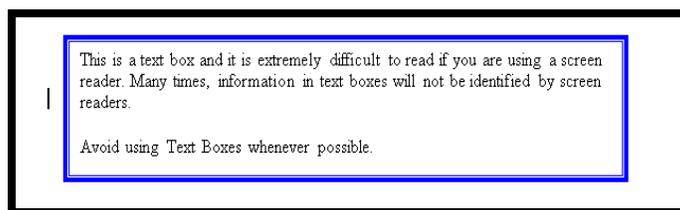


**Figure 467 Photo of clouds taken from plane to illustrate objects and layers.**

This is compounded with layered documents. It is like gliding between layers of clouds without knowing where you are or what you are “touching.” In some cases it is difficult to separate one layer of cloud from another. Similarly with layered documents it becomes difficult separating one layer of “content” from another.

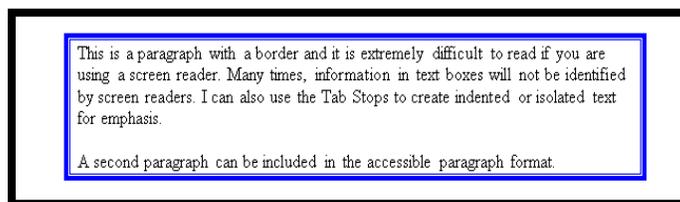
So while you may be able to read the content in a text box, you have no mechanism to help you view what is under it or around it. Each “layer of the document lives in isolation of each other as experienced by adaptive technology.

Text boxes are often used for quotations and other text that document authors want people to really notice and read.



**Figure 468 Text box showing cursor at the margin.**

Paragraph formatting is simple and easy, yet we often use the tools someone showed us during a “marketing of the software seminar” or a tool we found that “did the trick” when we needed a fabulous document done in five minutes.



**Figure 469 Paragraph Style used to visually isolate important content.**

In the preceding image a Paragraph Style was used to visually isolate important content. Some screen readers have the verbosity setting to allow for the identification of borders and shading. This aside the content is accessible and an end-user who is accessing your content non-visually will be able to read this important content.

Once you understand the formatting you can do using the basic tools in Word, you’ll find that these are easy to use...and you can create Custom Styles for formatting you do frequently.

## Creating Tables in Word

It is important to create proper data tables in Microsoft Word or any other application. This will let you take advantage of the automated tools you or your readers use daily. For example, if someone reading your document requires a Braille version, your table will format properly in the Duxbury Braille Translation software. When you convert to HTML or tagged PDF, people using TTS [Text-to-Speech] or screen readers can navigate information in a table more easily.

**Note:** Tables should not be used for formatting; they should be used to display brief pieces of comparative information. If you want to create columns, use Format > Columns in Word, or the structural element for creating columns in the application you're working in.

There are some elements of creating a table you need to include.

### Creating a Table

Create a table by pressing Alt + N, T. You can either use the visual grid which will be read by the JAWS screen reader or by using the Insert Table dialog.

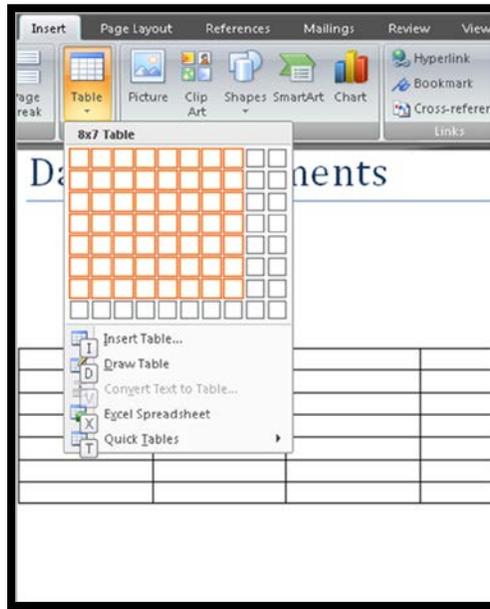
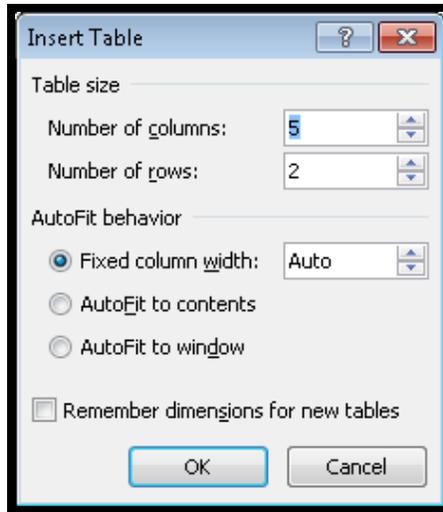


Figure 470 Insert table using Table grid.

Using Insert Table or the grid of possible rows and columns initially creates a uniform table which is more recognizable by automated tools like Duxbury, DAISY book authoring tools, HTML and PDF converters. It will also make navigating tables in Word a lot easier.



**Figure 471 Insert Table dialog.**

Once you've created your table, there are a few settings you need to modify.

## Header Rows Repeat

First, select the column title/titles or first rows of the table. You can wait until you've entered this information if you like,

Choose Table Tools, Layout, Header Rows Repeat. The keyboard commands are Alt + J, l, j.

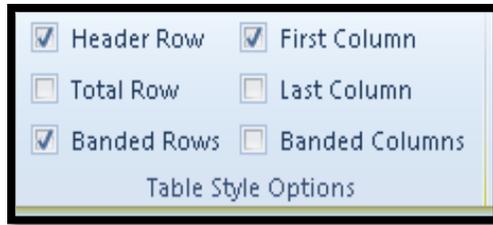
Adaptive technology such as screen readers have their own verbosity settings or user settings that will let the person using the screen reader choose which columns and rows they want read as the header rows of a table. The settings in the Table Tools Sub-Ribbons are not the place this is done.



**Figure 472 Header Row Repeat icon in the Data Group on the Table Layout Ribbon.**

Having the header rows repeat not only helps people using adaptive technology such as screen magnification or Text-to-Speech software, it also helps everyone keep track of the relationships between information if your table spans two pages. Even if your table will not span pages, using the Header row Repeat is what the Adobe and Microsoft PDF conversion tools used to identify and create the TH or Table header Tags.

On the Table Tools Design Ribbon there are some check boxes for column or row title.



**Figure 473 Table Tools Design Ribbon table header options.**

These check boxes are for internal Word use only and are not used by screen readers at this time to determine a column or row title. They are checked by default when you create a table.

The important setting is to have the header rows repeat in the table. There is no tool at this time to identify row titles for repurposing Word table content to tagged PDF or other formats.

## Rows braking Across Pages

The second thing you need to do is to not let the rows break across pages. I know, several of you are cranky about this at the moment.

1. Put your focus in the table and select it by pressing Alt + J, L, K, T. I put the Select Table tool in the QAT or Quick Access Toolbar because it is a tool I use often.
2. With the table selected, press the AppKey.
3. From the context list, choose Table Properties. You can also get to Table Properties once the table is selected by pressing Alt + J, L, letter O.
4. On the table tab, make sure the check box allowing rows to break across pages is unchecked.

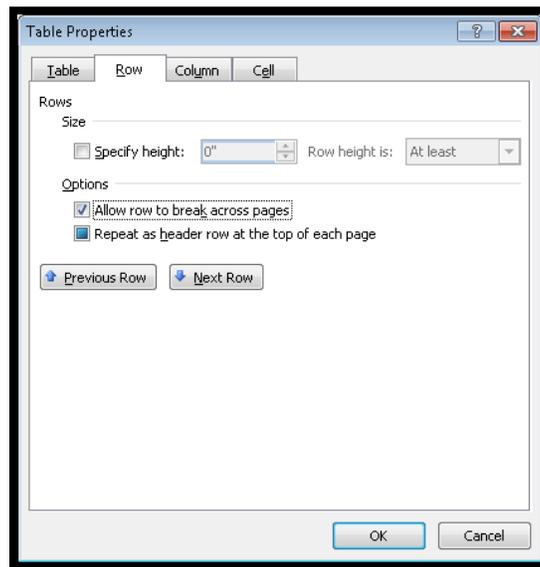


Figure 474 Allow rows to break across pages table option.

This does two things: first it keeps you honest in only having short pieces of information in a table cell; and second, it makes it easier for your readers using adaptive technology when you keep all information in one cell together.

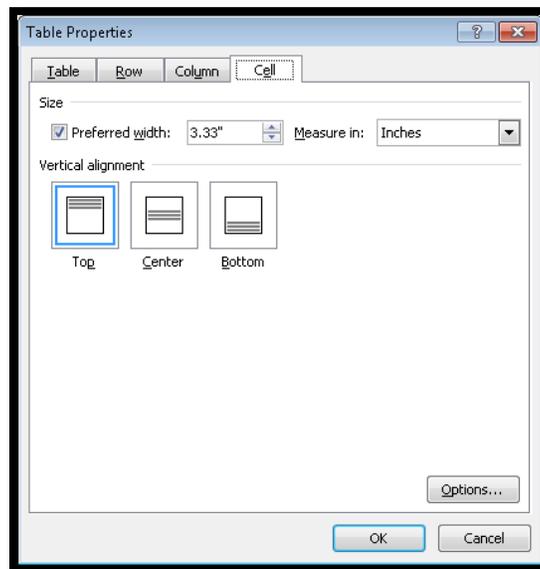
If your document is printed, it is easier for people with visual or learning disabilities to read the content of a cell if it isn't broken over pages.

## Empty Table Cells

You should not have a lot of blank cells in your table. If you have a blank cell because there is no information, use a - [dash] which will help automated processes understand that this is a blank cell. If someone is using a screen reader to read a table and empty cells have been used for "spacing" or visual effect, the person using the screen reader hears "blank" for each empty cell. If someone hears too many "blanks" in a row, they will stop reading the table information thinking that either their screen reader is stuck, or that the document author simply put lots of empty cells in a table for

visual effect. Either way, the person reading your document is frustrated and loses mental focus and concentration on what they are reading.

Tables used in HTML for design layout often have 10, 15, or more empty cells in a row or column because the document author is misusing the table structure for a visual effect. People using adaptive technology such as screen readers have been conditioned to believe that any series of blank or empty cells are just another example of improper use of tables and that it is a waste of time and energy to try to figure out where the content is.



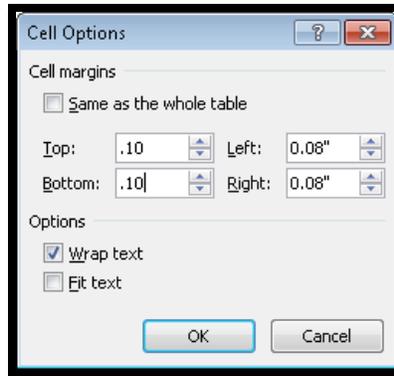
**Figure 475 Cell Properties dialog.**

## Cell Margins

Use the Cell Margins option to create space around cell content, not blank lines. If someone using a screen reader hears “blank” when they enter each cell, they might not listen to hear that content follows. It is also quite annoying to hear “blank” before and/or every piece of content in a table.

The Cell Margin tool is accessed through Table Properties > Cell

Tab to and press Enter on the Options button. The first topic in this dialog is Cell margins. You can adjust all four margins in a single cell or series of selected cells. Make sure to un-check the “Same as the whole table” check box. Your focus is on this check box when you enter the Cell Options dialog.



**Figure 476 Cell Margins dialog.**

You can then tab to each side of a cell: top, bottom, left and right. Make the changes you need to in order to get the spacing effect you want. Make any other changes you want, Tab to the OK button and press Enter.

A caution here is not to use whole numbers. A cell margin of .10 or .20 is more than enough for visual separation. Using whole numbers creates havoc.

You are returned to the Cell tab in the Table Properties dialog. Tab to the Ok button and press Enter.

The cells you've assigned new margins to are now showing these new margin settings.

Try to maintain a uniform table structure as much as possible. Do not have a blank row with another table or set of information in one table – make it two tables. Design your table with care before you begin constructing it.

## **Nested Tables**

Nesting tables is not good form or document structure. If you find yourself thinking of nesting information, perhaps a table isn't the right structure for your content!

Adaptive technology cannot look outside of the table it is in for information. This means that if you are in the cell of a nested table, the only "column and row title information that is available is those for the immediate table. A person using a screen reader would have to move focus out of the nested table to read any information in the table used for layout or what we can call the first table.

What is a nested table?

For those of you who haven't used one of these, don't. A nested table is a table nested within another table.

**Nested Table Sample**  
 A nested table is a table within a table and like those nested dolls we enjoyed as children can go on for several layers. Unfortunately each nested table is not as "accessible" as each layer of the nested dolls were.

Salesperson	First Quarter			Second Quarter
Karen	Jan	Feb	Mar	data
Barnaby	5000	5500	5200	data

**Figure 477 Sample of a nested table.**

In the preceding image a table was inserted into a table to delineate the months January, February and March for the first quarter earnings. What should have been done instead is to create the original table with 7 columns and then use the ability to merge cells for the table headers First Quarter and Second Quarter.

As this table is now, someone using a screen reader will be notified when they enter the first table and then again when they enter the second table. The information in the second table will have no relationship to any information in the original table. Both will be seen by adaptive technology as separate data tables independent of each other.

In Adobe Acrobat the nested table rows and cells will need to be dragged to their logical place within the original table and the second <Table> structure will need to be deleted. If this is not done the tables may not Tag properly but more importantly the information in each table will be separate and read as two tables not related in any way to each other.

## Captions for Tables

Just as you should add a caption for an image or equation, you should add a caption for tables used in your documents. This will also help you remain honest in the use of tables within a document. Many people won't want to put a caption on a table used for design layout.

To provide a caption for a table, select the table and then press the AppKey. The caption dialog box appears. The Caption should begin with "Table #" and your cursor should be just past this text at the point where you can type the caption. As with the image and equation captions, I generally insert a space before I begin typing just to provide some separation between the table identifier and the caption text.

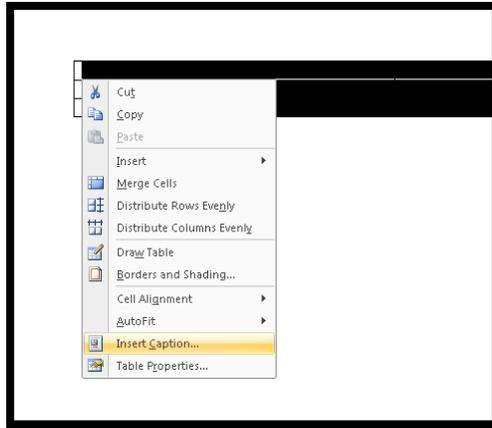


Figure 478 Insert Caption item from context menu.

The Insert Caption dialog opens and your focus is where you can type or paste the text for the caption.



Figure 479 Insert Caption dialog with label changed to Table.

Make sure the label is changed from Figure or Equation to Table. A table caption traditionally goes before the table. This lets people know what to expect when reading through the table.

## Table Summary Attribute

You can add a table summary in Adobe Acrobat using the TouchUp Reading Order tool. Although screen readers currently cannot access this information, it is something that screen reader developers are working on. Remember that the relationship between Adobe and the developers of adaptive technology is one of implementations and support. Sometimes the screen reader developers are ahead of Adobe and sometimes Adobe is ahead of the screen reader developers.

Techniques and tools for creating accessible documents are always changing and evolving. Using the table summary attribute comes under best practices for creating accessible PDF.

To add a table summary to a tagged PDF table:

1. Switch to the TouchUp Reading Order tool. You can press Alt + A, A, T.
2. Select the table you want to apply the summary to.
3. Right click the mouse and choose "Edit table Summary" from the context menu.
4. A dialog opens where you can type the table summary. Of course you can copy and paste information here too.
5. Close the table summary dialog.

Now when you are in the Order tab or have the TouchUp Reading Order tool open, you will see the table summary for this table.

If you cannot apply a table summary, you may need to examine why the table is in the tagged PDF document in the first place. This may in turn mean a redesign of the original document.

## **Table Frames or Drawn Tables**

I've recently come across the notion of "table frames" which appear to be drawn tables that text is dumped into.

If the tool to draw individual table cells is used to create a visual table, this is not an accessible table. There are some interesting side effects that affect the readability of the content. There are also some side effects that will impact your ability as a document author to rearrange content and control table frame/drawn table content.

This type of tool is used in documents, not only Word documents, to create a table instead of using the tools in an application that would create a uniform standard table.

The following image is of a visual table created using several drawn tables positioned to look like a single table.

Salesperson	January	June
Karen	575	650
Barnaby	525	600
Olivia	550	625

**Figure 480 Drawn table in document.**

As with uniform tables, the table can have one of the built-in designs applied to it as shown in the image below.

Salesperson	January	June
Karen	575	650
Barnaby	525	600
Olivia	550	625

**Figure 481 Drawn table with design applied.**

So what are the issues that affect accessibility and readability? These look fine to me.

The first issue is that when an end-user enters this type of "table" they are not told they are in a table. If they have the verbosity set to announce borders and shading, they are told they are in bordered text. It isn't until they move to the second "cell" in the "table" which is empty, that they are told they are in a table structure. They are not, however told how many columns or rows the "table" has. They are told it is a non-uniform table.

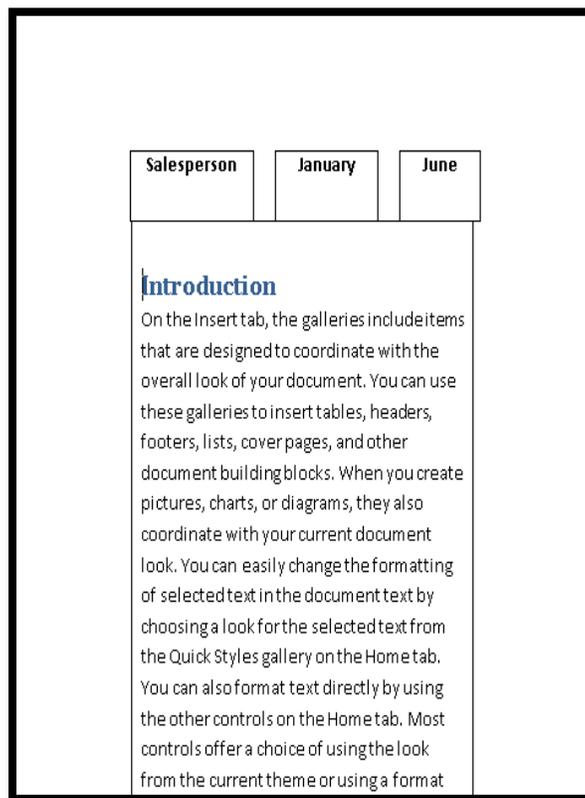
As the end-user moves through the "table" cell by cell, they are not provided any information about where they are. The screen reader indicates the key pressed which is either Tab or Shift + Tab. If

the end-user arrows through the "table" they hear space on the empty cells rather than the cell coordinates. At times we hear things like "table 4, or table 3 column 3 row 4." Remember that each "cell" of this table is an individual table that has been "joined" for a visual effect.

When I created this table, as I added subsequent cells they "joined in a non-uniform table structure. Pressing Enter after the last table I drew created a duplicate row which then formed the "table."

Even if the first row is selected in either sample shown previously in this topic and identified as the header row to repeat, the information is not available to someone using a screen reader.

Another interesting element to drawing tables is that if there is another drawn table near the one you are working on, they seem to recognize each other and connect.



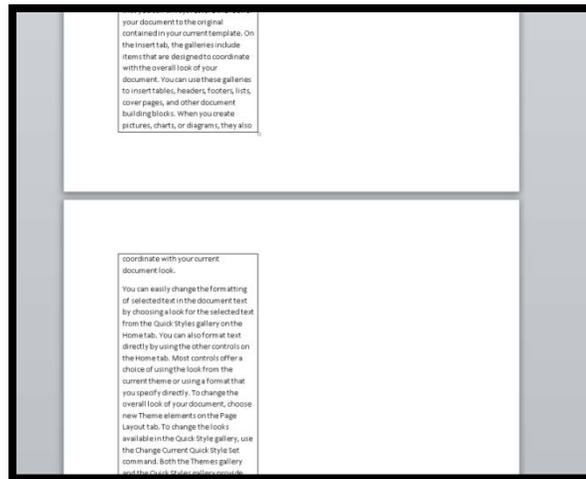
Salesperson	January	June
<b>Introduction</b> On the Insert tab, the galleries include items that are designed to coordinate with the overall look of your document. You can use these galleries to insert tables, headers, footers, lists, cover pages, and other document building blocks. When you create pictures, charts, or diagrams, they also coordinate with your current document look. You can easily change the formatting of selected text in the document text by choosing a look for the selected text from the Quick Styles gallery on the Home tab. You can also format text directly by using the other controls on the Home tab. Most controls offer a choice of using the look from the current theme or using a format		

**Figure 482 Table frame with table headers from previously drawn table in document.**

For example I had created what can be referred to as a "table frame" borrowing from concepts I've found on the Internet in help documentation, and my drawn table cemented itself to the table frame and couldn't be separated.

Not only that, when I had the header row repeat on the first table, it did so on the second table...the one containing the text. I used a table break to separate the two tables.

This brings us to the other disadvantage of using a table frame or table to position content. If a table frame or drawn table is used as a container for text, as it is resized it will spill over to the next page. It does not behave as columns would. You will have to remove some content from the table and try to find a way to display it on the same page. I tried to create a table next to this one on the page without success. This is not a challenge! It is a recommendation not to use drawn tables or table frames to position content!



**Figure 483 Drawn table resized to look like a column with content spilling onto next page.**

Parallel columns have their own unique issues when it comes to accessibility. The difference is that there is a technique you can use to modify the reading order and retain the look and feel you want for parallel columns.

The next chapter takes a closer look at using table headers and the difference between headings, page headers, table headers...and the headaches they cause.

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# Headings, Headers, Headaches

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One of the most confusing items for document authors new to accessible document design is the language around headings and headers. This article attempts to help clarify which is which and when to use a heading or a header.

Much of this next bit of information is available elsewhere in this book. I wanted to consolidate the information on headings and headers in one place so you could compare their functionality while reading the book without skipping backward and forward to other chapters.

## Headings

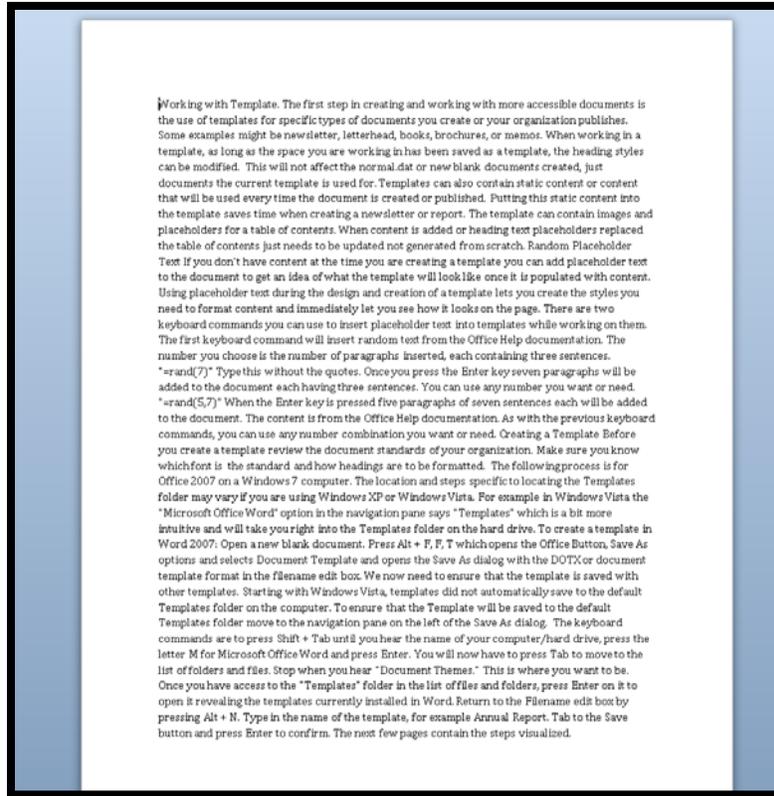
A heading is a built-in style in Microsoft Word. It also provides a navigational structure for someone using adaptive technology such as a screen reader or screen magnification with Text-to-Speech capabilities. This means that someone who is using an adaptive technology that can list headings or move through a document from heading to heading can find the topic and content they want to. Read quickly and begin reading it.

Headings are used in tagged PDF, Braille, HTML and word processed documents.

If you simply fling formatting at text to create the visual representation of a change in topic you are not adding the underlying structure that adaptive technology uses to identify proper headings. The text will be seen as a paragraph which is its natural default structure in a document.

Someone using a screen reader or Text-to-Speech tool would have to either use the Find tool to see if the word headings were on the page or try to find one that seemed to start a new topic or listen to the entire page until they found what they wanted. This is true in a document as well. Without a clear way to navigate to specific content time is wasted or reread over and over again until the desired information is found.

Consider a textbook where all the text is formatted as paragraph text, or a novel where you couldn't tell where one chapter ended and another began or a newspaper with columns of plain text with no way of finding the article you want. Everything looks the same to you. The text might be broken up by images but these would be the only breaks in an endless stream of text. This is the experience of someone who can't see documents or see them clearly.



**Figure 484 Page with only paragraph text.**

In the preceding image can you find the changes in topic? How many of them are there? Would you just give up once you glance at this page? Would you want to read this document? What if this was your class textbook?

Now look at the next page and the image of a document with headings. How much easier is it to find the information you want?



**Figure 485 Page in document with headings.**

To add a heading to your document, I recommend selecting the text you want to make a heading or navigational point in the document first. This ensures that the formatting doesn't spill over to other content which can create a bit of chaos if you are using adaptive technology. For example if a heading level is applied to a blank line and someone using a screen reader asks for a list of headings or navigates to that next heading they would only hear the heading level...nothing else because there is no content for that heading structure.

Using the heading styles lets you generate a Table of Contents that is linked and provides a supportive navigational structure to your documents.

Contents	
Author's Note.....	2
Dedication.....	2
Introduction.....	4
What is a Logical Document Structure?.....	4
Why do I Need to Have a Logical Document Structure?.....	4
Before We Begin.....	5
The Appkey.....	5
Focus and Selection.....	6
Working with Templates.....	7
Creating a Template.....	7
Themes.....	7
Custom Styles.....	8
Working with Styles.....	8
Document Templates.....	13
Index and Table of Contents.....	15

**Figure 486 Table of Contents generated through use of headings.**

Headings are used to generate Bookmarks if you convert your Word document to a tagged PDF document or Braille using the Duxbury Braille Translation software.

So you've implemented one structural element that optimizes the accessibility and usability of your document.

Don't pick the look and feel of a heading style and apply that everywhere in the document. I've seen documents where every heading is a heading 5. This means that there is no content more important than a heading level 5 in the document when the real reason for the use of the heading level is that the document author liked the way heading 5 looked.

This brings us to the other important element of headings: they provide the hierarchy of the content in the document. For example you move from a heading 1 to a heading 2 and then a heading 3. You don't "jump the queue" by creating a heading 1 followed by a heading 3. A document cannot have headings that are all at the same level. This removes the hierarchy of content.

If you don't like the way the headings look I recommend you create a template and modify them to the look and feel you want. There are details on how to do this in the chapter on "Working with Templates" in this book.

## Page Headers

Page headers are located in the top inch or margin of a page. They are not part of the document content. Conversely page footers are in the bottom inch or margin of the page and also do not contain content essential to the understanding of the document.



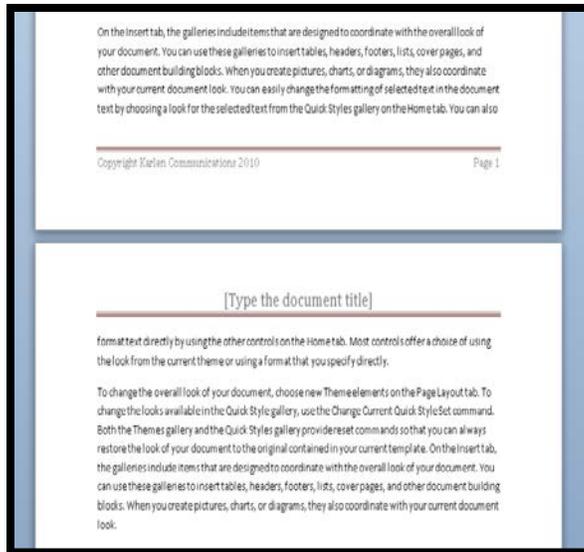
**Figure 487 Page Header with heading and text on page.**

I've seen people try to put the title of a document in the page header as the only place it appears in the document. This would put the title of the document on every page rather than on a title page or cover page to the document.

If we draw on the role of page headers from tagged PDF they are classed as "non-printing elements" and are ignored by adaptive technology. How many of us read the header or footer on each page. We tend to skip over that content unless we need to refer to it.

Putting essential information into a page header means that even in Word adaptive technology will ignore the page header unless the person reading the document purposely goes into the header or footer area of the page.

Generally we don't go into headers or footers on a page unless we are the document author.



**Figure 488 Page Footer on one page and Page Header on next page.**

Page headers cannot be used for navigation or for topic changes. They provide additional information that is not critical to the understanding of the content such as the date the document was created, the filename of the document, the page number or the name of the chapter.

If you had to listen to this information at the beginning and end of every page you would realize how intrusive this information is and how having it read to you on every page of the document interrupts the comprehension of the content.

If there are headings in a document and a linked Table of Contents, there is no need to have page numbers read to you. If you are using a screen reader there is generally a keyboard command to identify the page number you are on in Word. For the JAWS screen reader this is JawsKey + NumPad 3.

## Table Headers

It is not appropriate or good form to use headings in tables. Tables should not be used for design layout. “Headings” should not be used in tables. The underlying “Table Header” structure should be used if it can be implemented.

Table headers are also called column and row titles. You can have more than one row of column titles and more than one row of row titles for a specific piece of data. Unfortunately at this time there is no mechanism in Word to identify row titles.

Table headers or column and row titles provide information about the data in the table. If you were in cell C4 for example and just heard a number like 5200 you would have no idea what that number means. However if you were in cell C4 and heard “Units Sold 2009, Fence posts, 5200”. You have the

context and relationship of the data in cell C4 with surrounding data. You could then move to cell D4 and hear “Units Sold 2010, Fence Posts, 6700” and know that more units of fence posts were sold in 2010 than 2009. Without the column or row titles/table headers, you would just hear the numbers: C4, 5200, C5, 6700.

Table Header	Table Header	Table Header	Table Header
Table Header			

**Figure 489 Table Headers for column and row titles.**

In Word you select the first row or few rows of the table and make sure that the “Header row repeat” is turned on. The keyboard command for this is Alt + J, L, J while you have the row or rows selected. This translates into Table Tools, Layout Sub-Ribbon, and Header Row Repeat. You can also do this by selecting the rows and pressing the AppKey to open the table context menu, choosing Table Properties, Rows and checking the Header row repeat” option.



**Figure 490 Header Row Repeat button on Table Tools Layout Sub-Ribbon.**

The importance of the header rows repeat is that when the document is converted to tagged PDF these rows will be identified as TH or “Table Header” cells. If this is not done then the repair for this involves the manual tagging of the table headers. You will need to manually add the TH Tags for row titles so that they are table headers as well.

An important note here is that if you are using a screen reader you set the column and row titles using your adaptive technology. Generally screen readers do not depend on the header row repeat tool or the ability in Word 2007 or 2010 to check the check boxes for column and row header on the Design Sub-Ribbon in the Table Tools.

Then why would I use it when creating a data table?

If your table spans more than one page you would want the header rows at the top of each page so that someone with a learning, cognitive or visual disability doesn’t have to keep going back to the beginning of the table to jog their memory about what the relationship of data is.

As mentioned previously using the Header Row Repeat adds that table header structure if you are going to convert your Word document to another format.

You can visually format column and row titles by creating a table heading style NOT based on existing headings in Word. You don't need the underlying heading structure for table headers since you are looking at the relationship between pieces of data not providing a means to navigating to a specific row or column. The adaptive technology has keyboard commands for working in tables and being able to move to specific cells, the top of a column or start of a row is among them.

## Table Headers in Tagged PDF

It is important to design your data tables before you begin adding data to them. The key to this is to establish the relationships between the pieces of data.

For example in a simple table with column and row titles someone can move into the data and refer up to the column title and to the left to the row title to hear what the data is related to.

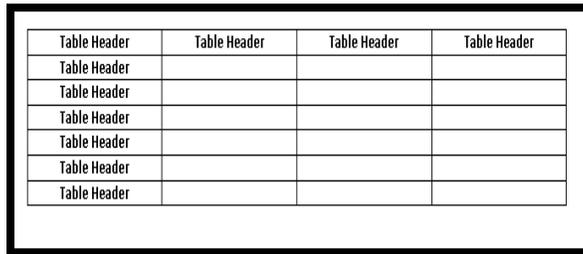


Table Header	Table Header	Table Header	Table Header
Table Header			

Figure 491 Table with single column and row titles.

If you have two row titles or two pieces of information that need to be referenced in order to understand the data, both will need to have a TH Tag in a tagged PDF document.

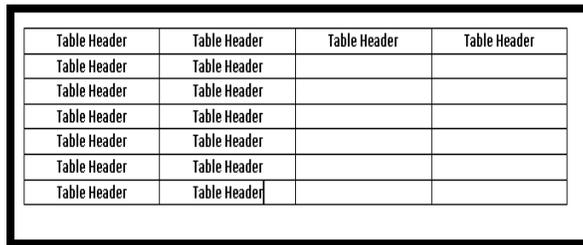


Table Header	Table Header	Table Header	Table Header
Table Header	Table Header		
Table Header	Table Header		
Table Header	Table Header		
Table Header	Table Header		
Table Header	Table Header		
Table Header	Table Header		

Figure 492 Table with one column title and two row titles.

For this type of data when you go into column 3 you need the information from the first two cells in this row to make sense of the data. Having access to only one of these pieces impedes the understanding of the data in cell C4.

Figure 1. Flowers planted in garden 2010.

Plant	Colour	By Retaining Wall	Along Fence
Iris	Blue	10	15
Iris	Purple	8	10
Iris	Yellow	7	8
Lily	Orange	10	6
Lily	Yellow	15	10
HollyHock	Purple	6	5

**Figure 493 Table with two row titles and one column title with data.**

In the preceding table, if you were in cell C4 and there were no column or row titles you would hear “column C, Row 4, 7.” What does this mean?

If you had access to one column title/table header and one row title/table header you would hear “Column C, Row 4, By Retaining Wall, Iris, 7” which gives you some of the relationship information.

However if you were to go up one row you would hear “Column C, Row 3, By Retaining Wall, Iris, 8.” You would not have access to the second row title of “Colour” which provides additional information about the data in cell C3.

In a tagged PDF document row 1 and columns 1 and 2 would have the TH or Table Header Tag. If this were an HTML document the same would apply. Any information that provides additional or supportive relationship information to the end-user has to be tagged properly in PDF and HTML.

If you look at the preceding image of a table with two row titles/table headers you might think that it would look better if you didn’t have to repeat the names of the flowers.

Table Header	Table Header	Table Header	Table Header
Table Header	Table Header		
	Table Header		

**Figure 494 Content in first row titles removed.**

In the preceding image I’ve left the gridlines in for the table. Often a document author will leave the cells as they are but only have the information essential to understanding the relationship between data in the first cell it applies to.

Taking our flower table example the word “Iris” would be in cell A2 but not in cells A3, A4 or A5. Visually the person reading the table is supposed to decode the fact that Iris applies to the empty cells until information in subsequent cells changes, in this case to “Lily.”

Table 1 Flowers planted in garden 2010.

Plant	Colour	By Retaining Wall	Along Fence
Iris	Blue	10	15
	Purple	8	10
	Yellow	7	8
	Orange	10	6
	Yellow	15	10
Holly Hock	Purple	6	5
	Yellow	25	15
	Pink	15	20

Figure 495 Sample of table where some row titles have been removed.

Without the use of the Scope attribute in PDF or HTML this relationship is non-existent. The cell is empty and adaptive technology doesn't take the time to look around to see what the document author's intent was in leaving the cells empty. Adaptive technology is a "mechanical reader" reading what is there, not an "interpreter" providing context where there is none.

If a document author merges the cells for the Flower column, the Scope or ColSpan attributes will need to be implemented in PDF and HTML to indicate that this merged cell area is a Table Header/Row Title for several rows.

Table Header	Table Header	Table Header	Table Header
Table Header	Table Header		
	Table Header		

Figure 496 Merged row title content.

In the preceding image of a table with two row titles/table headers, the first cell in rows A2 through A7 have been merged to visually show that the information in cell A2 should be used as the row title for cells up to and including A7. In a tagged PDF document this would be tagged as a TH or Table Header. It would be the same in HTML. The one thing to keep in mind is the underlying structure of the table to ensure that all cells have been tagged properly. One of the dangers in relying on this method of row title identification is that a conversion tool to tagged PDF will become confused and cells in columns B, C and D in this case, will be randomly created and have to be repaired in Adobe Acrobat manually. Often what happens is that the conversion tool fills in the "missing" cells in rows 3 through 7 and again the repair will need to be done in Adobe Acrobat manually.

Again using the flower example we can see the importance of using the scope attribute to provide the relationship information for table data.

Table 2 Flowers planted in garden 2010.

Plant	Colour	By Retaining Wall	Along Fence
Iris	Blue	10	15
	Purple	8	10
	Yellow	7	8
	Orange	10	6
	Yellow	15	10
Holly Hock	Purple	6	5
	Yellow	25	15
	Pink	15	20

**Figure 497 Sample table with merged row titles.**

This is the same for data tables with multiple column titles.

Table Header	Table Header	Table Header	Table Header
Table Header	Table Header	Table Header	Table Header
Table Header			

**Figure 498 Table with multiple column titles.**

The first two rows of the preceding table have column titles/table headers which will need to have the TH Tag in a tagged PDF document.

The best rule to follow when working with a tagged PDF document and data tables is to ensure that any column or row title that provides additional or supportive information to the understanding of the actual data has a TH Tag.

If you are working with dynamically generated content it is easier to have the data filled into every cell than to try and create these visual shortcuts to comprehending the data. A dynamically generated tagged PDF is one that an end-user can create on-demand” by asking for specific information such as current investments or pension benefits. A tagged PDF template is then combined with the dynamic data which is also added as a tagged element to the template and the end-user can read the entire document. The “life span” of this content is the length of time the end-user has the document open on their computer [unless they have the ability to save or print the document]. Each time they ask for their investments or pension benefits a new document is generated with the latest most up-to-date information.

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# Finding Highlighted Content

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For those of us who use a screen reader or who use Microsoft Word from the keyboard one of the most often asked questions is how do we find things such as highlight or specific styles in documents.

People who are using adaptive technology such as a screen reader will need to know that specific types of formatting are in a Word document in order to find them. We don't generally search for formatting such as highlighting unless we know it is there. We also don't generally go through documents word by word unless we are editing our work. The accessibility of using something like highlighting is that we can find it if we know it is there.

This chapter combines instructions on how to create accessible highlighting in a Word document with how to find that highlighting in a tagged PDF document. It is an expanded version of a Karlen Communications Blog I wrote on the same topic.

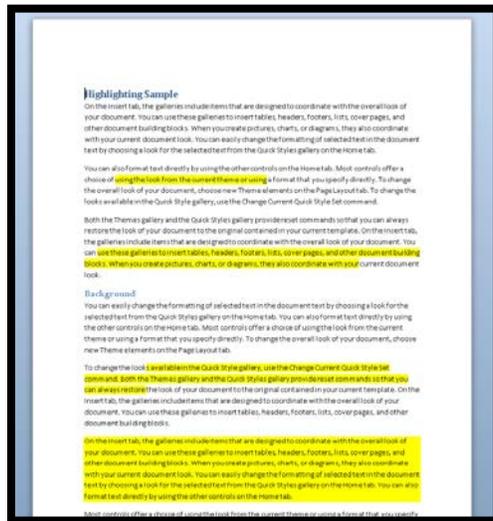


Figure 499 Document with highlighted text.

## Finding Formatting in a Word Document

There are two approaches to finding formatting in Word documents and both are accessible. This section provides information for Word 2007 and 2010.

If you are editing and revising a document you can use Track Changes since screen readers should be able to identify the edits. The JAWS screen reader has a keyboard command for getting a list of Track Changes in a Word document: JawsKey + Shift + R which stands for revisions. Using JAWS, pressing Ctrl + Shift + Apostrophe will give you a list of comments. If you are reading a document in "SayAll" mode using JAWS, pressing the letter R will move you to the next revision/Track Changes, while pressing the letter N will move you to the next comment. You can also press Windows Key + Semi-Colon to open the Virtual Viewer in JAWS and get a list of footnotes, endnotes, comments or Track Changes. Of course getting the Track Changes information requires Track Changes to be turned on.

The previous paragraph describing techniques and keyboard commands is included for information purposes only. Sometimes it is helpful when we know what can be done in terms of working with Word documents and finding the information we need using a screen reader.

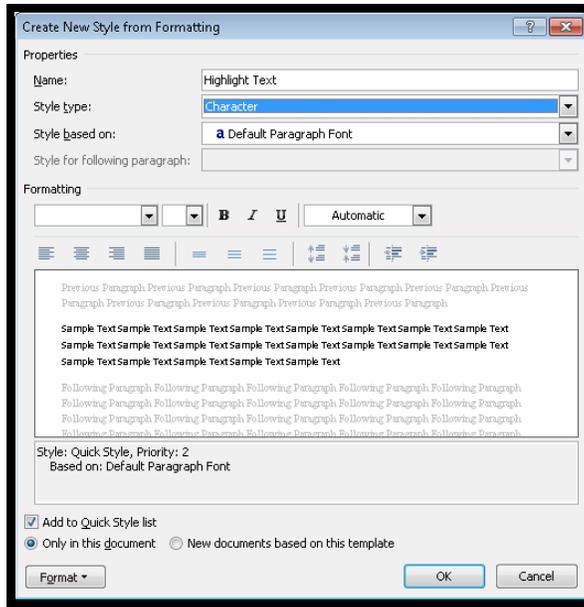
## Create a Custom Highlight Text Style

If you are using Word 2003 there is a similar process and technique. You would open the Styles Pane by pressing Alt + letter O, S for Styles and Formatting. I do not have Office 2003 on any computers at this time but the ability to find Styles should be available in the Find dialog as it is in Word 2007 or 2010.

The first option for Word 2007 and 2010 would be to create a specific character style. In this example I'm looking at highlighted text. For people using screen readers this might seem a problematic task. However if you create a style for highlighted text in a document someone using a screen reader will be able to skim the document just looking at that highlighted text. Since the keyboard commands are Word based rather than screen reader based, anyone using the keyboard can also use this technique.

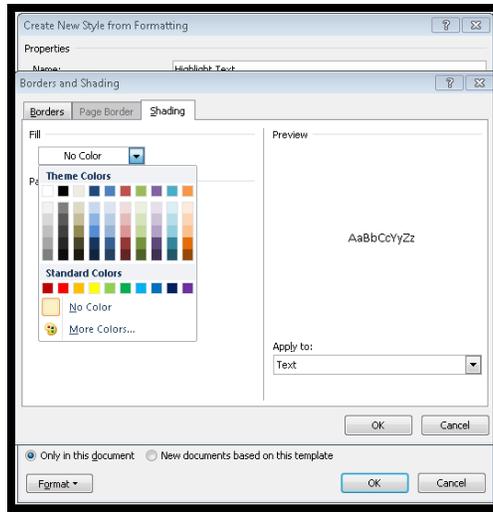
First create your custom style for highlighted text.

1. Press Alt + H, F, Y in either Word 2007 or 2010 to open the Styles Pane.
2. The Styles Pane opens to the right of your document.
3. The Normal paragraph style should be selected because that is the style in use at the cursor point.
4. Tab down to the New Style button and press Enter.
5. The New Style dialog opens.
6. Call the new style Highlighted Text. By default you are in the Style name edit area of the New Style dialog.
7. Tab to the Style type and choose "Character."



**Figure 500 New Style dialog showing character style.**

8. The only thing we are going to change is that the text will have a yellow highlight behind it.
9. Press Alt + letter O to open the Format options for the Highlighted Text style.
10. Choose the Borders option.
11. When the Borders and Shading dialog opens move to the Shading tab by pressing Ctrl + Tab.
12. The first item in this tab is the fill option.
13. Tab to it and use the Down Arrow to open the colour palette.
14. Choose the yellow colour from the Standard Colours area of this colour palette.
15. Tab to and activate the OK button.



**Figure 501 borders and Shading dialog open with Shading tab in focus and colour palette open.**

You can now decide whether to use this style in the current document or in documents based on this template.

Do not choose to automatically update. This often breaks the accessibility of your document and lets others revising the document add clutter to existing styles.

Once you've made your decision about whether this style will be available in this document or templates based on this document, Tab to the OK button and press Enter.

If focus is not on the Styles Pane press f6 until it has focus. To close the Styles Pane press Ctrl + Spacebar, C while the Styles Pane has focus.

If you've put the Apply Styles Pane on the Quick Access Toolbar you'll be able to quickly move to it and type in "Highlighted Text" when you have text selected. This will apply that style to the selected text.

You can also open the Apply Styles Pane on the fly by pressing Ctrl + Shift + S. This is a toggle so pressing this keyboard command again will close the Apply Styles Pane.

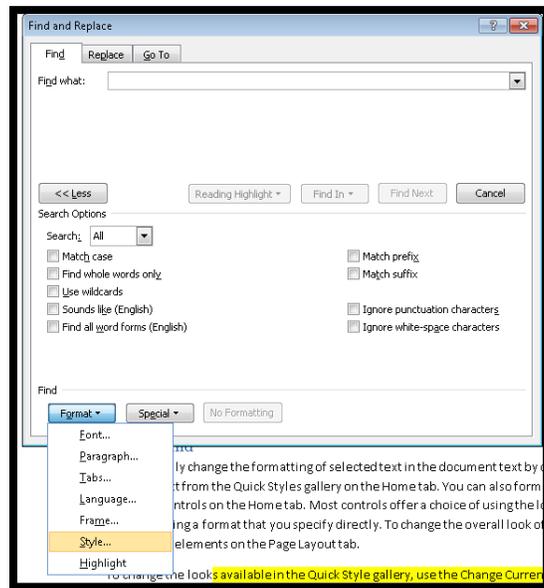


**Figure 502 Apply Styles Pane.**

## Finding the Style in a Word Document

Now that you have the style for highlighted text created it is easy to find all instances of it in the document.

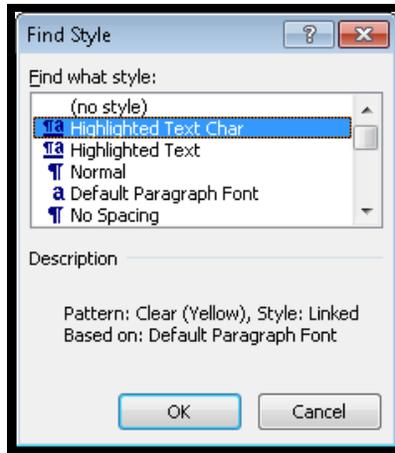
1. In Word 2007 press Ctrl + F to open the Find dialog. In Word 2010 press Ctrl + G to open the Go To dialog the press Ctrl + Page Up until you have access to the Find dialog.
2. Press Alt + M for More Options.
3. Once more options are displayed press Alt + letter O to open the Format options.



**Figure 503 Find dialog with Formatting options context menu open.**

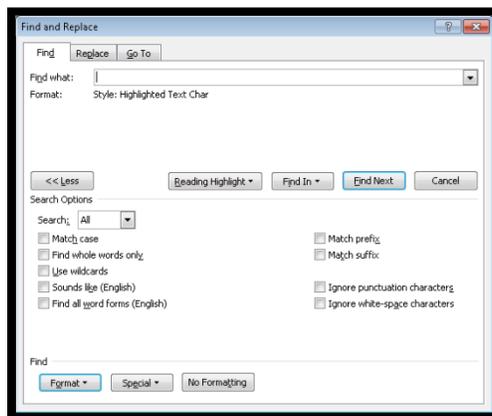
From the list of formatting options to find in the document choose Style.

When you activate the Styles item in the format context menu a dialog opens with all of the formatting used in the document. You can use first character navigation to press H and quickly move to “Highlight Text” which is your custom style.



**Figure 504 Find Styles dialog.**

The words “Highlighted Text” will appear in the Find dialog just under the edit area where you would normally type in a word or phrase to find.



**Figure 505 Find dialog with style showing under the Find what edit area.**

Do not enter any words into the Find edit area or you will only find those words that are highlighted not highlighted text in general.

Once you find the first instance of the style Highlighted Text you can press Escape to close the Find dialog and use the keyboard to find next and previous instances of highlighted content.

Press Ctrl + Page Up to find the previous instance of Highlighted Text.

Press Ctrl + Page Down to find the next instance of highlighted Text.

Typically Ctrl + Page Up or Page Down moves you from page to page in the document. Once you activate a Find you will keep cycling to found items. To return to using these keyboard commands to move from page to page press Ctrl + G to open the Go to dialog. Type in a page number. I usually

type in the page that I am on. Go to that page by pressing enter after typing in the page number. Press Escape to close the Go to dialog. Ctrl + Page Up now moves you to the top of the previous page and Ctrl + Page Down moves you to the top of the next page.

If you are using Word 2010 there is a new Find Pane that doesn't have the options the "old find dialog" had. You can still use the old Find dialog for this type of tasks by pressing Ctrl + G to open the Go to dialog and then pressing Ctrl + Page Down to move to the Find tab. Follow the steps as outlined in this article to find formatting.

These steps can also be used with the Replace dialog to replace wonky formatting in a document.

Once you've searched for the formatting you will need to remove it from the Find dialog in order to search for other things. To remove the formatting from the Find [or Replace edit area of the Replace dialog] make sure that your focus is in the "find what" edit area and press Alt + T. If you are using the Replace dialog make sure that your focus is in the "Replace with" edit area and press Alt + T. [As an example, using the Replace dialog, Ctrl + H you can find bold text and replace it with underlined text.]

## Using Highlighting

Office 2007 and 2010 have a Highlight tool from the Home Ribbon. The keyboard command to highlight selected text is Alt + H, letter I. This is a split button that is currently broken in both versions of Word. Normally the keyboard command would not open the colour palette for Highlight. However since most people use the yellow highlight this is OK. It is a bit trickier to use if you want a different colour highlight.

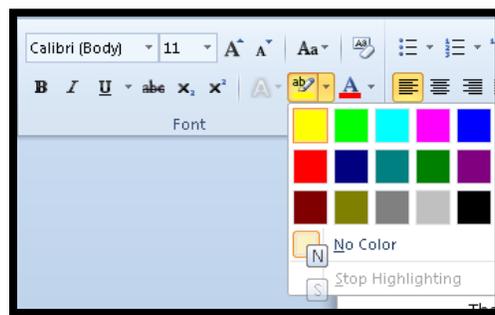
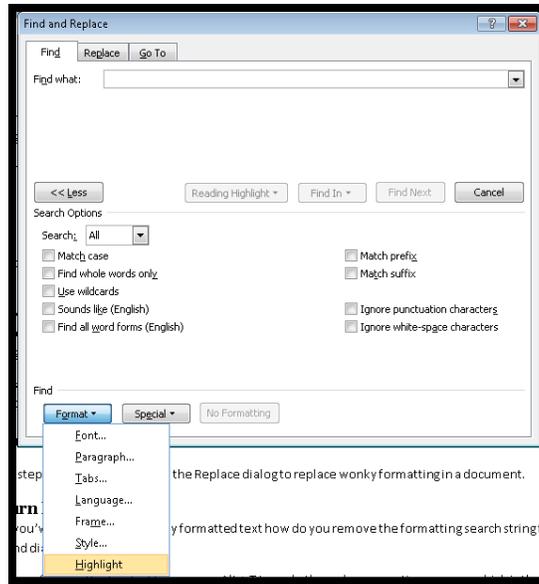


Figure 506 Highlight tool on the Home Ribbon.

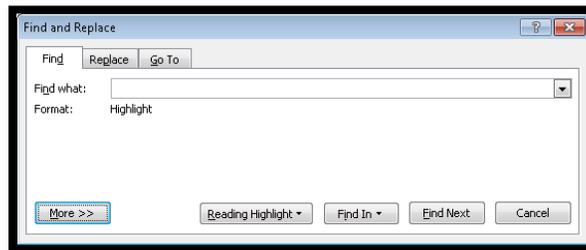
Now that we have the selected text in our document highlighted we can use the same Find tool as with the Highlighted Text style to find highlighted text.

This time under the Format button in the Find dialog we can choose "Highlight" from the context menu.



**Figure 507 Highlight selected in context menu for Format in Find dialog.**

As with finding a style the word Highlight will appear just under the Find edit area of the Find dialog.



**Figure 508 Find dialog showing Highlight as formatting to find.**

Don't type in any words or you will only find those words with highlighting. We want to find all text that is highlighted.

Once you've found the first instance of highlighted text press the Escape key to close the find dialog and use the Ctrl + Page Up and Ctrl + Page Down to move to the previous and next occurrences of highlighted text.

If you are using Word 2010 there is a new Find Pane that doesn't have the options the "old find dialog" had. You can still use the old Find dialog for this type of tasks by pressing Ctrl + G to open the Go to dialog and then pressing Ctrl + Page Down to move to the Find tab. This. Follow the steps as outlined in this article to find formatting.

These steps can also be used with the Replace dialog to replace wonky formatting in a document.

Once you've searched for the formatting you will need to remove it from the Find dialog in order to search for other things. To remove the formatting from the Find [or Replace edit area of the Replace dialog] make sure that your focus is in the "find what" edit area and press Alt + T. If you are using the Replace dialog make sure that your focus is in the "Replace with" edit area and press Alt + T. [As an example, using the Replace dialog, Ctrl + H you can find bold text and replace it with underlined text.]

## **Return Find to Default**

Once you've looked for specifically formatted text how do you remove the formatting search string from the Find dialog?

With your focus in the Find edit area press Alt + T to cycle through some options among which is the removal of the searched for formatting.

If you are using the JAWS screen reader you will need to route the JAWS cursor to the PC cursor and use the Down Arrow once to review the changes/cycling information. Use the ability to route the JAWS to the Pc cursor because you know where the PC cursor is and it is easy to just move down one line in the dialog, read the information, switch back to the Pc cursor and continue your work.

## **Getting Formatting Information with JAWS**

If you are using the JAWS screen reader you have a few options to review formatting of text.

First at any point in the document you can press JawsKey + F to have formatting information given to you. If you've used the Highlight tool or a specific style for highlighting that information is given to you. Of course you have to suspect that there are formatting changes at the cursor point to use this effectively.

The second and more annoying method is to have the Style Changes in the JAWS verbosity settings turned on. Press JawsKey + V to open the JAWS verbosity settings for Word. Press S until you hear the option for Style change announcement. It is off by default. This will only give you style changes for the text at the cursor point. You will need to move through the text to have the style changes announced for each character or word.

The third option would be to use the sound schemes in JAWS to play a specific sound for highlighted text as you come across it.

All of these methods are dependent on the changes in formatting being at the cursor point. If you know a document has a specific style like highlighted text using the Find tool is a more efficient way of skimming through that isolated text in a Word document.

# Find Formatted Text in tagged Documents

Once we convert a Word document with highlighted text in it to tagged PDF how do we find this type of formatting information?

The answer is not a simple one.

For any type of formatting such as bold or italic, change in font or font size there is no usable method or technique for someone who is using adaptive technology such as a screen reader to know where these formatting changes take place in the tagged PDF document.

For our example the goal is a specific one which is why this technique is usable. We want to be able to quickly locate the highlighted text in a document.

Since there are no “Tags” that can include attributes such as bold, highlight, font colour or font size, using the structural elements such as proper heading styles in Word is important.

It should be noted that PDF Tags have not advanced significantly since Acrobat 7. Why do I include this statement? It depends on which version of Word you use how many iterations of the Highlight Text Style are converted to Bookmarks in the resulting tagged PDF.

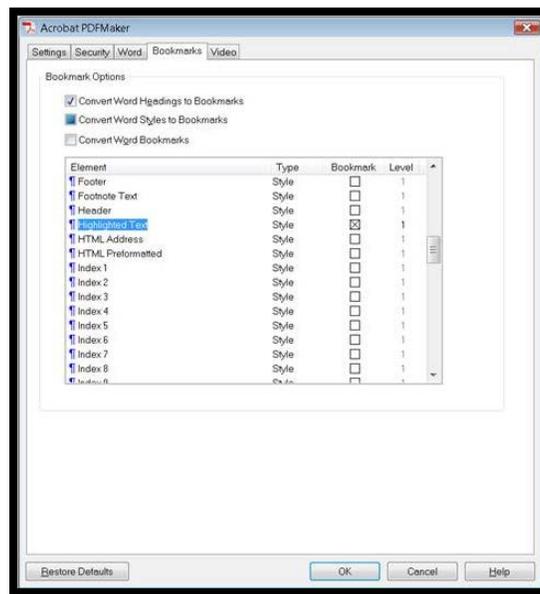


Figure 509 Bookmarks tab in Conversion Settings for Acrobat add-in for Word

If you are using Word 2003 and go to the Acrobat item on the Menu bar you will see the “Conversion Preferences” option. If you activate that and go to the Bookmarks tab you will be able to tell the Adobe Acrobat conversion tool to use the style you created, Highlight Text, to create Bookmarks in the converted tagged document. You do not want to choose all of the styles! Just the headings and Highlight Text style.

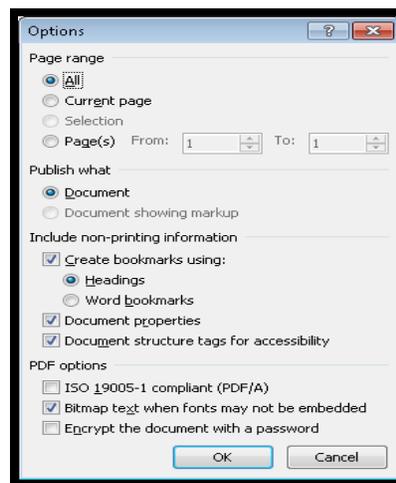
This topic is going to assume that you are working with Word 2007 or 2010 [

The initial release of Acrobat X did not have support for a 64-bit version of Microsoft Office 2010. The first service pack or patch might include this. Make sure you update Acrobat X when updates are available to ensure you have the best tools for working with tagged PDF documents.

In Word 2007 in the Adobe add-in preferences just choose to make headings Bookmarks. It makes little or no difference if you choose to make the Highlight Text style Bookmarks as well.

You can use the Microsoft add-in to Save As PDF or completely inaccessible XPS format and choose to use the heading styles as Bookmarks. This setting is found under the Options button in the Save as PDF or completely inaccessible XPS add-in dialog.

The initial release of Acrobat X did not have support for a 64-bit version of Microsoft Office 2010. The first service pack or patch might include this. Make sure you update Acrobat X when updates are available to ensure you have the best tools for working with tagged PDF documents.



**Figure 510 Options dialog for Microsoft Save As PDF add-in for Word.**

In Word 2010 to save the well-structured document as tagged PDF:

1. Press F12 to open the Save As dialog.
2. Give the document a name.
3. Press Tab to move to the Files of Type list and choose PDF.
4. Once you do this you will have an "Options" button appear in the Save As dialog.
5. Once you activate the Options button one of the check boxes is to use Word's heading styles to create Bookmarks. Make sure this is checked. This is a two part process. If you are using the keyboard press Alt + C to check the Create Bookmarks check box then either press Tab to move to the first of two radio buttons or Alt + H to move to and check the Headings radio button.

6. Tab to the OK button and press Enter to confirm your choice.

In the Options dialog for the Save As PDF or completely inaccessible XPS add-in you would only want to use the Bookmarks in Word if you have created Bookmarks as navigational points in the documents.

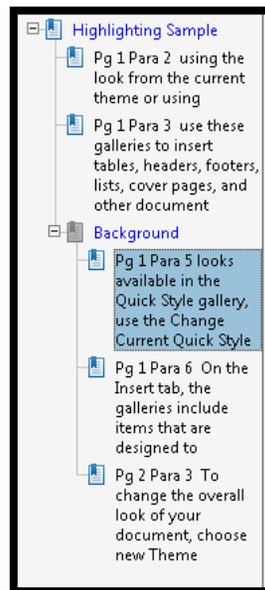
Whichever process you use, you now have a tagged PDF document.

## Repairing PDF to Find Formatting

Once we have a tagged PDF document we can use the Bookmark tool in Adobe Acrobat to add Bookmarks to the PDF document.

To add a Bookmark in a tagged PDF document:

1. Use the Select Text tool which is usually located to the left of the Hand tool to select the text you want included as a Bookmark. In this example it will be highlighted text in the document.
2. Press the Right mouse button to open the context menu. In this case the AppKey doesn't work reliably.
3. Choose "Add Bookmark" from the context menu.
4. The Bookmark appears in the list of Bookmarks for the document.

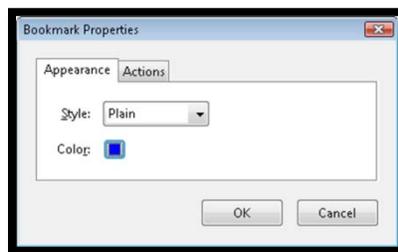


**Figure 511 Bookmarks for highlighted text in a tagged PDF document.**

It will depend where your focus is in the list of bookmarks which level the new Bookmark will be placed at. You may have to drag it to a second or third level bookmark for the document.

An additional technique for separating the headings in the list of Bookmarks from the highlighted text would be to make all headings blue and/or to put preface text

before the highlight text Bookmarks such as PX Para Y:” Both of these options or additional accessibility features are illustrated in the preceding image.



**Figure 512 Bookmark Properties dialog in Acrobat.**

This technique not only helps people using adaptive technology such as screen readers locate highlighted text in a tagged PDF document, but also helps people with learning, cognitive or visual disabilities. Anyone can access the Bookmarks in a tagged PDF document! Using this technique for highlighted text allows everyone to skim through the highlighted text quickly.

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# Columns and Tri-Fold Brochures

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I decided to add an entire chapter on columns since this technique is used in many documents. I've included tri-fold brochures in this chapter because visually on a page they may at first appear to be text in columns.

Document authors can alter the reading order of information once it's tagged. For example, if you have parallel columns with the document text on the right and a quote from that text highlighted on the left, it all gets tagged in order which may put the quote in the middle of the text. It changes the reading order of the document for those using adaptive technology. Whereas our eyes will pick up the quote or sidebar first and then move to the text, someone using a TTS tool or a screen reader may have the text and quote jumbled together. As a document author, you can find the paragraph or quote and move it in the logical document structure so it makes sense to the reader. The visual appearance of your document isn't altered, but people accessing the content in a non-visual way will be able to better understand what they are reading.

Consider this example

"You might have a very insightful quote here. The quote may or may not be included in the text on the right."

Document authors can also alter the reading order of information once it's tagged. For example, if you have parallel columns with the document text on the right and a quote from that text highlighted on the left, it all gets tagged in order which puts the quote in the middle of the text. It changes the reading order of the document for those using adaptive technology.

Whereas our eyes will pick up the quote first and then move to the text, someone using Read-Out-Loud [comes with Adobe Reader 6.x or later] or a screen reader will have the text and quote jumbled together. As an author, you can find the paragraph or quote and move it in the logical document structure so it makes sense to the reader. The visual appearance of your document isn't altered, but those accessing the content in a non-visual way will be able to better understand what they are reading.

When this is converted to tagged accessible PDF, there may need to be repairs made to the text. In our example, the quote on the left will be tagged and read before the content in the column on the right. If, instead of a quote, we had headings for content, the tagging tool would tag down the left column and then down the right column. This is correct as far as the formatting of the content is concerned. However, we need to consider document author intent. By placing headings in the left column at points where topics change in the right column, the formatting of the content into parallel columns is a visual design and therefore, the headings in the left must be moved to the Tags Tree just before their associated content in the column on the right.

## **Reading Order**

Document authors can also alter the reading order of information once it's tagged. For example, if you have parallel columns with the document text on the right and a quote from that text highlighted on the left, it all gets tagged in order which puts the quote in the middle of the text. It changes the reading order of the document for those using adaptive technology.

## **Sidebars**

Whereas our eyes will pick up the quote or sidebar first and then move to the text, someone using Read-Out-Loud [comes with Adobe Reader 6.x or later] or a screen reader will have the text and quote jumbled together. As an author, you can find the paragraph or quote and move it in the logical document structure so it makes sense to the reader. The visual appearance of your document isn't altered, but those accessing the content in a non-visual way will be able to better understand what they are reading.

In the sample above, the adaptive technology will read "Reading Order" followed by "Sidebars" and then the information in the second column. Since the document author visually appears to intend the text in the left column to be headings or topic changes, a person using adaptive technology will not benefit from this visual layout.

If this is not implemented correctly in Word, when the document is tagged, repairs will be needed in the form of moving the "visual headings" to their logical reading order in the Tags Tree.

Again, if you look in the Order panel of a document you may see this block of content identified as a block of text, but unless you go through the Tags, you will not know that the Tags and logical reading order are off.

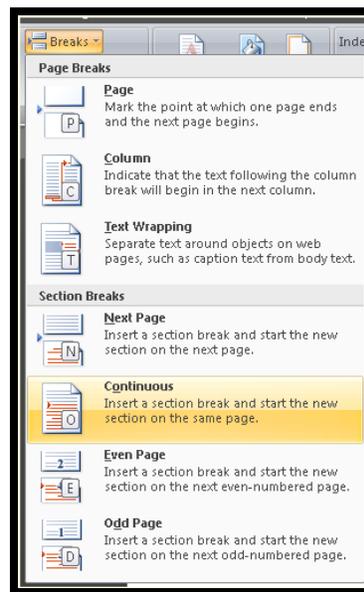
Columns by their very nature format text so that it can be read down column 1, then down column 2 and then down column 3 and so forth. This needs to be considered when designing and repairing tagged PDF documents.

The best solution would be to use section breaks in Microsoft Word to make each one of the topic changes a separate continuous section. This would put a section break before “Reading Order” then the content related to reading order would be added, formatted as columns and the section break ended. A new section break would then begin for Sidebars and its content with the section break ending after the column formatting for that topic.

## Creating Columns in Microsoft Word

The first step is to insert the Section Break at the cursor point just before the place where you want the columns to begin.

In **Word 2007 or 2010** press Alt + P, B to open the Page Layout, Breaks menu.



**Figure 513 Section Break menu.**

In Word 2003 you would press Alt + letter I to open the Insert menu. Break would be the first item in the menu. Press Enter which will open a dialog with radio buttons containing some of the same options as illustrated above.

You can choose to have a Continuous section break which I've used in this document. This lets you just continue with the document content.

The other option is to have the section begin on the next page. This gives you the flexibility in your documents to make choices about breaking up and formatting content.

In our sample, we will choose "Continuous."

If you want to see if your section break has been added to the document switch to Normal view in the View menu of Word 2003 or Draft view from the View Ribbon in Word 2007 and 2010.

With your cursor just after the section break, Type the text you want to be displayed in parallel or newspaper columns. Perform a Spell check on your work and make sure it is left aligned. Fully justifying text, whether it is in a single column or multiple columns creates distracting rivers of white throughout your text. Even for people without visual or print disabilities, it is often difficult to follow the context of what they are reading. Because digital documents use proportional fonts, there is no need for full justification, it is a holdover from old typewriter days when the fonts were fixed [which meant that the letter "o" took up the same space as the letter "i"].

To create your columns In Word 2003:

1. Select the text you want to be a parallel or newspaper column.
2. Choose Format > Column.
3. Your focus is in the number of columns in the columns dialog box. If you are creating newspaper columns, you can choose the number of columns here. Remember that the more columns you create, the smaller the pieces of information you have to catch and hold the reader's interest. A good rule to follow is to limit your columns to three, preferably two.
4. If you want parallel columns, press Shift + Tab and then use the arrow keys to choose either Left or Right to indicate where you want the smaller column, on the left or the right of the page.
5. Press Alt + B to insert a line between your columns whether they are newspaper or parallel. This will assist the reader in defining the column boundaries across the page.
6. Tab to and activate the OK button. The selected text is now displayed in columns on your page.

To add columns in Word 2007 or 2010:

1. Select the text you want to be a parallel or newspaper column.
2. Press Alt + P, J to open the Columns Gallery.
3. You can choose the type of columns using the Columns Gallery or by opening the traditional columns dialog.
4. Use the traditional Columns dialog if you want to insert a horizontal line between columns.
5. To create the effect shown in the sample, I positioned my cursor at the first character of the first parallel column. I inserted a column break so that I could control the amount of page

used by this text. In Word 2003 column breaks are found under Insert > Break. In Word 2007, column breaks are found under Page Layout, Breaks.

6. Once you have your columns added to the document, go back to the Insert menu or Page Layout Ribbon and choose to add another continuous section break. This confines the columns to the area between the section breaks so you don't have to worry about subsequent text being put into columns.

Creating columns by selecting text will help you balance your columns. This means that within one or two lines, both columns will end on the same visual line on the screen. You won't end up with one column filling a page top to bottom and the overflow text being displayed at the top of the next page.

## Tri-Fold Brochures

Working with tri-fold brochures is a bit tricky. Typically a tri-fold brochure is tagged from the left to the right, top to bottom. However this does not represent the logical order in which the content of the brochure would be read because each page contains a number of columns of text with space for the folds of a brochure.

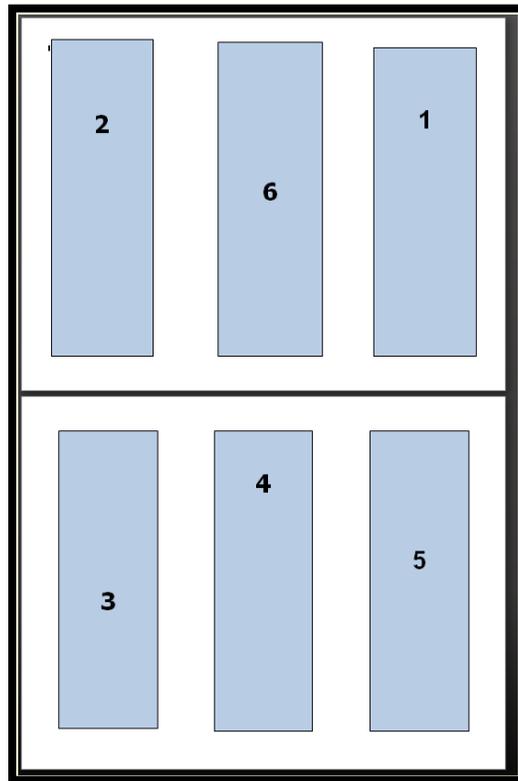


Figure 514 Tri-Fold Brochure showing logical reading order.

The preceding image shows all six panels as they would be read if the brochure were folded. First the cover would be read. It is important that the cover information be read first so that the person can identify whether they have the right brochure/document or not. Reading the brochure starting at panel two would be confusing. When working with a tri-fold brochure, you will need to manually move the Tags to reflect the reading order.

You can select and move more than one Tag at a time.

If you did not move the Tags so that the document has a logical reading order but content was tagged properly it would pass an accessibility full check. But how accessible if the content if it is jumbled and illegible?

A tri-fold brochure is one example of a document that may be laid out on an 8.5 by 11 page but is not read left to right, top to bottom. You will need to consider the logical reading order of invitations or any document where there are folds and a “non-intuitive” flat or static layout.

## Desktop Published Documents and Columns

I briefly looked at one of the most common issues encountered when working with documents that have come from desktop publishing software. That is the way that columns are implemented and tagged from a document that has been created using desktop publishing software.

This is a reminder of what can happen if columns aren't created properly or if there isn't enough room between columns...if the gutters aren't wide enough. It also brings home the importance of applying paragraph styles to text in a desktop published document that is mapped to the <P> Tag. A clear mapping of what is to be in a paragraph Tag will help reduce this type of mistagging.

The following image shows what often happens when columns aren't created properly or if the tagging process goes wrong. The only solution for this is to manually repair each line in the column and insert it under its own <P> Tag.

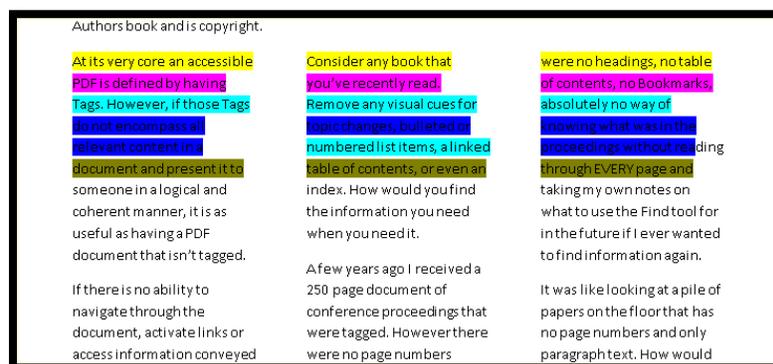


Figure 515 Text in columns that has been tagged improperly.

In the illustration the first line from each column has been tagged as one paragraph. The second line of each column has been tagged as a separate paragraph. This is how the adaptive technology will read or render the information to the person using TTS or screen reading.

If you Reflow the document using Ctrl + 4, it will reflow combining the first line of each column as if it were a sentence unto itself.

If you were to look at the Order panel, you'd see that the three columns were identified as a single block of text not as individual columns. If we were to accept the view of the document in the Order panel, we would miss this serious accessibility issue. It is only by going through the Tags Tree using Highlight Content that we would find this accessibility issue.

A document like this would even get a clean accessibility full check. After all the text is tagged as text. The full check is not a substitute for human review of the Tags.

Sometimes having the horizontal line down each column helps to keep the content separate. Sometimes it doesn't. When you have a document with columns, you will need to review the text using the Tags Tree and Highlight Content.

**Note:** In a tagged PDF document you may not be able to select the lines in the paragraph using the mouse. The best way to select each line and add it to its proper <P> Tag is to use the keyboard and the keyboard commands for selecting text: Shift + Left and Right Arrow, Ctrl + Shift + Left or Right Arrow, Shift + Home or Shift + End. Using the zoom to magnify the individual column content also helps when selecting text. This task will take a lot of patience. Depending on how fragile or flawed the source document was you may not even be able to do this as a repair technique.

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# Determining Document Security

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One of the issues for accessibility of Adobe PDF documents is security. Even if a document is tagged for accessibility, applying certain security levels will prohibit access by people who are using screen readers or other adaptive technology. As with other issues of document access and usability, security of information needs to be planned and strategically implemented.

With Adobe Acrobat, you can password protect the opening of a document as well as the reading and editing of a document. You will most likely need a really good memory to do this if you also password protect editing and commenting on documents.

**Note:** It is essential that document authors understand that they have to intentionally prohibit people who are blind or visually disabled from reading their documents. You can have a document that doesn't permit printing, copying, extracting of pages, commenting or editing, but if you intentionally un-check the "Allow access for the visually impaired/screen readers" you deny access to people who are blind or visually disabled and are using adaptive technology – even if your document is tagged.

If the check box to allow access for people using screen readers is unchecked, someone using a screen reader will be notified that the document's security does not allow them access.

By default, there is no security on PDF documents.

**Note:** You will have to save documents, close them and open them again for a screen reader to "see" the repairs. You MUST start the screen reader BEFORE you launch the application which might require you to exit Acrobat, start the screen reader then launch Acrobat and the document again.

## Trusted Assistive Technology

Adobe incorporates a plug-in that allows people who are using screen readers or "trusted assistive technology" to read PDF files that were created in version four or earlier of the product. If you look under Help and Add-ins you will get information on the Trusted Assistive Technology add-in. The intention for this tool is to bridge the gap between legacy PDF documents that are not tagged and documents that have been tagged. This tool is NOT meant to be a "rationale" for not creating tagged accessible PDF documents.

The trusted assistive technology tool is seamless and invisible. It is best to use current versions of screen readers in order to make use of this tool. This does not allow access to PDF documents that are scanned images or whose security has been set to disallow access. Scanned image documents are still barriers to information. They still need to go through an OCR process.

Let's look at the Security tab in the Settings dialog.

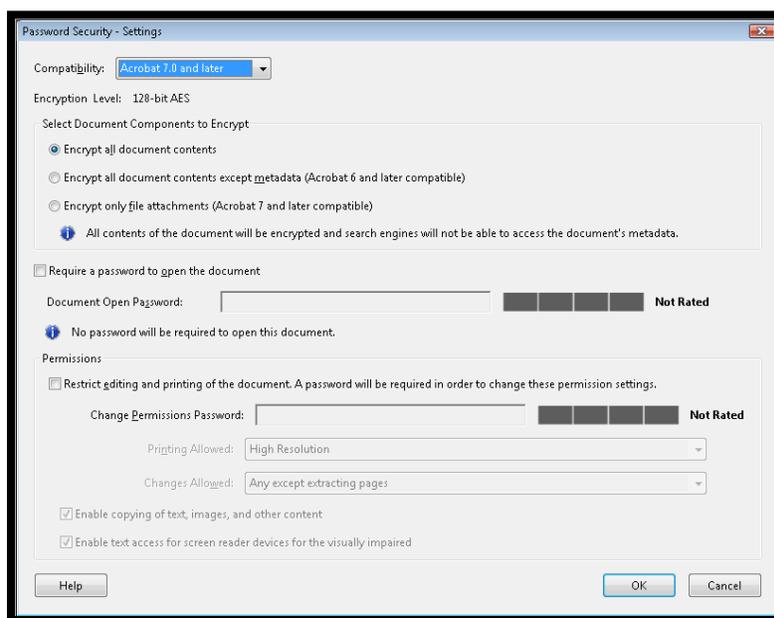


Figure 516 Password Security dialog.

## Encryption Definitions

The encryption level of an Adobe PDF document corresponds to the Adobe Reader compatibility. If you encrypt at 40 bit RC4, the document is compatible with Adobe Reader 3.x or 4.x. It is a low level security setting. If the document is encrypted at 128 bit RC4, it is compatible with Acrobat Reader 5 or later and it has a higher security level.

If a PDF document has "Adobe Reader 6" in this area it means that a person cannot use Adobe Reader 5 to open and read the PDF document.

Each version of Adobe Acrobat and Adobe Reader improves the access to a PDF document. As mentioned in this book, Acrobat 9 does have some tagging issues but this is an exception and hopefully will be fixed for version 10. Having a tagged PDF document open in Adobe Reader 6 or later is the “standard” and default setting in the encryption area of the Security dialog.

If you choose a different setting, for example Adobe Reader 7, you need to provide this information to the people accessing the PDF document so that they can update their version of Adobe Reader if necessary. Making this change will mean that anyone using Adobe Reader 6 will not be able to open the document.

## Applying Security

Once we've decided what version of the Adobe Reader we are going to have clients or students use, we can set some security levels. Although security is an important element of document integrity and intellectual property ideals, it is still a digital document we are working with and there are hackers who thrive on braking security.

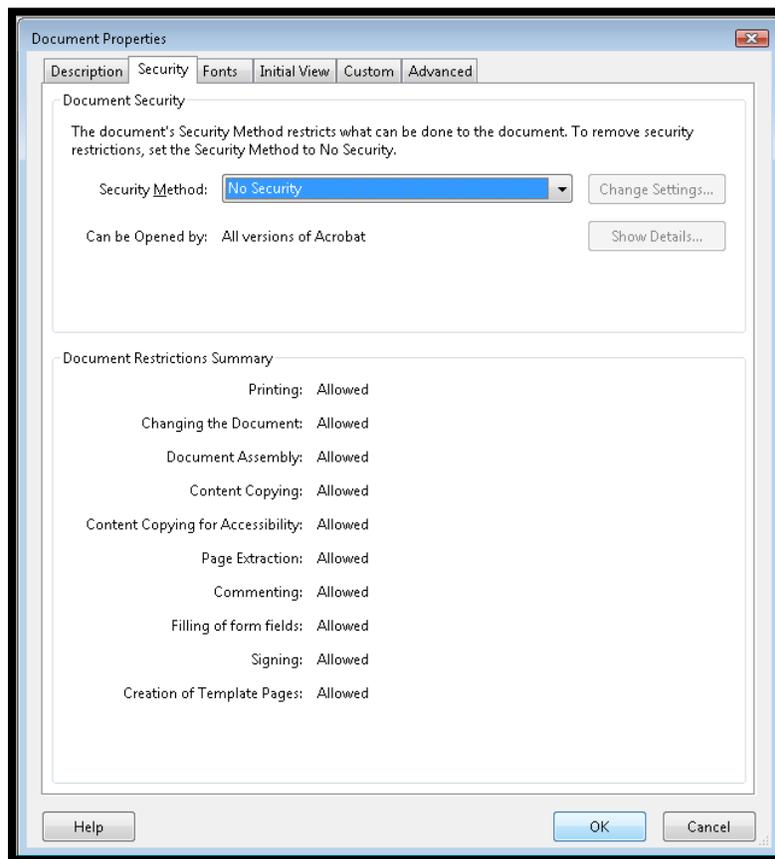


Figure 517 Password protect PDF document option.

Security can be set in one of three ways:

- In Microsoft Word or other Office applications choose Adobe PDF then Preferences in Microsoft Office 2007 or Change Conversion Settings in Microsoft Office 2003. Move to the Security tab. These settings will apply to all documents created until you change the settings
- Through Adobe Distiller. To launch Adobe Distiller choose All Programs, Adobe and Acrobat Distiller. These settings will apply to all documents created until you change the settings.
- Within Adobe Acrobat choose File, Document Properties then the Security tab. These settings are for the open document only.

If you are using the Microsoft Save as PDF add-in you will need to set security in Adobe Acrobat.

## Setting Security in Microsoft Office

When you set the security in one application it will be applied to all applications in the Microsoft Office suite. It will not be applied to documents you create outside of the Microsoft Office suite or to PDF documents created using the Print to Adobe PDF option.

To apply security to a tagged PDF from Word:

1. In Word 2003 choose Adobe PDF from the menu and then Change conversion Settings.
2. In Word 2007 or 2010, 32 bit version only, choose the Acrobat Ribbon and then Preferences.
3. Change the security setting on the General tab to "Password."
4. The Security tab is activated and you can now change the security settings..
5. Choose to restrict editing or changing of content which is located about halfway down the Security tab page.
6. When you check this check box, your focus is immediately put in the Password edit box.
7. Type in a password.
8. This will be used for each document you create using Word.
9. Press Tab to move to the print restrictions and choose one. Your options are no printing, low resolution printing or high resolution printing.
10. Press Tab again and you can choose the type of editing you will allow. For fillable forms you must allow the ability to fill in forms and signatures in order to facilitate accessibility of the form.
11. Press Tab and choose whether to allow copying and extracting of content. This is a check box.
12. The last check box is to allow access to adaptive technology for people with disabilities. Leave this check box checked or the PDF document, no matter how well tagged, will not be accessible.

You will need to set the security settings in Excel and PowerPoint separately. Since Adobe Acrobat doesn't create tagged PDF from Publisher it is not recommended that you apply security to Publisher documents since you will have to make repairs to these documents. This is true for archived Outlook content as well until Adobe fixes the tagging of Outlook content.

You can now make some decisions about what you will and won't allow for the document.

Under printing you might consider allowing low resolution printing so that people with learning or cognitive disabilities can print the documents. People with visual disabilities may also want to have a print version to use with a video magnifier. Keep in mind the purpose of the documents you are creating.

You can always come back and modify this setting for specific documents you create.

Low resolution printing in theory means that if someone prints the document and scans it back into the computer for a digital version in another format, they will have a lot of clean-up to do. However, OCR or Optical Character Recognition software has advanced significantly since this setting was implemented back in the early days of Adobe Acrobat.

You can also choose from no printing allowed to high resolution printing allowed. None is the default.

The next setting is to allow modifications or changes to the document.

You can leave this at none unless you want people to be able to comment on the resulting PDF document. That is, to use the tools in Acrobat to make notes or highlight content. If you want this you would need to allow commenting.

The last check box under the modification security is to allow copying of the content of the document. If this is not checked, someone using adaptive technology cannot create an accessible text version of the document nor a Word version. This means that they will have to read the document using Adobe Acrobat. This impacts the ability to read the document on other devices as well. Remember that we only have access to PDF documents on a desktop, laptop or tablet computer. This more global access has to be weighed against the need to secure the content of the document.

The last check box is already checked for you. It is the one to allow access to adaptive technology. You can lock a document down in the other settings but if you uncheck this setting someone using adaptive technology will not be able to read it even if it is tagged.

We need to balance our desire to protect our intellectual property with the ability of adaptive technology and people using it to be able to read documents. At one time there was a "leak" in that if you checked the check box to prevent copying and extracting, you could still use the keyboard to copy and paste content from a secure PDF document. That leak was repaired several versions of

Acrobat and Reader ago. Currently documents are pretty secure if you lock everything down but access to adaptive technology.

BUT, if someone wants to “repurpose” digital content they can do it. Our goal as document authors is to be diligent in protecting our work using the tools we have. Protecting our work doesn’t mean making it unreadable or inaccessible to the people we wrote it for.

## Setting Security in Adobe Acrobat

This is the tool I use most for adding security to documents. It lets me apply security to individual documents rather than any document I create using Microsoft applications. There are some documents that need to be secure and others that don’t. Using the Security dialog through Adobe Acrobat gives me the flexibility to apply security on a document by document basis.

The security settings for a document are found under File, Document Properties in Adobe Acrobat. By default the Security tab is open when you access the document properties. The default is no security on a document.

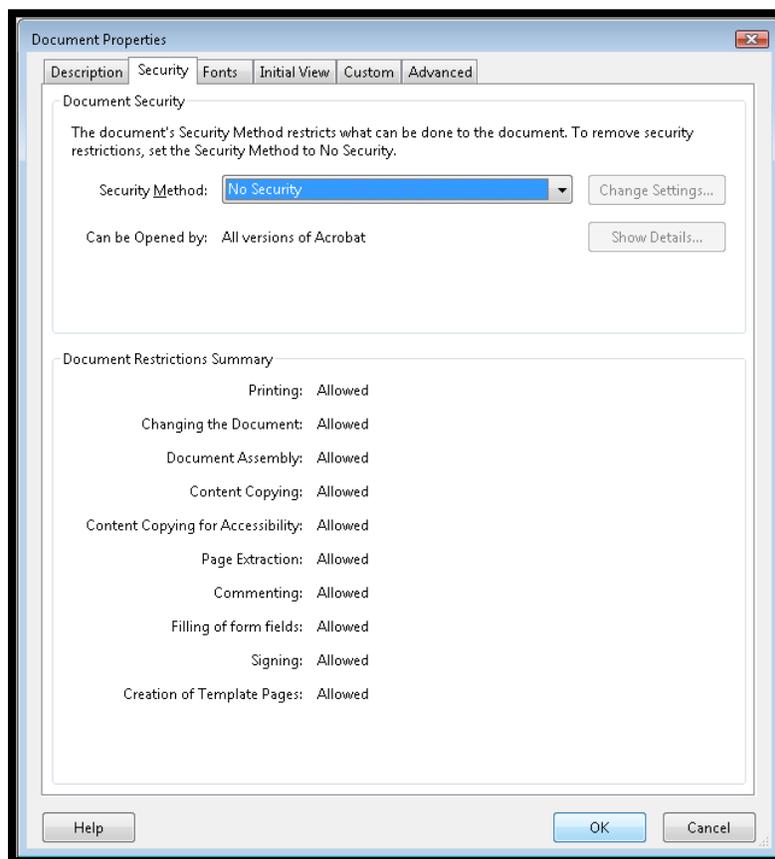


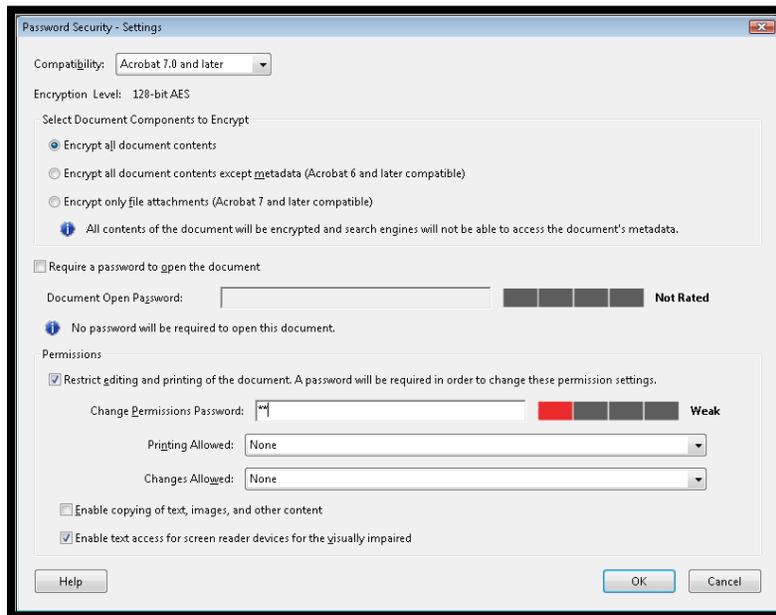
Figure 518 Security Tab in the Acrobat Document Properties dialog.

Once you choose Password as the level of security for the document, you can modify the permissions for the current document.

To change the security use Alt + Down Arrow to open the list of security options and choose Password.

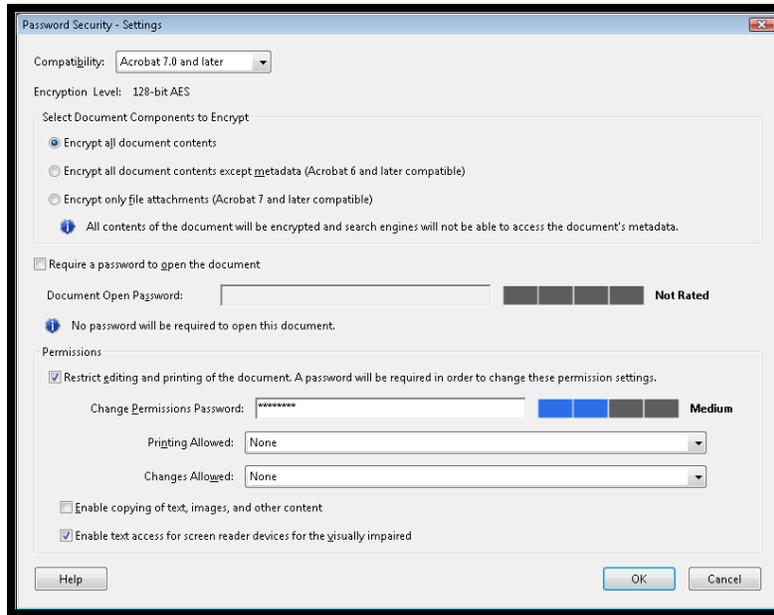
When we return to this dialog after modifying the security, the list of items allowed will have changed. If you are reading a PDF document and want to know what the security settings are, just come into the Document Properties dialog to review them.

As with the dialog we saw in Microsoft Office applications, you can choose to have a password to open or modify a document or both. You can see how strong your password is in this dialog.



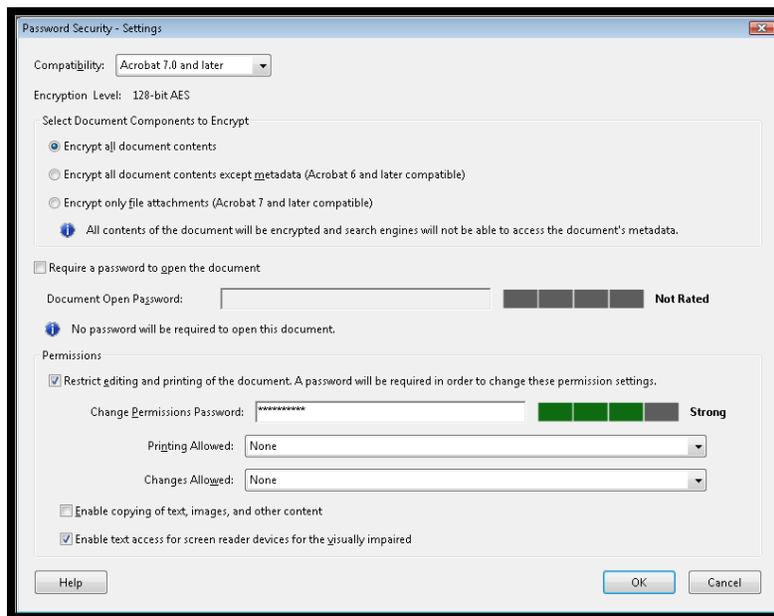
**Figure 519 Password strength changes as you type.**

When you begin typing the password, the colour bar to the right of the password edit field changes to show you the strength of the password.



**Figure 520 Password strength colour changed to blue.**

The password typed in this example has a mix of upper and lower case as well as numbers.



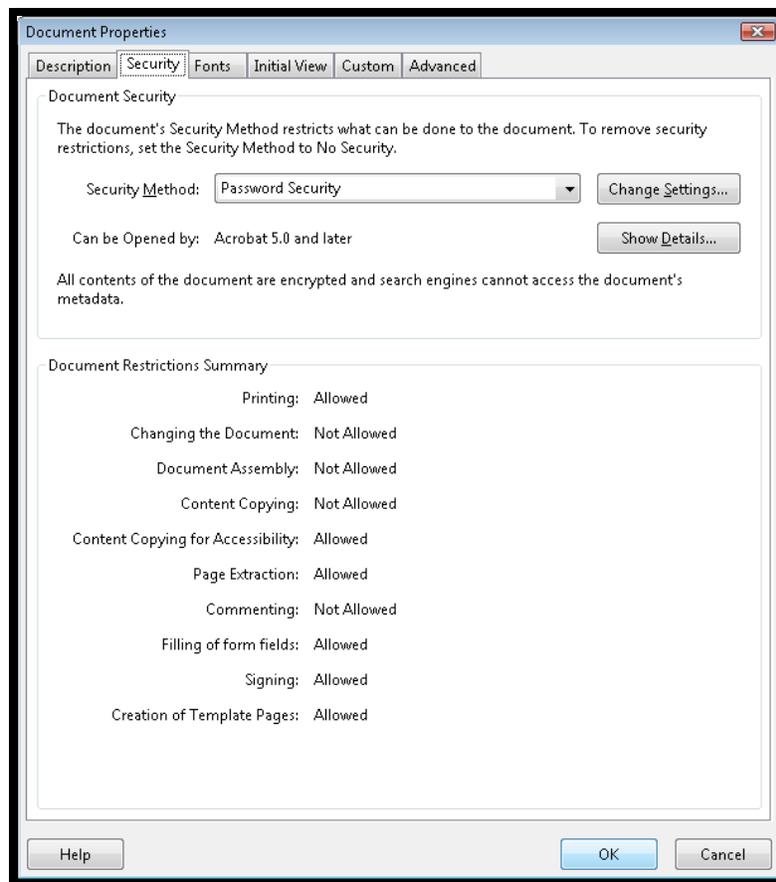
**Figure 521 Password using mixed case and numbers showing final strength of password.**

As with Word based documents unless you are dealing with sensitive information I don't recommend that you have a password to open a document. Typically we password documents to prevent modification or change and in the case of PDF documents, copying or extracting.

The preceding image shows the “Changes Allowed” area selected. If you are working with fillable forms you must have this set to allow the filling in of forms and digital signatures. If you don’t, people won’t be able to enter information into the form controls for a form. We’ll talk more about this in the chapter on forms.

Once you have the security set for the document and activate the OK button by pressing Enter, you will be asked to enter the password and be notified that you will need to save the document in order for the security settings to take effect.

When you save the document, if you access the Document Properties dialog again, you will see the security settings outlined in the lower half of the dialog. In Adobe Acrobat or Reader a small gold coloured lock will appear at the top of the Navigation Panes when security has been applied to the document.



**Figure 522 Security tab in the Document Properties dialog once security has been applied.**

You can remove security from a document by going back into the Document Properties dialog and choosing “No Security” for the document. Of course you will have to use the password in order to turn off the security settings.

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# Repair Techniques in Adobe Acrobat

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Although we've looked at some of the repairs you can make in Adobe Acrobat for specific problems, this chapter adds to those techniques and presents you with others.

As a reminder of the components of an accessible and usable PDF document:

- The document has Tags.
- The Tags are in a logical reading order.
- The Tags are appropriate and correct for their corresponding content.
- The document has a base language and additional language attributes for multilingual documents.
- The document has a Tab Order that is related to the document structure.

There is also the hierarchy of tasks when working with untagged PDF documents:

1. Is the document a scanned image?
  - a. If yes, then use ClearScan in Adobe Acrobat to perform OCR.
2. Does the document have links?
  - a. If yes, then use the "Create links from URL's" found under the Advanced, document Processing menu item in adobe acrobat.
3. Does the document have form controls?
  - a. If yes, then add the form fields/controls to the document in Adobe acrobat.

Once you've answered these questions for untagged PDF documents you can add the Tags and begin the repairs. The techniques in this chapter will work for repairing tagged PDF whether it was tagged when you opened it or not.

As mentioned throughout this book the "difficult" part of making a PDF document accessible and usable is ensuring that lists, tables, headings, paragraphs, links, images and Artifacts are properly tagged. In the case of images charts, diagrams, mathematical equations, and scientific notation the Alt Text is a critical attribute to add.

This chapter contains techniques for making repairs to documents in the cases where you do not have access to the source document, the document has already been tagged, or you are working with a document you've added Tags to.

**Note:** You will have to save documents, close them and open them again for a screen reader to “see” the repairs. You MUST start the screen reader BEFORE you launch the application which might require you to exit Acrobat, start the screen reader then launch Acrobat and the document again.

## Language

We’ve looked at how to add a core language to a tagged PDF document. This topic will serve as a review and provide information on changing the language for a Tag.

Each tagged PDF document, even multilingual ones, need to have a core or base language. This tells the speech synthesizer which language to read the document in. When an individual Tag has the Language attribute changed, the synthesizer will switch to that language.

Even in countries that are bilingual and produce material in two or more official languages, a core language for the document needs to be identified. This will mean that you don’t have to open the properties for each Tag and apply a language. You would only have to modify the language attribute for the changes in language. This in turn saves time in repairs.

**Note:** If Alt Text is in a different language than the core language of the document, the Language attribute will need to be changed appropriately.

You are supposed to be able to use the ISO two character abbreviations for languages but I find this unreliable. I used an ISO language abbreviation in a document and the next time I opened the document the core language of the document had been changed to Chinese. The document was a variant of Spanish not at all Chinese. I recommend staying within the confines of the listed languages until there is support for ISO language abbreviations.

To apply a core language for a document:

1. Make sure the Tags Root is selected in the document. I do this as a point of reference.
2. Choose File, Document Properties or press Ctrl + D.
3. Move to the Advanced tab by pressing Ctrl + Page Up or Page Down.
4. Press Alt + L to move to the Language attribute.
5. Press Alt + Down Arrow to open the list of available languages.
  - a. You cannot use first character navigation to quickly move to the language you want. Use the Down Arrow to find the language you want and press Enter. You may have to use a language close to a specific dialect or variant of a language.
6. Press Alt + C to close the Document Properties dialog.

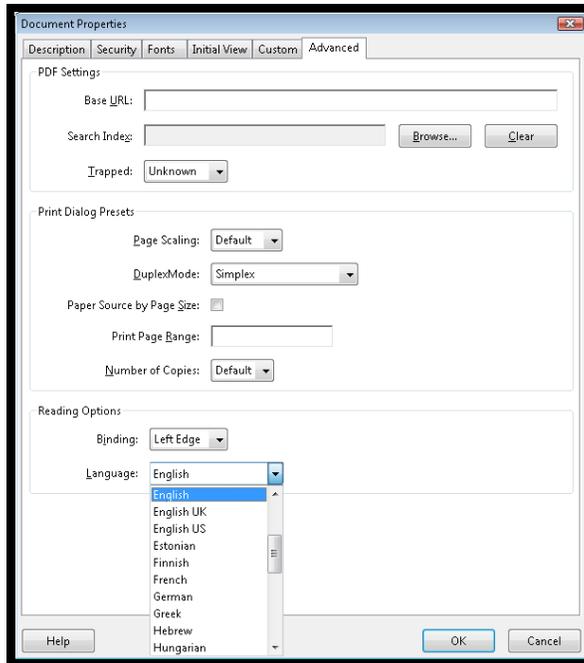


Figure 523 Advanced tab in the Document Properties dialog with Language options open.

## Language for a Tag

When the language changes in a tagged PDF document you must indicate this for speech synthesizers by changing the language of the specific Tag.

To change the language attribute for a specific Tag:

1. Select the Tag where the language changes. Do not select the content under the Tag.
  - a. If the Tag is in a <Part> or <Section> Tag, and all content under that Tag is different than the core language of the document, you can change the language for the <Part> or <Section>. Once that part or section “ends” the language of the document will return to the core language you’ve identified.
2. Press the AppKey to open the context menu for the Tags.
3. Press the Up Arrow to move to “Properties.”
4. Press Enter to open the Properties dialog for the Tag.
5. Press Alt + L to move to the Language attribute.
6. Press Alt + Down Arrow to open the list of available languages.
  - a. You cannot use first character navigation in this list. Use the Down Arrow to find the language you want. You may have to use a language close to a specific dialect or variant of a language.
7. Press Enter to apply the language to the Tag.
8. Press Alt + C to Close the Properties dialog.

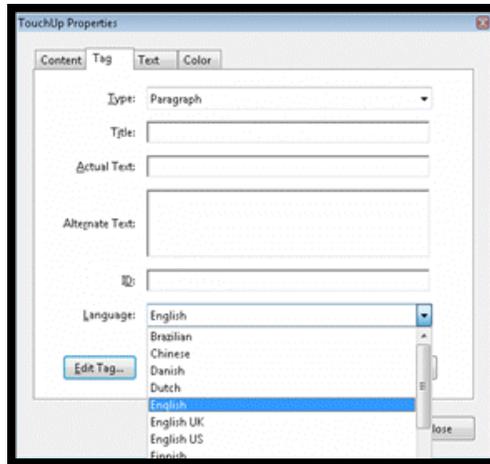


Figure 524 Properties dialog for a Tag showing the Language attribute options.

You will need to do this for each language change in the document including Alt Text or Actual Text that may be in a different language than the core language of the document.

## Language for a Word

Sometimes, especially with textbooks, there is a sentence in English with one or two words in another language...or vice versa. This needs to be repaired in Adobe Acrobat to indicate that the speech synthesizer should switch to the language so the word is pronounced correctly.

This topic examines two methods of doing this repair. First, in Adobe Acrobat when the word in the alternate language is part of the general <P>Tag; and second, using a new tool available in Word 2007 that lets you set the language for paragraphs, sentences and words within a Microsoft Word document. This feature was not available in versions of Word prior to 2007.

The sample document I am using is from my Word 2007 from the Keyboard book. It is an example of how you can use the Translation tool in Word 2007 to have different languages in a document and set the language for each change in language in the document. For this first example I used the Adobe Acrobat PDFMaker to tag the document.

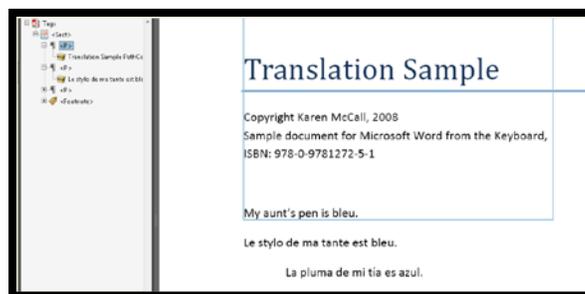


Figure 525 Sentence in a document with one word in a different language.

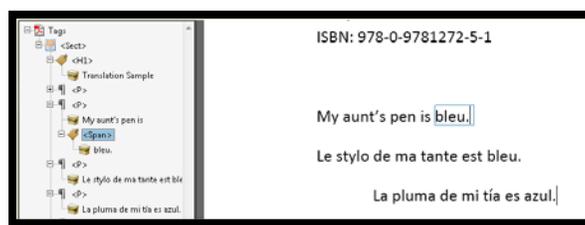
To Tag a single word in a different language:

1. Open the Tag that contains the word in a different language.
2. In this case the entire first part of the document needs to be repaired before we can proceed however this is not our focus at the moment.
3. Select the content under the Tag. If we do this the word we are about to isolate will still be within its <P> Tag.
4. Use the Select Text tool to select the word in the different language.
5. Move to the Options button in the Tags Panel and choose Create Tag from Selection.
6. In this case the word “bleu” will be isolated from the rest of the text in the sentence.
7. Select the content just above the word “bleu” and press the AppKey.
8. Choose New Tag and type in the word “Span” when the New Tag dialog opens.
9. Tab to and activate the OK button by pressing Enter.
10. Move the word “bleu” under the <Span> Tag.
11. Select the <Span> Tag and press the AppKey.
12. Choose Properties and choose the language attribute in the TouchUp Properties dialog.
13. Close the TouchUp Properties dialog.

Save the document.

Close the document then open it again to test using adaptive technology such as a screen reader. This is one of those instances where you would use a screen reader to spot check content you need to manually validate.

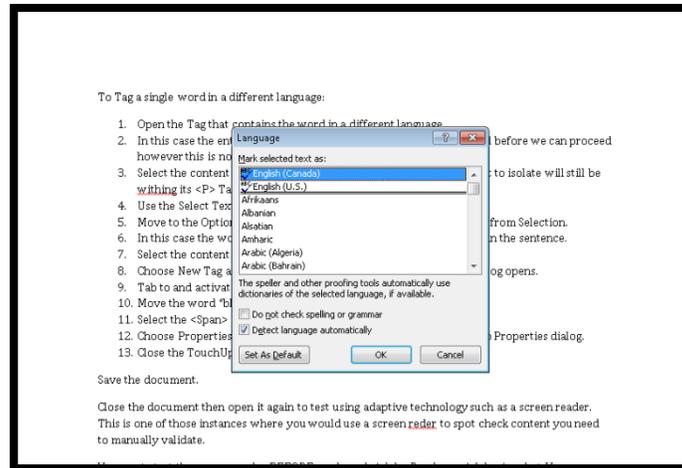
You must start the screen reader BEFORE you launch Adobe Reader or Adobe Acrobat. You may need to close the application too, then re-launch and open the document for the screen reader to work properly.



**Figure 526 Document with one word in a different language repaired.**

In Word 2007 and 2010 we can select a word and assign it a different language.

Once the word, sentence paragraph or section of the document is selected, press Alt + R, U to Set Proofing Language from the Language Group on the Review Ribbon.



**Figure 527 Set Proofing Language dialog.**

While neither tagging tool currently adds the appropriate language to changes in the language in a document, the potential is there for the next iteration of both tools and both Adobe and Microsoft are aware of the need for this.

If you are using Acrobat X check the content for the language change in the TouchUp Properties dialog for the specific Tag as sometimes it does work and other times it doesn't.

## Acronyms

Adobe Acrobat has a tool for rendering acronyms to people using adaptive technology. It is the "Expansion Text" attribute and is part of the TouchUp Properties dialog.

To use expansion text for an acronym:

1. In the Tags Tree select the paragraph or Tag with the acronym.
2. Move to the document and select the acronym using the Select Text tool.
3. Move back to the Tags Tree and activate the Options button.
4. Choose Create Tag from Selection.
5. This will isolate the acronym within the paragraph.
  - a. You can also create a <Span> Tag for the acronym if you like. In some documents this may be the only way to isolate the acronym. It depends on how the source document was created and subsequently tagged.
6. Select the acronym in the Tags Tree. Do not select the <Span> Tag.
7. Open the context menu and choose Properties.
8. Move to the Content tab and in the "Expansion Text" edit area type the acronym followed by the expansion text. For example CRTC – Canadian Radio and Telecommunications Commission.

9. Close the TouchUp Properties dialog by pressing Alt + C.

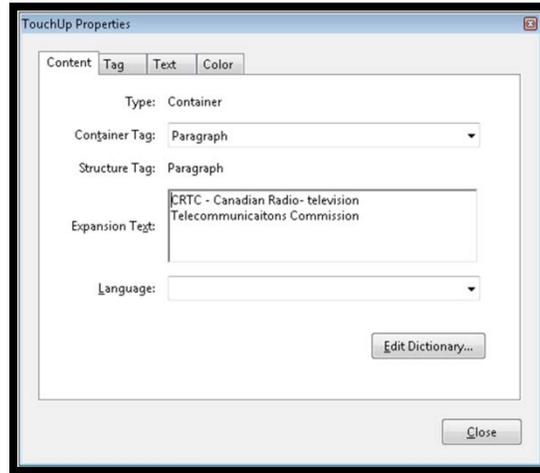


Figure 528 Expansion Text edit area in TouchUp Properties dialog.

This will provide the following information to a screen reader or Text-to-Speech tool: “CRTC – Canadian Radio and Telecommunications Commission.” If you just put the expansion text, in this case “Canadian Automobile Association” the acronym itself won’t be read. Adaptive technology will read the expansion text over the actual acronym in the document. As a document author, you will need to decide which technique to use: either type the acronym and expansion text or just the expansion text. Your choice will depend on whether you want the person reading the document to know what the acronym is or not.

If you use the <Span> Tag to isolate the acronym you would use the Actual Text edit area in the TouchUp Properties dialog for the <Span> Tag. The Actual Text for CAA would be CAA Canadian Automobile Association. As with the other method of identifying an acronym, you would add the acronym if you want someone reading the text to access both the acronym and its meaning.

## Tab Order for the Document

One of the most common errors when you perform an Accessibility Full Check is that the Tab Order of the document is not correct. This is misleading in that some people think that those of us who use adaptive technology “Tab” through a PDF document in order to read the content. This is not true.

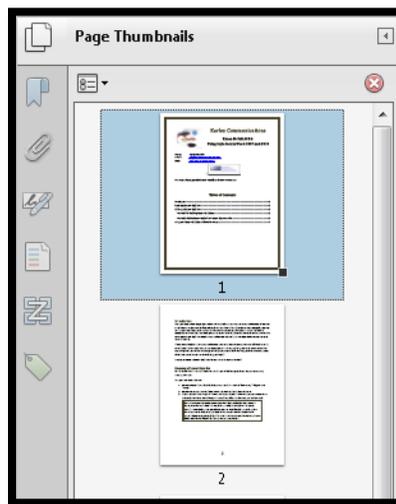
The Tab Order refers to the ability to Tab through the links or form controls of a document not the text. For example pressing Tab to move from link to link on a page and encountering the links in their logical order on the page rather than jumping around the page randomly. In the case of form controls, it means being able to Tab to form fields in the order in which they should be filled in on a form rather than randomly. For example moving from First name to last name to address rather than last name to address to first name.

Typically you will find that documents having an “incorrect Tab Order” will have either linked to information or form controls. Sometimes you will find that this is not true.

It is faster to repair the Tab Order globally for a document than to correct it for individual pages...and it doesn't “hurt” the document or its accessibility.

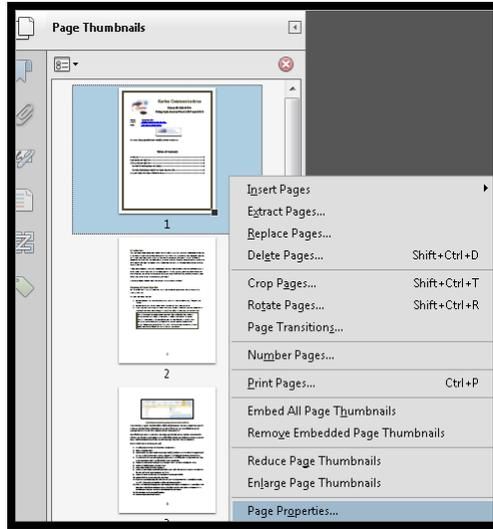
To repair the Tab Order of a document:

1. Press F4 to open the Navigation Panes.
2. Use the Up or Down Arrow to select the Pages Panel if it is not the one with focus.
3. Press Tab to move into the list of pages in the document.
4. Press Ctrl + A to select all pages in the document.



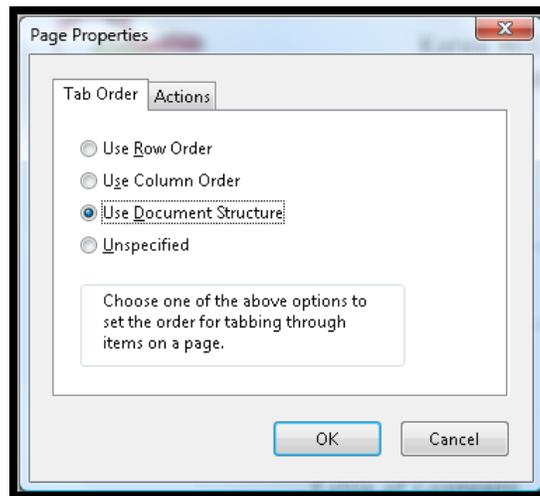
**Figure 529 Pages Panel.**

1. Press the AppKey to open the context menu.
2. Press the Up Arrow once to move to the Properties item.
3. Press Enter to open the Properties dialog.



**Figure 530 Pages context menu in Adobe Acrobat.**

4. Choose to get the Tab Order from the document structure. It is a radio button in the upper half of the dialog.
5. Press Alt + C to close the Properties dialog.



**Figure 531 TouchUp Page Properties dialog.**

When you run the accessibility Full Check you will not see any Tab Order problems with the document.

## Headings

Headings [and Bookmarks] are important navigational structures in a PDF document. They also represent the hierarchy of information in the document. For these reasons it is important to have headings or Tags such as <H1>, <H2> or <H3> in the document indicating the appropriate heading level.

One tip is to review the document before you begin adding headings if they aren't in the tagged PDF document. Determine how many levels there are and perhaps consolidate heading levels that look very similar with only a slight visual difference.

One of the problems with not using the inherent structural elements of a native application is that formatting is flung at text so it looks "good." If someone has revised the document or added to it they often guess at what was used before and don't actually look at the formatting applied previously. This results in visual headings that might look similar but are different once you examine them more closely.

If you try to move through the Tags Tree and add heading Tags without first reviewing the document you can get confused and end up making everything the same heading level because of your confusion and frustration at inconsistent formatting.

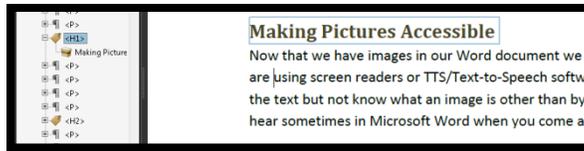
Keep in mind that this is a means of navigating from topic to topic. This will help you make decisions about the levels of headings in a document and what gets tagged as a heading and what doesn't. Over formatting using the heading styles inappropriately is also common in documents. For example using the Heading level 1 to format an entire page or paragraph simply because the document author liked the way it looked. Would it make sense to have this text as an actual navigational point in the document?

For documents that are not tagged or documents tagged improperly [every piece of text is a paragraph for example] it is up to us to examine the document and provide the structure based on the intent of the document author rather than the actual poor formatting of the document.

Because adaptive technology reads the Tags we have the opportunity to create a well-structured "document" where the document author has not. This is one of the reasons we need to separate the visual representation of the document from the document structure and what will be rendered or read to the person using adaptive technology and as important – how it will be rendered or read to them.

There are at least three possible ways of repairing headings in a tagged PDF document.

The first method is easy and we've discussed it before. Use F2 on a Tag to go into edit mode and replace the existing Tag with the heading Tag. For example if you have a <P> Tag you can edit it to be an <H1> Tag.

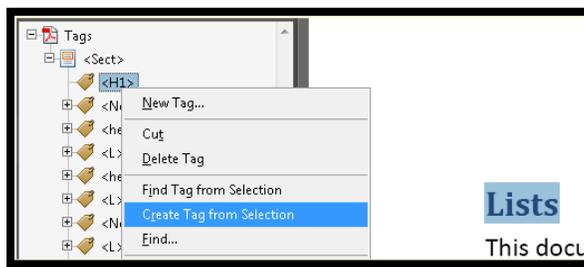


**Figure 532 Heading Tag in document.**

The second method is used when the text for a heading isn't in the Tags Tree or hasn't been tagged. You will use the Select Text tool for this. The Select Text Tool is the one to the immediate left of the Hand Tool.

I begin by putting the Tag where I want it in the Tags Tree. Once you are near the location in the Tags Tree press the AppKey to open the context menu. Choose New Tag and press Enter.

A dialog opens and you can choose to add a Heading level 1 Tag. Once the Tag is added to the Tags Tree make sure it is selected. The Tag may be <H1> or some other Tag indicating it is a heading level 1. The goal is to make sure the Tag is a heading level that you need.



**Figure 533 New Heading Tag creation.**

Use the Select Text Tool to select the text you want to be the heading text. Then move to the Tags Panel and open the Options button. Choose Create Tag from Selection. The text you've selected will be placed under the <H1> Tag.

The third way of creating a heading Tag is not often called for but you can come across it when working with desktop published documents. This is the case where an image of text is used for a heading. Generally the document author doesn't know how important using the styles in the desktop publishing application is to the accessibility of the digital version of the document. Remember that most desktop published documents were meant to live in the print world not the digital world. It is hard to break old habits of "composing" documents made up of images of text.

In this example the <Figure> or <InlineShape> Tag we need to work with is also nested into a Tags such as <Part>, <Span> or <Section>. For the specific example it is the <Normal> Tag.



**Figure 534 Image of Text that should be a heading.**

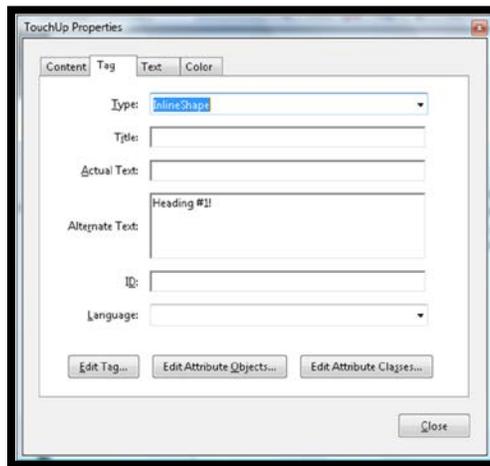
The <InlineShape> is the Actual Text that is being used to represent a visual heading in the document. It is nested in the <Normal> Tag which is helpful. This means we can use the Tag it is nested in as the <H1> Tag. But first we need to add Actual Text to the image properties.

The Actual Text attribute is to be used when there is an image of “Actual Text.” This should be used instead of Alternate Text.

What is the difference?

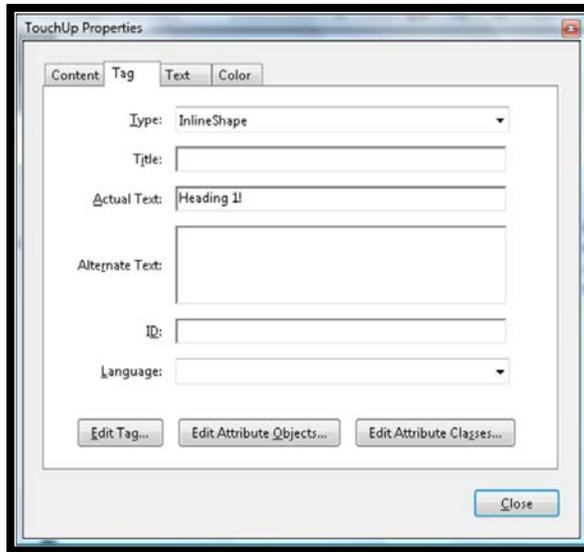
When a screen reader encounters “Actual Text” attributes they are read as text not as images with an alternate description or Alt Text. In our working example this means that “Heading #1!” will be rendered or read to someone as text not as “graphic: heading#1!” which wouldn’t make a lot of sense if you were to hear this.

First, select the <InlineShape> Tag and press the AppKey. Choose Properties which will open the TouchUp Properties dialog.



**Figure 535 TouchUp Properties dialog with Alt Text entered.**

By default because we created this sample using Microsoft Word 2007 the text we typed in for the WordArt has been entered into the Alt Text area of the TouchUp Properties dialog. We need to remove this and put it in the Actual Text area. You can cut and paste the text instead of typing it.



**Figure 536 TouchUp Properties dialog with Actual Text entered.**

**Note:** if you are using a different language or have a symbol in text you can type it into Microsoft Word or any other word processor where you can have the symbols or accents showing and copy and paste the text into either the Alt Text or Actual Text edit areas.

In the Actual Text edit area type the text for the heading. As its purpose suggests this should be the Actual Text that the image is representing. You cannot use the Actual Text to type in an entire page or paragraphs of content that have been created as images. First you run the risk of overwhelming the buffers and second you cannot go through Alt or Actual Text character by character or word by word. If you don't understand something you have to listen to all of the Alt or Actual Text and can't go through it using adaptive technology in smaller increments.

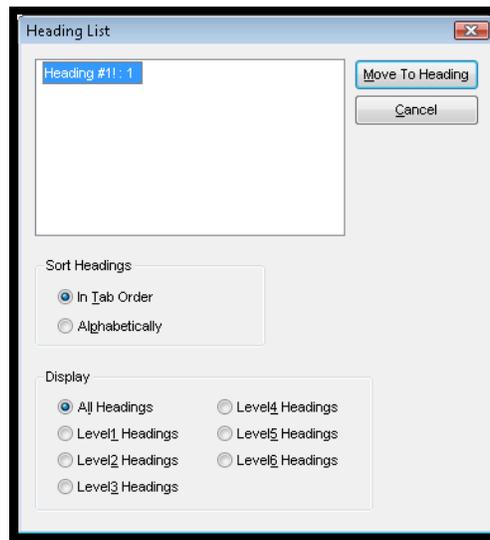
Once you have the Actual Text typed, press Alt + C to close the TouchUp Properties dialog.

Now select the <Normal> Tag and press F2 to edit it. Change the word normal to H1 and press Enter.



**Figure 537 Tag above the image of text in edit mode.**

The image of text is now a heading that can be found by screen readers.



**Figure 538 List of headings from the JAWS screen reader showing the repaired heading.**

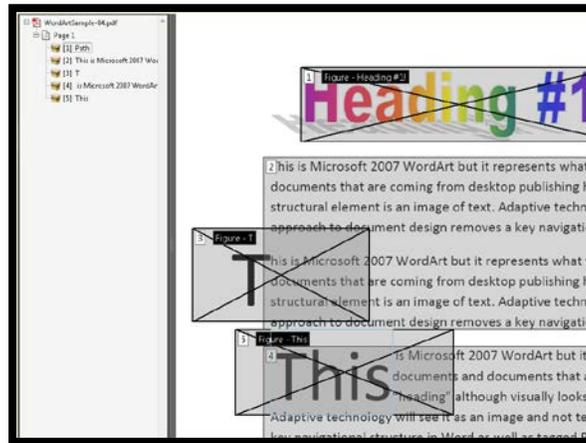
Using this technique we’ve added structure to a document that did not have any and provided a means of navigating from topic to topic in the document.

This is not a condoning of using this type of document part as a heading. If we adopted this as a “legitimate” way of creating headings we would then have to build in the cost of repairing all instances of images used as representations of headings. This is a way of repairing the odd case of someone who doesn’t use good document design in their documents.

In this sample, again because I’ve used WordArt to illustrate this technique, the exclamation mark was not tagged properly by Adobe PDFMaker. I will need to use the TouchUp Object Tool to include the exclamation mark in the <InlineShape> Tag.

What does this look like when we switch to the Order Panel? Will we be able to see the Actual Text as an attribute of the <InlineShape> Tag?

Yes. The following image shows what you should see when you use the Actual Text as opposed to the Alt Text attribute for an image of text.



**Figure 539 Images of text viewed in the Order Panel showing Actual Text attribute.**

Using the Order Panel it is easy to see that the letter “T” is not connected to or associated with any of the text next to it.

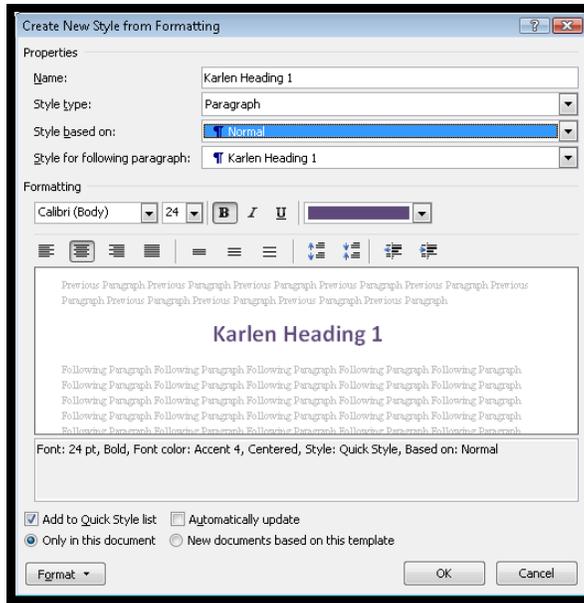
## **Non-Structured Custom Styles and the Role Map**

In the chapters on Microsoft Office I detailed how to create an accessible document that can be converted to tagged PDF with little or no repair. The emphasis is on using inherent heading styles and creating custom styles based on those inherent heading styles to save you repair time and make your Word documents more consistent navigable.

What happens if you have a tagged PDF that has a Title or Subtitle Tag in it? Both of these styles have no place in document structure as a hierarchical element. They are formatted <P> Tags for lack of a better description. They do have a style but are not based on a structural style that contributes to the hierarchy of the document content.

We might come across poorly designed custom styles that are in Word documents converted to tagged PDF. These would be styles like “Karlen 1” where the intent is that the formatting be a heading but it has only the visual representation of a heading not the underlying structure.

As a reminder, the following image is of the New Style dialog in Word showing the new heading style based on an existing heading style.

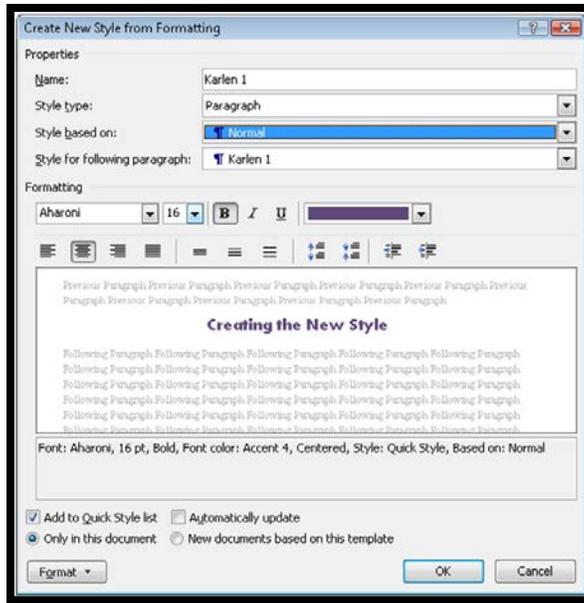


**Figure 540 New Style dialog in Word with heading based on existing heading.**

Notice that the “Style based on” is the heading 1 style. In this case the Karlen Heading 1 style will be tagged properly as a heading level 1 when the document is tagged.

This will be true for other applications. As long as you create custom styles based on the existing styles/hierarchical structure, the heading level should be tagged properly. I say “should” to account for any wonky applications that don’t use a true structure to their styles.

Let’s contrast this with a document author who creates a custom heading style but doesn’t base it on an existing heading style. In this case the name of the style lets someone know that it can be used for a heading, but the style lacks the underlying structure for adaptive technology to find it or for it to be converted properly to tagged PDF. Creating a style using this method also impacts the ability to repurpose the Word document to Braille, HTML, or DAISY format.



**Figure 541 New heading style not based on an existing heading style.**

In the preceding image the new Karlen Heading 1 style is based on the plain paragraph style not an existing heading style. This means it will be tagged as a plain paragraph. Remember to look under the hood!

How would we repair this in the tagged PDF document?

There are two ways to repair this in the tagged PDF. You can use F2 and enter the heading level into the Tag replacing what is there. If you go through the Tags Tree as part of a QA or Quality Assurance process you can see immediately that the Tag is a heading.

The other option is to use the Role Map in Adobe Acrobat. This lets you globally change the role of “Karlen 1” in the document to an H1 Tag. The Role Map is just for the document you are working on so changes won’t affect any other document.

If the name of the style is sort of cryptic and doesn’t provide the context of the Tag being a heading, my method of actually typing in the <H1> and so forth may cause less confusion. Given that documents are created using a myriad of formatting, it may be difficult to identify what should be a heading from the list of roles in the Role Map dialog.

As you work with documents you’ll decide which documents will be faster to repair using the edit Tag process [you can copy and paste while in edit mode] or whether the modifying of the Role Map for the document is going to be the faster solution. You should be aware of both repair techniques to make that judgement call.

In this example, the <Title> Tag should be a heading in the document so that people using adaptive technology can navigate by chapter heading.



Figure 542 Title Tag in a PDF document.

To modify the Role Map of a tagged PDF document:

1. With a tagged PDF document open, open the Tags Panel by pressing F4 and putting it in focus.
2. Press the AppKey on the Tags Root and choose "Edit role Map."

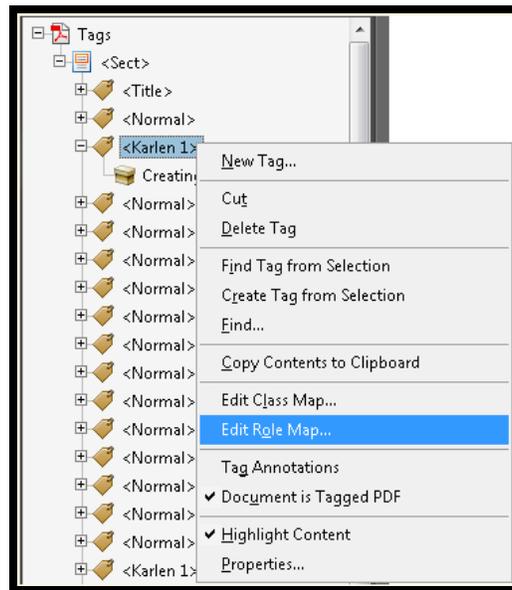
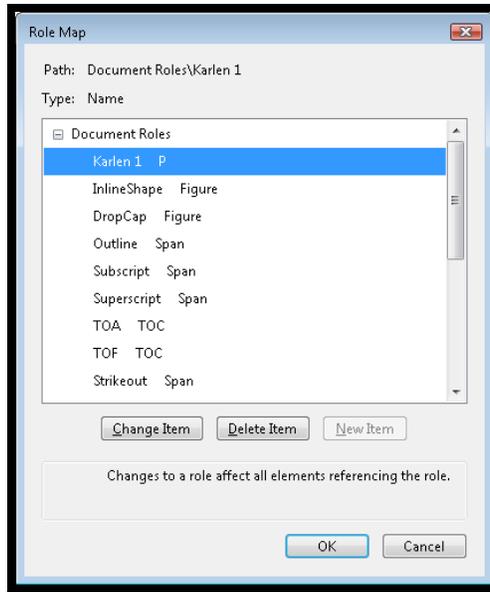


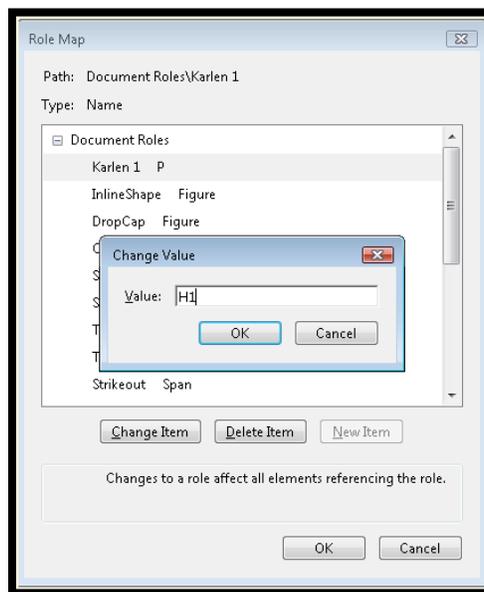
Figure 543 Tag context menu showing "Edit Role Map."

3. The Role Map dialog opens and the "Roles Tree" is collapsed.
4. Use the Left and Right Arrows to collapse or expand the Role Map Tree.
5. Use the Up and Down Arrows, Home or End keys to move to up or down, to the beginning of the Role Map Tree or to the end of the Role Map Tree.



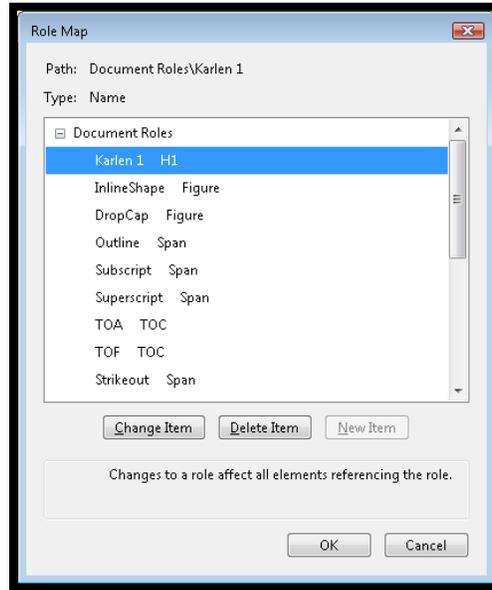
**Figure 544 Role Map expanded in the Role Map dialog.**

6. Locate the “Title” element. It will have a “P” after it indicating that its role is that of a paragraph in the tagged PDF document.
7. When the Create New Item button is activated by pressing the Enter key, a smaller dialog opens where you can type the element you want the Title to be, in this case an H1.



**Figure 545 Title element identified in Role Map Tree.**

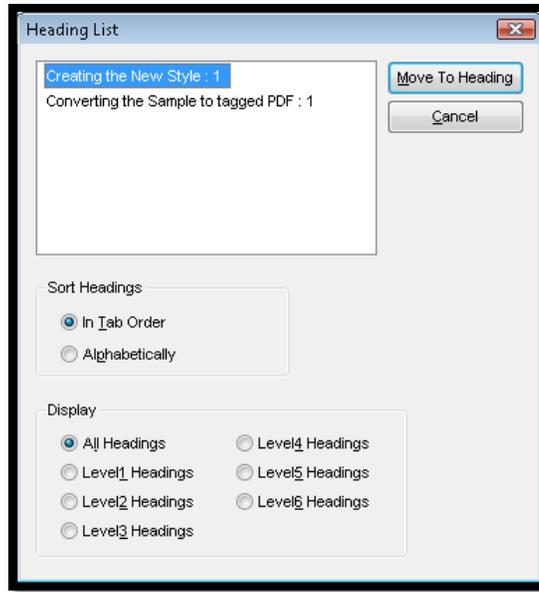
8. Once you've entered the role you want this element to be in the document, in this case an H1, Tab to and activate the OK button by pressing Enter.
9. When you are returned to the Role Map dialog, the "Title" will have H1 after it which indicates that the <Title> Tag will now be seen as an <H1> Tag throughout the document.



**Figure 546 Role Map dialog showing successful change to the role of Karlen 1.**

10. Tab to and activate the OK button in the Role Map dialog by pressing the Enter key.

In order to test this using adaptive technology, you will need to save the document, close it and open it again.



**Figure 547** List of headings from the JAWS screen reader showing the modified role of the <Title> Tag.

**Note:** If you are using Adobe Acrobat 8 Professional you can change the Role Map assignment for example such as the one illustrated above. If you are using Adobe Acrobat Professional 9 you cannot. When the document is tagged from Word it is the underlying P Tag that is applied in the Tags Tree NOT “Karlen 1” or whatever the name of the style is. While technically “correct” this does not let you use the Role Map to globally change role assignments. It means you will HAVE to use the manual editing of every Tag whose role needs to be changed.

## Bookmarks

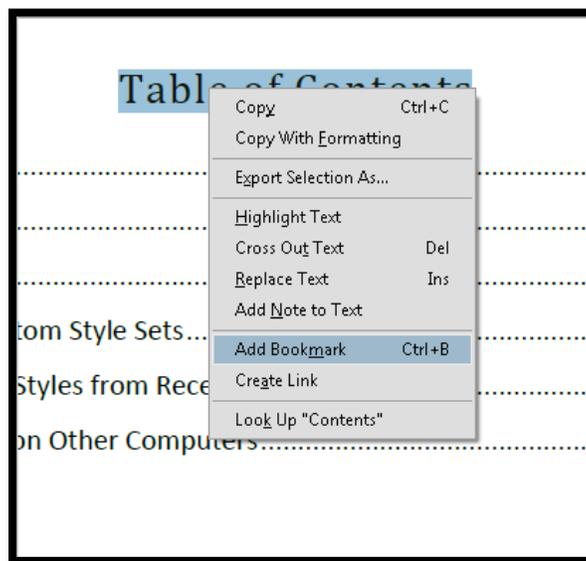
If the native application can produce Bookmarks at the same time it converts the document to tagged PDF this means less work for you! If you are working with a tagged document that has no Bookmarks or an untagged PDF document you will need to add the Bookmarks.

Although Bookmarks and Headings can be created at the same time we have to remember that they provide very different ways of navigating. Someone using a screen reader will be able to quickly get a list of headings in a tagged PDF document while someone with learning, cognitive or visual disabilities will not. [Screen magnification software has TTS or Text-to-Speech tools and some do not provide speech support for PDF documents] People who are not using screen reading also need a way of navigating from topic to topic. This is done using Bookmarks.

It is easy to add Bookmarks to a tagged PDF document but again I suggest that you review the document and make decisions about what headings you will create Bookmarks from. Ideally anything that appears to be a visual heading in the document should be a Bookmark but we know that this is not always practical due to the over formatting of content and the time it will take to make “everything” a Bookmark that needs to be one.

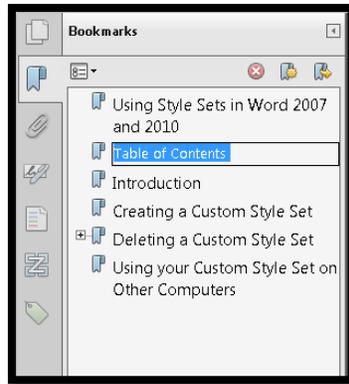
To add a Bookmark to a tagged PDF document:

1. Make sure the Select Text Tool is active.
2. Open the Bookmarks Panel in the Navigation Panes.
3. Select the first piece of text that will be used as a Bookmark
4. Press the AppKey or the right mouse button to open the context menu for the selected text.



**Figure 548 Create Bookmark for selected text.**

5. When the context menu opens choose “Add Bookmark.”
6. The Bookmark will be added to the list of Bookmarks in the document.
7. You will be in edit mode for the Bookmark in case you want to call it something else.



**Figure 549 Bookmark inserted in edit mode.**

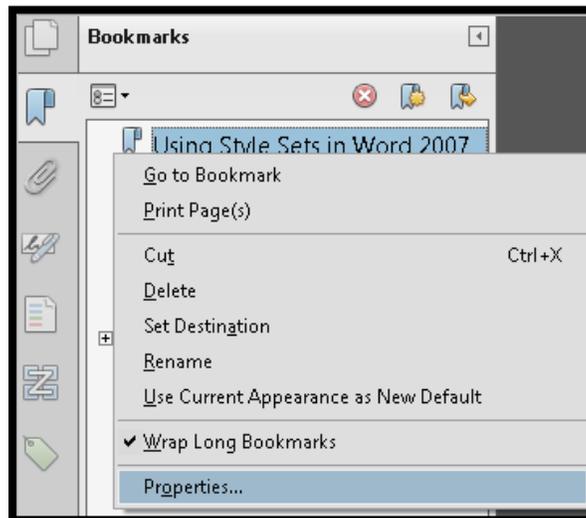
This is a first level Bookmark. You can nest Bookmarks for content that is under a chapter or main topic. You will drag the newly created Bookmark under the existing one.

One of the things I do for chapters is to make the chapter Bookmarks a different colour so that someone with a learning, cognitive or visual disability can easily see the chapter headings and then expand them to view additional Bookmarks.

To change the colour of a Bookmark:

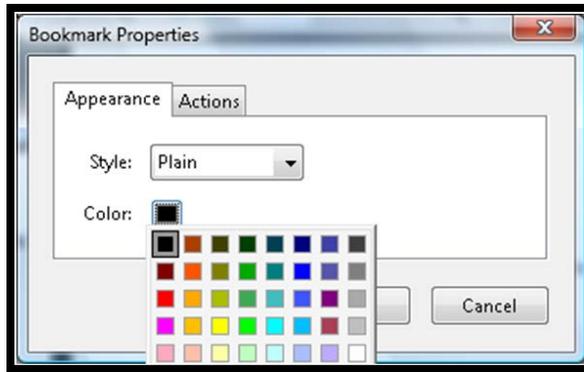
Select the Bookmark.

Press the AppKey to open the context menu and choose Properties.



**Figure 550 Context menu for a Bookmark showing Properties selected.**

When you press Enter on Properties, the Bookmark Properties dialog opens. One of the settings is for the colour of the Bookmark.



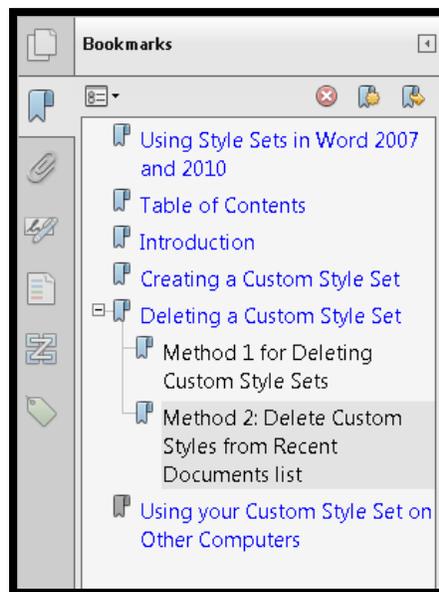
**Figure 551 Bookmarks Properties dialog.**

Open the colour palette using the mouse and choose a colour.

I've experimented with the colours to find one that is a good contrast yet still distinguishable from the black text of a regular Bookmark. The bright blue seems to be a good choice.

Once you choose a colour, Tab to and activate the OK button by pressing Enter.

The top level Bookmark will now be a different colour than lower level Bookmarks. Don't get colour happy and make all levels colourful. The goal is to help with navigation not to create confusion and unreadable Bookmarks.



**Figure 552 Bookmarks with high level Bookmark in bright blue.**

You might not want to add the colour change if your document is large and contains many high level Bookmarks especially if you have to manually add each Bookmark. This will be a decision made on a document by document basis unless your organization adopts this as policy.

## Paragraphs

One of the questions I get asked a lot when doing workshops is “how many characters are in the buffers of adaptive technology?” This comes after I state that each paragraph needs its own <P> Tag and you should not combine paragraph text into one huge “ginormous” <P> Tag.

Adaptive technology does have buffer limits. If there is too much content in a paragraph the adaptive technology will strain to read all of it at once. This impedes the understanding of the content but also may cause the adaptive technology to crash or Adobe Reader to crash.

I’ve noticed a trend in the tagging of PDF documents to have huge amounts of text in one <P> Tag. This means that more repairs will need to be done to separate the paragraphs into their own <P> Tags. In past versions of Acrobat the tagging was much better at putting each paragraph in its own <P> Tag.

There is no “absolute” character limit. Remember that we have several adaptive technologies each with its own buffer. We can’t use only one adaptive technology to define our paragraph character limits. What if the buffer for that adaptive technology changes?

Instead we need to come back once again to the Tags and the proper Tag for the content. In this case one <P> Tag for one paragraph. This makes our lives much simpler and we don’t have to worry about a broad range of adaptive technology buffers or our documents crashing adaptive technology.

Remember too that the Order Panel view of a document cannot give you the details of individual <P> Tags for each paragraph. The Order Panel can give you a global view of a page for you to verify that all content has been tagged, but it cannot give you the details you need to ensure that you have an optimally accessible PDF document.

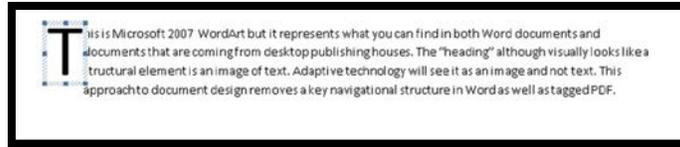
## Drop Caps

Another “formatting option” that causes accessibility issues is the use of Drop Caps in documents.

What are Drop Caps?

If we think of the books we read as children or some textbooks that have the first character of every chapter in a large scroll or integrated into an image around the large letter we recognize Drop Caps.

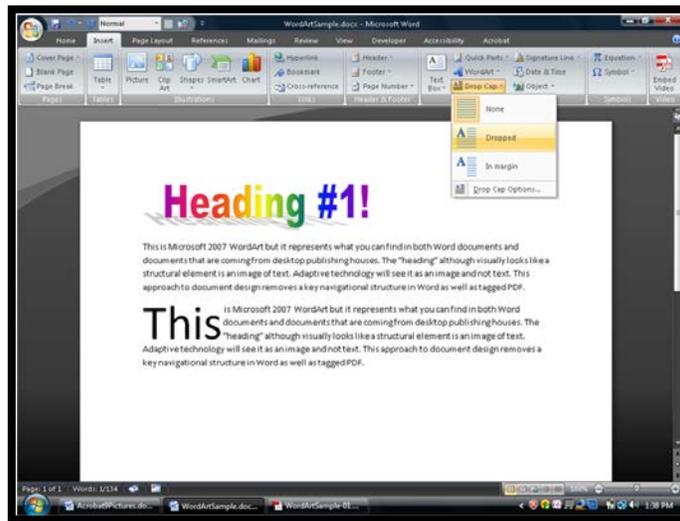
Typically this is the first letter of a word but it can be the first word in a paragraph.



**Figure 553 Drop Caps sample.**

The preceding image is a sample from Microsoft Word. Once you “format” a letter or word as a Drop Cap it becomes a <figure> or <Drop Cap> Tag when the document is converted to a tagged PDF. When a person using a screen reader encounters a Drop Cap in a Word document the paragraph in the illustration would begin with “graphic T, his” which doesn’t make sense as a word. This is because the “formatting” of the letter T as a Drop Cap turns it into an image of text just as WordArt does. Therefore it is “read” as a graphic not as text or part of the word it is visually associated with.

You can select an entire word in Microsoft Word or earlier and make it a Drop Cap.



**Figure 554 Creating a Drop Cap in Word 2007.**

This results in minimal disruption of reading in that the person using a screen reader would hear: “graphic This.” And then the rest of the paragraph would be read as normal text. However, this is still an issue for people with learning, cognitive or visual disabilities who are trying to read visually and are not able to associate the capital letter with the rest of the word or who are distracted by the size of the first word in the paragraph. Drop Caps aren’t an “accessible” way to format text.

Using a larger font for the first letter isn’t an option once you get to around 28 point as it visually separates the first line of the paragraph from the rest of the paragraph due to the space required for the larger font.

Having said all this, what can we do to optimize the accessibility of a paragraph that begins with a Drop Cap?

The best we can do is to use the Actual Text attribute at this point in time.

This is the fastest repair we can make. There are techniques for trying to isolate the text of the figure or image of text and then try to select the text itself and Tag it as text but this takes time and in a document that has come from a scanned image or desktop publishing software this is often not possible.

We could also work in the Content Panel to try and isolate any text from the image Tag but this again is often not possible when working with scanned documents or documents coming from desktop published applications.

I recently worked on an untagged PDF document from a desktop publishing application that did not let me add the drop cap to the Tags Tree at all. The only solution for this would be to try and snag a small piece of the background as a <Figure>Tag and give it Actual Text, however in this case it was not possible. Adding Actual Text to a piece of content that is already properly tagged may result in an error in the accessibility full check for “alternate text that will not be read by adaptive technology.” There is currently no solution for this type of drop cap usage in a document.

## Non-Unicode Characters

This seems to be as good a place as any to discuss the use of non-Unicode characters in a document and their impact on accessibility. Again this topic is based on my experience in working with PDF documents that have come from desktop published documents whether they are tagged or untagged.

Many designers use either images of fonts or proprietary fonts when creating documents. When those document are converted to tagged PDF several problems can arise.

First, if a character is a “picture” of a character it will most likely be relegated to an Artifact.

Consider the word “Introduction” in a document with a language variant that may not be common. If the letters I, n, t, r, o are in the font dictionary they can be used but if the characters d is not and the person working in the native application “draws” the font, it will not be part of the word.

This means that the Tag for the word “Introduction” would look like this:

<H1>

I  
n  
t

r  
o  
u  
c  
t  
i  
o  
n

Normally this would be pronounced correctly if all characters were present but since the “d” is missing, the word will be mispronounced. I see this type of “kludge” primarily for characters with accents. I also see it for non-Unicode font sets that have been used simply because they are proprietary when a standard font set would look the same in the document.

There is no way to fix this in a document and the text that is affected is inaccessible because it will not be readable to someone using TTS or screen reading. It can only be accessed visually where someone can see the entire word and visually read it.

There are times when the errant character can be tagged but it will be tagged as a <Figure> rather than text which also makes the word or words inaccessible because they are unreadable as a continuous flow of text.

One workaround might be to Tag the word as a <Figure> Tag but as with some other innovative solutions, you may get an error message indicating that a Tag has Alt Text that will not be rendered to adaptive technology. The repair to try in this case would be to Tag the text as an image and put it into a heading Tag with Actual Text for the word. If the word contains accents, you can type it into Word and copy and paste it into the Actual Text edit area.

Another problem with non-Unicode characters is that they will often appear in an accessibility full check as two elements:

- Content not in the structure tree.
- Figures with no Alt Text.

When you see both of these errors they will most likely have the same number associated with them. For example 7 elements not in the structure tree and 7 images with no Alt Text.

This is a flag to you that the issue is related to either non-Unicode elements such as bullets or pieces of the background that have been snagged but not recognized as anything formal in the document.

If they are bullets, you will be able to find them by clicking on or activating the link to them by the keyboard from the full check report document. However they will not appear in the Tags Tree or the Order Panel.

The only way to repair this is to go into the Content Panel in the Navigation Panes and locate each of the non-Unicode bullets then make them Artifacts. Be sure to turn on the Highlight content in the Content Panel so that you can accurately locate these elements.

Keep in mind that it is the actual list structure that will be accessed by adaptive technology and not the visual bullets. This means that the bullets can be Artifacts as long as the list structure is present in the Tags Tree.

As you repair one, both instances will decrease in value. For example if you make one repair, the full check would then indicate 6 elements not in the structure tree and 6 images with no Alt Text. This is how you verify that this was indeed the problem.

The repair is the same if there are pieces of the background associated with this type of error. The repairs can only be made in the Content Panel.

It is critical to the creation of tagged PDF that Unicode character sets be used.

In this case if the errant non-Unicode character cannot be made an Artifact you will never get a clean accessibility full check. So this approach to document creation fails on two levels: it creates unreadable text and does not allow for a clean accessibility full check.

**Note:** A clean Accessibility Full Check is not a definition of an accessible PDF document. I do recognize that it is part of a QA or Quality Assurance process which is why I include it here as a failure of the global document to be accessible. I do not support a clean Accessibility Full Check as a definition of an accessible PDF document. In this case the failure is symptomatic of serious accessibility issues in the document.

## Columns

As mentioned in the chapter on Columns, frequently there are issues when working with documents that have come from either scanned images of documents or from desktop publishing applications.

This topic will walk through the problem and some repair techniques.

The following image shows what often happens when columns aren't created properly or if the tagging process goes wrong. The only solution for this is to manually repair each line in the column and insert it under its own <P> Tag.



**Figure 555 Text in columns that has been tagged improperly.**

In the illustration the first line from each column has been tagged as one paragraph. The second line of each column has been tagged as a separate paragraph. This is how the adaptive technology will read or render the information to the person using TTS or screen reading.

If you Reflow the document using Ctrl + 4, it will reflow combining the first line of each column as if it were a sentence unto itself.

If you were to look at the Order panel, you'd see that the three columns were identified as a single block of text not as individual columns. If we were to accept the view of the document in the Order panel, we would miss this serious accessibility issue. It is only by going through the Tags Tree using Highlight Content that we would find this accessibility issue.

**Note:** You may not be able to select the lines in the paragraphs using the mouse. The best way to select each line and add it to its proper <P> Tag is to use the keyboard and the keyboard commands for selecting text: Shift + Left and Right Arrow, Ctrl + Shift + Left or Right Arrow, Shift + Home or Shift + End. Using the zoom to magnify the individual column content also helps when selecting text. This task will take a lot of patience.

How do we repair this?

This is a manually intensive repair and a good reason to make clear to any publishing houses that are producing your content in Quark or InDesign or any other desktop publishing software that

they need to create well-structured and designed documents that can live in both the print and digital worlds.

First, you would locate the <P> Tag and delete the content under it. You will have to add other <P> Tags for the other paragraphs but in this example we'll concentrate on repairing one paragraph from the sample illustrated on the previous page.

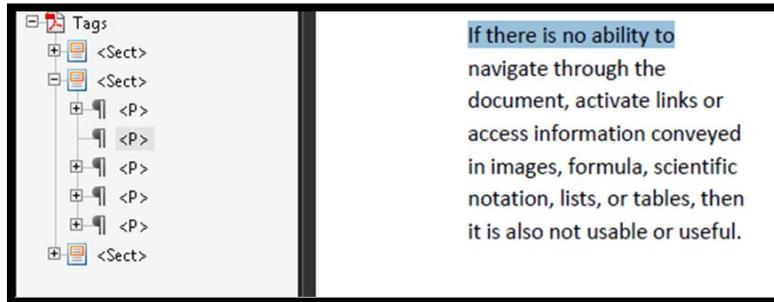


Figure 556 Empty <P> Tag with corresponding content selected.

Make sure the empty <P> Tag is selected.

Use the Select Text Tool to select the line in the paragraph you need to create the true paragraph from.

Use the mouse to open the context menu in the Tags Panel.

You can press F6 and use the AppKey.

Choose "Create Tag from Selection."

The line of text will be nested under its parent Tag the <P> Tag.

You will need to do this for each line of text in the paragraph.

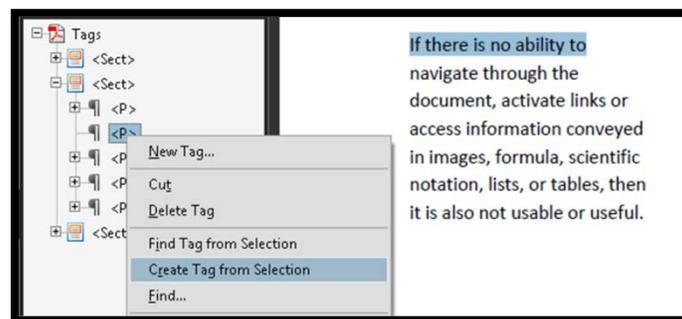
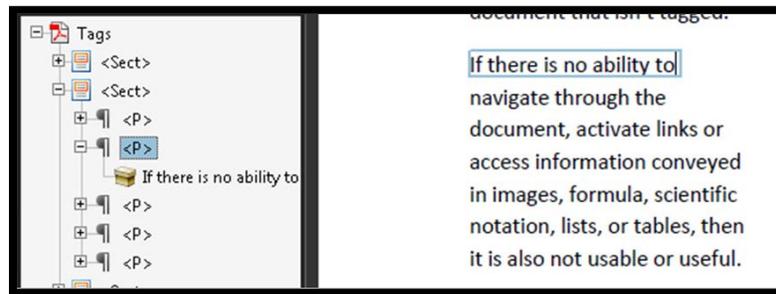


Figure 557 Paragraph Tag context menu showing "Create Tag from Selection" selected.

I always have Highlight Content turned on so that I can visually verify that no other surrounding content has been added to the Tag.



**Figure 558 Part of the repaired paragraph in a column.**

When doing this type of repair work, occasionally a space at the end of a line may not get tagged. This will show up in an Accessibility Full Check as content not in the structure tree. You will need to zoom to 400 or 800 percent to either make it an Artifact in the Content Panel or add it to the Tags Tree using the Order Panel. This is a decision you'll need to make based on time. It won't affect the accessibility of the document but it does affect a clean Accessibility Full Check.

## Lists

In previous chapters we've talked about how to create an accessible list in Microsoft Word. The "accessibility" of a list is dependent on it not being broken and that standard Unicode bullets are used in the case of what would be a bulleted list.

Now we turn to how to make repairs in Adobe Acrobat if we notice that lists haven't been tagged properly or there is an indication in the list was broken in the source document.

One of the things I've noticed when people are "designing" documents is that bulleted and numbered lists are often as misused as tables. For example an entire document may be bulleted to provide visual spacing or "design" to the document. The end result is that readers are confused, lists are often broken and content that visually seems to be related isn't.

Lists are intended to provide brief lists of common items not to format an entire document. The ability to correctly tag a document is impeded when the person making the repairs to the Tags can't figure out what level they are at or what content from the previous list item is directly related to the current list item...or the next one for that matter.

What should a properly tagged List look like?

First there should be the identifier Tag that will tell the adaptive technology that it has encountered a list of several items. A list should never be "one" item.

The <L> Tag is the starting point.

Under the <L> Tag are the <LI> Tags for each listed item whether it is bulleted or numbered.

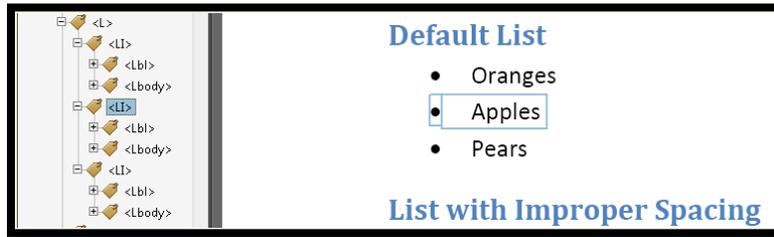


Figure 559 Properly tagged list from Microsoft Word.

The preceding image is a list created using Microsoft Word. How can we tell? If we could see the rest of the Tags Tree we would see the <Normal> Tag which is an indicator for Microsoft Word paragraphs. If we expanded the <Lbody> Tag we would see the "List Paragraph" style which is another indicator for a Microsoft Word document.

However, this does give us an example of a properly tagged list. Sometimes if you add the Tags to a document you will not get the <LI> or "list Item" Tag but each individual list item should have its own <LI> Tag.

What happens when space is added around a bullet or numbered list item without using proper spacing? In other words someone just presses the Enter key so that it visually looks OK but the underlying structure of the list is broken

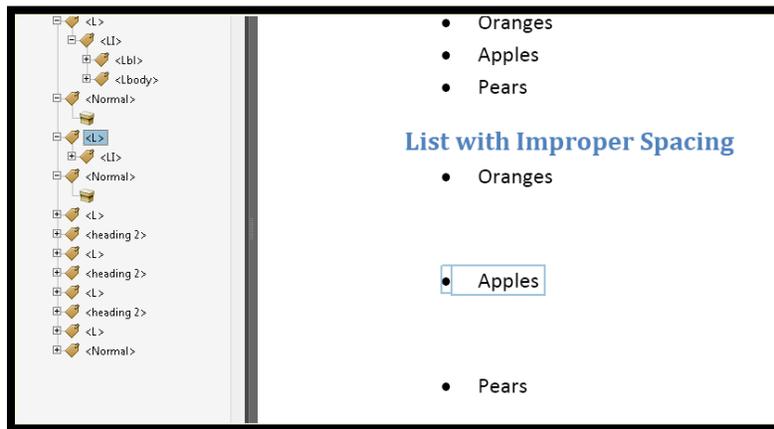


Figure 560 Improperly spaced list.

The preceding image shows a bulleted list where the spacing for the bullets has not been used. Instead the document author has pressed the Enter key to force space between bulleted items.

Notice that each list item now has its own <L> Tag and a <Normal> Tag or what is a blank line is between the lists.

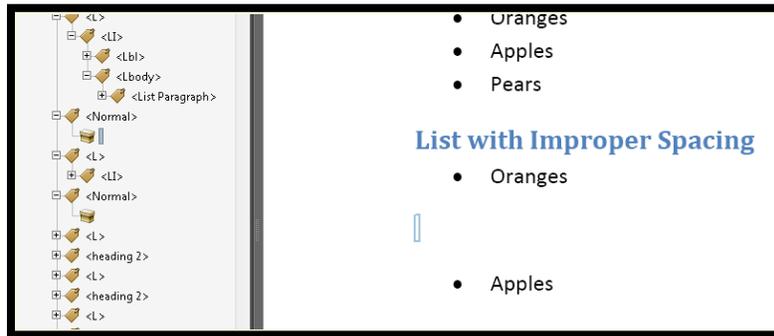


Figure 561 Tag for a blank line in the PDF document.

A person who is using a screen reader would hear: List of one item, bullet, oranges, blank, list of one item, bullet, apples, blank, and list of one item, bullet, and pears, blank.”

The purpose of having similarly contextual items listed or numbered in the case of instructional steps is lost.

How can we repair this in a cost effective manner?

Don't just delete the blank lines or <Normal> Tags. I know this is your first instinct!

Open all the Tags associated with the entire list. This includes the <Normal> Tags.

Remember we need to think of documents as more than the “visual.”

Drag the empty line Tag, not the <Normal> Tag under the <Tbody> Tag for the first list item.

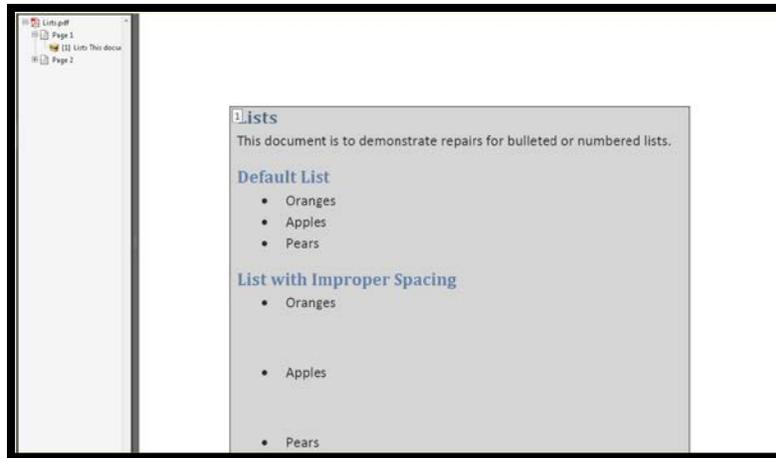


Figure 562 Repaired Tag for a list item with improper spacing.

Now the blank line is associated with the appropriate list item and will be included with it.

The now empty <Normal> Tag can be deleted.





**Figure 565 Sample list document from the Order Panel.**

There is currently no tool in Adobe Acrobat that lets you select a list and apply the proper list tagging to it. Adobe Systems is aware of this.

## **Repairing Non-Unicode Bullets**

I've mentioned that as long as the list items in the visual representation of the document are tagged properly we can put troublesome non-Unicode bullets into the background as Artifacts.

What do I mean by this?

The images for this topic are from Microsoft Word. The same type of bullets are available in Word 2003. The problem is generic when non-standard bullets are used to visually create "lists."

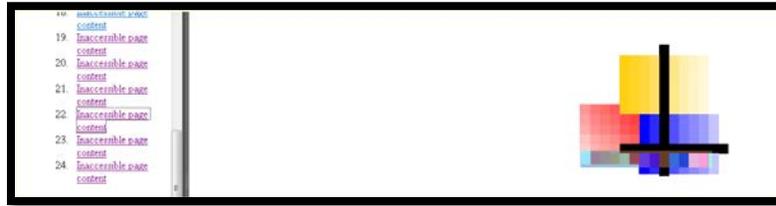
In desktop published documents if the standard bullets aren't used, what appears to be a bulleted list to the eye is really a series of paragraphs with pictures of round dark circles in front of them. Remember we talked about the list structure and how to properly structure the list items.

If a list hasn't been created properly the relationship between the items is lost. In the case of desktop published documents the repairs are more extensive than in our sample for this topic because the entire list structure will have to be built manually.

In our example, only the bullets are the problem. The list has been properly tagged. However, to make these repairs whether you are working with a Word document with non-Unicode bullets or a desktop published document with non-Unicode bullets, the repair will be the same.

The following image is of image shows the results of an Accessibility Full Check for the last list on page two of my document. There are only three bulleted items: oranges, apples and pears. There are no other "images" in the document.

The Accessibility Full Check found 24 images with no Alt Text and 24 pieces of inaccessible page content. This is typical of what you will see in these cases.



**Figure 566 Accessibility Full Check results for a non-Unicode bulleted list.**

In the preceding image the zoom is set to 1000 so I can see where these very small pieces are and confirm my suspicions. In this case the inaccessible page content numbered 22 is the small piece of the bullet in the document that is just under the horizontal black line. One part of it is on the left of the vertical black line and one part of it is on the right of the vertical black line. Again this is typical for this type of bullet.

In this case each of the three bullets have a total of 6 XObjects associated with them. This is why using the 1000 percent zoom is useful for making repairs. It makes even the smallest inaccessible page content visible. In some cases you will need to go higher than 1000 percent zoom.

After randomly looking at what the Accessibility Full Check found, I then move to the Content Panel. If you look at the Tags and the Order Panel you will not see any of these problems. They cannot be repaired in either of those panels.



**Figure 567 First XObject found in Content Panel.**

The Content Panel is the equivalent to the “raw print stream.” Every element on a page can be found here. The content is arranged in the order it will be printed which is not necessarily the order it will be read.

There is a Highlight Content for the Content Panel. To turn it on press the AppKey anywhere in the Content Panel and choose “Highlight Content.”

Where is the content in the document? Look very carefully at the top of the vertical black line of the bullet. It is the topmost “black square” and is outlined in a pale blue. You cannot change the contrast

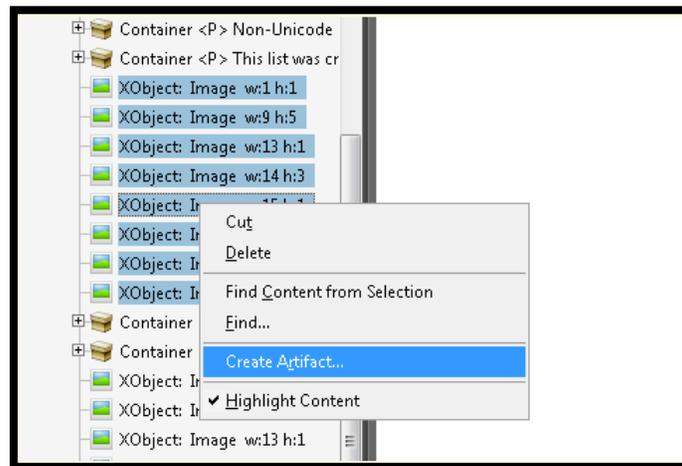
during this process and it has always been quite frustrating for those of us working to repair PDF documents for accessibility. Adobe Systems is aware of this issue.

Notice in the Content Panel that all of the XObject elements that make up this bullet are together! This is great! They could very well be all over the page!

Hold down the Shift key and select all of the parts of this bullet. As you select parts of it, the XObjects, they will be highlighted in the document.

Once you have them selected, press the AppKey to open the context menu,

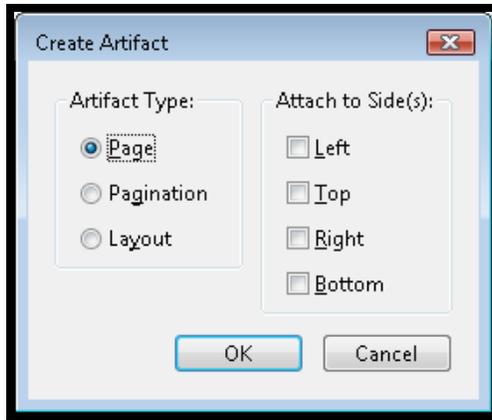
Choose “Create Artifact” from the context menu.



**Figure 568 All parts of the bullet selected and context menu open.**

A dialog opens where you can determine which type of Artifact you want to create.

I generally leave it as an Artifact attached to the page.



**Figure 569 Create Artifact dialog.**

When I look at the Content Panel again, all of the Objects associated with that bullet are now Artifacts and in the background of the tagged PDF document.



**Figure 570 Non-Unicode bullet now an Artifact.**

A reminder that the list has been properly tagged so putting this image of a bullet in the background as an Artifact is a moot point and does not affect the accessibility of the document.

Now when I perform an Accessibility Full check, there are no errors in the document.

I could have left the “inaccessible page content” since it was not represented in either the Order Panel or the Tags Tree. Adaptive technology wouldn’t see this type of error. It is invisible to adaptive technology.

However, it would show up in the Accessibility Full Check and if your organization requires a clean Accessibility Full Check, you would need to make these repairs. I generally make them because I prefer clean tagged PDF documents with no opportunity for something to go wrong.

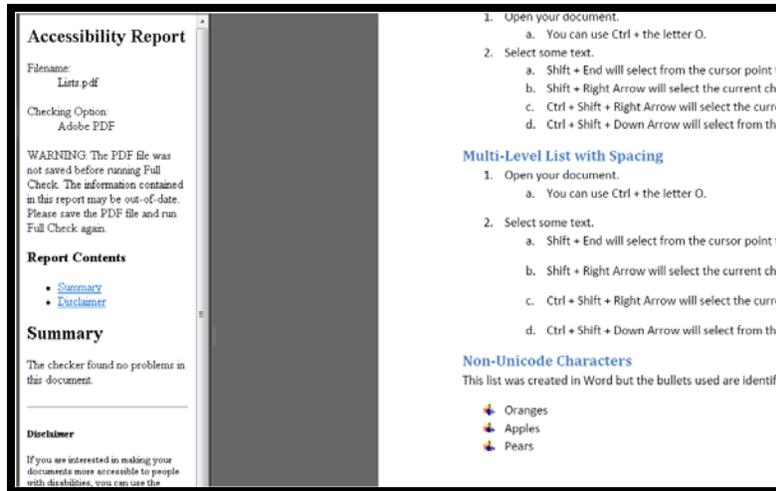


Figure 571 Clean Accessibility Full Check once repairs were made.

In this case I didn't need to review all 48 instances of errors found in the first Accessibility full Check. I randomly confirmed my suspicions and then made the repairs. As you work with these types of problem documents, you will begin to recognize common issues for non-Unicode bullets in documents. Your repair time will be less.

## Tables

It is important for any data table to have the proper Tags. This means that any header rows are identified using the <TH> Tag. Do not use <H#> Tags in tables. Headings or <H#> Tags are for text while table header Tags or <TH> are to identify table header content.

You may need to add the <TH> Tag to column or row titles.

If you are using a document that has come from Microsoft Word and the document author has used the "Header rows repeat" tool in Word, the column titles should have the <TH> Tag. There is currently no tool in Microsoft Word, even 2007, that will let a document author add row titles to a table in Word.

If you are working with a document that is a scanned image of a document or has come from desktop publishing software the table headers may not be identified when the document is tagged. This will depend on whether or not Adobe PDFMaker can determine that what it is converting is a table or not. This in turn will depend on how the table was created in the desktop publishing software and how clean the scan of the document was. It will also depend on whether a table was used for design purposes or not.

Sometimes if a table was used for design purposes in a document bits and pieces of it will be tagged but the entire table will not be properly tagged.

In the case of some tables that are a sort of combination of design and data you will see this problem as well – parts of a table will be tagged while other parts won't be.

There will also be instances where you will not be able to Tag individual table cells due to the origin of the source document or table creation.

With these documents you will need to make some decisions about what the proper Tags are.

I've primarily seen these problems when cells have been merged or split and have in effect "lost all association with the table structure around them. There are times and documents where you won't be able to use the TouchUp Reading Order Tool or the Table Inspector to repair the table and will have to manually Tag each cell...if that is even possible.

It comes back to better document design and how we implement tables in documents. Most of us are pretty sloppy in our use of tables.

Before we look at the Table Editor Tool in the TouchUp Reading Order Tool, let's look at how we can make the repairs in the Tags Tree. This is a fast way of making minor repairs although using the Table Inspector will give you the Tags at a Glance view of the table. It is still worth knowing how to make the minor repairs in the Tags Tree.

## Table Editor

Part of the TouchUp Reading Order panel tools is a "Table Inspector." In Acrobat 9 this tool lets you identify a scope attribute for columns that span more than one column. For example in a complex table where you may have two header rows one of which spans the other.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	2500

In the preceding table there are two header rows. The first header row contains two headers that were created by merging two cells. By implementing the scope attribute, when a person using a screen reader moves down through the content for Barnaby's sales for the second quarter, they would hear: "First half of 2009, second quarter, Barnaby, 2,500. The person reading the information in the data table would be able to understand the relationship between data and understand what the number 2500 meant.

Consider that without using table headers or the TH Tag for “First Half of 2009,” Second Quarter,” or “Barnaby” that a person using a screen reader would hear the following as they moved through to that table cell: “2000” If they went through the entire table of data without TH or column and row titles/headers, they would hear: “Karen, 1500, 2500, 2500, 27500, Barnaby, 2000, 2500, 2750, 2750, Olivia, 2000, 2500, 2750, 2750.”

This is a simple table. Can you imagine trying to figure out the relationship between data in a complex table?

To use the Table Inspector, select a table in the document by clicking on its content “container” number.

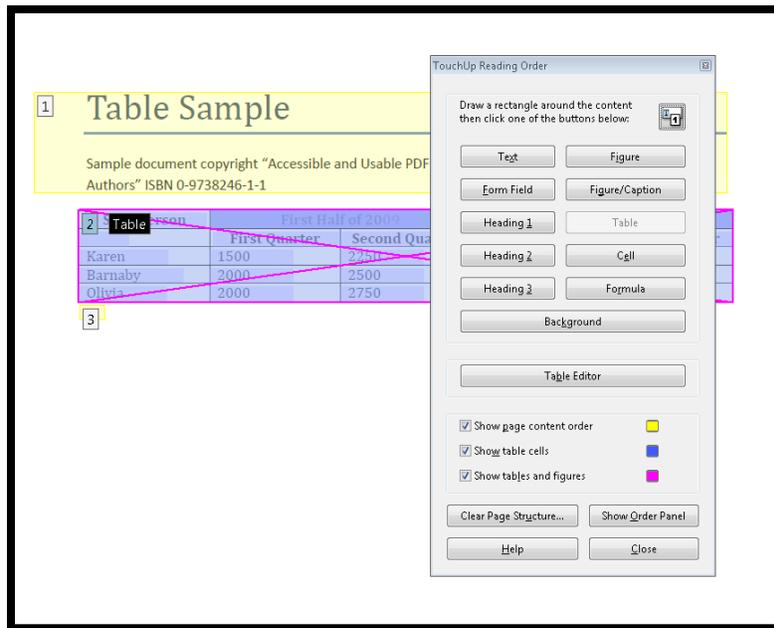


Figure 572 Table selected in a document and Table Inspector button active.

The TouchUp Reading Order panel temporarily disappears and the table is outlined in red.

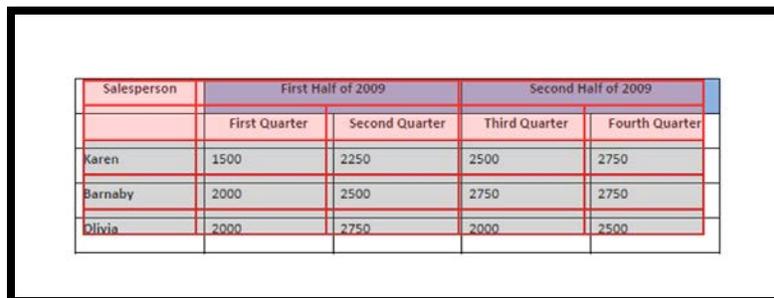
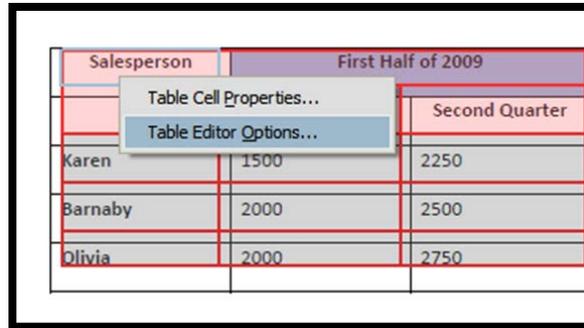


Figure 573 Table with Table Inspector active.

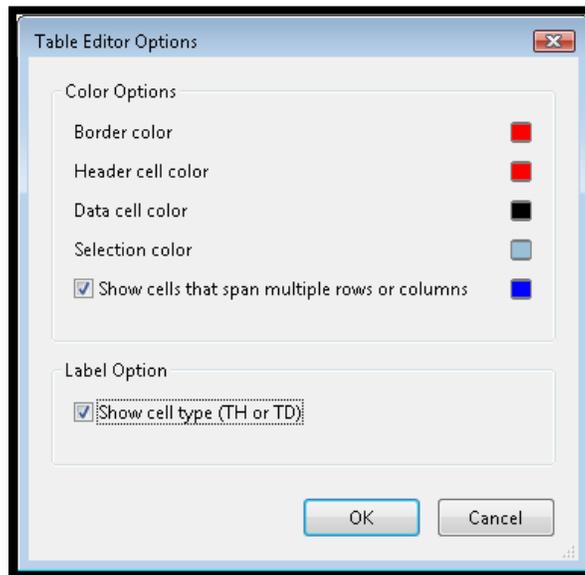
The cells in the table are outlined which lets you verify that the right content has been distributed appropriately in the table as individual table cells.

At this point, activate the left mouse button. A context menu opens. Choose “Table Editor Options.”.



**Figure 574 Context menu for table while Table Inspector is active.**

A dialog opens with settings for how you work with and view tables while using the Table Inspector.



**Figure 575 Table Inspector Options dialog.**

If you have colour deficits and have issues seeing red, you can adjust the colours for table elements to meet your needs. You also want to make sure that the check box to “Show all types” is checked. You can use colour to quickly evaluate the tagging of the table and its cells and then make repairs.

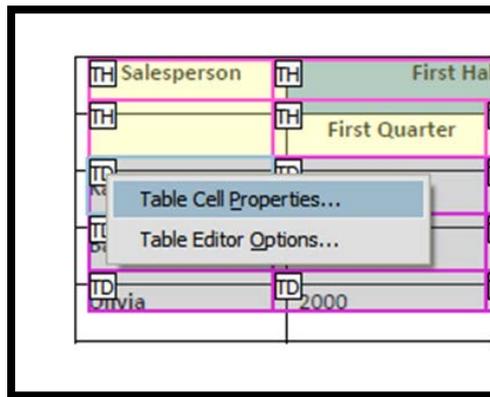
Activate the OK button and you are returned to the document. Now you will be able to see the attributes for each cell.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Sabrina	2000	2500	2750	2750
Mirvia	2000	2750	2000	2500

**Figure 576 Table Inspector now showing table Tags such as TH or TD.**

Notice that because I've used odd colours, it is easier to see which cells have a <TH> Tag and which cells have a <TD> Tag. If a cell is tagged as a <TD> or data cell but it should be a header cell as in this table, you can make this repair.

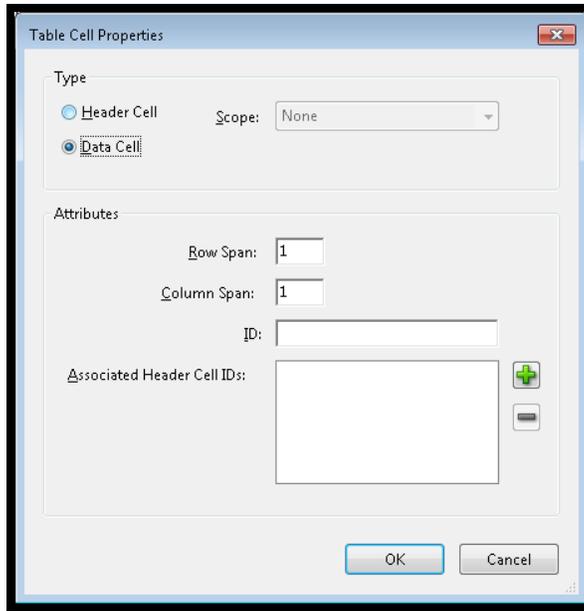
Using the mouse, left click to select the cell.



**Figure 577 Table Inspector context menu showing "Table Cell Properties" selected.**

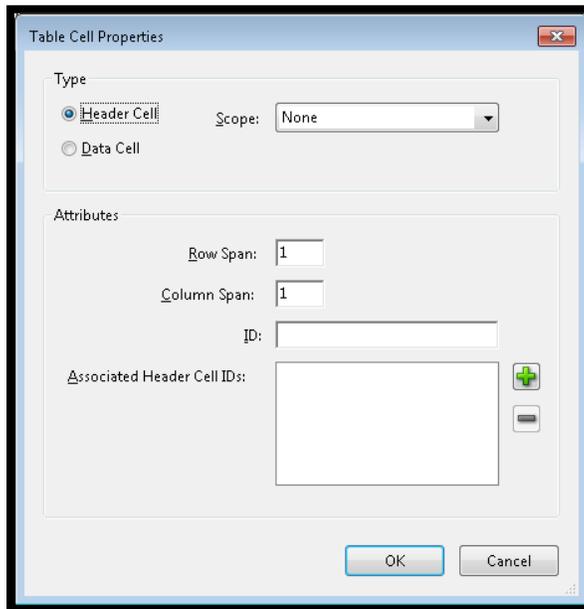
Activate the left mouse button to open the context menu but this time choose "Table Cell Properties."

A dialog opens and since this is a <TD> or Table Data cell, that is the radio button that is checked.



**Figure 578 Table Cell Properties dialog open showing Table Data cell selected.**

Choose the “Header Cell” radio button, Tab to and activate the OK button.



**Figure 579 Table Cell Properties with the Header Cell radio button selected.**

When you return to the document, the cell now has a <TH> Tag rather than a <TD> Tag. In the following images I’ve repaired all of the cells in the first column.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Yviva	2000	2750	2000	2500

Figure 580 Repaired cells in column one to be <TH> Tags rather than <TD> Tags.

Notice that they are now the yellow colour so are clearly visible as <TH> or Table Header cells.

Also notice that the Table Inspector didn't know how to colour code the two merged <TH> or Table Header cells in the first row of the table. We need to repair this.

Select the "First Half of 2009." By clicking on the <TH> attribute in the upper left corner of the cell. Right click the mouse to open the context menu and choose "Show Cell Properties."

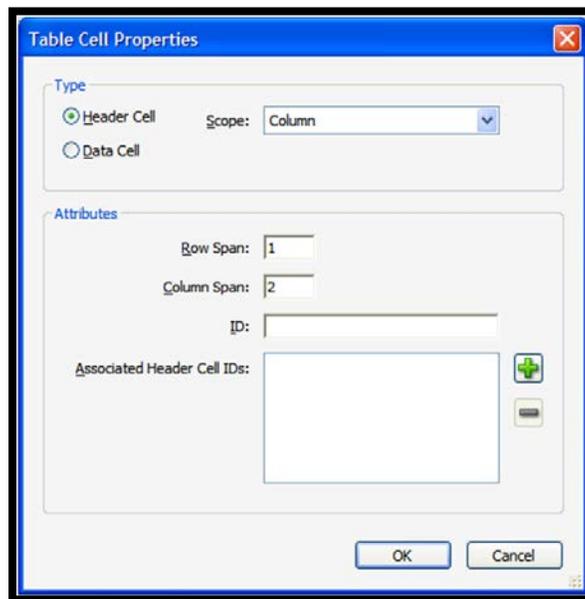


Figure 581 Table Cell Properties dialog with scope information filled in.

You will be warned that you might be creating a "malformed" table if you continue. Say yes and review the changes to the table. This is where having versions of your document comes in handy. You can make these changes and if they break the table, you can go back to the last good copy or simply exit the document without saving.

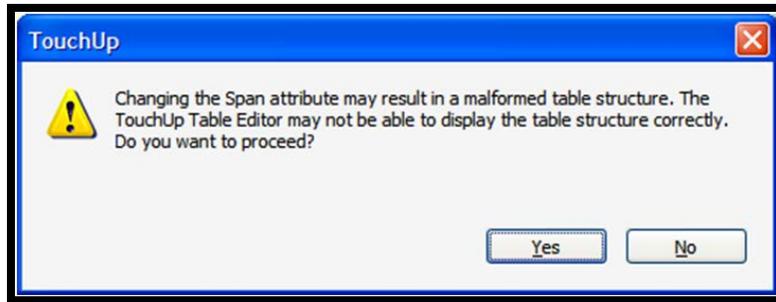


Figure 582 Image of warning message when you use the scope attribute.

The following two images show the first repair and then both repairs. Remember that I left the bright blue to be the colour of merged cells.

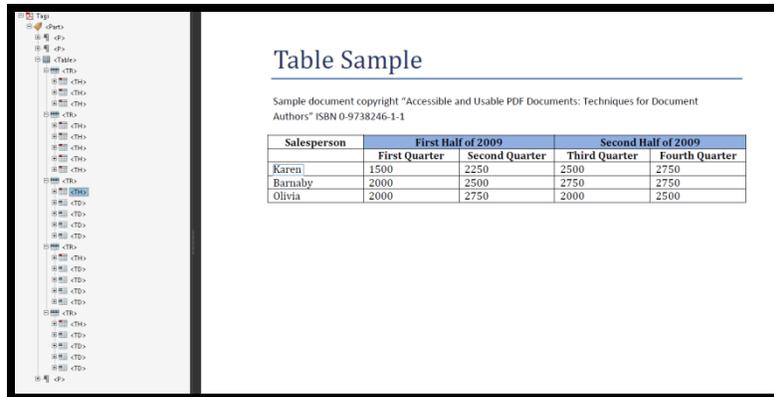
Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	2500

Figure 583 First repair of a merged header cell.

Salesperson	First Half of 2009	Second Half of 2009		
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	2500

Figure 584 Completed repairs on the two merged header cells.

But how is this related to the Tags Tree? Glad you asked! If we close the TouchUp Reading Order tool and go to the Tags tree, expand the <Table> Tag and move through the table structure, we can see the results of the work we did. With Highlight Content turned on, we can explore the table content cell by cell.



**Figure 585** The same table from the Tags Tree.

When doing repairs to PDF documents, you will be toggling between tools. This lets you check your work to ensure that nothing is broken. When working with flawed or fragile PDF documents you may repair something on page 5 and “break” something on page 9. Often this is because the PDF document came from a desktop publishing application and the document wasn’t put together in a well-designed way. The most common reason for content separation is that layers of content have been released or were not grouped or compressed in the desktop publishing application.

## Images, Charts and Diagrams

We’ve talked a lot about the buffers in adaptive technology and how they sort of scout ahead gathering the content then present it to the person reading a tagged PDF or any other document in a natural flow of information instead of as truncated content.

In a previous topic in this chapter I recommended that we focus less on the adaptive technology and its capabilities and more on properly tagging a PDF document. Since each adaptive technology has its own way of buffering information and its own limits, it is not viable to “define” a number of characters to put in either the Alt Text or Actual Text areas of the TouchUp Properties.

We need to ensure that each paragraph has its own <P> Tag and that we don’t try to explain every aspect of a complex chart or diagram in the Alt Text area or paragraphs of content in the Actual Text area.

One solution for very complex documents is to produce another document with the description. This way you are not confined by buffers, can use paragraphs and natural language to describe the image and attach it to the tagged PDF document so that anyone who is confused by the chart or diagram will have access to the longer description.

Just because attachments to PDF documents aren’t “traditionally” used to provide supportive information doesn’t mean that it can’t be.

## Alt Text for Images, Equations and Objects

There are two ways of providing access to information that appears as an image. One attribute is for “Actual Text” that is represented as an image and the other attribute is alternative text for charts, photos, pictures, equations, or diagrams.

In a tagged PDF document someone using TTS or a screen reader can move through text character by character, word by word, line by line, paragraph by paragraph. They can also get the spelling of a word and in some adaptive technology software phonetic spelling. When Alt Text or Actual Text is used, this is not possible. You either read all of it or none of it; you can’t examine the text more closely.

This is why a document with several paragraphs that are images of text or complete pages that are images of text need to be sent back to the person who created the document so that the text can be converted to “true text” not an image of it. This is for desktop published documents or documents where OLE or Object Linking and Embedding has been used.

When content is linked to documents using OLE the content comes into the document as an object which converts as an image of the content not the content itself. This means that Alt Text or Actual Text will be needed to make the content accessible in a tagged PDF document.

Alt Text or Alternative Text should be provided for images that contribute or support the content in a document. Alt Text should not be provided for decorative images. Remember that any Alt Text you add to a document has to be read or listened to by someone using adaptive technology. We have no way of saying “Don’t read the Alt Text for decorative images.” Decorative images should be defined as Artifacts and put in the background so that adaptive technology ignores them.

To add Alt Text to an image, figure, chart, or diagram:

1. Select the <Figure>, <Shape>, or <InlineShape> Tag from the Tags Tree.
2. Press the AppKey to open the context menu.
3. Press the Up Arrow to move to the last item which is “Properties” and press Enter.
4. The TouchUp Properties dialog opens

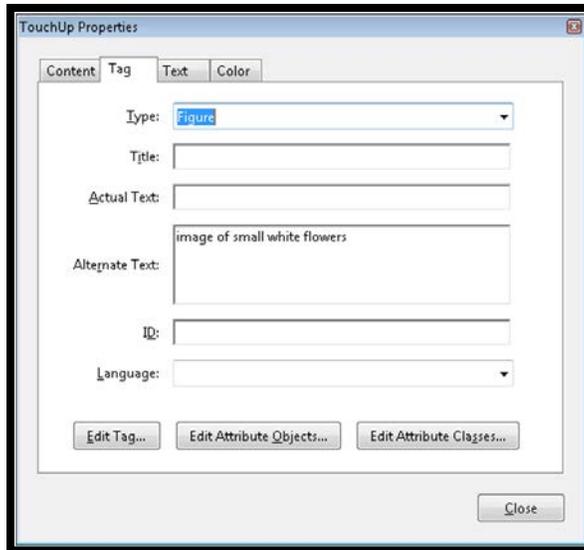


Figure 586 TouchUp Properties dialog in Adobe Acrobat.

5. Type or copy and paste the Alt Text for the image.
6. Press Alt + C to activate the Close button.

**Note:** When you move the mouse over images you may or may not see the Alt Text pop up. This is an Adobe Acrobat or Adobe Reader problem. To quickly verify that an image has Alt Text, open the Order Panel.

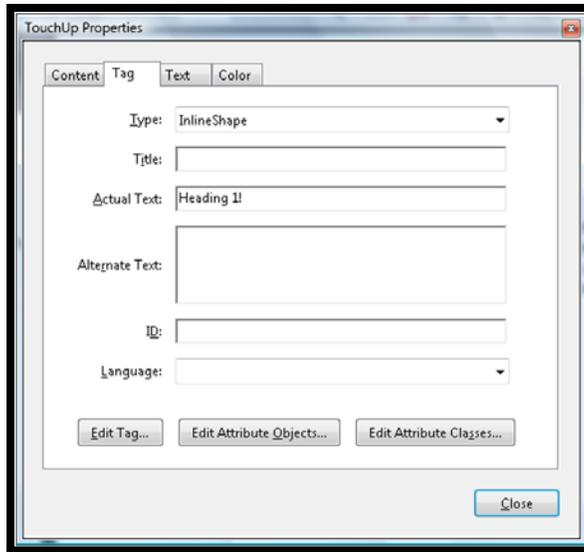
You should not have both Alt Text and Actual Text entered in the TouchUp Properties dialog. Choose one or the other based on the document element you are working with.

## Actual Text versus Alternate Text

In the topic on headings we looked at how and why we need to use Actual Text for images of text. The use of Actual Text in the TouchUp Properties dialog is not meant to be a substitute for having text in a document. It is meant for smaller images of text that have been placed in the document.

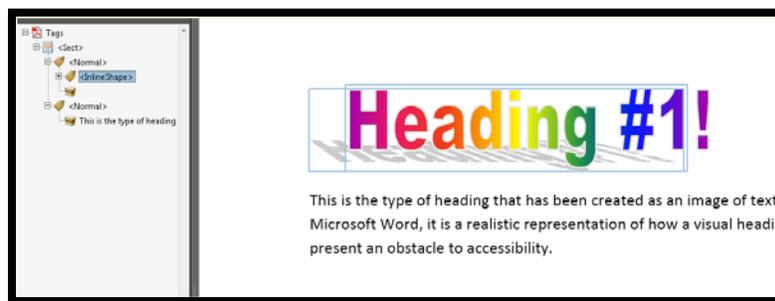
This is primarily because of desktop published documents where images of text from graphics applications are used instead of putting “actual” text into a document. If you have paragraphs of images of text you will need to send the document back to the designer/creator to be repaired. The repair in that instance will be to replace the image of text with real text in the document.

If you have smaller pieces of text that is an image or has been tagged as an image, use the Actual Text attribute in the TouchUp Properties dialog. This tells the adaptive technology to interpret that Tag as text not as an image. The person reading the document using adaptive technology will hear the text rather than “graphic: heading one.”



**Figure 587 TouchUp Properties dialog with Actual Text entered.**

In this example, we have a WordArt inline shape from Microsoft Word.



**Figure 588 WordArt used as a visual heading in a document.**

We made the repairs to this in the topic of headings in this chapter.

Typically you would not want to use the Actual Text attribute for large pieces of text that are images. This is because you run the risk of overwhelming the buffers in the adaptive technology but also because, just as with Alt Text someone using a screen reader cannot go through Actual Text word by word if they don't understand something.

## Mathematical Equations and Scientific Notation

Currently there is no support for MathML within a PDF document. [Design Science](#)<sup>26</sup> is a leader in the development of MathML based tools and is a company to watch in terms of future PDF content accessibility for math and science. Adobe Systems is also working on this.

The solution to provide the content for mathematical equations and scientific notation is to provide Alt Text for the formula in a document. A “formula” can be something as simple as 1+5 or a+b. Anything that is a mathematical operation or scientific notation should have the <Formula> Tag and be provided with Alt Text.

Consider a piece of text that describes what the mathematical operators are. You would have a sentence such as “In this document mathematical operators are represented by +, -, \*, and /. What someone using a screen reader would hear is “In this document mathematical operators are represented by plus sign, dash, star and slash.”

So a mathematical equation would be read as “ten slash five star three dash six plus sign four.” Would you find it easy to provide an answer to this equation?

Frequently square root or cosine symbols are considered part of the background and are Artifacts in the document meaning that they aren’t even available to adaptive technology.

As a sample I am going to use the Equation tool in Microsoft Word to enter a simple equation. Math is not my strength so I apologize in advance if I interpret it incorrectly.

$$(1 + x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \dots$$

The Alt Text for this would be: “Open paren one plus X close paren to the power of 28 equals one plus twenty-two X over one exclamation mark plus N open paren N minus one close paren X squared over twenty-one plus ellipses.”

As with any other Alt Text someone using a screen reader will not be able to go through this formula piece by piece if they don’t understand part of it or want to hear a specific part of it again.

If you are adding Alt Text to any mathematical equation or scientific notation I recommend that you include a Word document or Nemeth Braille document as an attachment to the PDF document. The Texas School for the Visually Impaired and Blind has an excellent resource on [Nemeth Braille](#)<sup>27</sup> if you are not familiar with it.

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<sup>26</sup> Design Science web site: <http://www.dessci.com/en/>

<sup>27</sup> Texas School for the Visually Impaired and Blind Nemeth Braille web page: <http://www.tsbvi.edu/math/alberta-022505.htm>

At this point in time even a tagged PDF document containing mathematical equations or scientific notations can't be made functionally accessible. By this I mean that someone using a screen reader will not have the ability to explore a mathematical equation or scientific notation in a tagged PDF document. Even the sample above is inserted into the document as an image.

If you do need to provide Alt Text for mathematical equations or scientific notation ensure that each item has its own <Formula> Tag. Trying to group several of these together and provide only one "Alt Text" increases the inaccessibility of these items.

**Note:** Even in something as simple as  $a + b$  the "a" will be pronounced as the word a instead of as part of the mathematical equation.

## Complex Diagrams and Equation Solution

I mentioned that there is a technique for providing detailed information about a chart or diagram. It is to use the attachments feature in Adobe Acrobat.

You can create individual documents either word processed or tagged PDF that are descriptions of complex images and charts. This lets you use more natural language to explain the chart or diagram content and provides clarification for charts or diagrams that may be visually confusing.

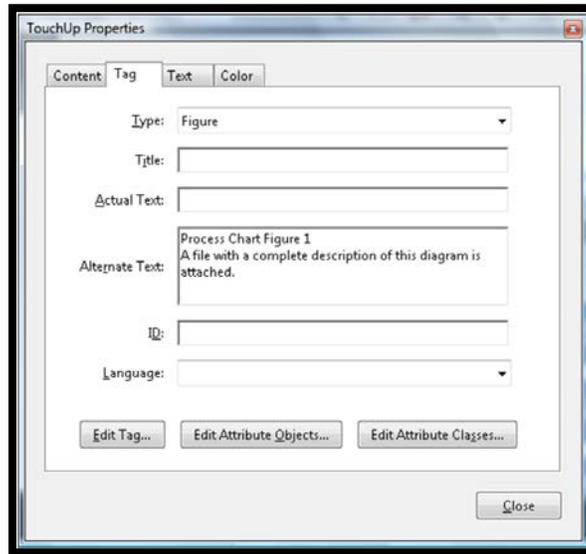
One of the ways a chart or diagram can be visually confusing is if a lot of acronyms are used for processes or organizational structures. You can, of course expand acronyms in text but when trying to describe a chart or diagram you can't type reams of text. After all you don't want to overwhelm the buffers in adaptive technology.

Providing a simple identifier for the chart or diagram plus the indication that there is a description for it attached optimized the accessibility of the chart or diagram. It also provides supportive information for people with learning, cognitive or visual disabilities who may not be able to navigate the chart or diagram visually.

**Note:** If your chart or diagram has a lot of acronyms I recommend expanding them in the descriptive document. When you just have a bunch of acronyms listed as steps it becomes confusing and difficult to listen to. In work that I've done with these types of charts even People without disabilities commented on how much easier it was to understand the chart or diagram when the acronyms were expanded in the descriptive document. The technique is outlined in the acronyms topic in this chapter.

How would this solution work?

First create your document adding the charts and images. Provide Alt Text for them indicating that there is a detailed description attached.



**Figure 589** Alt Text indicating a descriptive document is attached to the PDF document.

**Note:** You can also use this technique for math or science textbooks by attaching a Duxbury Braille document so the person can emboss the equations in Braille if needed.

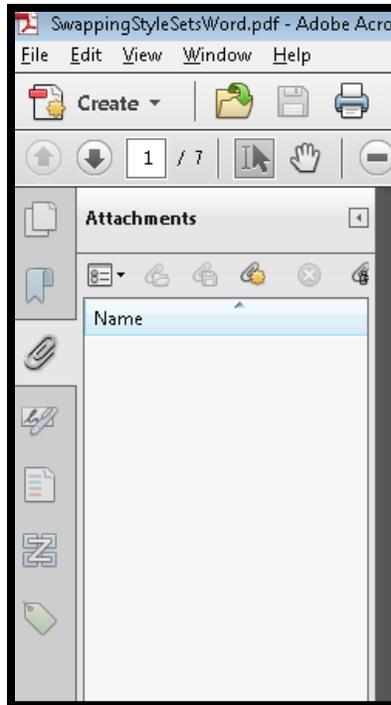


Figure 590 PDF document with attachment explaining diagram.

If you do not attach descriptions I recommend that an image of the chart or diagram be included in the descriptive document so that someone with a learning or cognitive disability can easily refer to the image as they are reading the description without having to toggle back and forth between documents.

## Links

When we look at adding links we need to go back to the hierarchy of tasks in an untagged PDF document. This topic will also show you how to repair a link if you have a tagged PDF but the link isn't tagged properly.

**Note:** I've noticed in some desktop published documents or documents where the web address begins with www instead of http that although you can hover the mouse over the link and it will work with a mouse, it will not work with a keyboard command to activate the link. Do not depend on the accessibility of a link being that it is identified by a mouse hover and click. The technique for repairing this is in this chapter.

## Create Links from URL's

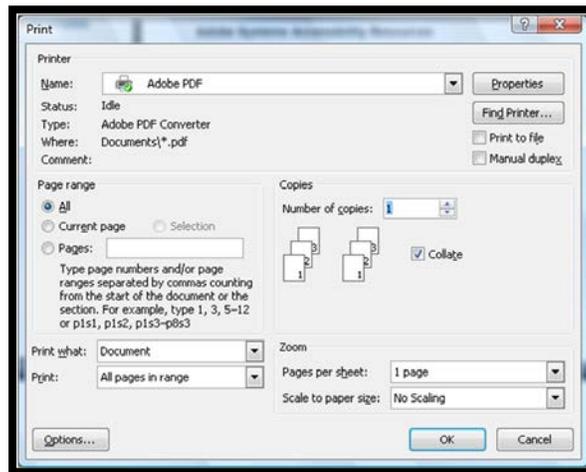
We begin with an untagged PDF document. One of the first things we do is add the links if the document is not tagged.

The hierarchy of tasks is:

1. Is the document scanned? If yes, perform OCR.
2. Does the document have form controls? If yes, add them.
3. Does the document have links? If yes, add them.
4. Only then do you add the Tags to the document.

**Note:** If the web addresses begin with www instead of http you will need to add them manually throughout the document.

If you want to practice this technique you can use the Print to Adobe PDF in the Print dialog of a Word document. If you've created contextual links in your document these will not be recognized using the Print, Adobe PDF tool but will be properly tagged when you use the Adobe PDF, Convert to PDF tool from the Office Button, File Menu, PDF Maker toolbar or Acrobat Ribbon in Word.



**Figure 591** Print dialog showing Adobe PDF as the printer.

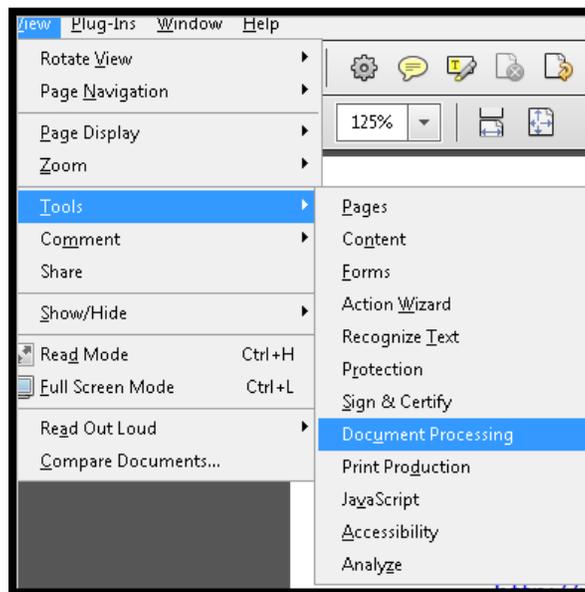
The following image is typical of what you might find in a PDF document with links.



**Figure 592 Long Web addresses in document.**

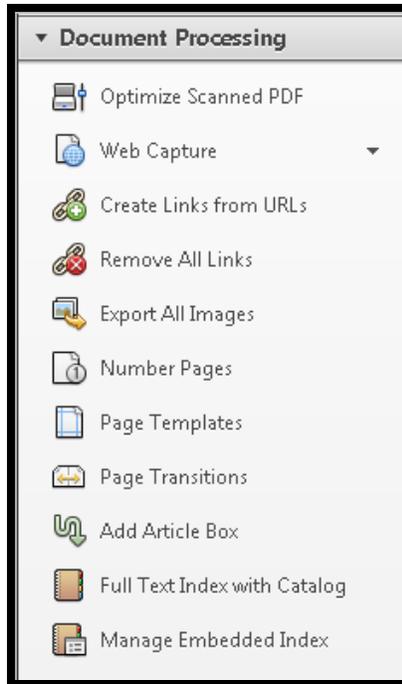
To add links to an untagged PDF document:

With the PDF document open in Adobe Acrobat make sure the Document Processing Toolbar is visible.



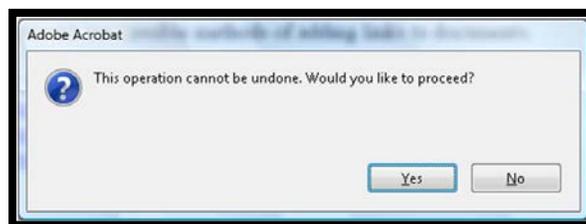
**Figure 593 Document Processing on the View Toolbars menu.**

Once the Toolbar is visible to the right of the document, activate the Create Links from URL's item.



**Figure 594 Document Processing Toolbar.**

This begins the process outlined in the following images.



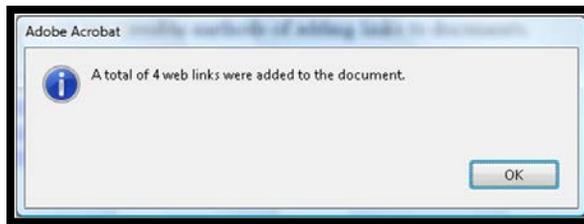
**Figure 595 Adobe Acrobat message indicating that the creation of links cannot be undone.**

If you are in doubt create a new version of the document before you begin this process. At this point say “No” and save the document with a new version number. This ensures that your original is clean and you can go back to it if you need to start over.



**Figure 596** The Create Link dialog where you identify the number of pages to examine.

The next dialog is the “Create Web Link” dialog where you can choose to have the tool examine all pages or only some pages in the document. I recommend that you have it look at all the pages in the document for possible web addresses.



**Figure 597** Final message indicating the number of links found.

Once the tool has finished examining the document and locating the links, you will get a message telling you how many links were found in the document. This is helpful and why you should review the document before you begin this process.

If you know how many links are in the document you will know from this dialog if all of them were found and “tagged” or if you will need to find some of them and manually create the links.

Since we haven’t added the Tags yet you cannot see the Tags for the links found. If the tool for locating and tagging links found all the links in the document you can now add the Tags to the document by choosing Advanced, Accessibility, and Add Tags.

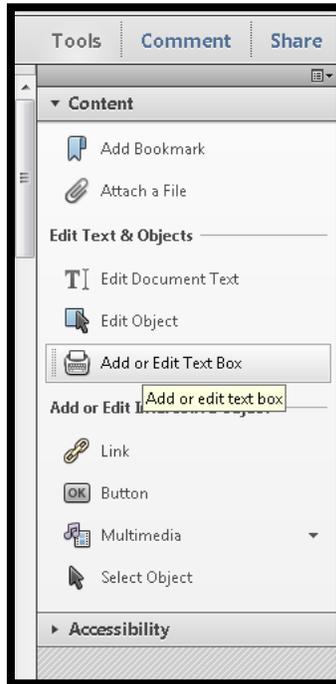
If the tool did not find all the links in the document you will need to use some of the following techniques to create them before you add the Tags to the document.

## **Creating Links with the Link Tool**

If the “Create Links from URL’s” tool did not find all of the links in the document, you can use the Link Tool to add them.

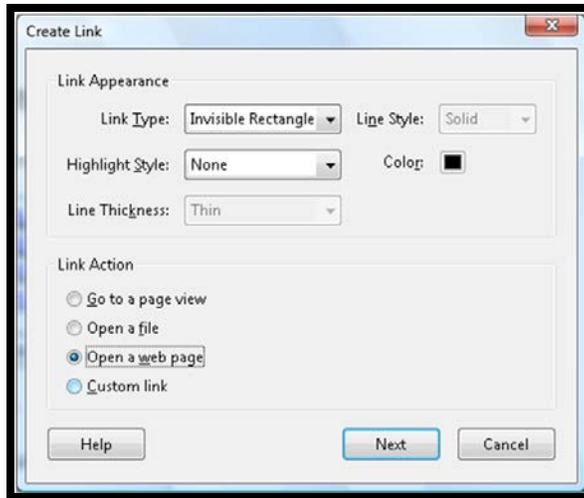
To use the Link Tool to add a link to a document:

1. Make sure the Content Toolbar is visible to the right of the document.
2. If it isn't you can show it by choosing View, Toolbars, Content.
3. In the section to edit or add objects is the Link Tool. It looks like a piece of linked chain.



**Figure 598 Edit or Add Objects in Content Toolbar.**

4. When you activate the Link Tool and position the cursor over the document, you will have cross-hairs instead of the traditional beam cursor.
5. You might want to increase the zoom a bit so that you can “select” just the text for the link.
6. If the web address begins with www instead of http you might want to use the Select Tool first to copy it so you don't have to remember it to type in the address edit box.
7. Drag the mouse from the upper left to the lower right over the text that you want to be the link.



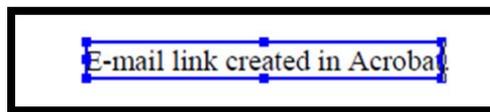
**Figure 599 Create Link dialog.**

8. The Create Link dialog opens when you release the mouse button.
9. The option you'll use most is to open a web page. The other options are to force a specific page view and to open a file. You can also create a custom link with other actions if you want.
10. In this example, we are going to choose to open a web page.
11. Once this is done, Tab to and activate the Next button by pressing Enter.



**Figure 600 Edit Link dialog where you type or copy and paste the web address.**

12. The Edit Link dialog opens where you can either type or copy and paste the web address.
13. I recommend using the full web address when creating a link. This avoids possible breakdowns in the functioning of the links.
14. Tab to and activate the OK button when you are finished.



**Figure 601 Finished link added using the Link Tool.**

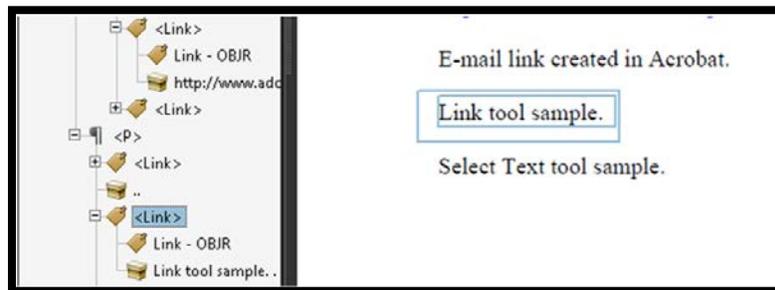
The link is outlined in blue in the document.

It has handles so that you can adjust the size of the link area using the mouse.

Once you switch to the Hand Tool, the outline of the link will disappear and it will look like normal text in the document.

To see any links just switch back to the Link Tool. Even the links found by the Create Links from URL's Tool will be seen.

If the link was not contextual but the full web address in the document you will need to add Alt Text for it once the document is tagged.



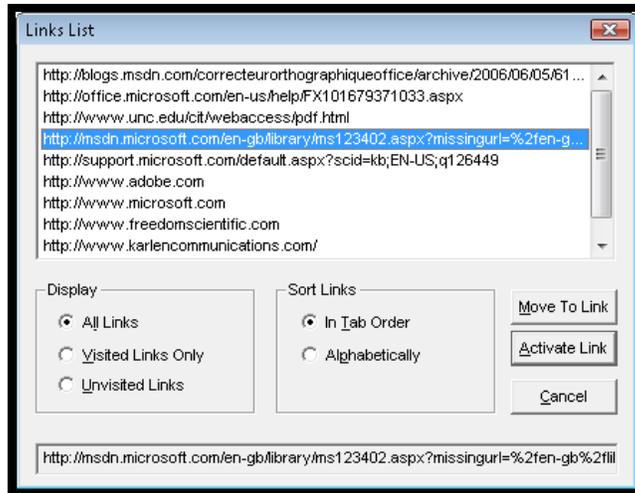
**Figure 602 Links in the Tags Tree of a tagged PDF document.**

Once the document is tagged, find the <Link> Tag and press the AppKey to open the context menu. Choose Properties and then add the Alt Text for the link.

Why do we add Alt Text for links?

Let's consider this question from the perspective of someone using a screen reader who has to listen to all of the links in a document.

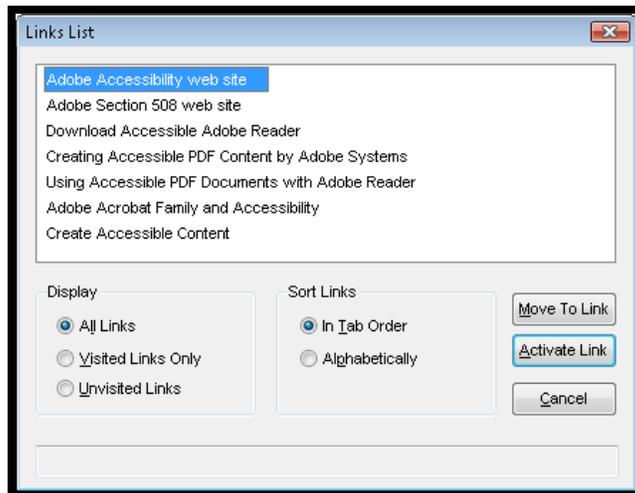
If each link begins with http we can't use first character navigation to quickly move to a link and activate it. As with headings and form controls we can get a list of links in a document. If all of the links are the full web addresses we "hear" the following:



**Figure 603 List of full web addresses from the JAWS screen reader.**

Looking at the list of links how quickly would you be able to locate and go to the Freedom Scientific web site? Remember that you will have to listen to all of the web addresses up until you find the one linking to the Freedom Scientific web site. How much time will that waste?

Once you add Alt Text to the link and get a list of links from a screen reader, you will be able to quickly locate the link you want as illustrated in the following image:



**Figure 604 List of links from the JAWS screen reader once Alt Text is added.**

Notice how easy it is to find the link to creating accessible content from Adobe Systems.

If a person wanted to download Adobe Reader they could press the letter “D” and move quickly to that link; or, press the letter “U” to quickly move to the link for using Accessible PDF Documents with Adobe Reader.” We don’t have to sit and listen to the long web addresses many of which end

with an illogical filename such as file225.html. In that instance we have no clue where the link will take us.

That is the second reason for using contextual links as we discussed in the chapters on Microsoft Office applications.

By adding Alt Text you are creating contextual links.

**Note:** Links should not begin with “click,” “click here to go to..,” “Select this link to go to...,” or any other prefix text. This impedes first character navigation to a target. Links should also not simply say “click,” “click here,” or “more information.” Consider several items with more information that would appear in the list of links as a series of links that simply say “more information.” More information on what?

Remember that we are thinking outside of the visual when we are looking at how to make documents more accessible and usable. Providing meaningful Alt Text for links makes a huge difference toward a more accessible document.

## Create Links with the Select Text Tool

The other way of creating a link is to use the Select Text Tool. If we use the Select Text Tool we won't have to add Alt Text to the <Link> Tag – it will be the text we select and use.

In this sample we will create a link to contact someone.

1. Open an untagged PDF document.
2. Activate the Select Text Tool. It is to the immediate left of the Hand Tool.
3. Select the text you want to use as the link.

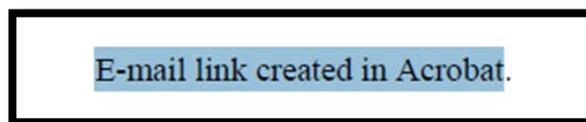
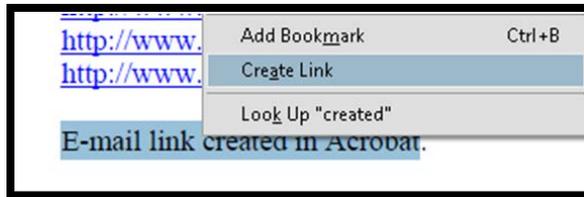


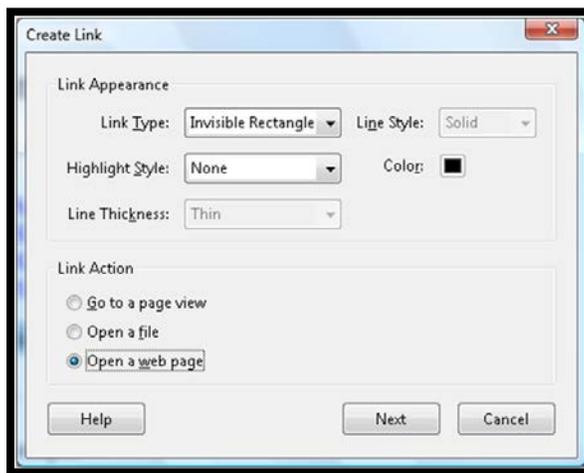
Figure 605 Selected text that will be a link.

Activate the right mouse button while over the selection to open the context menu.



**Figure 606 Context menu for selected text showing the Create Link option.**

4. Choose “Create Link” which is near the bottom of the context menu.
5. A dialog opens where you can choose to have the borders around the link invisible or to change the colour of them.
6. I recommend making the border invisible but if there is no other means of seeing the link in the tagged PDF you might want to reconsider.
7. The bottom part of the dialog has radio buttons so you can choose what type of link you want to create:
  - a. To open a different page view.
  - b. To open a file.
  - c. To open a web page.
8. In this case we are going to choose to open a web page.



**Figure 607 Create Link dialog with a link to open a web page selected.**

9. Move to and activate the Next button by pressing the Enter key.



**Figure 608 Edit link dialog where the e-mail address is entered.**

10. We are creating a link to open the default e-mail client and fill in the To field.
11. In the edit box for the link type <mailto:info@karlencommunications.com> or whatever your e-mail address is.
12. It is the <mailto:> that will trigger the e-mail client such as Outlook to open a new message with the To field filled in.

Because we made the link invisible, when we Tab to and activate the OK button using the Enter key then switch to the Hand Tool, the link is invisible. However, if you hover the mouse over it you will see the link. A screen reader will have the text “E-mail link created in Acrobat” as the text for the link. Obviously if this were a real document and not a sample one, the text would be something like “Contact Karlen Communications” which provides more meaning.



**Figure 609 Link to e-mail shown using the Hand Tool.**

As with the other links we created when the Link Tool is active this link will be outlined in blue. It will be properly tagged when the document is tagged.

If you have created all the links you need in a document, then add the Tags to the document.

## Repairing Links

At the start of this topic I mentioned that in some of the desktop published documents links can be mouse activated but even though they will show up in a list of links, they cannot be activated using the keyboard. This is true even if you are not using a screen reader and are tabbing from link to link.

If we examine the Tags Tree we will find that part of the <Link> Tag is missing – the OBJR part. This is a necessary component of the <Link> Tag if the link is to be accessible using the keyboard.

How can we repair this?

In this sample the link was created in Microsoft Word. Because I didn't press the Spacebar after typing in the web address, the link isn't blue or underlined which means that there is no underlying "link" structure to it. It is a good way to practice this technique and easily demonstrates what we see in desktop published documents.



Figure 610 Link that can be activated by the mouse but not the keyboard.

In the preceding image the mouse hovering over the web address indicates that it is "active" but it can only be activated using a mouse. When we look at the Tags Tree we do not see a <Link> Tag for the web address.

To repair a broken <Link> Tag:

1. Turn on Tag Annotations by choosing a Tag and pressing the AppKey. In the context menu choose "Tag Annotations."

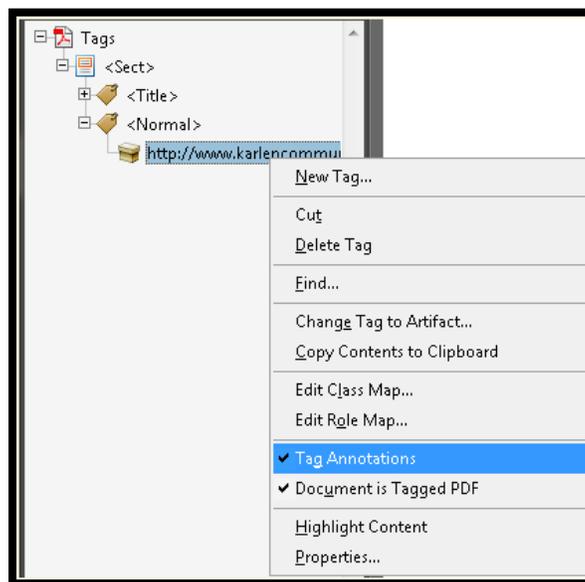


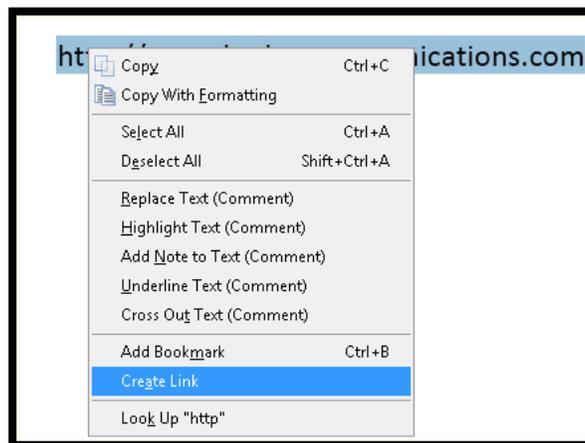
Figure 611 Turning on Tag Annotations.

2. With the web address selected in the Tags Tree, select the corresponding web address in the document.



**Figure 612 Web address selected in document.**

3. Use the right mouse button to open the context menu for the selected text.



**Figure 613 Context menu for text selected in document.**

4. Choose the Create Link menu item.
5. This opens the Create Link dialog where you can choose the way the link looks in the document and what action will occur when the link is activated.
6. In this case we are going to choose to make the link invisible and to open a web page.

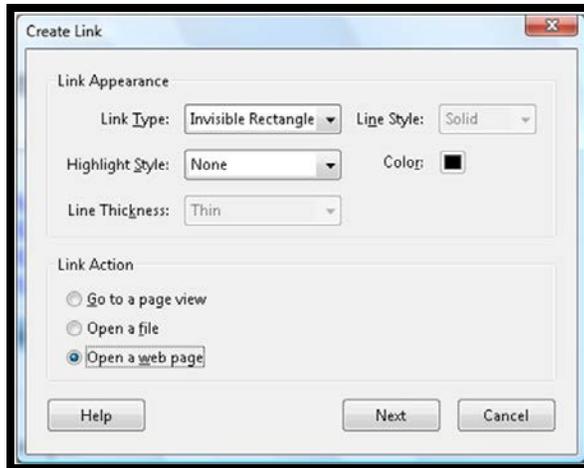


Figure 614 Create Links dialog.

7. Move to and activate the Next button.
8. The Edit Link dialog opens where you can type or copy and paste the web address.



Figure 615 Edit Link dialog shown near the link being created.

9. Once the web address is entered, move to and activate the OK button by pressing Enter.
10. Now when you look at the Tags Tree the <Link> Tag will be complete.



Figure 616 Repaired link showing Tags Tree and link identified in document.

The preceding image shows the full <Link> Tag and the link outlined in the document. Once you activate the Hand Tool, the red outline of the link will disappear. You will see the link again if you activate the Link Tool.

To finish this link, select the <Link> Tag, press the AppKey and choose Properties. Add the Alt Text for the link.

Now a screen reader will find the link and it can be activated using a screen reader or using a keyboard without a screen reader.

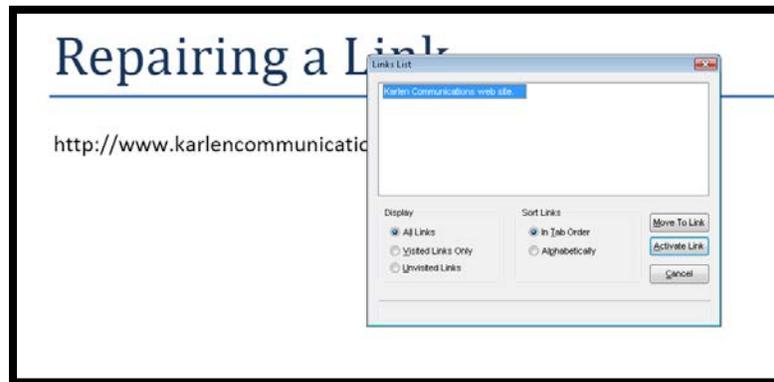


Figure 617 Document with repaired link and list of links from the JAWS screen reader.

## Acronyms in Form Controls

There are issues around the use of acronyms.

- How the synthesized speech will pronounce them in a tagged form.
- Their use in descriptive documents for charts and diagrams.
- Adding the expanded text for acronyms in a tagged PDF document.
- Acronyms in Form Controls

It is worth noting that acronyms used in form controls may have accessibility issues if they are not typed correctly.

My favourite example is of the acronym for "American Housing Association." The Acronym would be AHA. A speech synthesizer pronounces it as the word "aha." Imagine reading a document or trying to fill in a form field asking for the "aha" file number or telling you for more information contact the aha." All context is lost.

Although this might be considered a usability issue, the impact of not paying attention to acronyms is that the content is not understandable, is confusing, and important information is lost in a maze of alphabet soup.

The solution is to make sure that in form controls capital letters are used for acronyms and a space is added between each letter.

In the case of AHA if we used lowercase and did not put a space between the letters it would be pronounced as the word aha instead of part of an acronym so even writing a h a would result in the acronym not being read correctly.

Using uppercase with spaces between letters – A H A – ensures that any adaptive technology will read the acronym correctly. This would be the solution for any acronym that creates an actual word that can be pronounced.

Remember that adaptive technology has pronunciation dictionaries and choices have been made about pronunciations of words. For example Dr. Palser would be read as either “doctor” or “drive” depending on the sophistication of the adaptive technology pronunciation dictionary. Likewise Elm St could be read as “Elm Street” or “Elm Saint.” In more robust dictionaries these types of abbreviations can change according to their context or the words used around them but we are used to the fact that we are using mechanical speech which is not the same as a human reading text who makes decisions based on predictions and language.

At this point I will also mention the human phoneme voices that are available. Human phoneme based voices are actual human pronunciations of vowel and consonance combinations and do sound a lot less mechanical. The main issue with these types of voices is that they are not as advanced in their pronunciation dictionaries as the old clunky mechanical synthesizers. For example you might hear “was ted” instead of “wasted” because the human phonemes put the two words together instead of “recognizing” that was ted is not the same as wasted. Other words commonly mispronounced are waited and distinguished. Many symbols such as the tilde [~] are not in the pronunciation dictionaries of many human phoneme voices/synthesizers. This means that if these symbols are used they may need supportive information such as the word written out in longhand.

This issue is particularly important when we look at DAISY books. It is mentioned here to provide more information on how synthesized speech works and renders content to someone reading digital content. It is not meant to create obsession over each pronunciation of words. It is also why we can't have an adaptive technology specific definition of an accessible document PDF or other format. The choice of voices is vast and if someone is using a voice with a sparse pronunciation dictionary would this mean that the document is not “accessible.”

The point of this topic is to be aware of the problems around the use of acronyms in form controls so that you can optimize the access for all adaptive technology that uses speech output.

## **Using Acronyms in a Descriptive Document**

This topic is in this book to provide a solution for acronym laden process or organizational charts. Again this is based on experience with this type of document.

As we saw earlier in this chapter, one solution for providing detailed descriptions of complex charts and diagrams is to attach either a tagged PDF or Word document description of the chart or diagram.

Often the descriptions of complex charts and diagrams contain all the acronyms used on the chart. If you have a sentence describing the node of a process like: "From the ATDR the XYZ report goes to the KST, KSR, or MTP where it is inserted into the JQP and output to the NXVD system" and each step of the process is similarly acronym intensive, the acronyms impede the understanding of the process. Given that there is no "visual" for someone who is blind has a learning, cognitive or visual disability, the understanding of the chart or diagram is dependent on the text description.

I recommend that in all supportive descriptive documents that the full name of the acronym is used. In several cases working with clients this helped people without disabilities understand the chart or diagram as well.

I would further recommend that if the supportive descriptive documents are not attached to the tagged PDF document that the last page of the description contain the image of the complex chart or diagram. Keep in mind that someone will be reviewing the description outside of the document containing the image. Ensuring that a copy of the complex chart or diagram includes the image of what is being described optimizes understanding and comprehension.

I hear you now....BUT that is so much typing!

In Microsoft Word, use the AutoCorrect to help you.

What does this mean and how does it work?

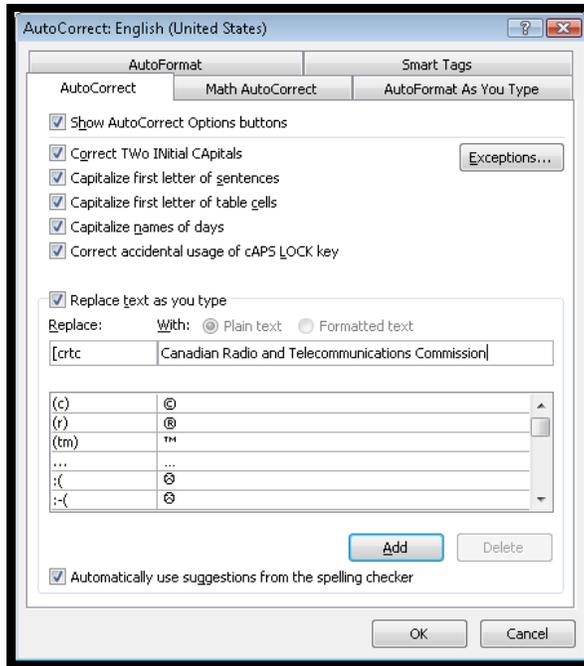
If you have an acronym for the Canadian Radio and Telecommunication Commission" for example you can use AutoCorrect so that every time you type [crtc it will expand to the full text.

I use the left bracket or [ in front of acronyms so that I can also just type the CRTC without expansion to full text.

How do I do this?!

In Word 2003 choose Tools, AutoCorrect and in the "Replace" edit box type "[crtc" without the quotes. In the Replace with edit box, type the full text for the acronym. Activate the Add button to add it to the list of AutoCorrect words.

In Word 2007 or 2010 choose Office Button, Word Options and go to the Proofing category. The AutoCorrect button will open the same dialog as in Word 2003.



**Figure 618 AutoCorrect dialog in Microsoft Word.**

Now when you type [crtc or whatever you entered into the AutoCorrect dialog and press the Spacebar, the acronym will expand to full text. This saves a lot of time.

You can use the Find tool in Word to work with documents where you have the acronym intensive document and a list of acronyms. In some cases you might have to create the acronym document and I find that people who work with acronyms tend to make them up as they go to save time.  
<Grin>

To use the Find tool in Word to replace acronyms:

1. With the document open move to the first acronym.
2. Copy it to the Clipboard – select it and press Ctrl + C.
3. Switch to the document containing the acronyms and their full text.
4. Press Ctrl + F to open the Find dialog.
5. When the acronym is found, close the find dialog and copy the full text to the Clipboard.
6. Switch back to the document you are replacing the acronyms in.
7. The acronym you selected should still be selected.
8. Paste the expanded text over it.
9. Since you last search for the acronym press Ctrl + page Down to move to the next instance of the acronym in the document.
10. Pressing Ctrl + Page Up will move to the previous instance of the acronym which makes it easy to examine the entire document as you move through it.

11. Each time the acronym is found you can press Ctrl + P to paste the expanded text over the acronym.

I use this method because often acronyms have several versions. For example the CRTC might have an additional GC added to it so that it reads CRTCGC or Canadian Radio and telecommunications Commission Government of Canada. By using the Find tool and keyboard commands I can replace only the CRTC instances and then go back and replace the CRTCGC.

This is only one technique. As you work with acronyms in supportive descriptive documents you'll develop your own techniques for making the document more readable and the content easily understood.

I also recommend not using numbered or bulleted lists in supportive descriptive documents as this also gets confusing to listen to especially if the person who created the description gets lost in the complex chart or diagram.

## Acronyms in a Tagged PDF Document

When there are acronyms in a tagged PDF document and you need to include the full or expanded text, there is a repair technique.

The acronym, for example CRTC, needs to be isolated from the sentence it is in. Once it is isolated we can use the "Expansion Text" attribute for the acronym.

To add the full or expanded text to an acronym in a tagged PDF document:

Open the Tags Tree.

Turn on Highlight Content and locate the Tag containing the acronym.

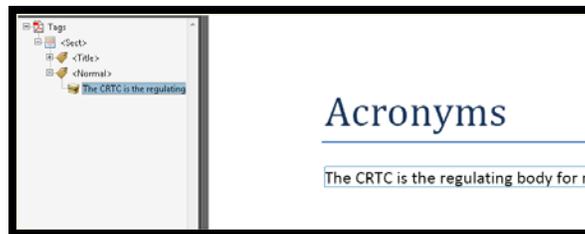
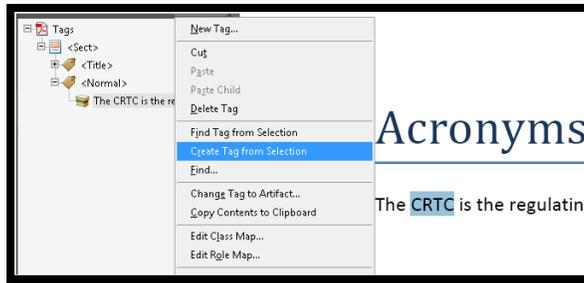


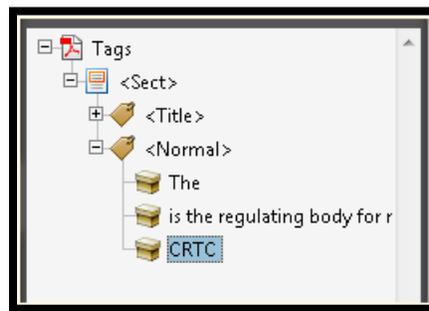
Figure 619 Tags Tree open and Tag containing acronym selected.

1. Using the Select Text Tool, select the acronym.
2. Move to the Tags Tree and select "Create Tag from Selection" from the Options button.
3. This will separate the text putting the "CRTC" as an individual element in the paragraph.



**Figure 620 Acronym separated from the sentence.**

4. With the acronym separated from the sentence, add the new <Span> Tag.
5. Drag the acronym to its logical place in the sentence.
6. Press the AppKey and choose “Properties.”
7. The TouchUp Properties dialog opens.



**Figure 621 Acronym separated from the sentence**

8. Go to the Content tab where you will find the “Expansion Text” edit area.
9. Type in the acronym followed by the expanded text.
10. We need to type in the acronym because current versions of screen readers cannot provide both the acronym text and the expansion text. In other words for this Tag and its attributes there is no distinction between the text in the document/acronym and the attribute. Screen reader developers are working on this for future versions.
11. Move to and activate the Close button of the TouchUp Properties dialog.

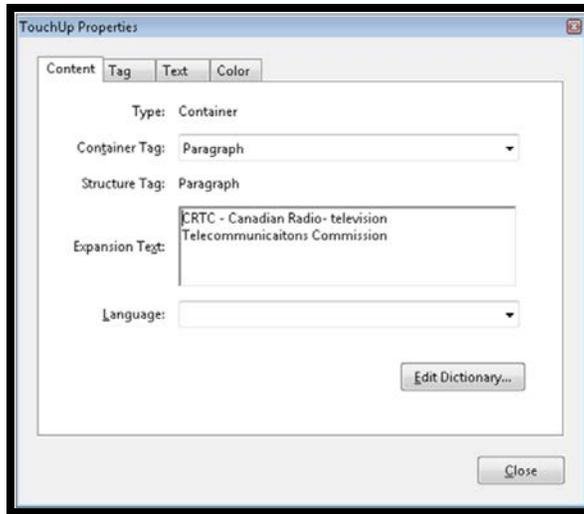


Figure 622 Expansion Text edit area of TouchUp Properties dialog.

Now when a screen reader encounters the acronym, they will hear the acronym followed by the expansion or full text.

**Note:** This technique may not be possible in some tagged PDF from scanned or desktop published documents.

Some repair technicians advocate the use of an empty <Span> Tag to provide Actual Text to as a technique for adding the expanded acronym text. The problem with this approach is that a Tag should not be empty. The purpose of tagging a document is to ensure that each Tag corresponds to true content in the document. If we begin adding text to Tags that are inserted randomly into the Tags Tree, we are creating “bad PDF” documents. Tags such as <Part>, <Page>, <Workbook>, <Worksheet>, <Slide>, <Section>, <Span>, or <Document> are Tags used to collect other Tags into a logical order. They are not meant to be used to facilitate content that might not be easily tagged.

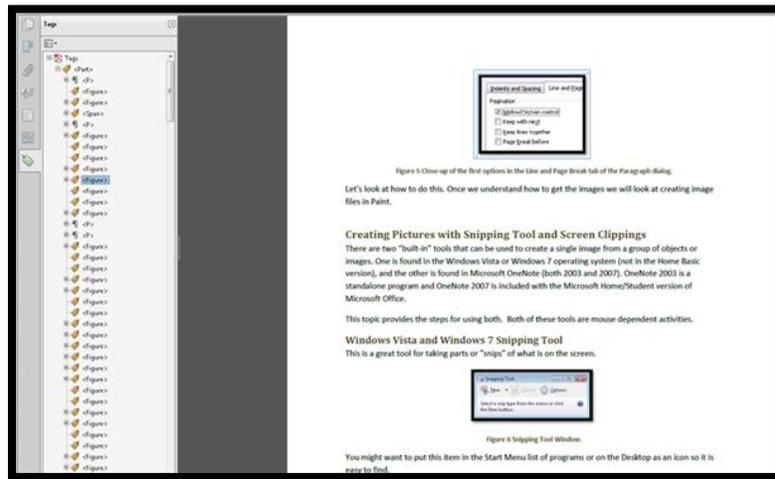
Using the empty <Span> Tag is just bad form.

## Figure Tags and Reading Order

With Acrobat 9 and Office 2007 a bug appeared that is still not fixed in Acrobat X and continues for documents created using Microsoft Office 2010. Adobe is aware of the bug and has been since Acrobat 9.

The bug is that any images on a page are placed at the bottom of the page in both the Order Panel and the Tags Tree rather than the place where they actually are on the page.

If you use Picture Styles for your pictures in Microsoft Word, like the ones used in this book, you will end up with the <figure> Tags all being at the top of the Tags Tree no matter where the actual images are in the document. You'll see this if you go down the Tags Tree using the Down Arrow as you will start jumping around the document from image to image. The Tags Tree looks off since all of the <Figure> Tags are at the top of it.



**Figure 623 Figures at top of Tags Tree.**

For both of these problems you will need to drag the <Figure> Tag to its logical place in the Tags Tree. If there are no picture styles this is easier since the <Figure> Tag is near the place it should be in the Tags Tree. However, if picture styles were used this can be difficult to do especially in longer documents such as this one.

This is where the use of captions comes in handy. Because I use captions for images in my books I can open the Order Panel and make all the images in the book Artifacts. People using adaptive technology can still access the caption text so they will know that there is an image there and what it is.

It takes less time to go through the document in the Order Panel and make images Artifacts than it would to move all the <Figure> Tags to their logical place in the Tags Tree. But...you have to use captions in the original document for this to be an accessible repair.

Acrobat X also deletes the empty <Figure> Tags once you remove the image from a page. Acrobat 9 did not do this and you had to go back and delete all the empty <Figure> Tags from the Tags Tree once you finished working in the Order Panel.

This is an annoying bug and one I hope is fixed for the next version of acrobat.

## Repairing Document Structure

There are times when you may only need to remove the structure of one page of a document. Typically these are scanned documents or documents coming from desktop publishing applications. If the tagged PDF from a desktop publishing application is fragile you may need to remove a page from the main document, perform the repairs and insert it back into the document. You may, however, be able to just remove the page structure while the problematic page is still in the document and manually rebuild the structure.

This topic outlines both methods.

### TouchUp Reading Order Panel

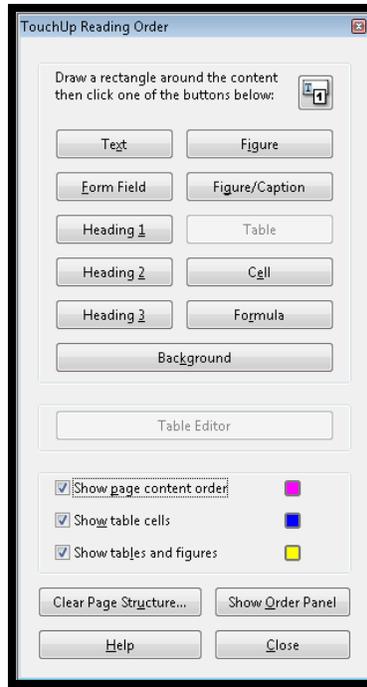
You can remove or clear the structure from a page in a document. This is useful when working with fragile PDF documents or scanned documents where the tagging has created so many mistagged elements that it is faster to manually rebuild the page structure than it is to repair it.

To clear the page structure:

1. Make sure that the page you need to clear the structure from is the one in front of you in Adobe Acrobat.
2. Open the TouchUp Reading Order Panel. You can use either the Accessibility Toolbar to the right of the document or you can use the AppKey in the Order Panel and choose Show TouchUp Reading Order Panel.
3. In the lower left corner of the TouchUp Reading Order Panel is a button to “Clear Page Structure.” Activate that button using the Enter key.
4. The page structure or Tags for that page have been removed from the document.
5. Close the TouchUp Reading Order Panel.

You can use the Highlight Content in the Tags Tree to select content at the bottom of the previous page and find the Tag from the selection using the Options button in the Tags Panel. From this point you can add new Tags and create the Tags from the selection rebuilding the page structure you cleared.

This might seem tedious but for some fragile documents it is the only way to get proper Tags or to put content into the appropriate Tag.



**Figure 624 TouchUp Reading Order Panel.**

**Note:** You cannot use the Add Tags Tool to add Tags to a page once you've cleared the structure. The Tags will need to be added manually.

## Deleting and Inserting Pages

The TouchUp Reading Order Panel does let you delete page structure.

What does this mean?

In the Tags Panel you can delete the entire Tags Tree and you can delete Tags and add new ones. So you can work with the document structure in the Tags Panel itself. However, if you have a particularly bizarre document you may need to delete the Tags or structure for an entire page. The TouchUp Reading Order Panel has a button that allows you to do this quickly instead of selecting all the Tags in the Tags Tree and then deleting them.

In many documents that have come from desktop publishing software and were not created using well designed and proper assets, even removing the structure from a page and tagging it manually may not result in a well tagged PDF document.

Although we don't use the Accessibility Full Check as a definition of what an accessible PDF document is, those of us doing repairs use it to see what elements of a PDF document may not have

been tagged or if there are any underlying problems that might interfere with adaptive technology. As mentioned several times in this book an “inaccessible element” that is not directly related to the understanding of content doesn’t impact the accessibility of a document. In fragile and flawed PDF it may not be possible to do anything with these inaccessible elements.

What this topic focuses on are those documents and pages where you can’t perform the repairs while the page is still in the document. This might be due to the use of layers that weren’t compressed in the native application, the type of font used, the way the document was “put together” in the native application, or even the way the document was converted to PDF. Typically this happens in PDF documents that have come desktop published applications but I have seen it in PDF documents that have come from Word or other non-desktop publishing applications.

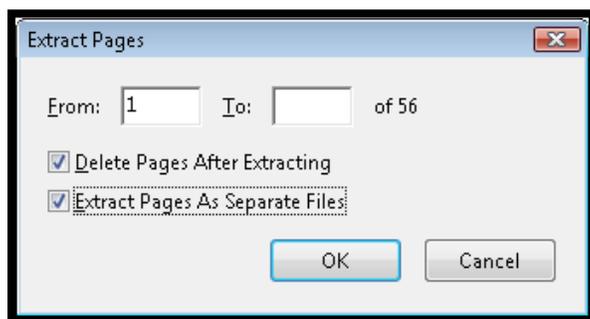
When you find that a page cannot be repaired in the document itself, you will need to remove it from that document, make the repairs, and then reinsert it and its Tags back into the main document. It sounds a bit more daunting than it is. Once you’ve done this a couple of times you’ll recognize that this is the fastest way of making repairs to some fragile and flawed documents.

The TouchUp Reading Order panel does have the ability to clear the page structure. In Acrobat 8 you would do this before removing a page from the main document but in Acrobat 9 I find that if I remove a page from a document its Tags are removed too.

If You find that the Tags for the page you are deleting are not removed, use the “Clear Page Structure” button in the TouchUp Reading Order Panel to do this before you delete the page from main the document.

You can extract the pages and delete them at the same time if you have several pages in a row you need to remove and repair. However, if you only have one or two pages and they are not sequential, using the Delete pages tool from the Document menu is faster.

If you extract sequential pages make sure to check both the check boxes in the Extract Pages dialog. You want to delete the pages from the document and create separate files for each page.



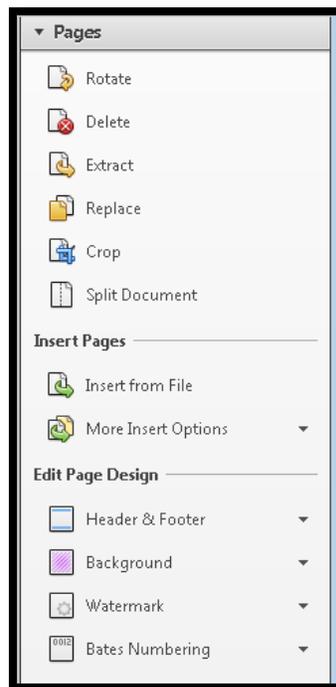
**Figure 625 Extract Pages dialog.**

Why do we need separate files for each page?

The problems in flawed and fragile documents are related to their connectivity and any underlying layers that span multiple pages. If we keep pages together in one file, we run into the same issues of not being able to repair accessibility problems. It is only when we work on each page that we can make the repairs.

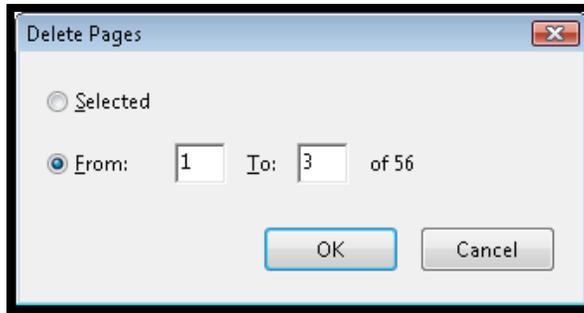
To repair a page outside of the main document:

1. Make sure you have a backup of the current version of the document.
2. Go to the page you want to remove.
3. Choose Delete from the Pages Toolbar to the right of the document. You can press Ctrl + Shift + D which will perform the same function.



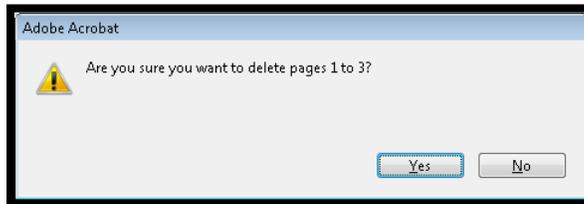
**Figure 626 Pages Toolbar.**

4. The Delete Pages dialog opens and you can choose which pages to delete.
5. In our example we need to repair the structure on page 4 so first we need to delete pages 1 to 3.



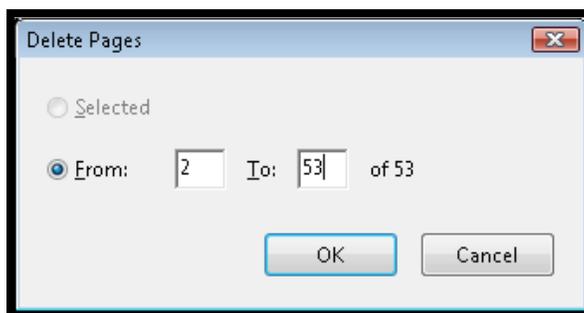
**Figure 627 Delete pages dialog step one.**

6. Our document has 56 pages in total.
7. You will be asked if you are sure you want to delete the page. Say Yes.



**Figure 628 Are you sure you want to delete the page dialog.**

8. Once you have all the pages removed that you need to, save the original PDF document with a new version number.
9. This will let you go back to the last “good” copy of the document if you need to.
10. We next need to delete the pages after page 4. Because we deleted the first three pages, page 4 is now the first page.
11. Press Ctrl + Shift + D and the Delete Pages dialog opens again.
12. Choose to delete from page 2 to page 53. We now have 53 pages in the document because we deleted the first three.



**Figure 629 Delete page dialog for the remaining pages in the document.**

13. What you are left with is page 4 on its own.

14. Save the page. Usually I keep it in the same folder and just name the files Page X where X is the page number I need to repair.
15. Open the Tags Panel and remove the Tags Tree.
16. You can try to add the Tags again but with fragile and flawed documents most of the tagging will be done manually. At least using the Add Tags tool will give you the “bones.”
17. Make the repairs to the page and perform an accessibility full check to see if the underlying issues for the page while it was in the main document still exist.
18. Remember to add the language and correct the Tag Order. Treat this as a stand-alone document you are working on.

Now you need to insert the page back into the main document. The Tags will come with the document.

1. Open the version of the document with the deleted pages.
2. Move to page 3 of the document.
3. Choose Pages, Insert Pages, Insert from File or press Ctrl + Shift + the letter I.
4. Locate the Page 4 file and insert it.
5. It should now be in its logical place in the document.
6. The Tags for page 4 will be at the bottom of the Tags Tree. You will need to drag them to the right position in the Tags Tree.
7. I usually open the Tag just before the entry point so that I know where it is in the Tags Tree.
8. Page 4 will begin with either a <Document>. <Part> or <Section> Tag so all Tags for the page can be moved at once.
9. Drag the Tags to their logical place in the Tags Tree.
10. Save the document with a new version number.

Check the document to ensure that there are no other problems.

Voila! You are done.

Although this may seem to be long and drawn out, it is the fastest way to attempt to repair fragile or flawed PDF documents. Even using this technique there are documents that cannot be repaired. At least this saves you some time and frustration.

## **Disappearing Layers in Documents**

One of the most common problems when working with desktop published documents is that the layers haven't been compressed or they have been created using corrupt assets. This often results in repair nightmares. The most significant of these is that you select text or other document elements to repair a Tag or add a new one and the text disappears from the page. Many of us have leapt from the computer shrieking the first time this happened. It is a good thing you can close a document without saving it and a good thing you have previous iterations or versions of the document to go back to if you can't resurrect the text or document element.

This does occasionally happen with Word and other documents but primarily is found in PDF from desktop published documents. This will happen even if an application such as Quark or InDesign that is capable of exporting tagged content is used. It is the design and use of corrupt assets that is the issue affecting the Tags of the PDF document not the tagging process itself. Remember: garbage in garbage out.”

The repair for this “if” you can repair it is complex and requires you to work in the Content Panel.

What has happened is that the layers have jumbled so that the text layer which was on top of the heap is now somewhere else in the layers of content. If you think of phylo pastry trying to work with one of the layers without touching any of the other layers you begin to understand the problems in repairing layered content that is not compressed. By touching or Tagging one layer others crumble.

You need to work in the Content Panel because you need to rearrange the layers so that the “text” is on top again. This means locating the text in the Content Panel and dragging it around the Content Tree until it appears again in the document...without making any other layers crumble.

In these types of fragile and flawed documents I’ve made repairs to text on page five [5] only to have text on page ten [10] disappear or a layer of the footer on page nine [9] detach from the footer position and float aimlessly above text in the middle of page nine.

This type of repair requires patience and you may need to create several versions or iterations of the document as you go depending on how much content disappears.

Recently I discovered, primarily out of desperation, that if you zoom the text that disappears to about 400 percent or more and use the keyboard to select character by character, you can make the repair/add the Tag without the layers disappearing. This took two or three tries to get the technique right. If you are able to do this it will cut down on the repair time for the document.

Disappearing text and separating layers are chronic problems with desktop published documents and symptomatic of poorly composed documents. Again, desktop publishing software was designed to create camera ready artwork not to create both a print and digital version of a document. It didn’t matter what type of assets you used as long as the hard copy or print looked the way you wanted it to.

Now we need to ensure that people creating documents for us using desktop publishing software understand the need to create proper assets and the relationship between Tags, accessibility, and the need for camera ready artwork.

## Reducing the Size of PDF Documents

Many PDF documents are provided through web sites. Believe it or not there are still a lot of people in North America who do not have high speed connectivity and some rural areas have no connectivity at all. One of the concerns with tagged PDF is the increased size of the documents because of adding the Tags.

Adobe Systems has a notice to people using Microsoft Office applications that warns of the time it will take to convert a document to tagged PDF. One of the options is to not add the Tags. You need the Tags for accessibility so accept that you can go get coffee, have lunch, or answer those phone calls while your document is being converted and tagged.



**Figure 630 Acrobat PDFMaker warning about the time it will take to convert and Tag a Word document.**

You can reduce the size of the PDF document once it has been converted. Do this before you do your QA or Quality Assurance process in case the reduction in size affects the tagged PDF document.

I've looked through the various Toolbars and can't find where Adobe has hidden the ability to reduce the file size. It used to be under the Document menu item in previous versions of acrobat. Despite restricting my search of the Help documentation to the current reference guide only, a search of the Help documentation for acrobat X takes me to the Internet community and information about previous versions of Acrobat not acrobat X. Sigh.

When we look at scanned documents or documents that have come from desktop publishing software we may be limited in our ability to reduce the size of the document. If the scanned image is poor, we may corrupt the visual representation of the document. This means that images or pages might become fuzzy and illegible.

For desktop published documents the most common effect is that corrupt assets or assets that weren't created properly will lose crispness and become illegible. If the asset is an image, chart, or diagram this become critical to someone's ability to visually read the PDF document. We come back to ensuring that desktop published documents are created properly and that assets aren't used and reused in different file formats.

It is impossible to meet file size criteria when you can't reduce the size of a PDF document with or without Tags because corrupt assets were used or the quality of the scan is poor. At that time decisions need to be made about the ability to visually read the document or the necessity to reduce the file size. Some documents don't reduce file size significantly enough for this to be an issue. You will be "stuck" with the original file size – with or without Tags.

## **Watermarks and Confidential Documents**

Currently there is no <Watermark> Tag for us to use to help people with adaptive technology know if a document has a "confidential" or "do not copy" watermark on a page. We have to get creative in how we provide this information to someone who uses adaptive technology, specifically speech output based technology.

The easiest way to do this is to use Microsoft Word to create the documents.

If you insert the watermark into the document each letter of a watermark could potentially be tagged as a <Figure> with no Alt Text even though it should be an Artifact. A watermark is considered to be a non-printing element and is therefore an Artifact.

If you have a watermark that says "do not copy" for example, each letter on each page can potentially be tagged as a <Figure>. You would then need to find and repair each instance of this in the document.

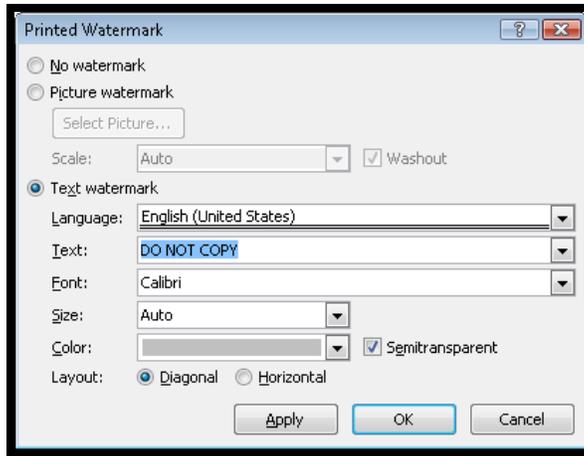
If you create an untagged PDF of the watermark and insert it "under" the tagged PDF document in Adobe Acrobat, you will be able to then use a blank line to provide Actual Text that indicates that a document is confidential, a draft, or is not to be copied.

How does this work?

First, open Microsoft Word and add the "Do Not Copy" watermark to a blank document.

In Word 2003 you'll find it under Format, Background, and Printed Watermark. Choose the "Text" Watermark and in the drop down list, choose "Do Not Copy."

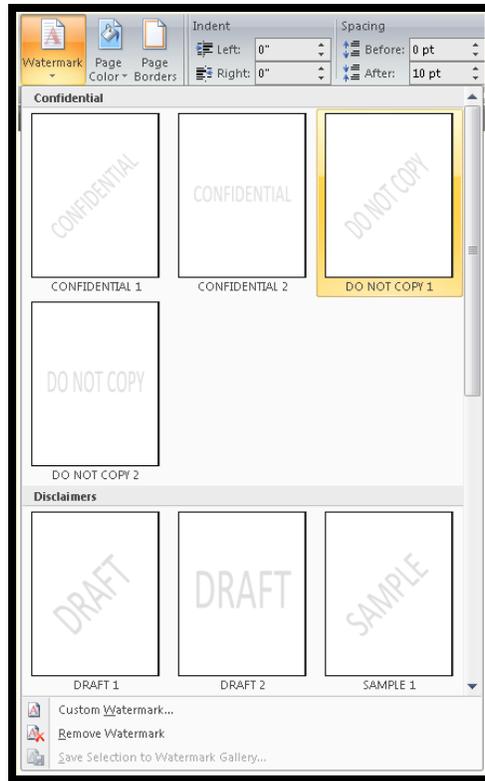
In Word 2007 or 2010 choose Page Layout, Watermark and then choose the "Text" watermark. The dialog is the same as in Word 2003 except that in Word 2007 you can also choose a language for the text watermark.



**Figure 631 Printed Watermark dialog in Word 2007.**

Notice that the watermark text will be in uppercase which is the most difficult format to read whether you have a disability or not. Readability may be impeded further if you choose a colour for the text that interferes with the ability to distinguish characters that flow over the text watermark. When adding text watermarks make sure to add as much accessibility as you can to the process.

Word 2007 or 2010 has a Watermark Gallery which makes choosing your printed watermark easier. This tool is accessible if you are using a screen reader.

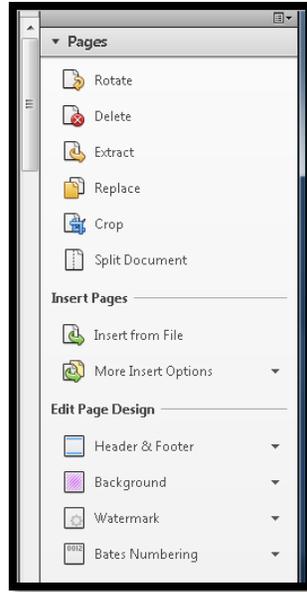


**Figure 632 Watermark Gallery in Word 2007.**

Once you have a blank page with just the watermark on it, save it as something meaningful like "DoNotCopyWatermark." Press Ctrl + P to open the Print dialog and print to Adobe PDF. This will create an untagged PDF document. Since this is going to be an Artifact in our tagged PDF document it should not be tagged.

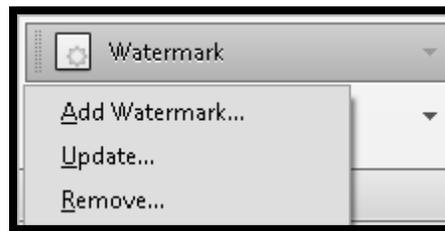
Open the tagged PDF document in Adobe Acrobat. This is the document you will be adding the watermark to.

In the Toolbars to the right of the document choose Page, Watermark which opens a sort of sub-menu.



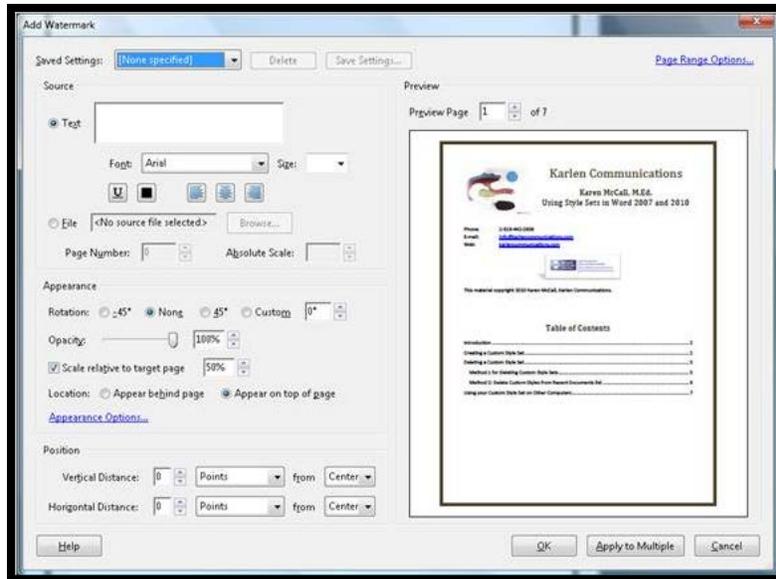
**Figure 633 Page Toolbar.**

From the sub menu choose Add Watermark..



**Figure 634 Watermark sub-menu.**

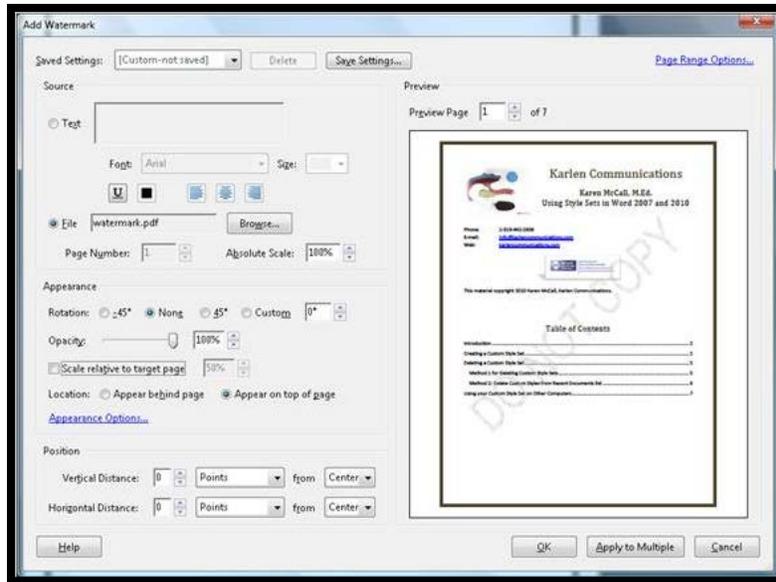
This opens a dialog with options for a watermark and an area where you can preview the document once the watermark has been added..



**Figure 635 Add Watermark dialog.**

If you don't have a file like the one we created, you can add the watermark in Adobe Acrobat by typing it into the Text edit field.

We are going to choose the File radio button because we do have a watermark. This method is handy if you have a company logo you want as a watermark for pages in a document. We are using the example of text so that we can walk through the repair to make the text available for people using adaptive technology.



**Figure 636 Add Watermark dialog with watermark file selected.**

Locate the DoNotCopyWatermark PDF document and choose to open it. You will see the watermark added to the document in a preview on the right of the Add Watermark dialog.

If you choose to scale the watermark, it will look like the sample above and you will need to adjust the scale to get the effect you want.

If you leave the scale, you will get the results shown in the following image. The watermark will span the entire document upward from lower left to upper right.



**Figure 637 Watermark in PDF document.**

In the Add Watermark dialog the one thing we want to make sure is chosen is to have the watermark behind the document. This is a radio button just above the link in the lower left part of the dialog. This will make the watermark part of the background and not part of the content of the document.

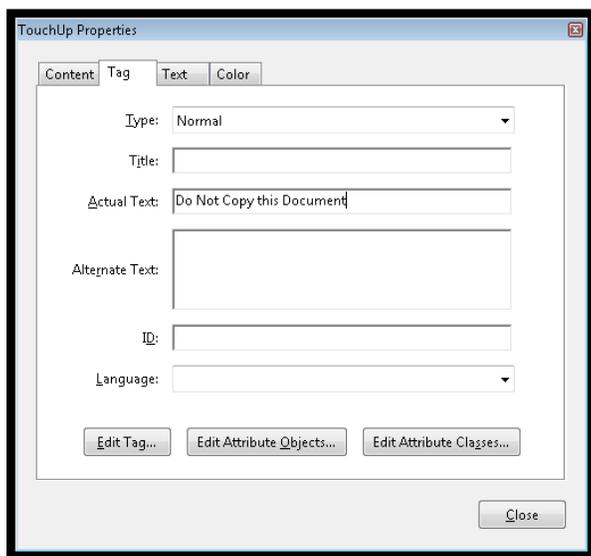
When you move to and activate the OK button using the Enter key, the watermark is added to the document.

As mentioned there is no <Watermark> Tag yet so we need to be creative. In the original document I had not added a blank line between the title of the document and the first sentence which was the acronym sample. I went back to that document and added the blank line. I saved the document as a tagged PDF using Adobe PDFMaker although you could use the Save as PDF or XPS plug-in if you are using Word 2007.

1. Once the tagged PDF document opens, locate the Tag for the blank line.
2. The Tag should be <Normal> since this document came from Microsoft Word.
3. Press The AppKey and choose Properties to open the TouchUp Properties dialog.
4. In the Actual Text field, type the words "Do not copy this document."

The document will need to be saved, closed and reopened in order for the adaptive technology to read the Actual Text for the blank line.

Now the tagged PDF has the visual representation of the watermark text and someone using TTS or screen reading will also know that they are not to copy the document.



**Figure 638 TouchUp Properties dialog with Actual Text entered.**

Why didn't we just add a Tag and the Actual Text for it?

You have to have document content in order to have a Tag. This book began by stating that each piece of the visual representation of the document will have a corresponding Tag. An Artifact is content even if it doesn't have a Tag. Artifacts are ignored by adaptive technology which is their purpose...to represent non-printing elements.

We can't simply create content where there is no space for it in the document. It would be the same if we tried to use Adobe Acrobat to edit sentences and paragraphs. You can only enter characters into the space that is already in the document. For example if you notice a simple typo and have the font on your computer you can repair it but if you need to replace sentences or paragraphs you will have to go back to the source document to do this.

Because each document element has its own Tag you can't simply "invent" or add Tags where there is no corresponding content. This is why we use the blank line just after the title in the document. We need people using adaptive technology to know that the document is confidential, a draft or is not to be copied but since there is no mechanism for watermark information in the available Tags we need to be creative.

**Note:** if you put the blank line before the first line of the document, the document title, it can easily be lost in the “document loading” information or be skipped by adaptive technology. I found the best place to put it is on a blank line just under the document title or first line of the document. This lets people using adaptive technology know quickly after loading the document what the document is and that it is confidential, a draft, or not to be copied.

## Combining Tagged PDF Documents

If you have several tagged PDF documents, you can combine them into one tagged PDF document. As each document is added to the other, the Tags Tree for the document is inserted into the global Tags Tree usually with a Tag representing the start of the new “document.” For example if we combine a Word document with an Excel workbook and a PowerPoint presentation, the Tags Tree would indicate a <Document>, <Workbook> and <Document>.

This lets you combine an annual report with its corresponding Excel workbook and any presentations used for it. Everything is in one PDF document.

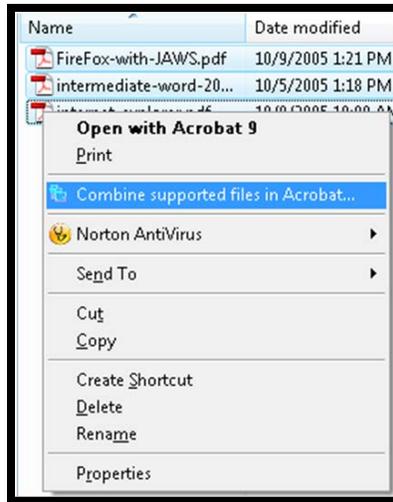
Of course you could use the attachments tool in Adobe Acrobat to attach the tagged PDF documents to the main document. There is always choice!

**Note:** It is at this point that you need to be sure NOT to create a Portfolio.

An important thing to remember is that when you combine a tagged document with an untagged document you will need to manually Tag the untagged document once it is combined with the tagged one. You cannot use the Add Tags Tool because part of the combined document already has Tags. Another issue will be the consistency of tagging between the two documents. For example your first document might have correct Tags for content while the second document might have minimal Tags for the content. You will need to decide whether to make the Tags consistent in the combined document or to leave the Tags as is. This decision will depend on the policy and standards of your organization related to accessible tagged PDF documents.

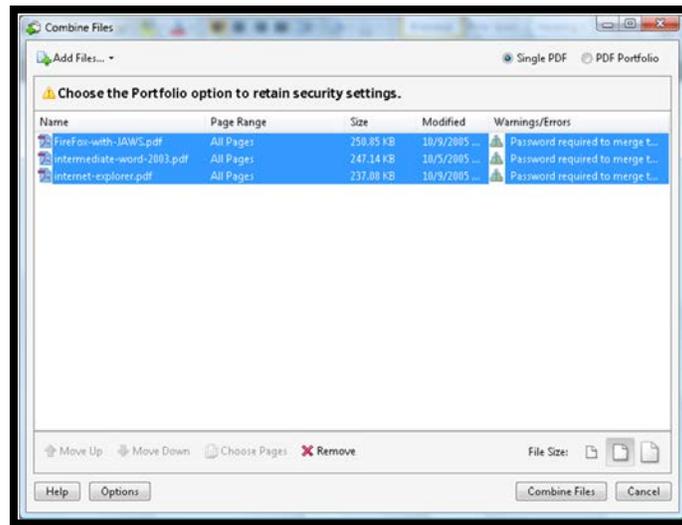
To combine tagged PDF documents into one tagged PDF document:

Locate and select the documents you want to combine. I generally put them into one folder so I can keep track of them but you don’t have to.



**Figure 639 Combine supported files in Acrobat context menu.**

1. Press the AppKey to open the context menu.
2. Choose “Combine supported files to Acrobat...”
3. The Combine Documents dialog opens and the files you selected are already in the list.



**Figure 640 Combine Documents dialog with files added.**

4. Do not choose to create a Portfolio. Portfolio is a Flash application that holds collections of PDF documents and is still not accessible. Although some parts of the application are now accessible, it is still not functionally accessible.
5. Choose to create a Single PDF document which is the default.
6. You can choose to Add Files if you have other files in other folders. Use the Tab and Shift + Tab to move around this dialog.

7. You can arrange which order the files will be combined.
8. If you have one of the files selected in the list of files you've added, the option to move a file up or down in the list will be available to you.
9. You can delete a file if you've chosen the wrong one.
10. Tab to and activate the Combine Files button.
11. Give the new PDF document a name.
12. The documents are combined and open in Adobe Acrobat.

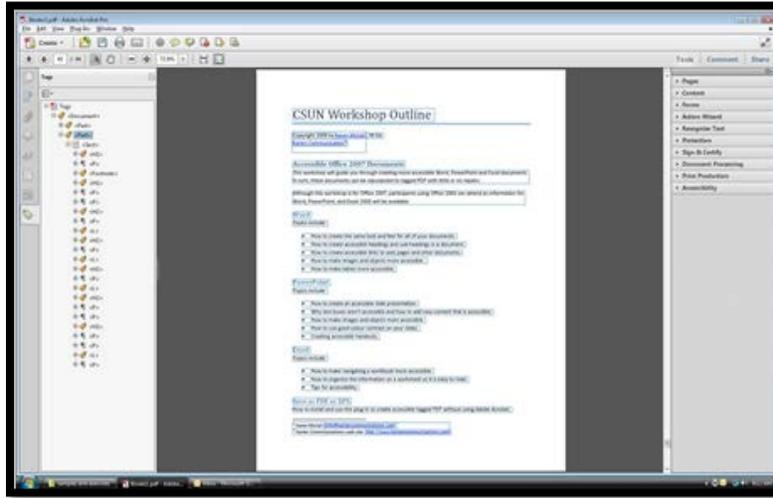


Figure 641 Combined documents with Tags Tree showing.

In the preceding image the first document which was a tagged PowerPoint document is under a <Document>Tag while the Word document is under a <Section> Tag. All of the Tags were combined and the single document now just needs QA and it will be good to go.

**Note:** If you combine tagged and untagged PDF you will not be able to use the Add Tags Tool for the untagged documents. They will have to be manually tagged. Make sure all documents are tagged before you combine them.

### Combining Secure Documents

All of the documents I combined for the previous example were secure PDF documents. When I chose to create the single PDF document from the combined files using the context menu, I saw a message box telling me that some of the documents were secure and that the security would have to be removed in order to combine the document.



**Figure 642 Adobe Acrobat message about combining secure documents.**

I chose to leave the check box not to jog my memory on this unchecked so that if I do try to combine secure documents I do get this warning.

Tab to and activate the Yes button.

For each secure document you combine you will need to enter the password for either opening or modifying the document. This is one reason I choose to keep getting the first reminder message. I may have to go and look up a password or find a non-secure version of the document.



**Figure 643 Password dialog for combining secure documents.**

Once the passwords are entered the documents will combine.

When the documents are combined you can apply security to the new single document made up of the combined documents. Remember to allow access to adaptive technology.

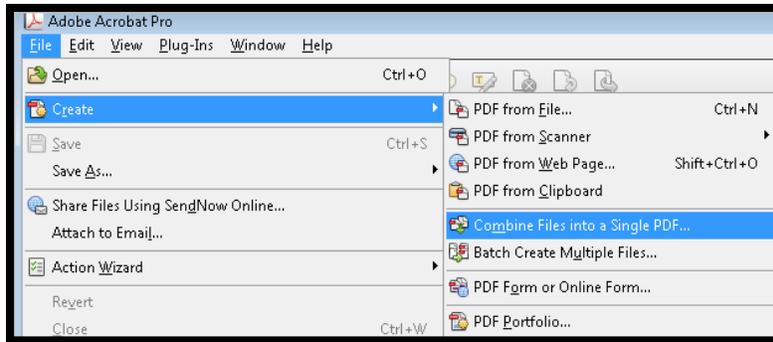
## Combining PDF in Acrobat

We can also combine files from within Adobe Acrobat.

**Note:** We need to remember NOT to create Portfolios until the inaccessible Portfolio Flash application becomes accessible.

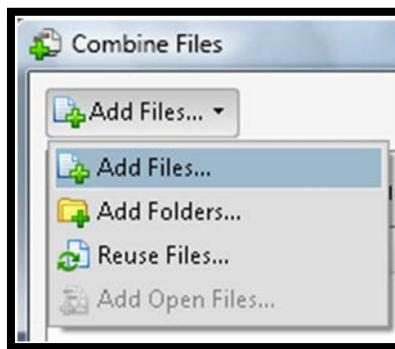
To combine documents in Adobe Acrobat:

1. Launch Adobe Acrobat but do not open any documents.
2. Choose File, Create PDF, Combine Files into a Single PDF.
3. The Combine Files dialog opens but this time there are no files in the list.



**Figure 644 Combining PDF documents in Adobe acrobat.**

4. Choose the Add File drop down list.



**Figure 645 Add Files drop down list in the Combine Files dialog.**

1. You can add files; folders Reuse files or add open files.
2. We didn't add an open file to avoid confusion.
3. The remainder of the process is the same as the first part of this topic.
4. Choose tagged PDF documents.
5. Provide any passwords necessary to use files you've selected.
6. Do not choose to create a Portfolio.
7. Make sure the files are in the order you want.
8. Delete any files you added by mistake.
9. Tab to and activate the Create File dialog.
10. The tagged PDF document will open in Adobe Acrobat.

## Web Capture

In Adobe Acrobat you can archive web pages and articles in tagged PDF. You need to set this up before you capture a web page but once it is set up you shouldn't have to modify the setting unless you reinstall Acrobat or there is an update that requires you to redo our settings.

To create a tagged PDF from a web page:

1. Open Adobe Acrobat but do not open a document.
2. Choose Advanced, Web Capture.
3. Choose to Create PDF from or Append to a PDF document.

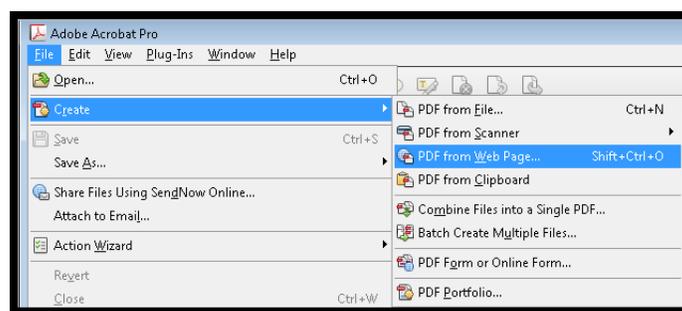


Figure 646 The Advanced menu with the Web Capture tool sub-menu open.

4. This opens a dialog.

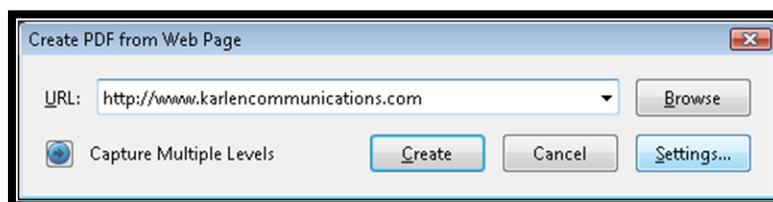


Figure 647 Create PDF from Web Page dialog.

5. Type or copy and paste the web address into the URL edit box. By default it may be the Adobe web site.
6. Press Alt + S to open the Settings dialog.

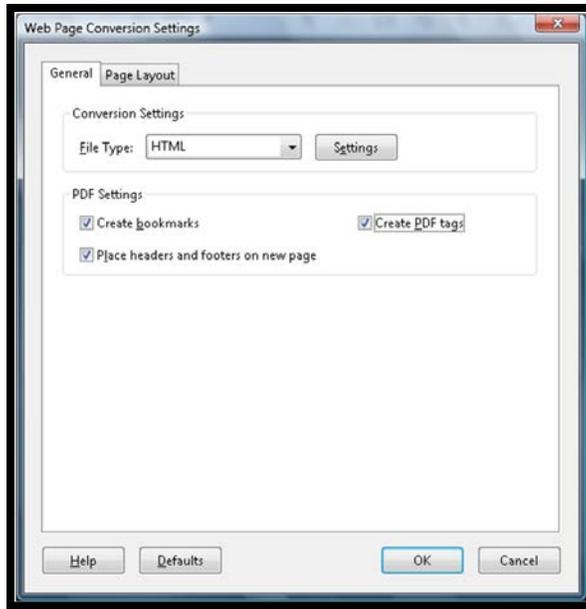


Figure 648 Web Page Capture Settings dialog.

7. Make sure that the check box to create a tagged PDF is checked. It isn't by default.
8. Tab to and activate the OK button by pressing Enter.
9. You are returned to the Create PDF Document from Web Page dialog.
10. Tab to and activate the Create button by pressing Enter.
11. The web page opens in Adobe Acrobat as a tagged PDF document.

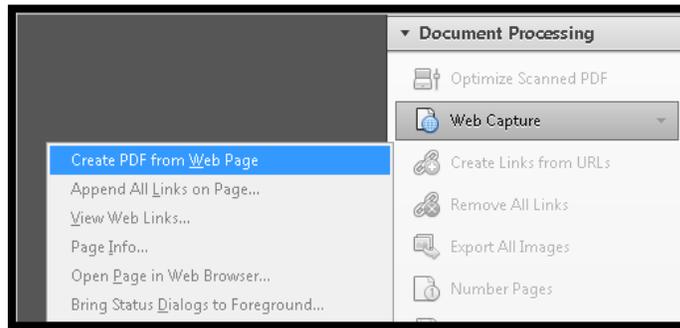


Figure 649 Web page based tagged PDF document showing Tags Tree.

You should be able to use the AppKey on a web page and choose to convert the web page to PDF which will create a tagged PDF document if you have the check box checked in the settings for converting web pages.

## Advanced Web Capture

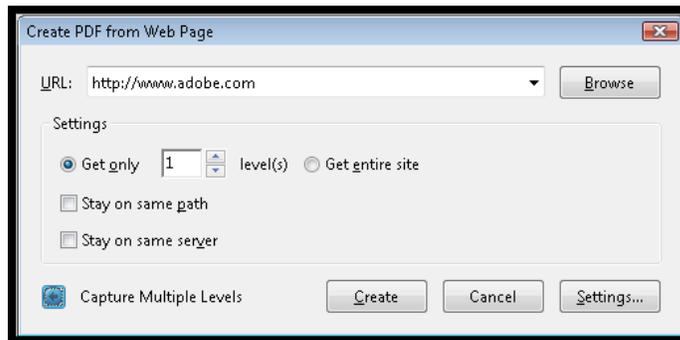
There is an option under the Document processing Toolbar to the right of the document that is for advanced web capture.



**Figure 650 Advanced Web Capture option in Document Processing Toolbar.**

It The Web Capture option under the Document Processing Toolbar has a sub-menu with other options. If no document is open the only option you have is “Advanced Web Capture.”

Using this tool you can convert multiple levels of a web site into tagged PDF documents.



**Figure 651 Advanced Web Capture dialog.**

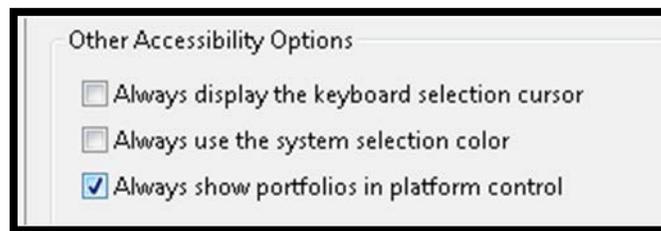
When using this tool keep in mind the size of the web site you are converting. You may end up with a large PDF document that is unwieldy.

## Adobe Portfolio

This is not directly related to repairing PDF documents as much as it is a strong recommendation NOT to use Adobe Portfolio for any type of “document collections” until Adobe makes this application completely accessible..

Although Adobe has added some accessibility to this “viewer” for collections of PDF documents, it is still not functionally accessible. The Find and Search tools are still completely inaccessible. Adobe has used the Search tool in Adobe Acrobat and reader which makes finding information in those applications impossible too. We used to be able to find and search for information but with a redesign of these tools, those of us using adaptive technology were “left in the digital ditch.”

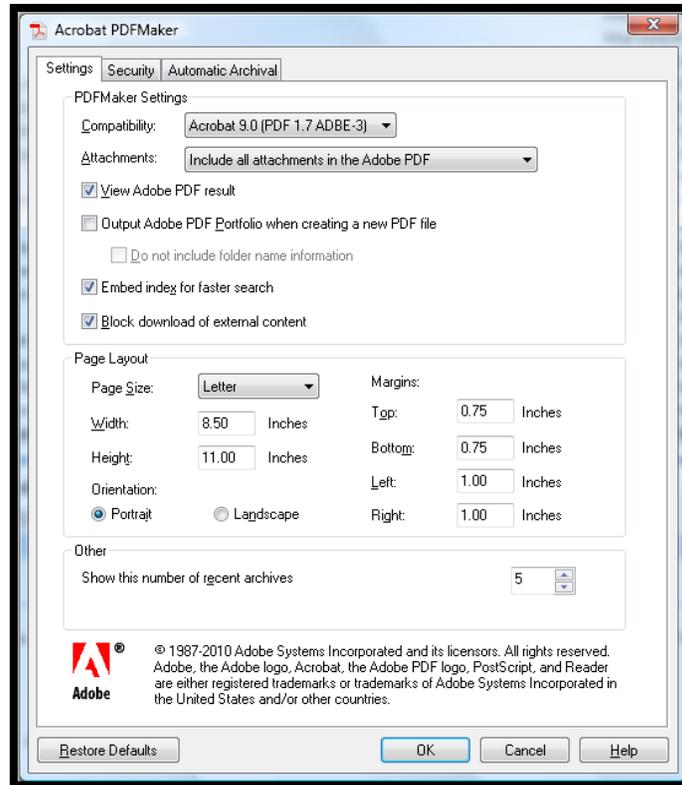
There is a setting in the Acrobat and Reader Preferences under Accessibility to not use the Portfolio application but to use the Adobe Reader or Adobe acrobat applications when opening Portfolios.



**Figure 652 Setting not to open PDF using Portfolio.**

One of the problems with this check box is that it may not always be respected. I’ve encountered random Portfolio openings.

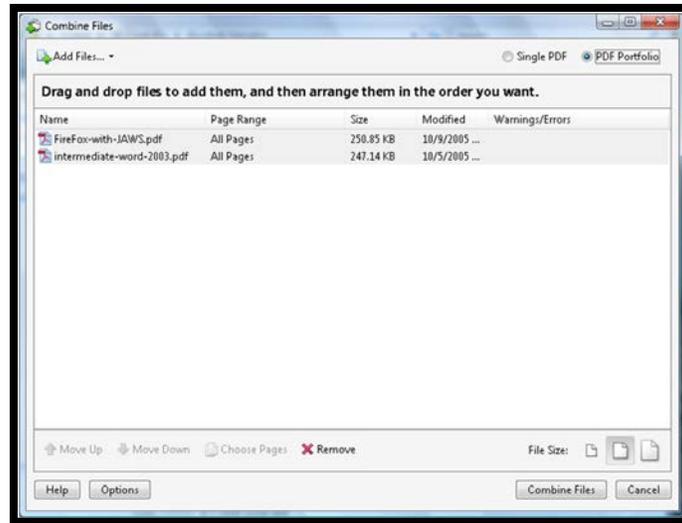
There is also a setting in Outlook that needs to be changed so that you don’t create Portfolios from Outlook.



**Figure 653 Outlook conversion settings for PDF.**

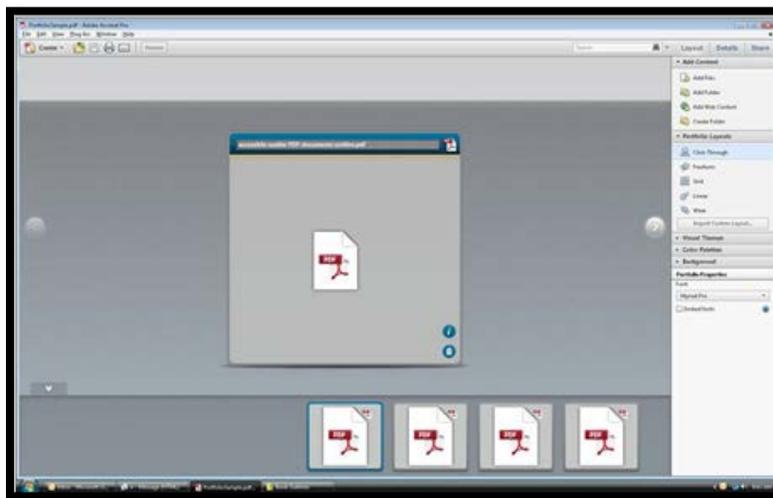
There is a checkbox about halfway down the Conversion Settings dialog that turns off the automatic creation of Portfolios. This is found under the Acrobat menu item or the Acrobat/Adobe Ribbon.

When combining documents you do not want to choose the radio button in the Combine Documents dialog to combine the document in a Portfolio.



**Figure 654 Combine Documents dialog with Portfolio radio button checked.**

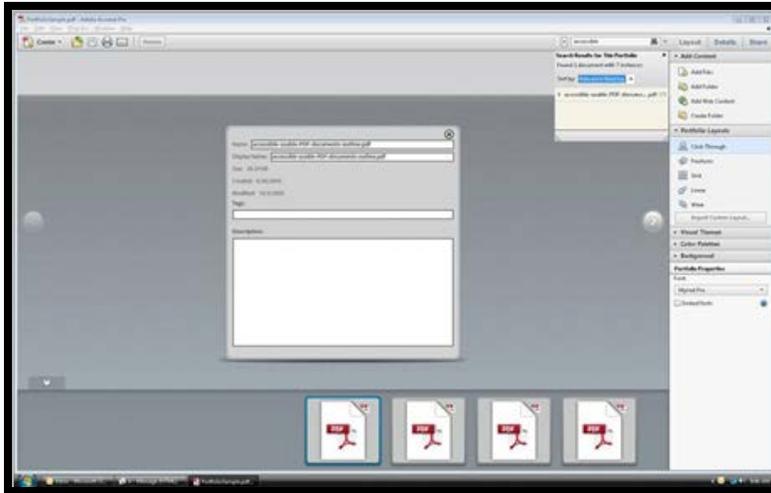
Once the documents are combined, they will open in Portfolio. The following is the default Portfolio view.



**Figure 655 Default view in Portfolio.**

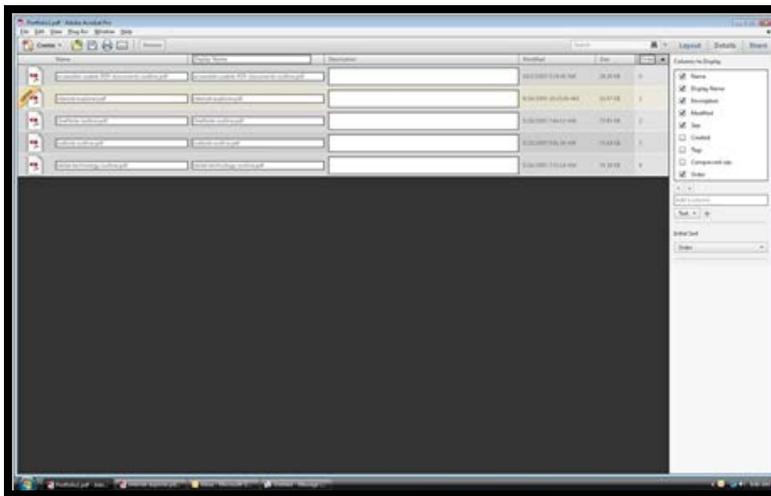
If you Tab around this application you will come across something called “more Info.” This flips the file in focus to the other side revealing some information about the document. Although I can Tab to some of the elements of this flip side of the image, there is often nothing reported to me by my screen reader other than the keyboard command I pressed...Tab, Tab, Tab. I am using the most current version of my adaptive technology.

In the following image I’ve done a search for the word “accessible” but using the keyboard with or without a screen reader, I cannot access the information.



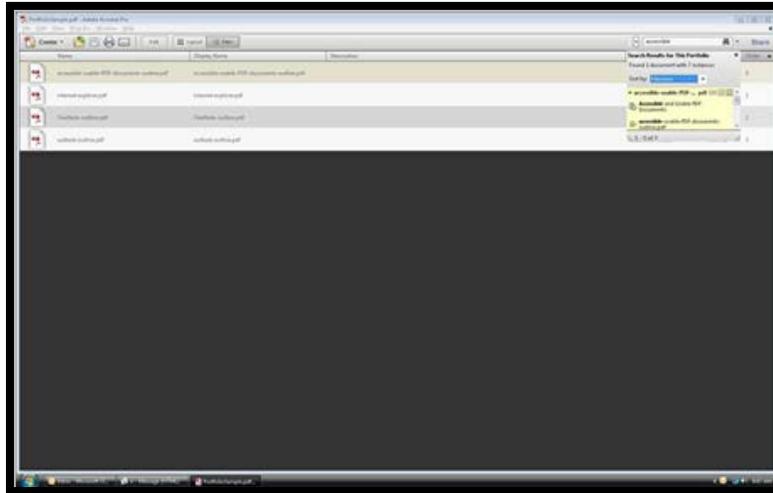
**Figure 656 Portfolio showing flip view of document and Find tool.**

If I turn off the Portfolio settings in the Acrobat or reader Preferences I have an altered view of Portfolio. So we get a different tool not the tool everyone else is using. When a Portfolio opens, I can move to the various documents and they open in Acrobat or Reader when I press Enter on them. However now I have both Portfolio and Acrobat/Reader open and unless I concentrate on where I am, can easily lose track of which application I'm in.



**Figure 657 Sort of accessible Portfolio viewer.**

However the Find/search tool is still not accessible even in this modified Portfolio application.



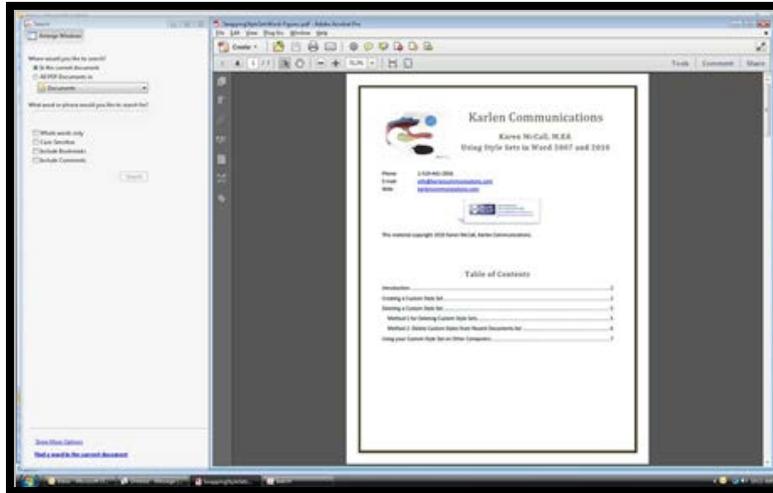
**Figure 658 Modified Portfolio viewer with Find tool expanded.**

For those of us using the Find Tool in Acrobat, it is a continuance of inaccessible user interface design. Pressing Ctrl + F will open a pop-up thing just under the Tools, Comments, Share options in the upper right corner of the user interface. We can type a word into this pop-up but we can't use the keyboard to view any of the options. Words are highlighted in the document and we have to move to previous and next iterations of the words. This means pressing F6 until we think we are on the document and then reading at what may be the cursor point or may not be. We then have to f6 into the Find pop-up again or press Ctrl + f and try to figure out which button moves us to the next iteration of the word we searched for.



**Figure 659 Inaccessible Find tool in Adobe acrobat.**

The best solution is to press Ctrl + Shift + S to open the expanded search tool. This opens a pane to the left of the document which is separate from the acrobat application itself. It is easy to Alt Tab Away from either the search Window or the application Window as they are not connected in any way. However this is the most accessible way of searching for something in a document.



**Figure 660 Separate Search Window in Acrobat.**

Having a tool like Portfolio is a wonderful idea, I'm not sure why it wasn't made accessible at the design stage since Adobe owns Flash and has resources on creating accessible Flash on its web site. This doesn't really encourage others to implement Flash accessibility.

It is also unclear why the Ctrl + f tool is not accessible. Another "oops."

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# Accessible Fillable Forms in Acrobat

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There are some design issues to consider with forms. First, if you create the forms using Microsoft Word, you cannot use the Form Controls in Word or other native applications. You must use the Form Controls in Adobe Acrobat Professional.

**Note:** If you choose to use LiveCycle Designer to create forms you should know that you need to create the entire form in LiveCycle Designer in order to optimize accessibility. Using an untagged document as the template will result in any instructions or information on that template not being tagged. What gets tagged are the form controls you add. Although someone using adaptive technology can Tab from form control to form control, they will not be able to read any of the instructions. The “template” will be “tagged” as an Artifact Forms created using LiveCycle Designer are XFA forms and only use Acrobat or Reader to view the content. They are not “true” PDF documents. Duff Johnson has written an article that will help you decide which tool to use to create your forms. “[Choosing Between PDF and XFA Forms](#)”<sup>28</sup> can be found on the Appligent Document Solutions web site.

The next chapter in this book details the creation of forms using LiveCycle Designer. XFA forms cannot be edited in Acrobat and you cannot use the Accessibility Full Check as part of a QA process because LiveCycle Designer, although included with acrobat, is not part of acrobat and is a stand-alone application.

Using Adobe Acrobat and its tools for automatic field generation , a simple form works best. That is a form with text fields only. Once you have list boxes, radio buttons or check boxes, the auto-detect tools in Acrobat won’t find them and create them. The tool is not that sophisticated. However, for text fields it works quite well. You will need to add the drop down list boxes, radio buttons and

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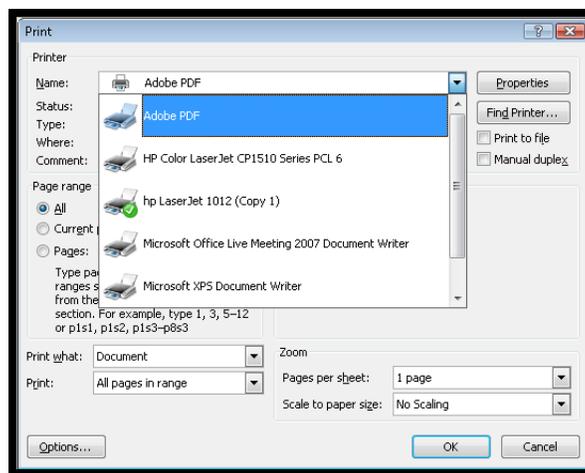
<sup>28</sup> Choosing Between PDF and XFA Forms: <http://www.appligent.com/talkingpdf-choosing-between-PDF-and-XFA>

check boxes manually. You will need to do this in LiveCycle Designer if you are using an existing template so on this point the two tools are equal.

One of the “quirks” of PDF fillable forms is that when you use the Tab key to move from form control to form control you may encounter a repetitive Tab at the end of the page. This is normal. The extra Tab is not present if someone uses their screen reader to get a list of form controls. Those of us who do use adaptive technology or the keyboard to navigate form controls are used to this hiccup/bug. Adobe is aware of this problem.

**Note:** You will have to save documents, close them and open them again for a screen reader to “see” the repairs. You MUST start the screen reader BEFORE you launch the application which might require you to exit Acrobat, start the screen reader then launch Acrobat and the document again.

When using a Word or Excel document as the foundation for a form, use the Print dialog and choose Adobe PDF as the printer. Do not create a tagged document.



**Figure 661 Print to Adobe PDF printer option.**

If we go back to our hierarchy of tasks we find that adding form controls comes before we add Tags to the document.

1. Is the document a scanned image?
2. If yes, use the Adobe Acrobat OCR tool to make it readable text.
3. Does the document have links?
4. If yes, use Document Processing, Create links from URL's to identify them.
5. Does the document have form controls?
6. If yes, add the form controls.

Once these questions have been answered and the tasks performed add the Tags to the document.

**Note:** Creating forms is a mouse dependent activity. You will also have difficulty creating forms if you are using a screen reader.

## Text Based Form Controls

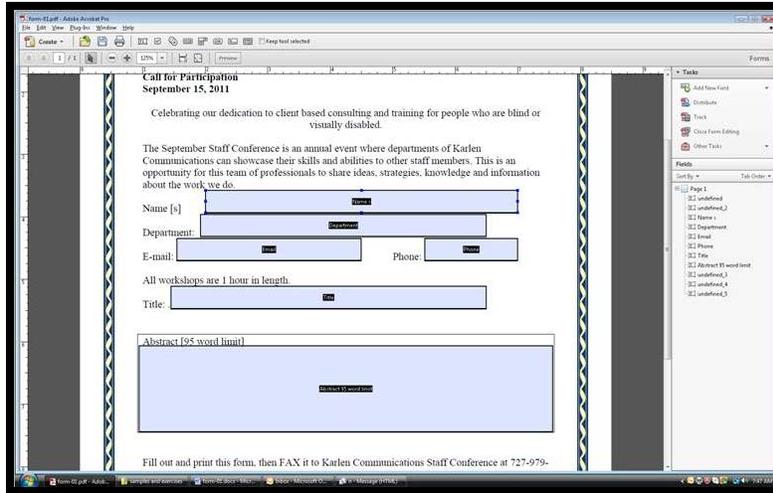
The first type of form we'll look at is a simple form with only text fields. The sample is a proposal form for a small company holding a staff conference to share expertise. It is a Word based document using the underline to indicate lines to be written on and a text box to add the abstract. Since this document is not designed to be used as a Word document but is only to be used as the layout for an accessible PDF form, I initially used a text box for the proposal abstract area.

As we move forward with the need to create more accessible documents even if we don't foresee them being used in their native application, the use of the text box will not be acceptable...unless we can create accessible text boxes.

In subsequent versions of this form I used a paragraph style to create the illusion of a text box or writing area. I pressed the Enter key the number of times I wanted the writing area to be and, selecting all of the blank lines, applied the paragraph style I named "Multiline Form."

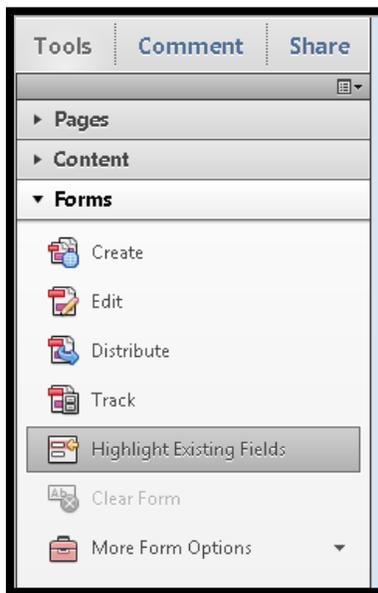
This topic will also demonstrate two solutions for using multi-line fillable form controls.

First, let's walk through the automatic creation of form controls using a Word document as a template. For this sample I've added a page border so that we can examine some of the issues created when using this type of document design on forms. The following image shows the untagged form with the Forms Toolbar visible and initial forms added to the PDF document.



**Figure 662 Form controls added to untagged PDF document.**

Open the Forms Toolbar to the right of the document. If it is not visible go to View, Tools and choose Forms.



**Figure 663 Forms Toolbar to the right of the document.**

Once the Forms Toolbar is visible activate the Create Form item in the Forms Toolbar.

The first step in adding form controls to your untagged PDF document is to decide whether to use an existing document as the template or to scan a paper form. Remember that if you scan a paper form you will need to use the Recognize Text tool before you add form controls to the document. It might be better to exit the form tools at this time and scan the paper form, perform the optical text

recognition, make any repairs to the text recognition and then return to the forms tool, this time choosing to use an existing document.

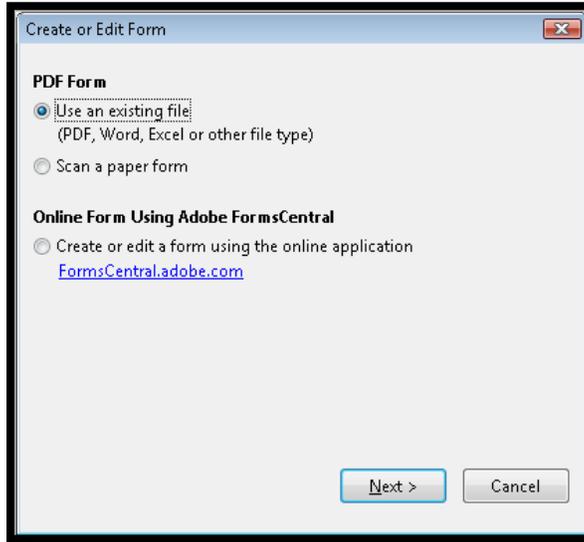


Figure 664 Step one in creating a form using Acrobat.

Activate the Next button and you are at step two in the process.

Step two in the process asks if you want to use the current document or browse for another document. We are, for this example, going to use the current document which is the default if you have a document open.

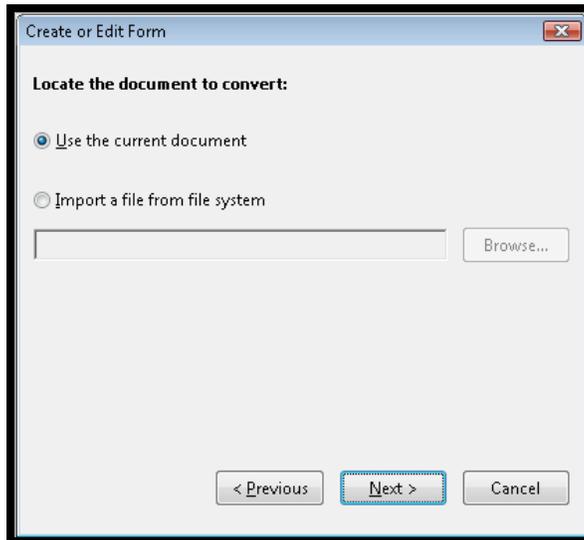
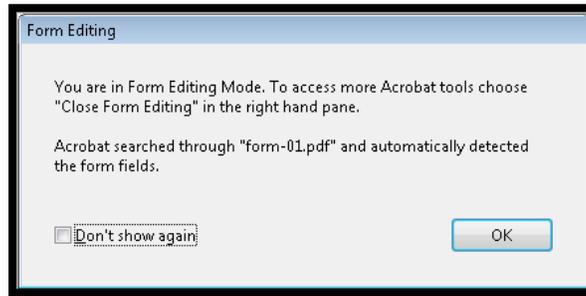


Figure 665 Step two in the form creation process.

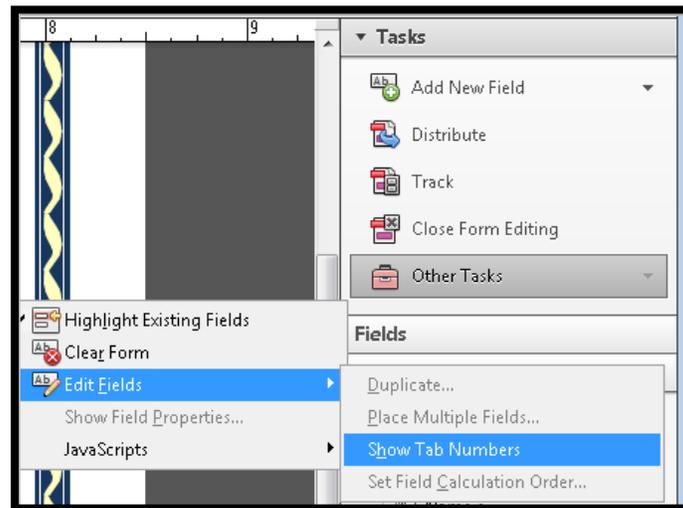
Once you activate the Next button, you are in the final step of creating your form using the automatic form control detection.



**Figure 666 Forms Editing Mode dialog.**

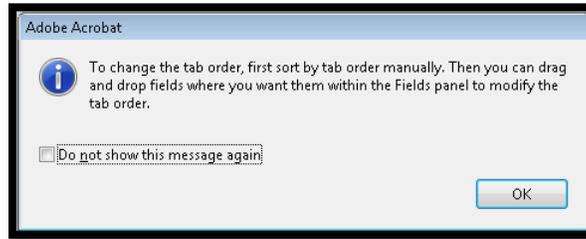
The final step is a message that lets you know you will be in Forms Editing Mode once the process has completed. You can choose to "Close Form Editing" from the Forms Toolbar when you want to return to the regular view of the PDF document and either look at the form controls or add Tags to the document. Adding Tags should be the last step in the form creation process. Once the Tags are added, you can begin any repairs to the form and perform the QA.

Once the form controls are visible in the document, we can't really tell if the form controls are in their right order. The right order of form controls as with links on pages is called the "Tab Order." You can see the Tab Order by choosing to show it which is found in the Forms Toolbar.



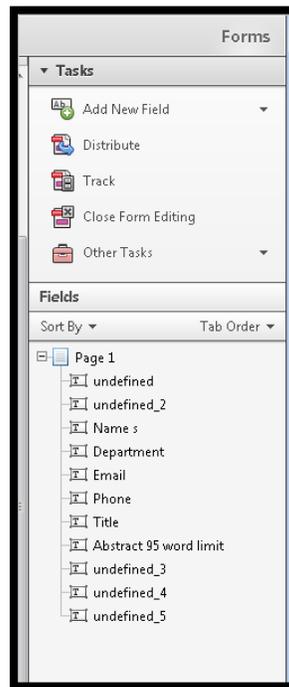
**Figure 667 Show Tab Order option in Forms Toolbar.**

When you choose to view the Tab Order, you will get a message telling you how to work with the Tab Order of form controls. You may have to set the Tab Order manually. You can also drag form controls to their correct Tab Order in the Forms Toolbar.



**Figure 668 Tab Order message.**

The Forms Toolbar will change once form controls are added to the document. You will be able to see the specific form controls through the Forms Toolbar as well as in the document.



**Figure 669 Forms Toolbar showing specific form controls.**

The form I've used has a page border that is quite decorative. Remember that I said the form identification tool looks for underline as a guide as to what text forms it should create.

ne [s]  2

partment:  4

mail:  5 Phone:  6

workshops are 1 hour in length.

e:  7

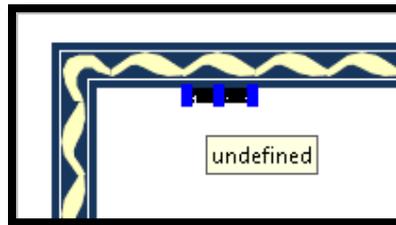
stract [95 word limit]  8

**Figure 670 Tab Order showing first form control as number 2.**

The Tab Order numbers appear in the upper right of each form control. Of course with check boxes and radio buttons they will visually take up most of those controls.

In this form the first form control has been identified as the second form element on the page. We know that this is really the first form control, we need to find the errant form control and delete it.

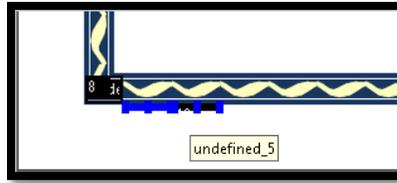
What has happened in this case is that pieces of the page border that look like underlined content have been identified as text form fields.



**Figure 671 Piece of page border identified as text form control.**

Actually there are two other pieces of the page border that will cause issues with this form. One is located in the lower left corner of the page and the other is located in the upper right of the page.

To delete this incorrect form control, select it and press the Delete key.

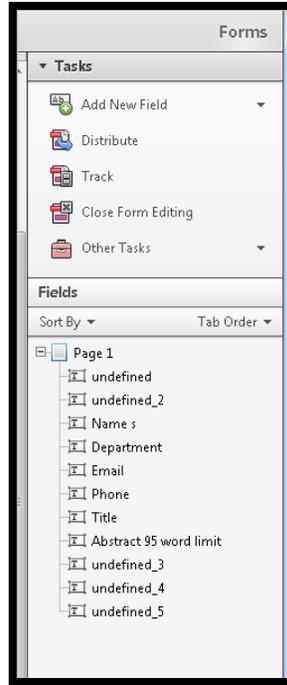


**Figure 672 Second piece of page border identified as form control.**

Neither of these two form controls were the problem. They were recognized as a sort of hybrid: form control but not form control. We know this because the first form control on the form is still identified in the Tab Order as the second form control in the form.

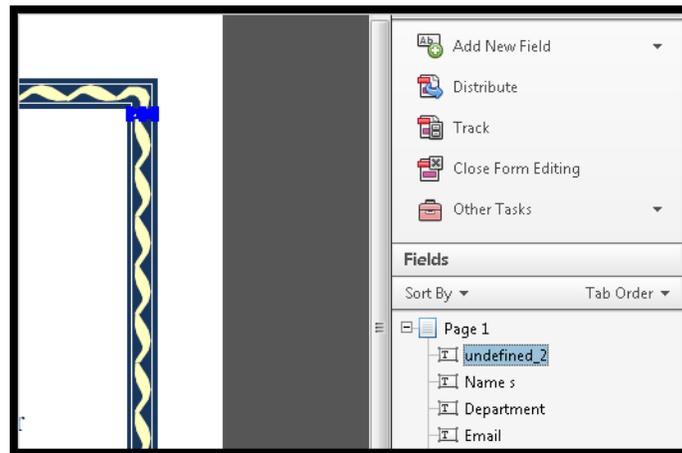
**Figure 673 First form control identified as second form control on form.**

It is difficult to find other pieces of the page border that might be causing the this problem. We can turn to the Forms Toolbar and activate the first form control to have it selected in the form.



**Figure 674 Order of form controls in the current form shown in the Forms Toolbar.**

When we activate the first form control in the Forms Toolbar, that form control is outlined in blue in the form. This is how I found out that there was another piece of the page border that had been identified as a form control.



**Figure 675 Third piece of page border identified as a form control.**

This time we can simply press the Delete key in the list of form controls in the document to delete this “form control.” In the form, the Tab Order automatically adjusts to show that the first form control now has the number 1 indicating it is now the first form control in the form.

The image shows a form with three input fields. The first field is labeled "Name [s]" and has a small "1" in a black box at its top-left corner. The second field is labeled "Department:" and has a small "2" in a black box at its top-left corner. The third field is labeled "E-mail:" and has a small "3" in a black box at its top-left corner. The text "Email" is visible inside the third field. The form is enclosed in a black border.

**Figure 676 Corrected Tab Order for form.**

We can now examine the ToolTips or descriptions that someone will hear and see when filling in this form and make sure that they are easy to understand.

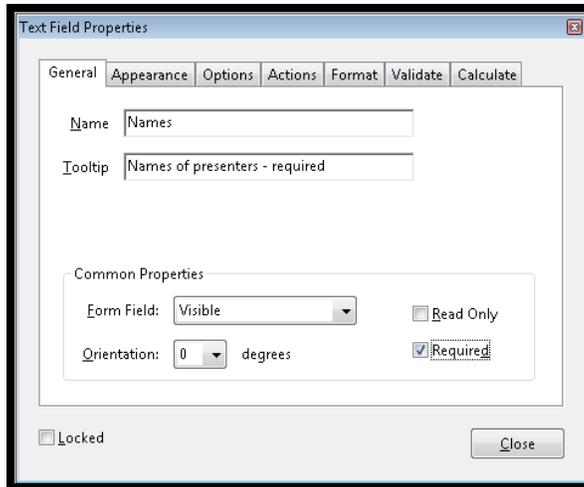
Click on the first form control, the Name[s] field. When the form control was created, the brackets around the “s” were removed so the name of the field is awkward. We also need to check on the Tooltip to see if one was added automatically or we have to add one. It is the ToolTips that the adaptive technology will read to the person trying to fill out the form. It is important that the ToolTips are clear and concise...and make sense. We could just leave the text in a Tooltip as “Names” but this doesn’t provide any context.

Keep in mind that many people either Tab through the form controls or get a list of them and begin filling in information. As with people without disabilities, we don’t read the instructions unless we have to. However, the “instructions” need to be available in case we can’t figure out what is needed from the Tooltips.

For example something that says “check box not checked” doesn’t provide any help in understanding why we would want to check that check box. Similarly, for forms where the form author forgot to indicate in the Tooltip that the field was required, we need to be able to access that information from the label of the form control or surrounding content. For people with learning, cognitive or visual disabilities, it is often helpful to glance around a form control to see if there is any other helpful information.

We need to examine the properties of each form control.

To access the properties of the first text form control, press the Right mouse button once the form control has been selected. Choose Properties which should be at the top of the context menu. This opens the Text Field Properties dialog.

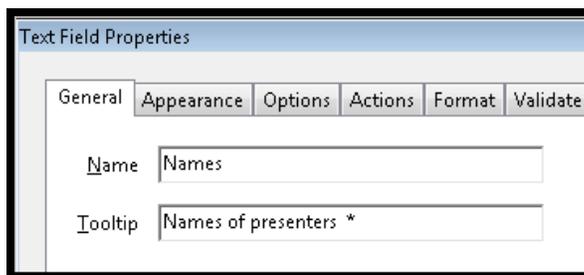


**Figure 677 Text Field Properties dialog showing General tab.**

The preceding image shows the ToolTip information filled in for a required form control. I've tightened up the Names text so that the name of this form control will make more sense to me if I need to come back and edit the form...or if someone else does.

I've added the word required after the instructions for this form control. I've also checked the check box so that this form control will need to be filled in before the form can be submitted.

There is some discussion about the proper way to indicate that a form control is required. Some say that the proper format is to add the word "required" to the ToolTip. Others say that just adding an asterisk is fine.



**Figure 678 Required field identified with an asterisk.**

Remember that although we can't provide different information in the ToolTip, the purpose of the ToolTip is to help people fill in this form who not only may not be able to see it, but may have learning or cognitive disabilities as well. From my perspective, adding the word "required" is less confusing and clearly identifies the form control as being required whereas an asterisk is easy to miss visually or if you are having form control ToolTips read out to you. I tend to err on the part of clarity of purpose when working with form controls.

To check the required check box for a form control:

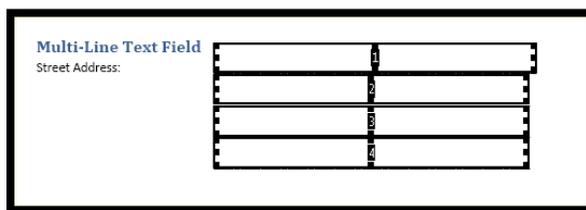
1. Select the form control in the document. It will change colour.
2. Right click on it and choose Properties from the context menu.
3. In the Text Field Properties dialog, check the "Required" check box on the General tab.
4. Add the "- required" without the quotes to the ToolTip for the form control.
5. If you need to add more descriptive text, you can do this while in the Text Field Properties dialog.
6. Press Alt + C to Close the Text Field Properties dialog when you are finished.

When the form has been finished and tagged, this text form control will have the following look and feel in the form. The ToolTip which is visible in the following image will be read to the person filling in the form. I did forget to put the asterisk next to the form control label in the source document if you are looking closely. I would need to make this repair in the source document and repeat the process to this point. I decided to show you how to do a required form control at the same time I demonstrated ToolTips and didn't go back to the form template. My bad.



**Figure 679 Text form control in tagged PDF document.**

Before we close out of Forms Edit Mode and Tag the document we need to look at the field for abstract. In this case it has been identified correctly. This is because I used the paragraph border to identify the parameters of the writing area. We would have had to repair this form control if I had used a table or underline to provide guiding lines for handwriting.



**Figure 680 Incorrectly identified multiline form control.**

In the preceding image from another sample form, each line in the multiline form control has been identified as an individual form control. While intuitive for handwriting, this is not appropriate for an online fillable form. The solution is to delete some of the form controls and expand one of them to cover the "writing area."

The lines will still be visible if you are offering the ability to print and handwrite the content however for filling the form digitally the person can write continuously without having to hear a ding at the end of one line, pressing Tab to move to the next line/form control, and remember what they were writing about to continue entering data. If the data is collected digitally this also means that the individual lines will not be sent as individual pieces of data but will be sent as one paragraph or block of data.



Figure 681 Repaired multiline form control.

The colour yellow shown in the preceding image highlighting the form control is a user defined colour set in the Preferences of Acrobat or Reader. Although you can set this while creating form controls, it is not a good idea to override the end-user preferences. If someone has colour deficits and can't easily identify the colour you've chosen, you've created an accessibility barrier in your form. Your choices will not let the end-user choose a more effective and visible colour for form controls.

## Tagging the Simple Form

I've gone ahead and repaired the ToolTips for this simple form. Once that is done, I exited out of Form Edit Mode and returned to the Acrobat interface. I added links to the document using the Document Processing Toolbar before I started adding form controls.

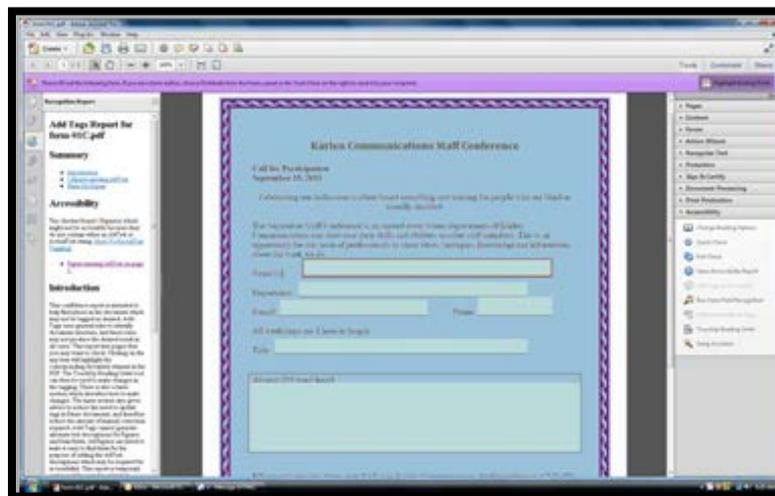
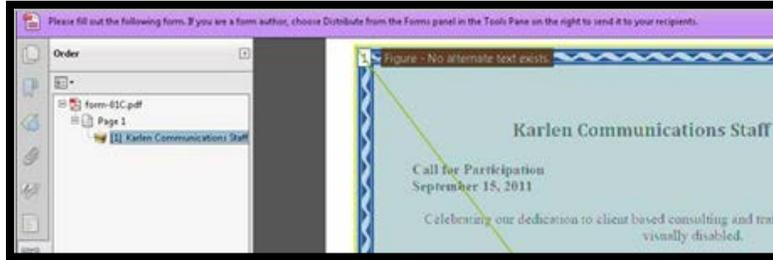


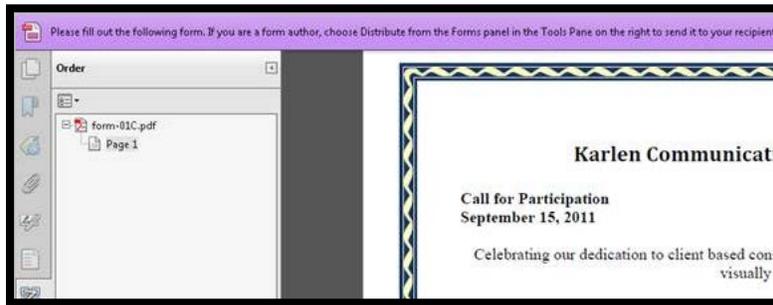
Figure 682 Initial Tags for the simple form with page border.

As we can see from the Add Tags Report much of the form has been tagged as a Figure. Of course we don't know this for sure. Sometimes what happens is that a page border or other decoration is layered on top of the document content. We can verify that the content is tagged correctly by making the <Figure> an Artifact.



**Figure 683 Figure content appears as text in Order Panel.**

If we look in the Order Panel we can see that some of the text has been tagged as text. How much and what we can do with it still remains to be investigated.



**Figure 684 Figure made an Artifact on form.**

This is not looking good so far.

It appears that the text was connected to the <Figure> Tag and once we removed the <Figure> Tag the text that was tagged has been made an Artifact too.

This is verified in the Tags Panel and Tags Tree.



**Figure 685 Tags Tree for simple form sample.**

At least we can see that the form controls were tagged properly.

In this case, because I used a page border, there will be more repairs needed to the document than I have time for. Remember time is money. This is also my own form so I have the ability to “change my mind” and remove the page border. In the cases where you don’t, the repairs to this form will be to manually Tag all text content in the form. You will be able to do this, the text is selectable. In addition you will need to drag the proper <Form> Tag to be with its corresponding text so that the two are together in the Tags Tree.

We’ll work through this in the revised form without the page border.

I quickly returned to Word, removed the page border, printed the document to PDF, added the form controls again, repaired the ToolTips and tagged the document. This is a simple form and the entire reworking of the form took only five or six minutes.

Now when I Tag the document, although the Add Tags Report shows what it thinks might be problem areas, the form is tagged in such a way that I don’t have many repairs.

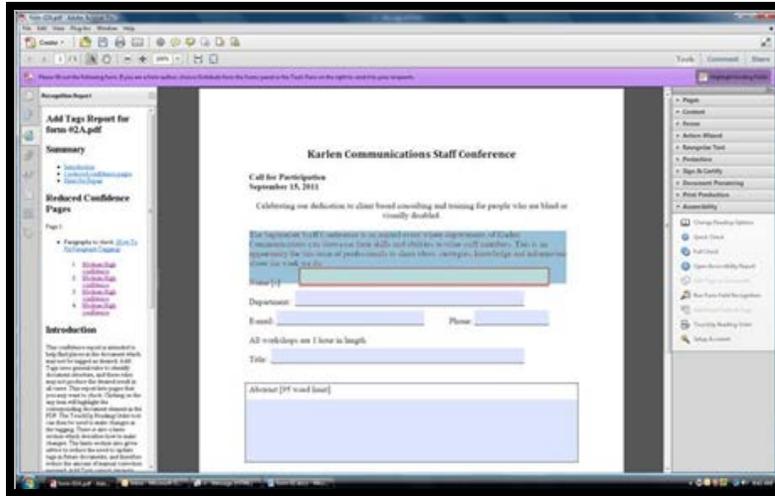


Figure 686 Add Tags Report on reworked simple form.

When I turn to the Tags Tree in the Tags Panel I see that the Tags are appropriate for the most part.

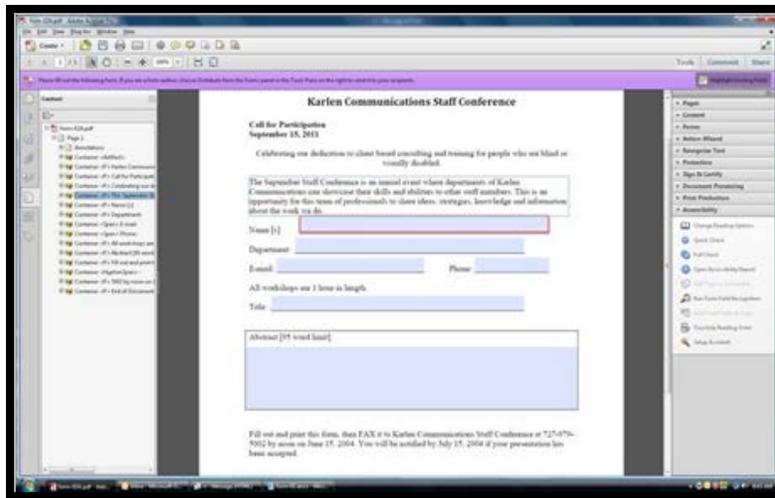
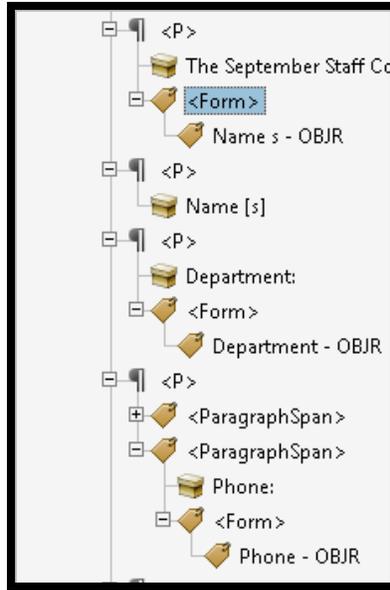


Figure 687 Tags Tree for reworked simple form.

The repairs to this form are simply to drag the <Form> Tags under their respective <P> Tags that have the same content. For example the “Names” <Form> Tag should be under the <P> tag containing the text “Names.” In this example it isn’t. We just need to drag it to its logical place in the Tags Tree. Use Highlight Content to verify the positioning of text and form control.



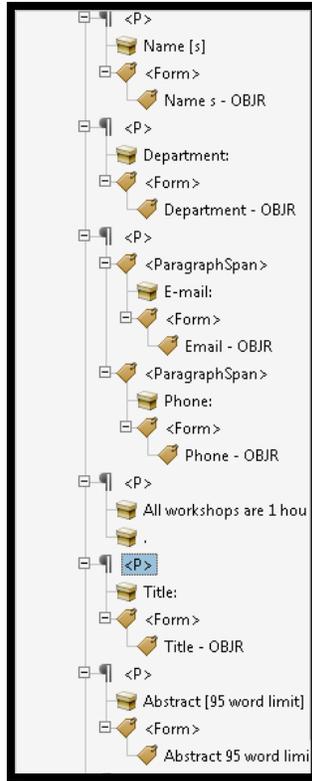
**Figure 688 Tags Tree showing disconnect between content and form controls.**

This review and repair is repeated for the other form controls and their corresponding text such as “Title,” “Description,” “e-mail,” and so forth.



**Figure 689 Close-up of Tags Tree for simple form.**

Once that is done, check the language of the document under the Document Properties, I would make the Tab Order dependent on the document structure [under Pages in the Navigation Panel], and then run an accessibility full check to see if there are any major issues with the document. There shouldn't be.



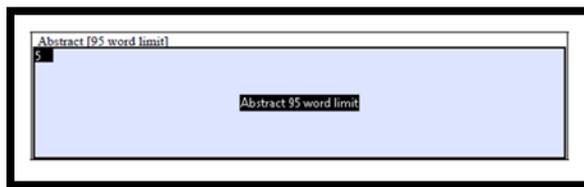
**Figure 690 Repaired Tags Tree for simple form.**

Let's take a closer look at adding other form controls to an accessible PDF form.

## Multi-Line Edit Boxes

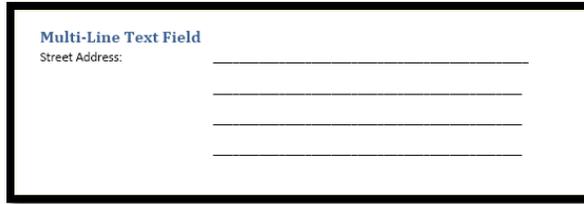
I briefly mentioned the usability of multi-line edit boxes or text edit fields when I began the creation of the simple form in Adobe Acrobat.

The automatic field detection properly identified the text editing area because I used a paragraph style in Word to outline it.



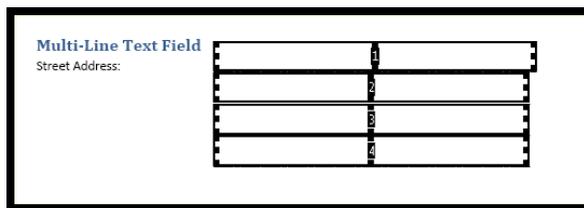
**Figure 691 Properly identified multi-line text field.**

In the following sample, there is an area for a street address that has been identified in Word by using the underline.



**Figure 692 Address "form field" created using the underline in Word.**

Sometimes the automatic form detection tool gets confused about what to do. This is especially true when the underline or a table has been used to provide handwriting guides for forms to be printed and filled out. This needs to be repaired.



**Figure 693 Multiple "lines" detected using automatic field detection in Acrobat.**

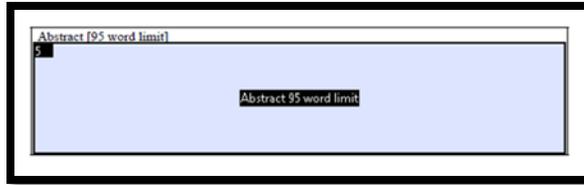
This is not the correct recognition of the form control. Remember that the form detection tools are mechanical and cannot interpret intent.

Logically speaking, if someone were entering their address digitally they would not type in the street number, look for the next form control to enter the city or province and then look for the next form control to enter their postal code and country. Visually this set of information is tied together by the underline. Digitally it needs to be tied together using one text field/control not four. However if your form does require separate entry fields for each piece of an address, each form control would have its own label such as Street Address, Apartment or Unit Number, City, Province/State, Country and Postal Code/Zip Code. In our form, all of this information is consolidated in one form.

Another example of this type of mistagging would be the Abstract form control in the simple form we looked at. The flow of information for that form control needs to be continuous without interruption.

The last three text controls need to be deleted. The first one needs to be expanded by dragging the lower parameter to cover all the lines in the address form control, and then the properties of the text field/control need to indicate that this is a multi-line text field.

When we are finished, it should look like the first example with the exception of the ToolTip which should say "street Address."



**Figure 694 Properly created multi-line text control.**

Using this type of text control a person can continually enter the necessary text.

If we think of the abstract text control as the example, if we had put lines to represent where the writing should go, having each line be a text control so that our train of thought is interrupted at the end of each line while we try to find where to continue is counter intuitive.

By creating the one text control that covers all the lines we can either write on the lines if the form is printed or type in the multi-line text control if we are filling in the form digitally.

The key is to look at the purpose of the form control and how best to facilitate digital or online filling in of information. Even for those of us without disabilities it is counter intuitive to have a single concept or train of thought scattered throughout several text controls/fields.

The failure to create one multi-line text control for more than one line of information is a common mistake made when creating fillable PDF forms.

## **Check Boxes, Radio Buttons and Drop-Down Lists**

This next example will walk you through creating forms with check boxes, radio buttons and drop-down lists. Although more complex than the previous example, there are still forms more complex in the types of information required and the layout of the form itself. This book should get you started working with form controls so that you can make decisions about which tool to use: Adobe acrobat or LiveCycle Designer.

Continuing with Adobe acrobat to create a form, let's look at adding form controls manually to a form. We won't use the "Create" tool in the forms Toolbar.

What great practice!

**Sample Form Controls**

**Check Boxes**

I am a new student:

Yes  No

**Radio Buttons**

Question	Agree	Neutral	Disagree
Creating forms in adobe Acrobat is fun!	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Drop Down Lists**

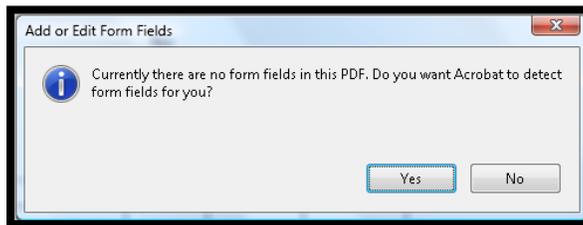
Location:

**Multi-Line Form Control**

Address:

**Figure 695 Form with samples of form controls.**

When we choose “Edit” from the Forms Toolbar instead of “Create” we get a message asking if we want Acrobat to try and detect the form controls. For this example we will choose “No.”



**Figure 696 Message when Edit is chosen for a form with no form controls.**

If we had chosen to use the automatic form control detection tool, only text box form controls would be identified. For this form, it would be the “Address” area that would have form controls and they would most likely be separate from controls for each writing guide. It is faster to just add the form controls than to delete the wrong ones and do the repair.

Let’s start our repairs!

The first form controls to add are the check boxes.

## Check Boxes in a PDF Form

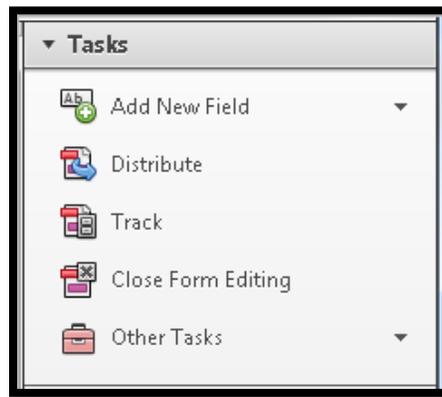
This topic guides you through manually creating check boxes in a tagged PDF form.

Our example has a statement followed by two check boxes, one for yes and one for no.

The statement is: I am a new student.

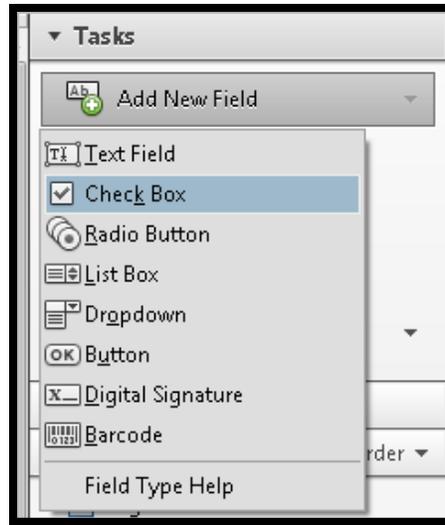
On the form are the words “yes” and “no.” I need to put a check box beside each one and give it a value. The value will let me send the information electronically but will also let the person who is filling in the form digitally which answer they are choosing. In this case the values are either “yes” or “no.” On reflection this was not a good example. Check boxes let you choose more than one response whereas with this specific question using the check box allows both answers to be chosen. Just look at this as practice. It is another example of why we need to design forms to be clear and understandable and to use the correct form control for the information we are gathering.

When we chose to add the form controls manually, elements of the forms Toolbar changed. The first item is now



**Figure 697 Options in Forms Toolbar when editing a form.**

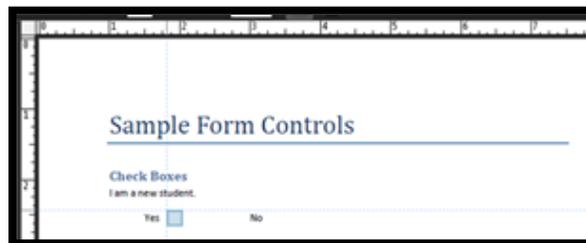
Activate the first item in the Forms Toolbar which is “Add New Field.” This reveals the list of possible form controls.



**Figure 698 List of possible form controls in Forms Toolbar.**

The nice thing about this list is that if you are not familiar with the terminology around form controls, there are images of what each represents to the left of the text that describes it. So the words check box have a small check box to the left.

When you choose to add a check box to a form the cursor changes to a small check box and you can literally place it where you want.

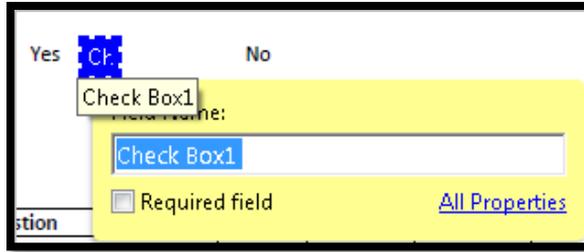


**Figure 699 Check Box placed in form.**

Once you click on the page, the check box is placed at that location.

Use the ruler along the top and left of the document to place a form control more precisely. You can also use the Zoom to magnify the document so that you have a better sense of space around and between form controls.

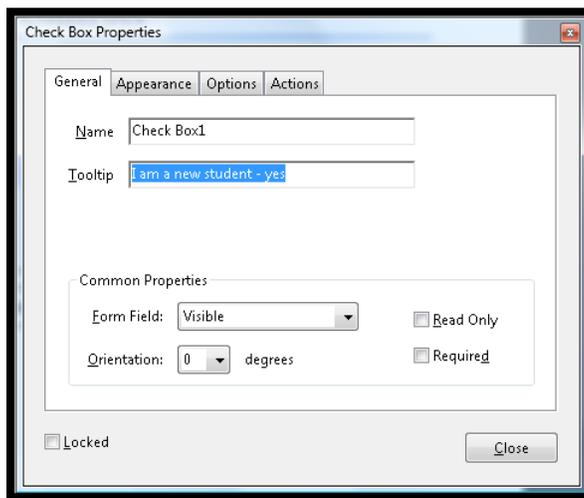
A small interactive dialog opens in bright yellow with some options for the form control you are placing in the document.



**Figure 700 Check box form control showing yellow Properties dialog.**

The preceding image shows the check box placed in the document represented by the bright blue outline and the form control dialog showing the field name, a check box to make the field required and the “All Properties” link.

We need to activate the “All Properties” link in order to complete the accessibility of this check box.



**Figure 701 Check Box Properties dialog showing General tab.**

One of the keys to creating an accessible form is to make sure that the form control has a ToolTip that provides information to the person filling out the form.

Those of us who use screen readers have a keyboard command that lets us get a list of form controls in a PDF document. We can also use this on HTML pages and Word documents.

Typically we just get the list of form controls and begin filling out the form if it is a simple one. For forms that are not well organized or have the Tab Order out of whack, getting the list of form controls often provides insight into what information will be required. It is a fast way of getting an overview of the form before going back and reading the instructions.

This is also an essential tool for you to create the ToolTips for forms.

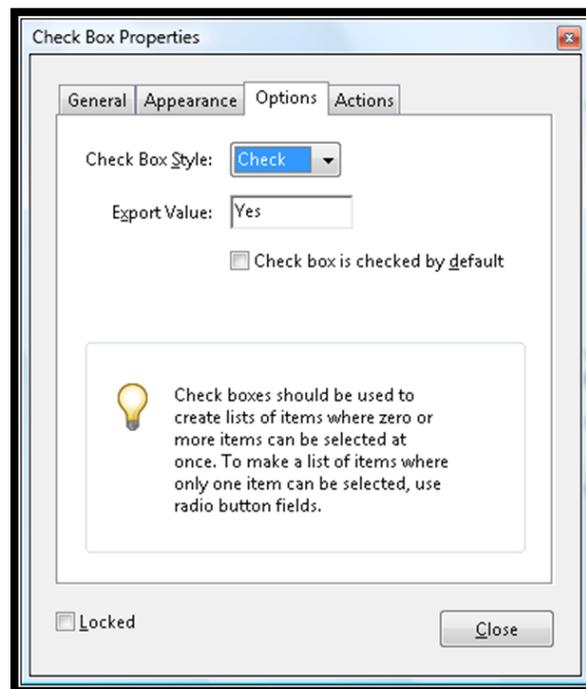
If the only thing you could see” on the form were the labels or ToolTips for the form controls, would you be able to fill out the form and send it in independently? Would you know what form controls were required? Would you know what the check box relates to, the radio button is for?

Without proper Tooltips we will hear “check box not checked” or “radio button not checked” or “edit.”“

If this were all you heard what decisions would you be able to make?

It is important to provide the context for the form control in the Tooltip.

In this case I typed...you can copy and paste...the text “” I am a new student: Yes” into the Tooltip.



**Figure 702 Check Box Properties Options tab.**

I then move to the Options tab and type the Export Value of “Yes.” This will let me send the data from the form electronically if I choose to.

Press Alt + C to Close the Check Box Properties dialog.

Repeat this process for the “No” check box but make the Tooltip indicate “No” and the Export Value in the Options tab “Yes.” So the Tooltip will be “I am a new student – no.” The export value is “Yes” because it indicates that the check box is checked. As I said after reflecting on this question, it is not ideal for check boxes. Just use the check boxes as practice for this form.

The set of check boxes is now part of the accessible form. The form is not tagged yet. We have to add the other form controls before we can test the fields.

The image shows a screenshot of a PDF form with two sections. The first section is titled "Check Boxes" and contains the text "I am a new student." followed by two check boxes labeled "Yes" and "No". The second section is titled "Radio Buttons" and contains a table with three columns: "Agree", "Neutral", and "Strongly Disagree". The first row of the table is labeled "Question" and the second row contains the text "Creating forms in Adobe Acrobat is fun." with three radio buttons corresponding to the "Agree", "Neutral", and "Strongly Disagree" columns.

Question	Agree	Neutral	Strongly Disagree
Creating forms in Adobe Acrobat is fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 703 Check boxes and radio buttons in a form.

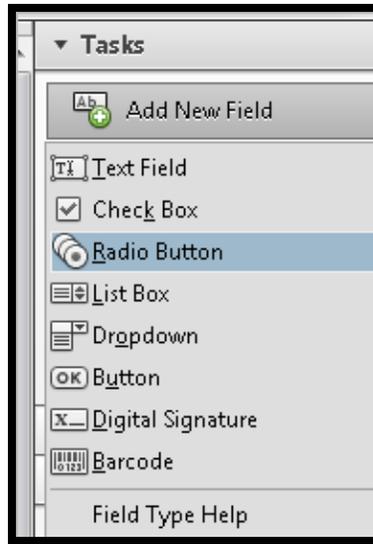
## Radio Buttons in a PDF Document

The second sample form control is a series of radio buttons. The most common mistake when creating radio buttons is that they are made “individually” and not as a set of options. This is an easy mistake to make and often results in a statement that “radio buttons aren’t accessible in tagged PDF forms.” If created properly this is not true.

In Acrobat it is easy to create a series of radio buttons. The key to having them all work as a set or series of options is to make sure they all have the same “name.” In the Radio Buttons Properties dialog the name should be the same for all of the radio buttons you want to act as a set of choices. For example “RadioButton4” would appear as the name of each of the radio buttons in a set of five that offer choices of strongly agree, agree, neutral, disagree, and strongly disagree. Even the ToolTips would be the same. The difference would be in the value for each of the options.

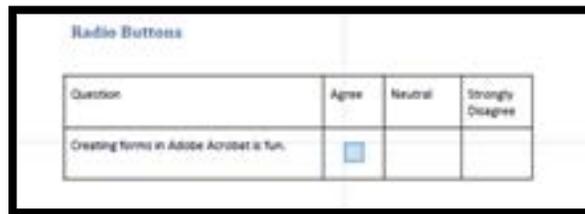
Let’s work through this for a set of radio buttons that are in a table that has been used for layout. Although tables should not be used for layout, I recognize that they are often used to lay out a form so have conceded the use of a table for design in a PDF form.

First activate the “Add New Field” item in the Forms Toolbar.



**Figure 704 Radio Button option in Add Form Field list.**

Once you choose to add a radio button, the cursor will change to the crosshairs and give you a “shadow” radio button when you move the mouse over the document.

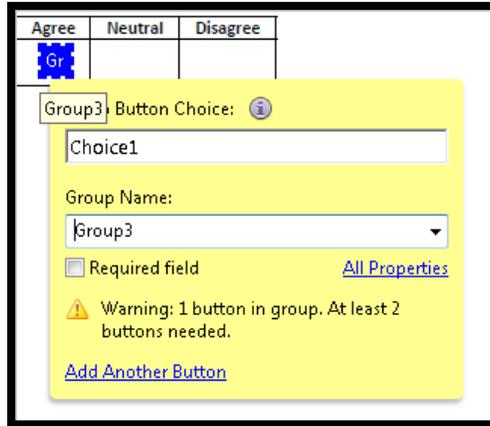


**Figure 705 Radio button added to form.**

When you locate the position for the radio button, click to put it in place.

Use the ruler along the top and left of the document to place a form control more precisely. You can also use the Zoom to magnify the document so that you have a better sense of space around and between form controls.

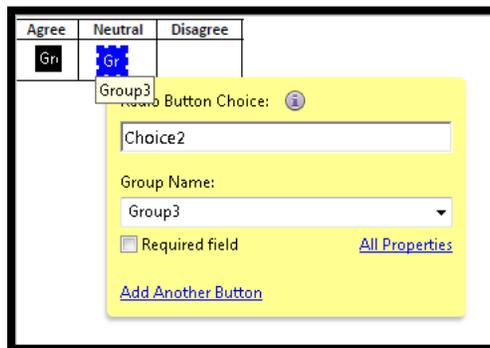
Once the radio button is placed on the page, a yellow dialog opens with some of the commonly used properties for a radio button.



**Figure 706 First radio button added to form showing yellow properties dialog.**

This dialog makes it easy to create the set of radio buttons. This process is a lot easier than in previous versions of Acrobat.

Activate the link that says “Add another button to group.”



**Figure 707 second radio button added to the form.**

The yellow dialog disappears and the place marker for the next radio button appears. Place that radio button where you want it to be. The new radio button has the same group name as the first, however it is now identified as “Choice 2.”

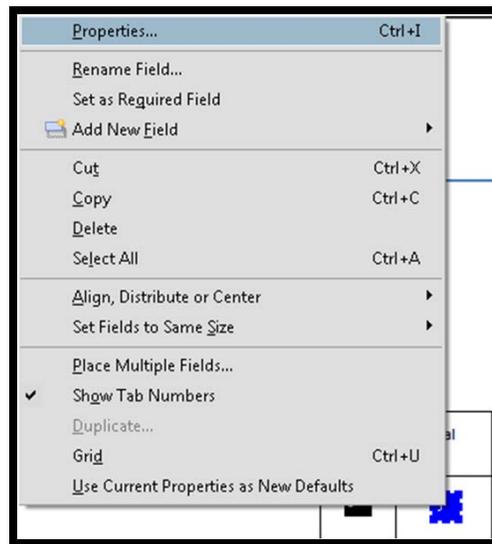
Repeat this process for the number of radio buttons in the group or set for one question.

All of the radio buttons will have the same name. We’ll go into the properties dialog for each form control to make the changes necessary for each one to be more accessible.



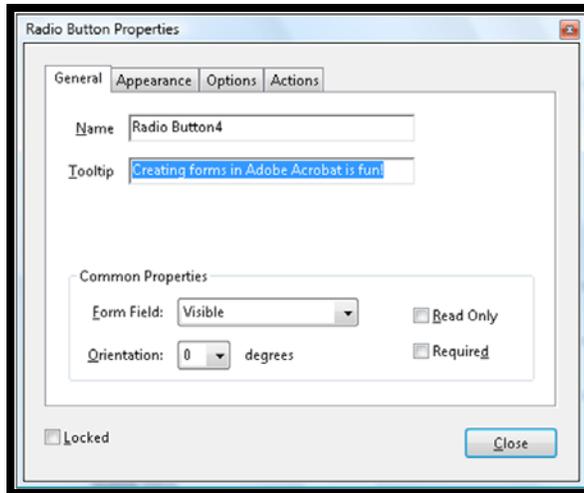
**Figure 708 Set of radio buttons in PDF form.**

Once you have all the radio buttons for the group or set that you want, choose the “All Properties.” Link If this option is not available, if the yellow dialog is not available, right mouse click on a radio button and choose Properties.



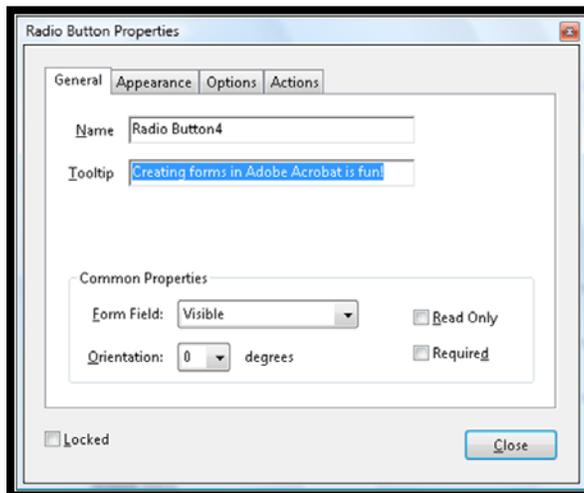
**Figure 709 Context menu for a radio button.**

The Radio Button Properties dialog opens.



**Figure 710 Radio Button Properties dialog showing General tab.**

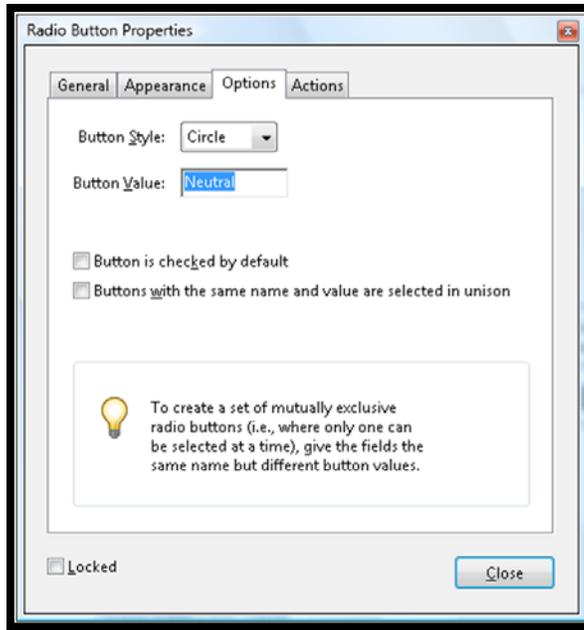
When you type in or copy and paste in the ToolTip it will be the ToolTip for all of the radio buttons in the group or set.



**Figure 711 Radio Button Properties dialog with General tab open.**

If the question or statement the response is for is long, summarize it here. Remember that someone using TTS or Text-to-Speech or a screen reader is going to have to listen to the entire ToolTip. On the other hand we need the ToolTips to provide enough information about the question or statement we are responding to so that if we get a list of form controls we can fill in the information independent of surrounding text on the form.

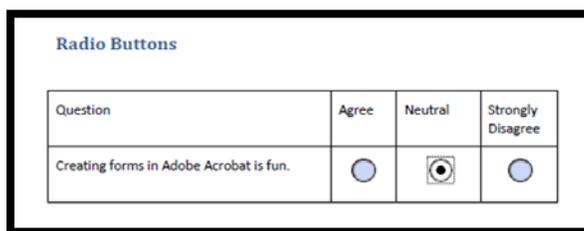
The property that we need to modify is in the Options tab. We need to type in the value for each of the radio buttons. The values are strongly agree, agree, neutral, disagree, and strongly disagree.



**Figure 712 Radio Button Properties dialog with Options tab open.**

In each of the Radio Button Properties dialogs enter the corresponding “Button Value.” Do not put the value in the ToolTip. Adaptive technology will read the ToolTip and then the value to the person reading the form.

If the radio buttons are grouped or added as a set with the same name, built on the same initial radio button, they will behave as radio buttons in the PDF form. This means that you can Tab to the first button and then use the Left or Right Arrow keys to move to the previous or next button. Of course if you are using a screen reader you would be able to get a list of the form controls and move to and select the radio button you want in one step.



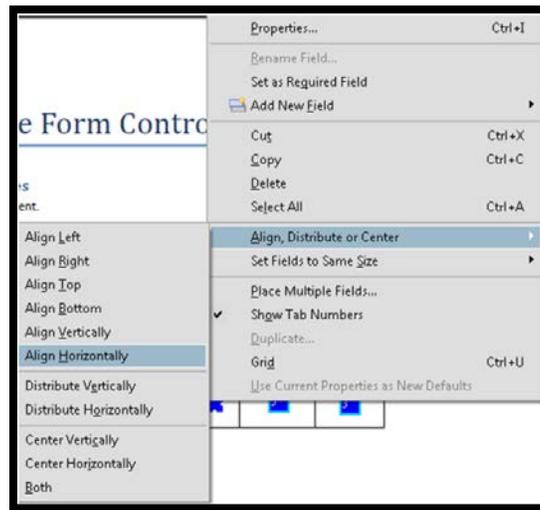
**Figure 713 Set of radio buttons with one activated.**

The next step is to align the radio buttons and then make them all the same size. This is another task for which you might want to use the Zoom as well as the ruler at the top and left of the document.

## Aligning Form Controls Horizontally and Vertically

For radio buttons or check boxes across a row, you want to align them horizontally. Aligning them vertically will put them all on top of each other. Align radio buttons or check boxes in a column vertically so that they are more uniform and consistent.

In previous versions of Acrobat when it wasn't as easy to add consistently sized radio buttons and check boxes, we had a wide variation of sizes that caused a lot of laughter when we finally got around to aligning and sizing them. Now, each radio button and check box is created "equally" which means that we don't have to resize them unless the space for them is smaller. Typically we would only have to align the radio buttons.



**Figure 714** Context menu to align radio buttons.

Select all of the radio buttons or check boxes in a row by holding down the Ctrl key and then clicking on them with the mouse. All of them will be blue in colour as shown in the preceding image.

Use the right mouse button to open the context menu and choose "Align, Distribute or Center." This will open a sub-menu and you can either press the letter H or click on the "Align Horizontally." There are other alignment options that you can explore on your own.

I recommend working on a sample form before you work on one with a deadline.

Once you activate the "Align Horizontally" option, the radio buttons or check boxes will have a more consistent look and feel across the row as they fall into line.

## Resize Radio Buttons

You can also resize radio buttons or check boxes so that they are all the same size which looks better on a form. The first radio button or check box you select will be the template for the size of the rest of them.

To select the radio buttons or check boxes hold down the Ctrl key and then use the mouse to select the ones you want to resize based on the size of the first one selected.

This is another activity you might want to use the Zoom and the ruler at the top and left of the document for. Size the first radio button or check box to the size you want and then select the rest.

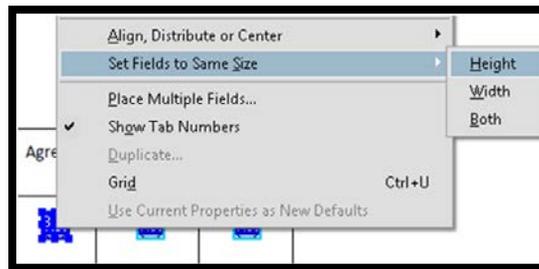


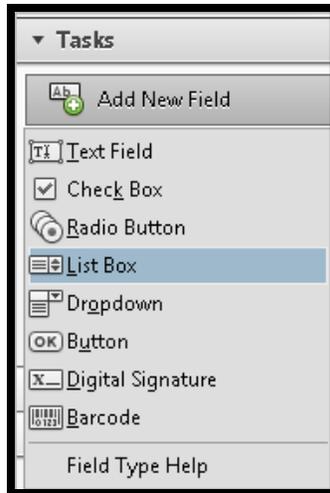
Figure 715 Set Fields to Same Size sub-menu.

Once you have the radio buttons or check boxes selected, use the mouse to open the context menu and choose “Set Fields to Same Size” or press the letter S. This opens a sub-menu where you can set the radio buttons or check boxes to the same height, width, or both height and width.

## Drop Down lists

You can add a drop down list to a PDF form and have it accessible. Once again we look at the ToolTip and value for the selection. Creating drop down lists is a bit different in that all of the options are in one property dialog instead of being assigned for each component as you have with radio buttons.

Our form example has a drop down list to identify how close you are to the university. The label for this form control is “Location.” We return to the Forms Toolbar to the right of the document, Add New Field item and then choose List Box.

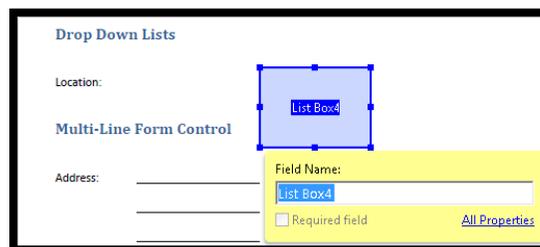


**Figure 716 List field option in Add Form Field options.**

The mouse pointer or cursor will be displayed as a rectangle or square when you move it over the document.

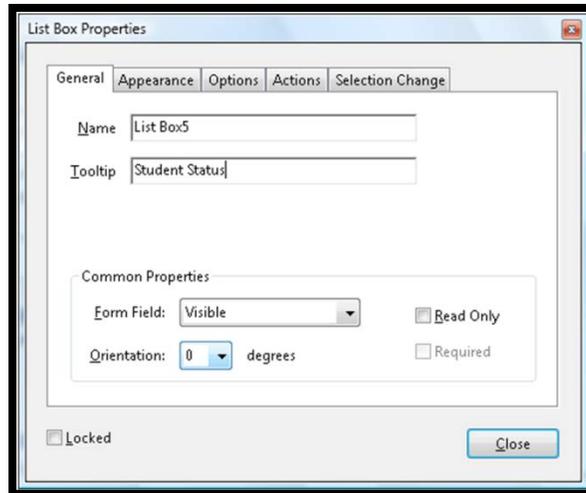
This is not generally the size of a list box and we need to ignore its size for the moment and place it in the right area of the document.

When we click on the document to place the list box, the familiar yellow dialog opens with some options.



**Figure 717 List box added to form.**

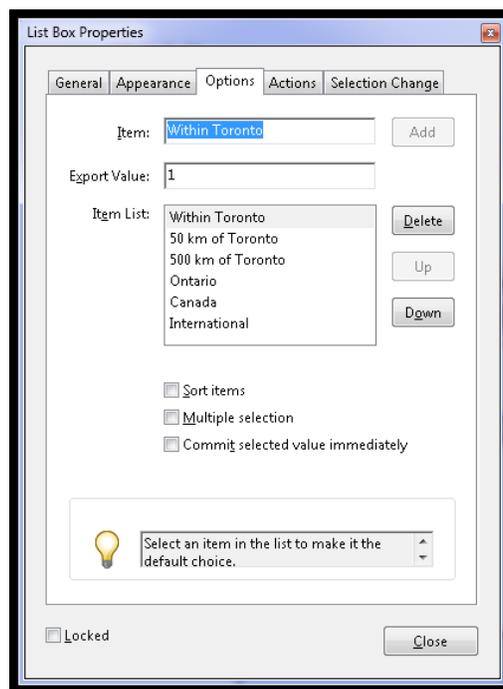
We need to choose the “All Properties” link.



**Figure 718 List Box Properties dialog.**

This opens the List Box Properties dialog and we should be on the General tab.

For this list, the ToolTip is "Choose your location." The list will contain all the variables we enter into it. That is the next step, moving to the Options tab and adding the values for the locations that students are in.



**Figure 719 List Box properties.**

The first item will be “Full Time” and that will have a value of 1. If you are using the keyboard the dialog isn’t intuitive since you Tab first to the Add button and then to the value area. I always enter values in case I decide to have just the data of the form sent via e-mail and not the entire form.

The second item is “Within 50 km of Toronto” and it has a value of 2. Remember to activate the Add button after you enter the item and its value.

The third item is “100 km of Toronto” and it has a value of 3. I’ve also added items for Within Ontario, Canada, and International. Each would have an ascending value. In this list the value of International would be 6.

I can move the items up or down in the list depending on what the most frequent responses are. I can also allow multiple selections however; keeping in mind accessibility and people with learning or cognitive disabilities I would most likely use check boxes for multiple selections.

Press Alt + C to Close the List Box Properties dialog once you are finished.

We can now look at using the mouse to resize the list box. What we are trying to do is to have only one item visible at a time in the list. Of course, you could have all of them visible if you want. The following images show the list box after an initial resizing and then the final resizing to fit the text.

Use the Zoom and the rulers at the top and left of the document to adjust the size of the list box. As with images and the other form controls, there are handles that you can locate and move. You can also then move the list box itself to a more usable location in relationship to the label “Location.”

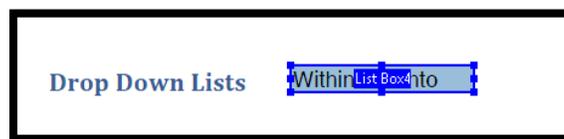


Figure 720 Location List Box resized.

## Adding the Tags to a Form

When you have all the form controls added and you’ve checked the Tab Order, move to the third item in the hierarchy of tasks that of adding the links to the document if there are links.

You will find the Create Links from URL’s tool under the Document Processing Toolbar to the right of the Document.

Remember to add any links that this tool does not find by using the Link Tool or the Select Text Tool.

Once both form controls and links are added, you can add the Tags to the document. Our form is based on a Word document rather than a scanned image of a form. If a scanned image of a form is

used to layout the form controls , you must perform the text recognition before adding the form controls or links.

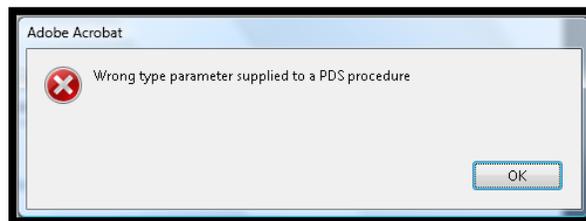
To add the Tags choose the Accessibility Toolbar to the right of the document and then Add Tags.

In most cases you will need to add the language to the document and I would adjust the Tab Order of the pages if it is not to use the document structure for the Tab Order of pages. You'll find this in the properties for pages in the Page Panel of the Navigation Panel.

The other repairs will be minor in that you may need to drag some content around to a more logical reading order. For the form I created, even the column and row titles for the table used to layout the radio buttons has been tagged properly. I did, however, have to move some <Form> Tags under their rightful questions or <P> Tags.

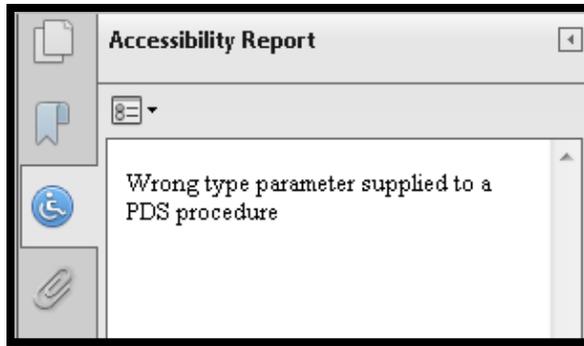
Normally at this point I would say that there were no other repairs than dragging the <Form> Tags to their place with the form labels. However, this particular form provided me with yet more insight into forms and how they can go wrong. This is a typical form and one that although I called "complex, is complex only because I added a variety of form controls. It is by no means as complex as some of the forms you might work with that come from government agencies.

When I did the final Accessibility Full Check, I got the following error message.



**Figure 721 Full check error message.**

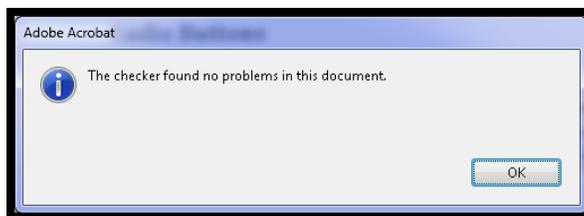
This message was then repeated in the Accessibility Full Check Report that opened to the left of the document.



**Figure 722 Error message in Accessibility Full Check Report.**

The message indicates that a full check for accessibility cannot be performed on this form due to a “wrong type parameter supplied to an FDOS procedure.” Right then, this would be easy to fix if I understood what the heck it was. With no other information, I went to acrobat 9 to do the full check and received the same message. The message is not helpful in that it does not give me any information as to what procedure violates the other procedure or what the heck an FDOS procedure is.

I redid the form in Acrobat 9 using exactly the same tools and techniques to add the form controls and the Tags. The result was a clean Accessibility Full Check which I had anticipated in the same form I created in acrobat X.



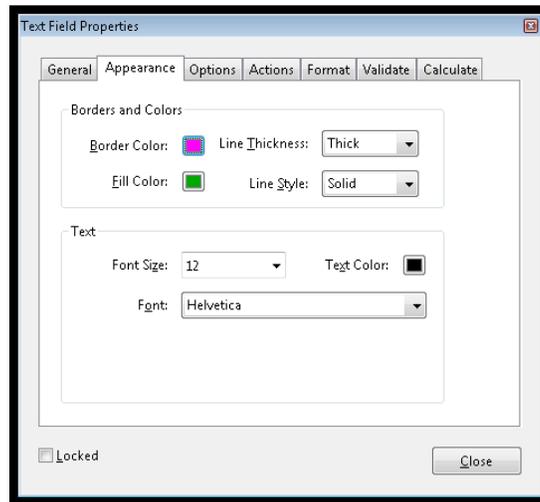
**Figure 723 Acrobat 9 Accessibility Full Check on reworked form.**

I also found that I had fewer Form< tags to move around in the form created in Acrobat 9.

## **Using the Appearance Properties**

In each of the form control property dialogs there is a tab to change the appearance of the form control. One of the WCAG [Web Accessibility Authoring Guidelines] version 2.0 guidelines is to allow the end-user, the person reading the document or interacting with the application, the ability to choose how they view or interact with content.

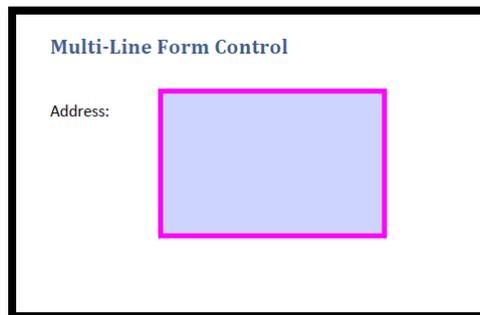
Toward that goal it is recommended that you do not change the appearance of form controls but rather let the person filling in the form do this by using the Adobe Acrobat or Reader Preferences [Ctrl + K].



**Figure 724 Appearance tab in form control properties.**

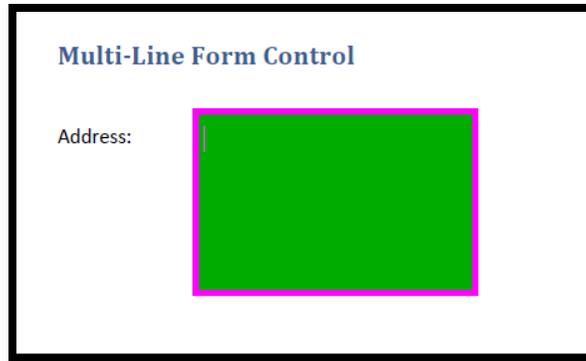
Figure 725 Appearance tab for a form control.

In the following image the text form control is outlined in magenta using the Appearance tab in the Text Field Properties dialog. If someone has colour deficits that affect the way they see specific colours or hues, the predefined colours a document author uses can impede the accessibility of a form or document itself. It means that someone can't use the colours they can see better. They are forced to use your colours.



**Figure 726 Text form control outlined in magenta.**

One of the other options is to predefine the colour of the interior of a form control. In this example I chose a vivid green. Keep in mind that a large portion of colour blindness is red/green.



**Figure 727 Text form control with the interior coloured vivid green.**

The preceding image shows the effect that applying a colour to the interior of a text form control has on the document. Although form controls are easier to spot visually, there is a tool in the Preferences dialog to achieve the same effect. Setting preferences to identify form controls using a colour that is easy for “you the person filling in the form to see” makes the form functionally accessible. As a document author you cannot possibly choose “the best” colour for people with colour deficits. The goal of WCAG and most standards is to let the end-user choose how to view and interact with content...in this case form controls.

There are several preferences that can be modified that will help with the filling in of forms.

All preferences for adobe Acrobat or Adobe Reader can be found by pressing Ctrl + K.

In the Appearance tab of a form control properties dialog you can also adjust the font style and size to match that of the document. You don't want fonts to be larger than those in the document or awkwardly different. When filling in a form online or digitally, the answers and form control data should blend in with the rest of the document.

The use of colour will not be flagged when you perform an Accessibility Full Check using the Adobe PDF criteria and Colour is something that needs to be checked manually if you are performing a Section 508 based Accessibility Full Check.

## **Accessibility Full Check for Forms**

If you create your forms in Adobe Acrobat as opposed to LiveCycle Designer, you can use the Acrobat Accessibility Full Check to identify any underlying problems. You cannot use the Acrobat Accessibility Full Check for forms you create in LiveCycle Designer. Acrobat and LiveCycle Designer may let you work between them to make decisions on which tool to use to create a form but they are separate applications and you can't use the Acrobat tools to check the accessibility of your LiveCycle Designer form. The results will not be accurate.

Typically, even though LiveCycle Designer does apply a “language” to each piece of the form it creates, you will always get the language lacking error message if you use the Acrobat Accessibility Full Check.

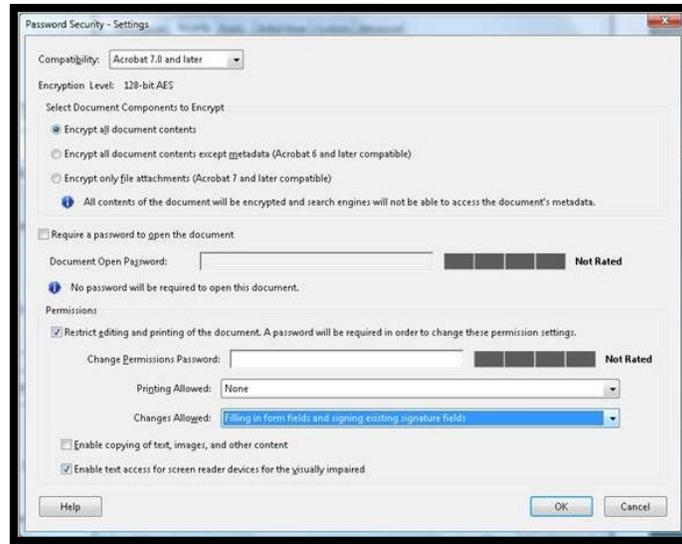
Any repairs you will need to do to a form created using LiveCycle Designer will also have to be made in LiveCycle Designer. This is because they are two different applications. There is currently no “Tags view” in LiveCycle Designer. You have to know how to create accessible forms and develop an independent QA or Quality Assurance process.

## **Extend Features in Adobe Reader**

The last thing you need to do for the form is to turn on the ability for someone to save the form and fill it out gradually on their computer. For people with learning, cognitive or visual disabilities fatigue might set in if they have to fill in a form all at once. There is also the issue of trying to find and remember what information to enter into a form. For people with physical disabilities such as tremors , palsy, Multiple Sclerosis, Parkinson’s, Huntington’s, or Hodgkin’s disease, having to stay at the computer and fill in a form all at once can result in physical fatigue and frustration.

Turning on the ability to save the form as you fill it out and close it, then come back to it when you are refreshed, can see better, can concentrate better, can go gather the required information addresses the issue of “Time Delay” or Provision O in Section 508. If a form is created such that you cannot take breaks, cannot recover data if your system or adaptive technology crashes or you fatigue due to your disability, the form can never be completely filled out and would fail Section 508 standards.

If your form is secure, you need to first allow filling in of forms and digital signatures in the security settings.

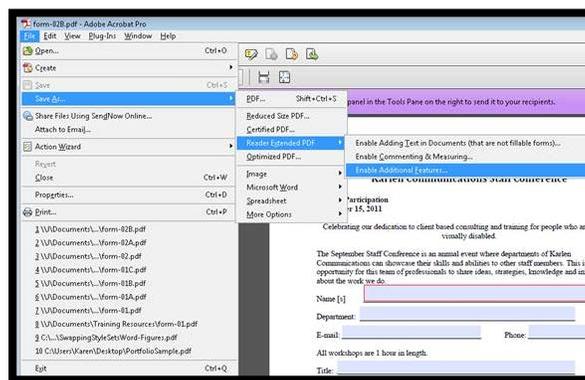


**Figure 728 Security dialog showing setting for fillable forms.**

If there is no security required for your form you don't need to do this. People will be able to fill in the form digitally but you will need to turn on the features in Adobe Reader.

To turn on the ability to save a form and work on it gradually:

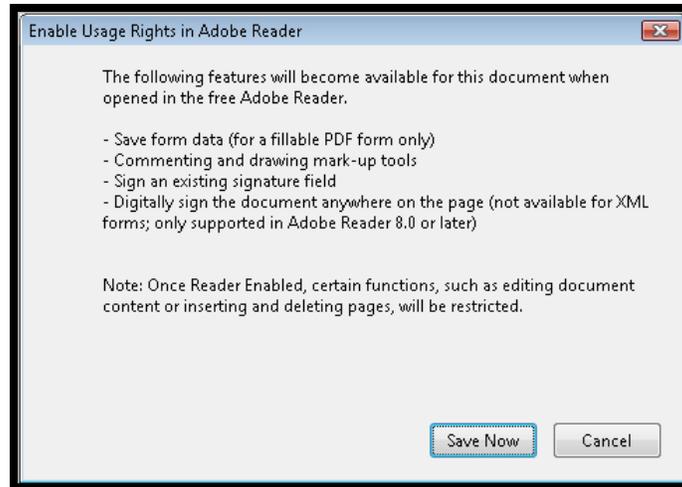
1. With the form open, choose File, .Save As, Reader Extended PDF, Additional Features.
2. The keyboard command is Alt + F, A, X, F.



**Figure 729 Extended features in Reader.**

There are a couple of other choices and the first one states that it is not to be used for fillable forms as it allows someone to add or edit text in the PDF.

Choosing “Additional Features” results in a dialog telling you what features will be turned on in Adobe Reader.



**Figure 730 Extended features in Reader dialog.**

You will need to save the file that extends the features with a new filename. This retains the original form and creates the version of the form that extends features for Adobe Reader. It also lets you go back and edit the original form.

Once the new version of the form is saved, the process is complete. The form can now be saved to someone's computer and filled out gradually by someone who needs or wants the time to think about what they are doing. In combination with this you should never override the ability to open a PDF in Acrobat or Reader and never eliminate the toolbars in Acrobat or Reader. Someone may need to modify their preferences in order to access the PDF document. Remember, the end-user chooses how to view and interact with the content.

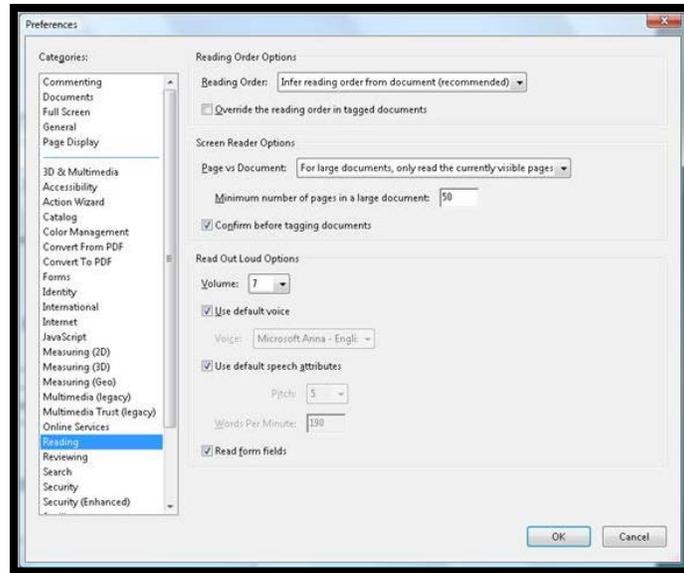
## Testing Forms with Speech and Preferences

Adobe Reader and Adobe Acrobat both have the Read Out Loud tool which is a TTS or Text-to-Speech tool. This means it will read the document but has limited capability to look at the granular details such as characters, words, lines or individual paragraphs. A screen reader will give you access to those types of elements.

You can use Read Out Loud to test form labels or ToolTips.

To use Read Out Loud to test form controls in Adobe Reader or Acrobat:

1. Open the form.
2. Press Ctrl + K to open the Preferences dialog.
3. Choose the Reading category.
4. Check the check box to "Read form fields."
5. Tab to and activate the OK button by pressing the Enter key.



**Figure 731 Reading preferences options in Preferences dialog.**

With the form still open, choose View, Read Out Loud and Activate from the sub-menu.

Press Tab to move through the form controls. The ToolTips will be read to you.

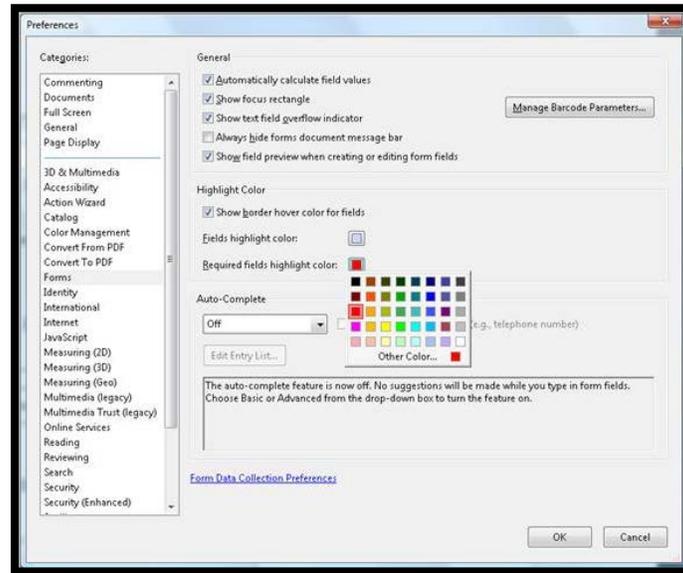
If you don't like the default voice of the Read Out Loud Text-to-Speech tool, you can change it in the operating system provided you have other synthesized voices on your system. Read Out Loud will use the default voice for your computer. This is the voice that Narrator typically uses.

The next set of options are for the visual effect of form controls. Under the Accessibility options in the Preferences dialog you have a setting to show form controls in a different colour. This user defined colour will let you choose a colour that meets the needs of your own colour deficits. For example if you have red/green colour blindness you can choose a colour you can see better.

To choose a colour for form controls in Adobe Reader or Acrobat:

1. Open the form.
2. You can set preferences without having a document open. This way you can see the results immediately.
3. Press Ctrl + K to open the Preferences dialog.
4. Choose the Form category.
5. The options for working with forms are:
6. Alt + B to check the check box to "Show border hover colour for fields."
7. This puts a black border around fields as you hover the mouse over them.
8. Alt + F for the colour picker button to choose the "Field Highlight Colour."
9. All fields will have this colour in the form.
10. Alt + R for Required Field Highlight Colour."

11. Any required fields will have this colour as a border around them.
12. Tab to and activate the OK button by pressing Enter.



**Figure 732 Form Preferences category.**

The most common colour blindness, especially among the male population is red/green colour blindness. Ironically we tend to flag required fields everywhere using the colour red. If you can't see the required fields because of a colour deficit, change the hover colour using the Form Preferences.

The colour for all fields in a document has been changed to yellow. When you then return to the form you are able to see the form controls in a colour that you can work with.

I chose yellow because it is bright and would translate well in a demonstrative image. You can use whatever colour on the colour palette works best for you. Keep in mind that as you enter text into a form control you might need to modify your colour so that the text is readable.

**Check Boxes**

I am a new student:

Yes  No

**Radio Buttons**

Question	Agree	Neutral	Disagree
Creating forms in adobe Acrobat is fun!	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Drop Down Lists**

Location:

**Multi-Line Form Control**

Address:

**Figure 733 Form controls with modified colour.**

List boxes will not be coloured completely but as indicated in the preceding image, will have the line of colour at the bottom of the form control.

You can see the ToolTip for form controls you hover over.

There are other options to help you fill out forms. You can choose to have auto-complete turned on, auto calculate fields, or show focus rectangle for form controls. This last check box which is checked by default will put a small dotted line around the form control that has focus.

The best way of testing forms is to develop a QA or Quality Assurance process that can be implemented once a form is tagged. This might involve methodology as well as standards you are looking for. Knowing what tools are available to test with is key. I would also recommend using a screen reader to spot test a list of form controls and random reading of text in the form. I do not advocate that a form be adaptive technology specific. The key to an accessible form is the ability for a broad range of people to be able to fill it out not just one population using one version of adaptive technology. Using the Read Out Loud tool with the Reading Preference set to read form controls is a good starting point.

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# Accessible Forms: LiveCycle Designer

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Adobe LiveCycle Designer lets you design your forms in an application that will automatically generate accessible tagged forms provided you create the entire form in LiveCycle Designer and use best practices for creating accessible forms. Many of those best practices were identified in the previous chapter and will be reinforced here.

If you use LiveCycle Designer you cannot use the Accessibility Full Check in Adobe Acrobat as part of the QA or Quality Assurance process. The Accessibility Full check is a tool for Adobe Acrobat generated content only. Although LiveCycle Designer ships with Adobe Acrobat, it is a separate application.

In LiveCycle Designer you are also not able to view the Tags Tree for your forms so again, being able to design and create accessible forms must be an integral part of your form creation process.

## Why use LiveCycle Designer?

For those of us who are “steeped” in accessibility and can create accessible forms and documents in our sleep, LiveCycle Designer is a tool that helps us ensure that forms are accessible from the ground up. We know that we’ve added text or instructions properly, we know how to work with the form control properties and we understand how adaptive technology will render the form information to the person trying to fill it out.

**Note:** It is possible to create an inaccessible form using LiveCycle Designer by using an untagged PDF as the form template, or by using one of the form templates available to you through LiveCycle Designer. In these cases it didn't matter if I saved the form as a static or dynamic PDF document. The only items accessible were the form controls. None of the instructional or informational content was accessible/tagged.

**Note:** LiveCycle Designer is not accessible for those of us who use screen readers and design forms. It is a mouse dependent tool in its current iteration.

There is a good article by Duff Johnson of Appligent Solutions on the [differences between PDF and XFA forms](#)<sup>29</sup> and how to choose which one to use for your forms.

## Accessible Forms

Looking at the Help documentation from Adobe you would think that you cannot create an inaccessible PDF form from LiveCycle Designer.

The Help documentation states that LiveCycle Designer "creates an accessible form by default."

If we look at what makes a PDF form accessible we are looking at two components to the form: the form controls themselves and any instructional or informational content on how to fill out the form or what data is needed.

In this respect, LiveCycle Designer makes all form controls accessible. You do need to provide the ToolTip for the form controls, but even without them you can Tab around the form. You may not know what you are tabbing into or out of but you can move through the form.

LiveCycle Designer does provide access to the instructions on a form IF the entire form has been designed in LiveCycle Designer. If however, you use an existing document as the template for the form, content in the "template" is not tagged. When someone needs to review instructive information it is not there.

A LiveCycle Designer form can only be accessible if the entire form has been designed in LiveCycle Designer. Even then, it may take several attempts at saving the file with the ability to Tag the form turned on in order for it to actually happen.

I started with one of the templates in LiveCycle Designer: Conference Registration.

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<sup>29</sup> Duff Johnson's article on the differences between PDF and XFA forms:  
<http://www.appligent.com/talkingpdf-choosing-between-PDF-and-XFA>

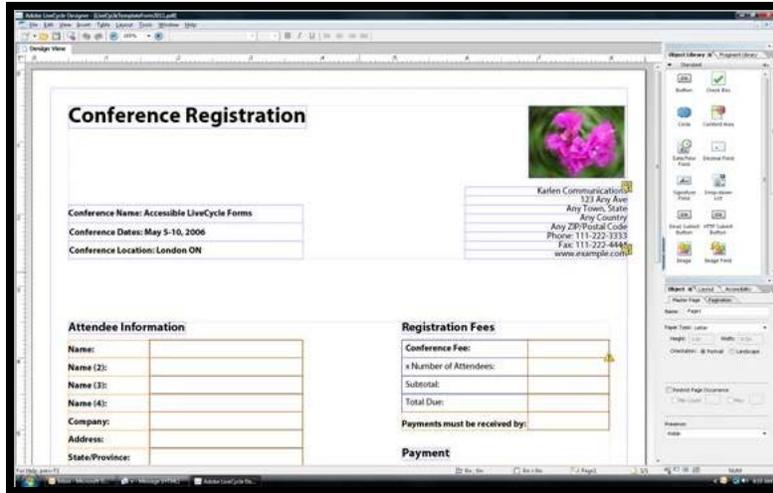


Figure 734 Conference Registration template.

This is a choice you have from the Splash Screen when LiveCycle Designer starts. If you choose to use a pre-existing template, you are guided through some information that will be added to the form such as company name, address, logo, dates for the conference and location.

I added the accessibility features, went to the Form Properties and made sure that the check box for a tagged PDF was chosen and then saved the form. I opened it in Acrobat and went to the Tags panel. There were “No Tags Available.” I then went to the Accessibility Toolbar to try and add Tags but this option is not available if the form comes from LiveCycle Designer and no Tags have been added. Remember that LiveCycle designer is not part of Acrobat. It is a separate form creation software that ships with Acrobat.

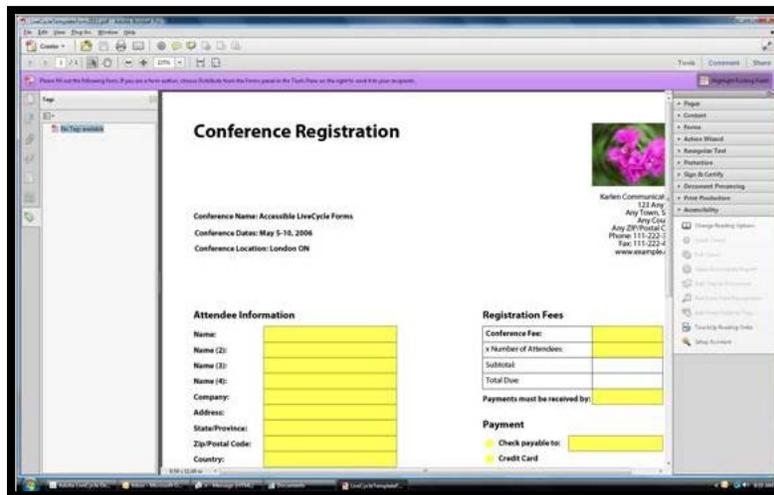
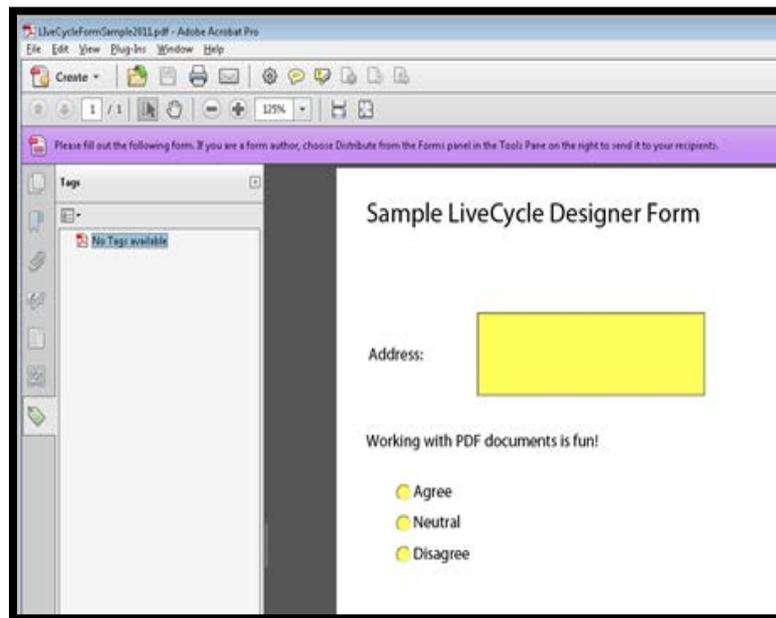


Figure 735 Untagged form from LiveCycle Designer.

In the version of LiveCycle Designer that ships with Acrobat X I found that even creating the form from scratch didn't guarantee that Tags would be included in the resulting form. The following image shows a modest form that has been completely created in LiveCycle Designer. As with the on-board template, I added the ToolTips for the form controls. I did not make the heading text an H1 as I wanted to see how this played out in Acrobat.

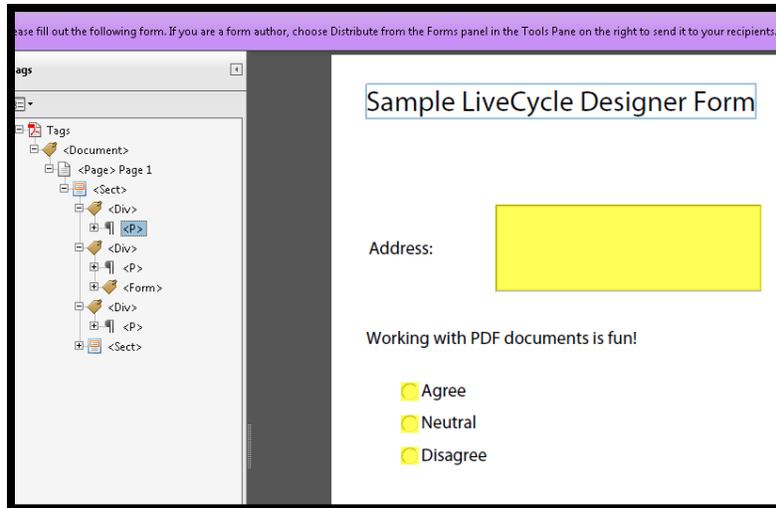


**Figure 736 Untagged PDF form from well-structured form.**

The form controls are shown in yellow because this is what I set in the Acrobat/Reader Preferences.

I went back to LiveCycle Designer, which I still had open, and checked the Save settings in the Form Properties dialog. The check box to create Tags was checked however this was not done.

I resaved the form in LiveCycle Designer although I hadn't changed anything, and this time when I opened the form in Acrobat the Tags were there. I have no idea what was "different" about the second save of the form or what is going on behind the scenes, but if you are designing forms in LiveCycle Designer you need to constantly check that the Tags are added to the form when you view it in Acrobat or Reader.



**Figure 737 Simple form controls tagged when viewed in Acrobat.**

One of the reasons I didn't add the headings at this point was to demonstrate that you cannot edit Tags in Acrobat that were created in LiveCycle Designer. If you select the <P> Tag for the document title and press F2, nothing happens. You cannot repair Tags from LiveCycle Designer in Adobe Acrobat. Any repairs need to be done in LiveCycle Designer. As you make repairs and resave the document, open it in Acrobat to make sure that the Tags are still with the document.

This is why working in LiveCycle Designer requires some advanced skills in understanding what an accessible PDF is, what an accessible PDF form is and the quirks of trying to create a PDF form with software designed to create XFA forms. You are basically on your own with no validation tools to show you mistagged or untagged content, no access to a Tags Tree in LiveCycle Designer and using Acrobat to view the underlying structure of the form.

In the previous chapter I stressed the need to have meaningful content in the ToolTips for each form control. Many of us just dive into the form by getting a list of form controls and moving through them filling in the information. However, as we know, many forms are confusing and we often have questions about what exactly the form is asking for. Some forms have ages of instructions with details on the process for filling in the form. All of this instructional and informational content needs to be tagged so that it is available to anyone who needs it.

# Orientation To LiveCycle Designer

You launch LiveCycle Designer from the Start Menu by pressing the Windows Key and typing LiveCycle Designer.

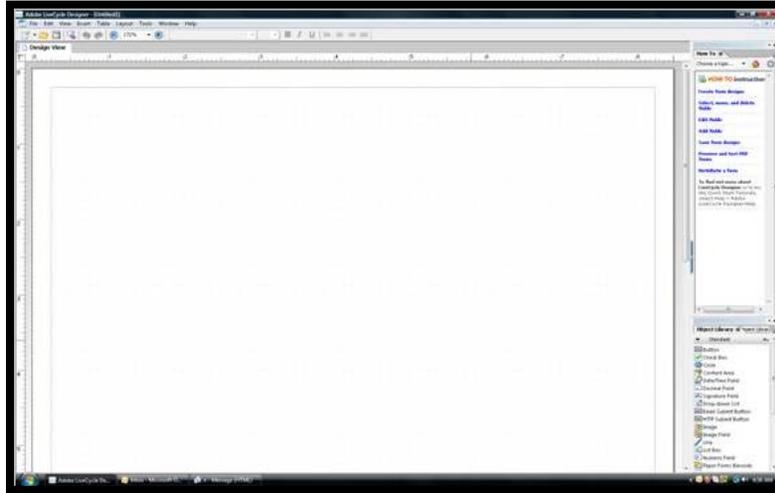


Figure 738 Blank form inn LiveCycle Designer.

When you launch LiveCycle Designer you will see a Splash Screen while the program loads.



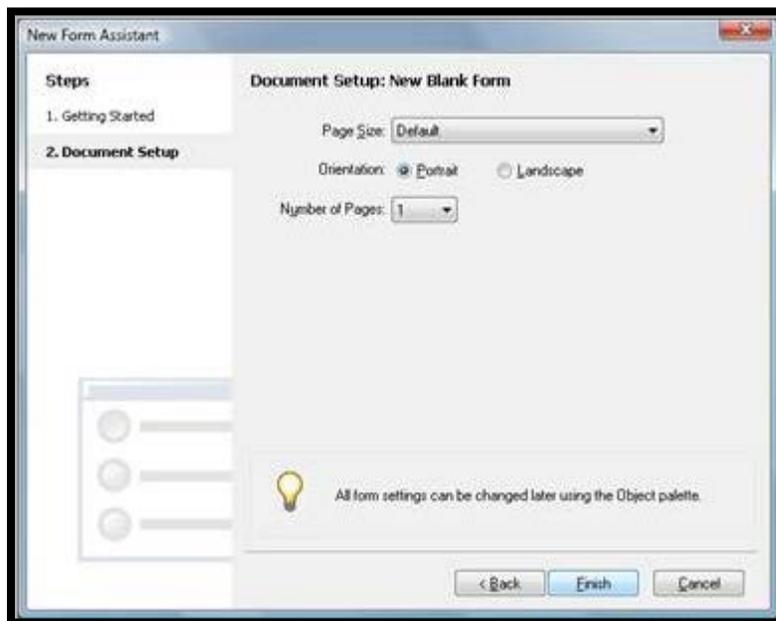
Figure 739 LiveCycle Designer Splash Screen.

If you choose to start a new form a dialog opens with a series of steps to walk through to create your form. The first step asks if you want a blank form or if you want to use a template.



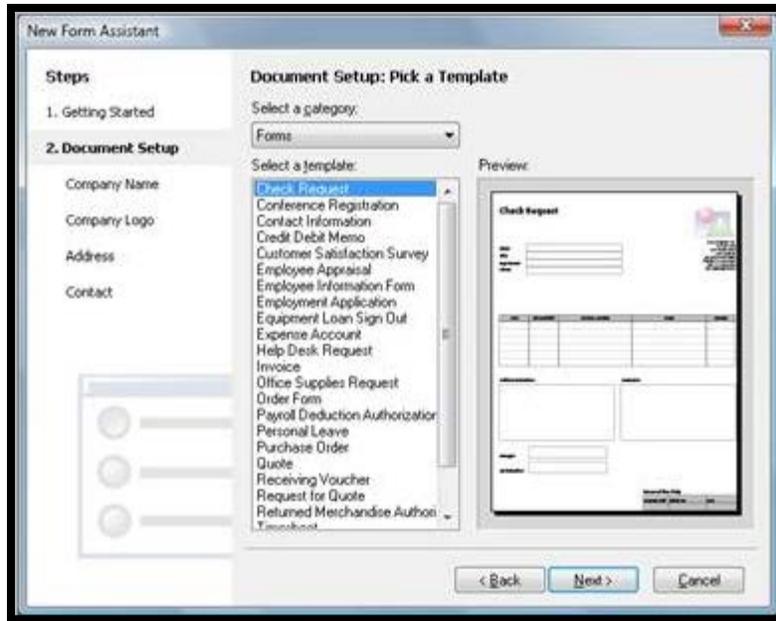
**Figure 740 Step One in the process of creating a form.**

If you choose to use a blank document, you are then asked about the default settings of the document.



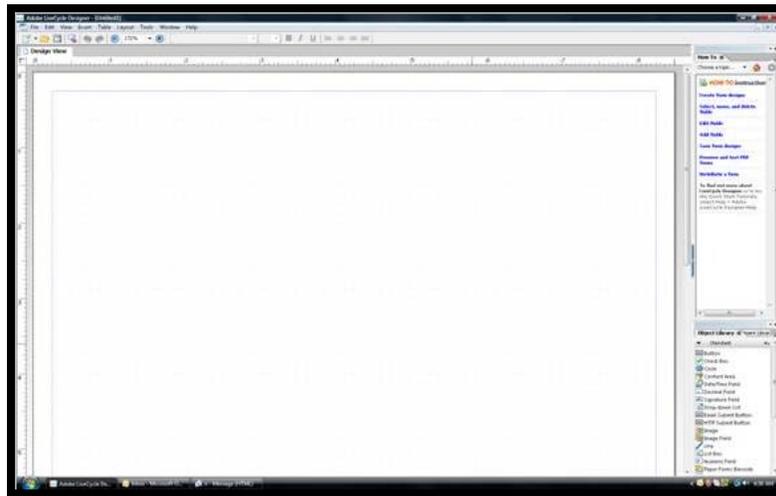
**Figure 741 Setting the defaults for a blank form.**

If you chose to use a template, the list of available templates in LiveCycle Designer is presented to you.



**Figure 742 List of available templates in LiveCycle Designer.**

We chose a blank form or document which will open in LiveCycle designer.



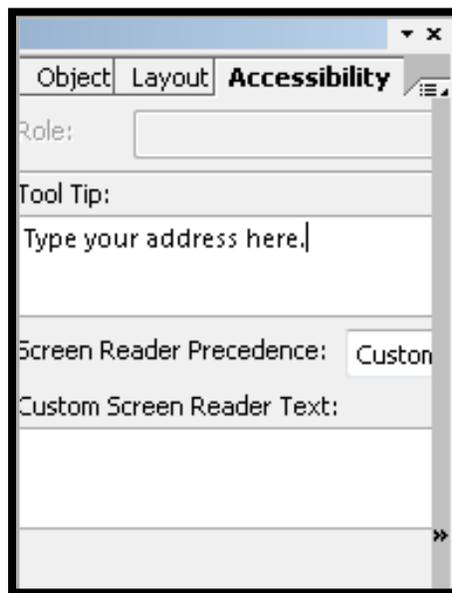
**Figure 743 LiveCycle Designer application window.**

Once LiveCycle Designer is launched, maximize the application so it is easier to work with. From the top of your screen are the title bar, Menu bar, and toolbars. The main document Window has two components; the space that your form is displayed in, and the palettes containing form tools located on the right of the main document Window. You can add and remove tools and palates from the right of the main document Window. At the bottom of the application is a status bar.

The main working area is on the left of the application window under the Menu Bar and Toolbars . The work area is shown in a grid and there are rulers along the top and left of the work area. To the right of the work area are the palettes.

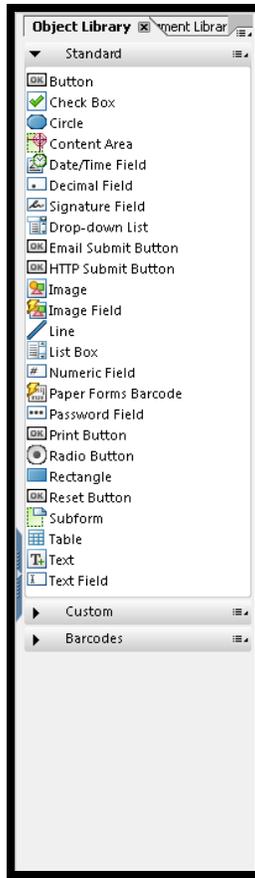
By default the "How to" palette is open as is the Object palette. You can collapse any of the palettes to reveal others. You can also choose Window, Workspace and choose how the palettes are arranged in the application: floating, left, right or top.

You will need to show the Accessibility options for the Objects in the form. Choose Window, Accessibility to do this. The Accessibility tab will appear next to the Object tab.



**Figure 744 Accessibility and Object tabs with Accessibility tab in focus.**

The form controls themselves are found in the palette to the right of the document. Click on the How To panel to hide it and you will see the form control palette.



**Figure 745 Form Control Palette showing list of form controls.**

You can choose to use large icons for the form controls in this palette which I find works better. It lets you recognize what you want to use faster.



Figure 746 Large easier to see form control options.

## Creating Accessible Forms using LiveCycle Designer

The key to creating accessible forms using LiveCycle Designer is to create ALL parts of the form in LiveCycle Designer and not to use other documents for the layout of the form.

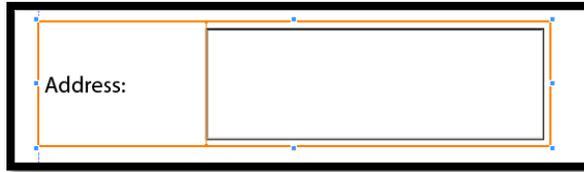
This book has already covered best practices and techniques for creating accessible form controls. In this chapter, the focus is on where to find these items in LiveCycle Designer and how to optimize the LiveCycle Designer tools to create an accessible form.

The text on the sample form shown in the following images is large so that it is easier for you to see the sample. You can adjust the size of the text as needed for the form you are creating.

### Text Fields

Let's look at a text field. Notice that in LiveCycle Designer you can add a text block which would be paragraphs of instructions and information or you can add a text field which can be used to enter data. A text field, as in Adobe Acrobat, can be a multi-line field. If you want a multi-line field, the same "rules" apply:

- Make sure the form control area is large enough to write in.
- Make sure that the text field spans visual lines if you choose to add them.



**Figure 747 Text form control in document.**

To create a text field in LiveCycle Designer:

1. Click on the Text Field icon in the Form Control Library.
2. Position your mouse over the place on the form where you want the text field to be. As you move the mouse over the main form area, it will change from a pointer to a cross-hair.
3. Click on the spot you want the text field. Typically where you click will be the upper left corner of the form control.
4. When you release the mouse button, the form control is placed on the form.

Use the mouse to snag one of the handles around the form control to resize it by dragging the edges to the size you want.

On the Object palette in the Field tab is an edit box named "Caption." This is where you will type the label or text for the form control. For example this form control's caption would be "Name."

## **Accessibility Information**

If you notice the Accessibility tab has a couple of parts to it. You have something called "ToolTip" which we saw in the Adobe Acrobat form controls tool and something called "Custom Screen Reader Text."

A common mistake is to only add the custom text for screen readers. The thought is that it is important to ensure that screen readers have access to the additional information about a form control.

You can't have both custom screen reader text and the ToolTip read to the end-user. You have to choose one that will take precedence if you add both.

Unfortunately this then impedes access by TTS or Text-to-Speech tools or other adaptive technology.

Here is how it works.

If a screen reader can't find a ToolTip, it defaults to reading the custom text for screen readers. You can also choose which part of the form control is flagged for the adaptive technology. I would not recommend the caption be the information provided to adaptive technology unless the caption is easily understood and clearly written.

You need to ensure that the ToolTip is entered as it provides the additional supportive information about the form control to the broadest range of adaptive technology. If you feel that people using screen readers need to have more information, use the custom text for screen readers as well as the ToolTip.

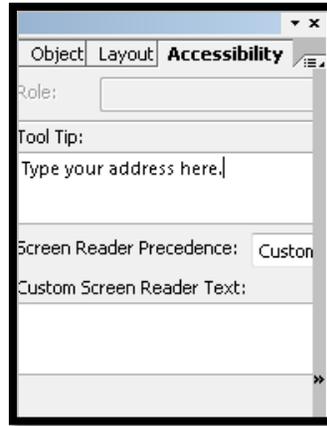


Figure 748 Accessibility palette with ToolTip.

## Check Boxes

As with the text form control, click on the check box icon and then click on the form at the place where you want the check box to be placed.

Once you release the mouse, the check box is placed at that location. You can drag it around the form if it isn't where you want it.

Add the Caption. You may need to make the caption or label area larger to fit your text. The following image shows two check boxes, one for "Yes" and one for "No." I used a text block to put the question in.

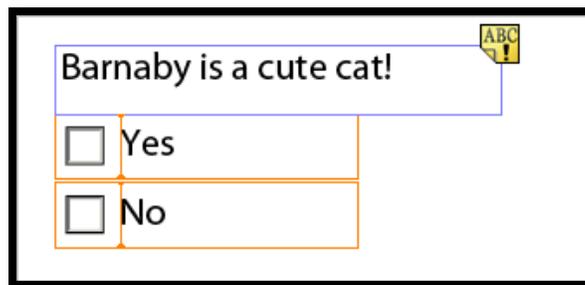


Figure 749 Check boxes in a LiveCycle form.

Add the ToolTip for optimal accessibility. The Tooltip should include the choice for the check box, for example Yes or No.

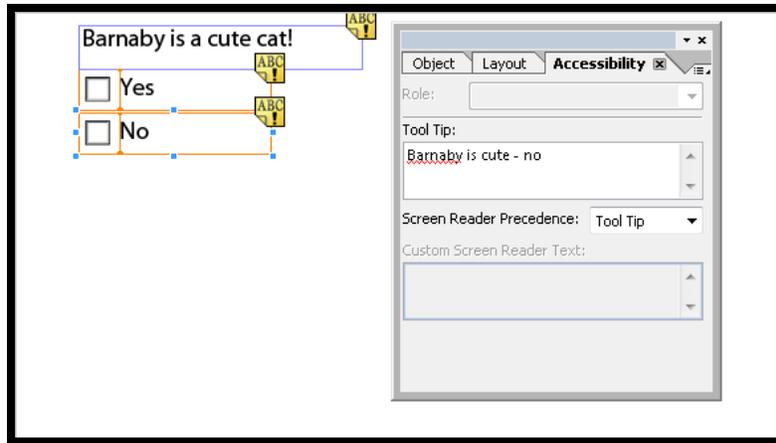


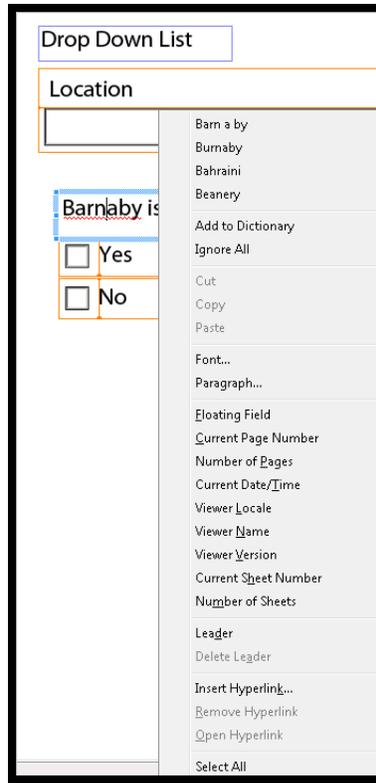
Figure 750 Adding the ToolTip to a check box.

Notice that the word "Barnaby" is not in the LiveCycle Designer spell check. I'm still doing "cat penance" for that oversight. <smile>

## Misspelled Words in Instruction Text

If you make a spelling mistake, there is a spell check option even within the ToolTip area of the Accessibility palette. As you can see in the preceding image one of the words in my question has been flagged as a misspelled word. It happens to be "Barnaby" which is spelled correctly.

To correct spelling mistakes in text areas of the form, right click on the misspelled word and choose from one of the suggestions.



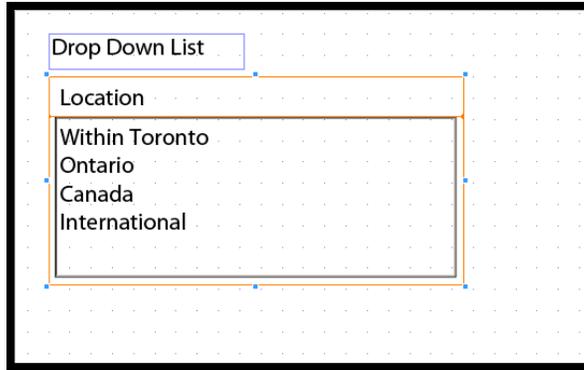
**Figure 751 Context menu for a misspelled word.**

## List Boxes

To add a list box to your form, click on the Drop Down List icon in the Form Control Library. Move your mouse over your form and click where you want the drop down list to be.

There is only one option in the Form Control Library for a drop down list, however you can make it a "Combo Box" in the Object Field settings by allowing custom input from the end-user.

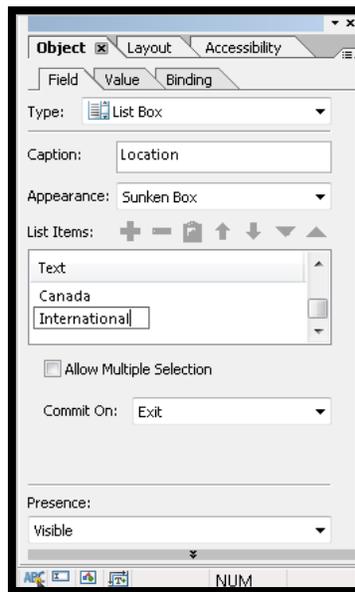
Add the Caption for the form control.



**Figure 752 Drop down list before resizing.**

Click on the Add button in the Object Field tab.

An edit area will appear just under the word Text and you can begin typing the first item.



**Figure 753 Values added to the drop down list.**

As long as you press the Enter key, you will automatically add another item. A new field will appear ready for you to type in the list item.

Move to the Accessibility tab and add the ToolTip and/or custom text for screen readers.

## Radio Buttons

The key to getting radio buttons to work as a group with only one selection submitted is to ensure that each radio button for a series of possible answers has the same form name, for example "Question01."

What would this look like?

Question 1: Working with PDF documents is fun!

Agree

Neutral

Disagree

For the possible choices agree, neutral or disagree the form control name would be Question01. I use the zero in front of the number just because of habit in organizing files and information. You don't need it as the order of the form control is based on where you place it in the form control list and eventually the Tags Tree.

The ToolTip for each of these buttons is the same because it is derived from the question. The value which is in the Options tab of the Radio Button Properties dialog is either agree, neutral or , disagree

Let's walk through this.

Create a text block with the question for the radio button form controls. In this example it is "Working with PDF is fun!"

From the possible form controls for the document choose Radio Buttons. As you move your mouse over the document you will see a square with connectivity to the rulers so that you can place your radio button more accurately.

Click on the page where you want the radio button to appear.

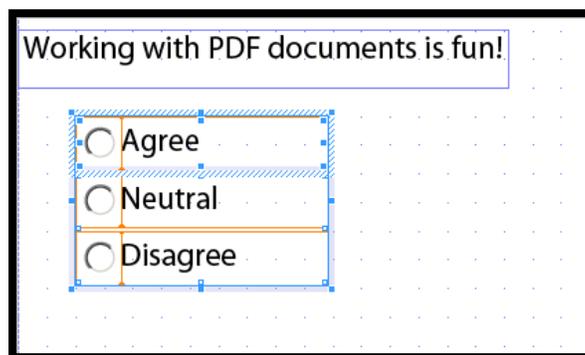
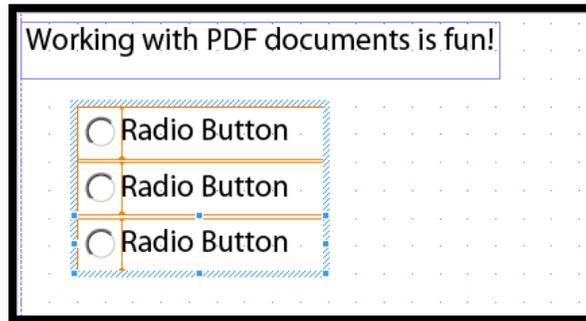


Figure 754 Radio buttons added to form.

Go back to the Form controls and choose Radio Button again. Make sure that the second and third radio buttons are slush against the one above it. This helps group them.

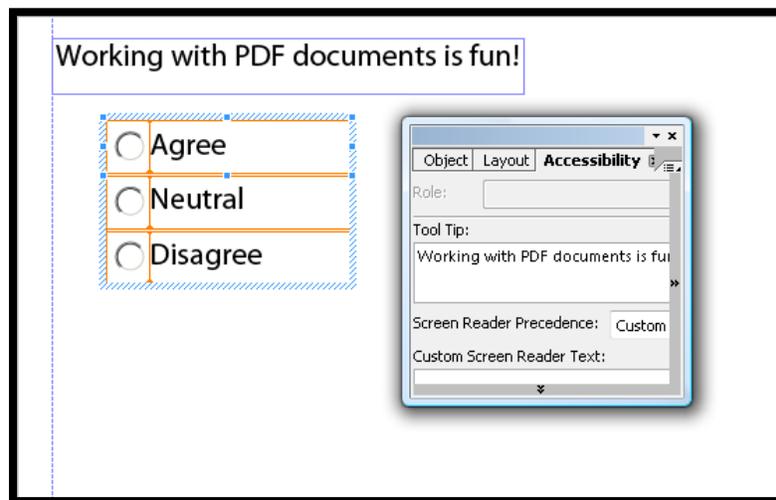


**Figure 755 Grouped radio buttons.**

Click where the text says "Radio button" and type the words Agree, Neutral and Disagree in the appropriate button text.

To group the radio buttons I held down the Ctrl key and clicked on each of the outlines for the individual buttons. This gave me either the thick border around them as shown in the previous image or the outline with the handles as shown in the first image in this topic.

I can then go to the Accessibility Toolbar and when I add one ToolTip it will be applied to all of the buttons in this group.

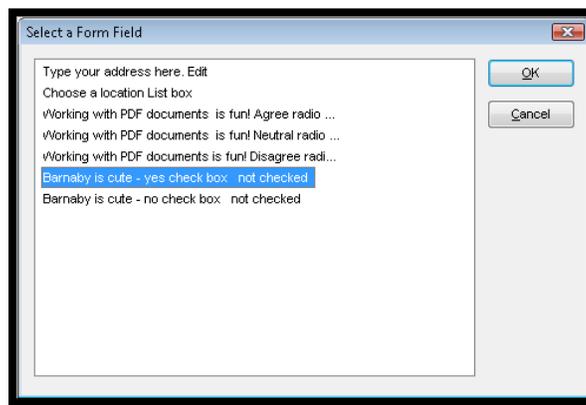


**Figure 756 Adding the ToolTip for radio buttons.**

I moved the Accessibility Toolbar closer to the area I wanted to demonstrate so that the image can focus on that specific part of the form. Once I finished, I just dragged it back to the Toolbars Panel to the right of the document.

However I found that unlike working in the form control tools of Acrobat, I had to add the question to the ToolTip of each of the buttons so that it would be read. Even then it was a bit quirky with the JAWS screen reader version 12. Once again, we look to ensure that the structure and tools are used correctly and do not try to make this readable with the JAWS screen reader. Not everyone has JAWS and the fact that it reads one or two correctly but not a third and the context it reads is random each time you enter this set of radio buttons indicates that it is a JAWS issue. The information is there, the person using their screen reader has to know how to get it and that is not our problem. Providing access to the information is our responsibility and we've met it.

If the person using JAWS gets a list of form controls in the document by pressing JawsKey + F5, all is well. It was only when tabbing through the form controls that I noticed this oddity on the radio buttons.

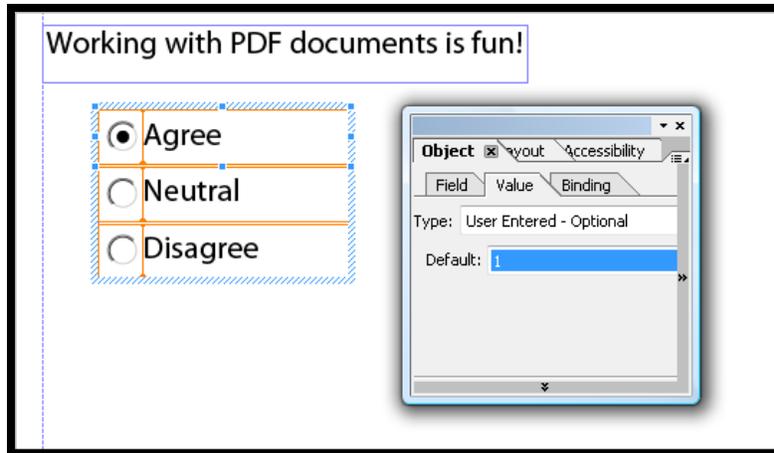


**Figure 757 JAWS screen reader list of form controls.**

To add the ToolTip to each radio button, select the individual radio button and move to the Accessibility section of the object properties.

I chose to make everything a ToolTip because it is discoverable by most adaptive technology whereas Custom Tips are only accessible using screen readers. If the screen reader doesn't see the flag for custom text, it will read the ToolTip. This gives me optimal accessibility for a broader range of people using this form.

The ToolTip must include the text for the choice to be made. For example "Working with PDF is fun! Agree."



**Figure 758 Adding the ToolTip for each radio button.**

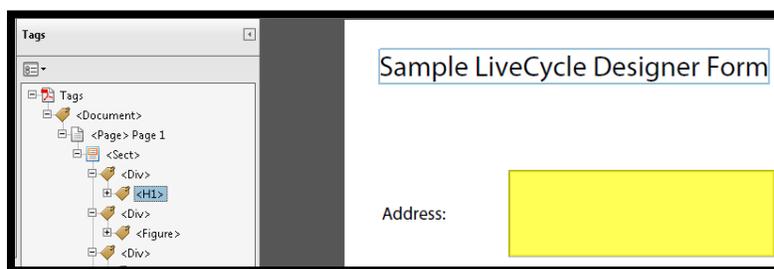
Once the form is saved and opened in Acrobat or Reader, you can hover the mouse over a form control to see the ToolTip. You can also turn on the ability to have form controls read to you as you Tab through the form controls. Unlike JAWS or other adaptive technology you cannot get a list of form controls to quickly view and perform quality assurance on. However, tabbing through the form gives you the same type of information and validation.

## Headings in LiveCycle Designer Forms

Now that we've looked at making the form controls as accessible as we can we need to turn our attention to the instructional or informational content.

Just as with accessible tagged PDF documents that are not forms, we need to ensure that headings are tagged properly.

In the form there is no style mechanism that you can use, however, there is the ability to select an item and change its role in the document using the Role Map.



**Figure 759 Heading added to text element in a LiveCycle Designer form.**

Use the Font tab in an unnamed dialog to format the text the way you want. You can right click on the selected text and choose Font or Paragraph to open this unnamed dialog.

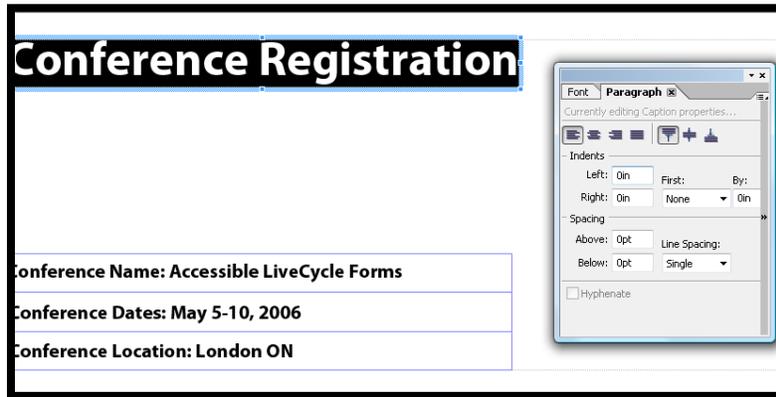


Figure 760 Text attribute dialog including Font attributes.

We are so used to applying styles in documents that simply flinging formatting at text should now be counter intuitive and awkward, but this is how it is done in LiveCycle Designer. It is the role of an object on the form that determines its tagging rather than any underlying structure of text elements themselves.

Once the heading is formatted the way you want it, return to the Accessibility palette.

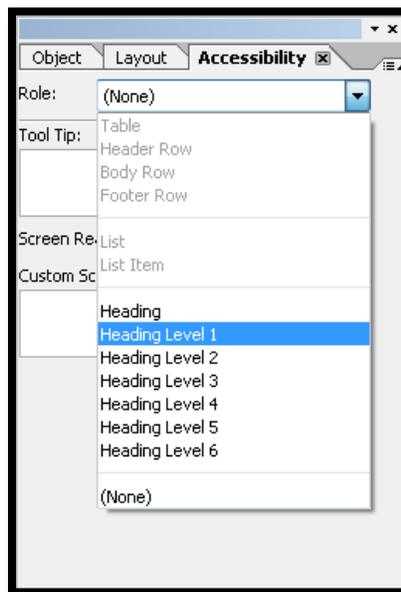


Figure 761 Role attribute in Accessibility Toolbar.

We don't need the option to change the role of form controls or their captions/labels. For other content such as instructional or informational text, we do.

Any heading in a form needs to be mapped to its appropriate heading level. Remember that headings provide the hierarchical structure for the form and a means of navigating from area to area on a form./document.

You don't need a ToolTip or custom text for screen readers, you just need to define the role that the heading is going to have in the document.

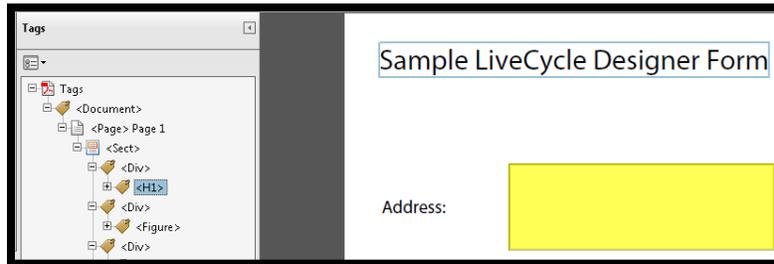


Figure 762 Heading Tag in LiveCycle Designer form .

By default paragraphs will be tagged using the proper <P> Tag. It is the non-paragraph elements you need to examine and repair roles for.

## Tab Order of Form Controls

You can check the Tab Order of the form controls in your form before you save the form as a PDF document.

To view the Tab Order of form controls choose Windows, Tab Order.

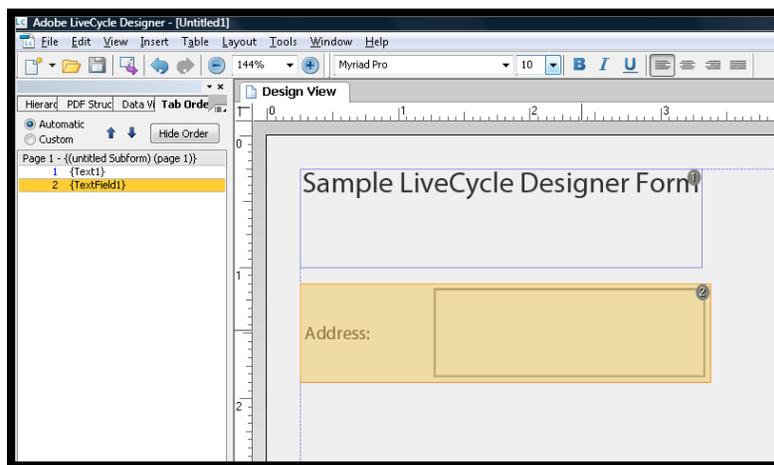


Figure 763 Tab Order pane open to the left of the form in LiveCycle Designer.

Although this might seem visually confusing, you'll get used to it.

When you activate the Tab Order view of the form a message appears with some information about Tab Order.

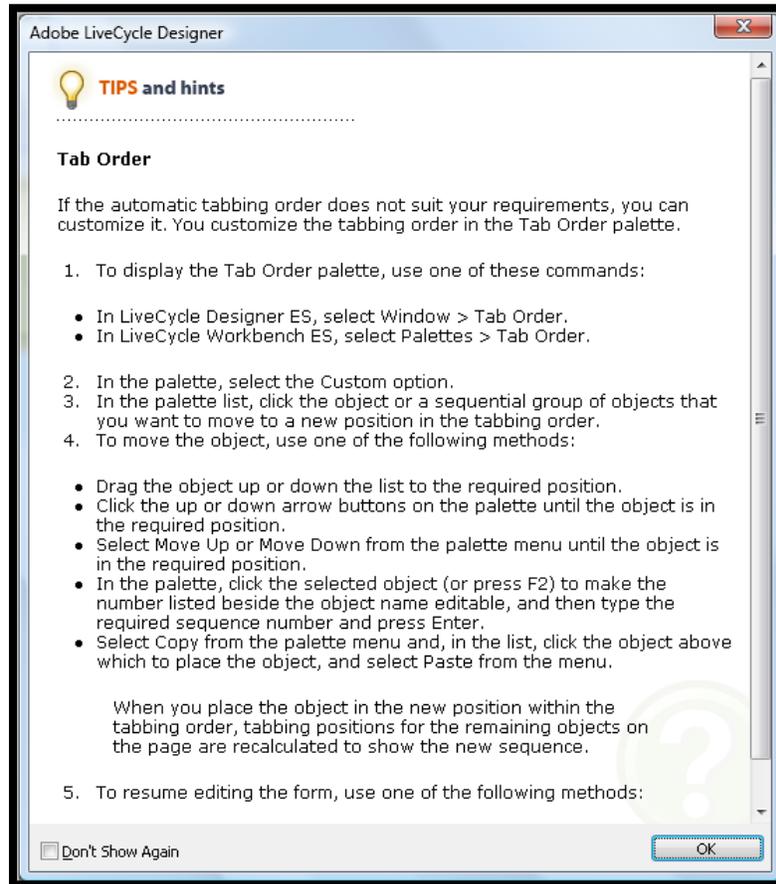


Figure 764 Tab Order message.

You might also get a shorter message about changing the Tab Order.

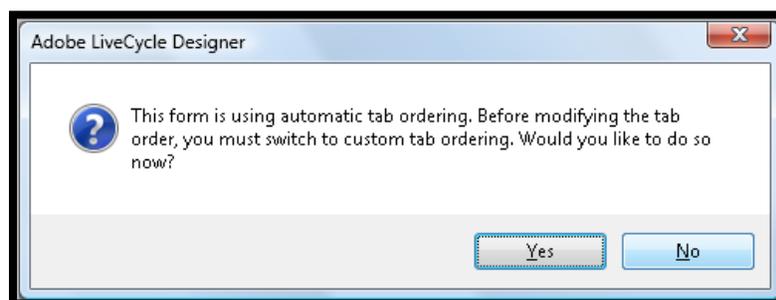


Figure 765 Modifying Tab Order warning message.

The message about modifying the Tab Order tells you that the form is using automatic Tab Ordering and that if you want to create a custom Tab Order or modify the Tab Order you need to choose the Yes button in the dialog.

Once you go into the Tab Order pane on the left, the form controls are highlighted in the form as you move up or down the list of form controls. This lets you verify that the way someone will Tab through the form controls is the logical and natural flow of how you want the information filled in. Each form control has a number in the upper right corner of the control. This is the order in which it will be tabbed to in the form viewed in Acrobat or Reader.

**Note:** You need to verify the Tab Order, however for some screen readers, getting a list of form controls in an accessible tagged PDF form jumbles them up. This does not mean that the form is not accessible. This is a limitation of the screen reader/adaptive technology. As long as the Tab Order is correct here in LiveCycle Designer and through your QA or Quality Assurance process, the document is accessible.

There are two ways to edit the Tab Order of form controls. This is the first method:

- Right Click on the order number in the form control and choose "Edit Tab Order."
- Press F2 while you are in the Tab Order list to the left of the document.

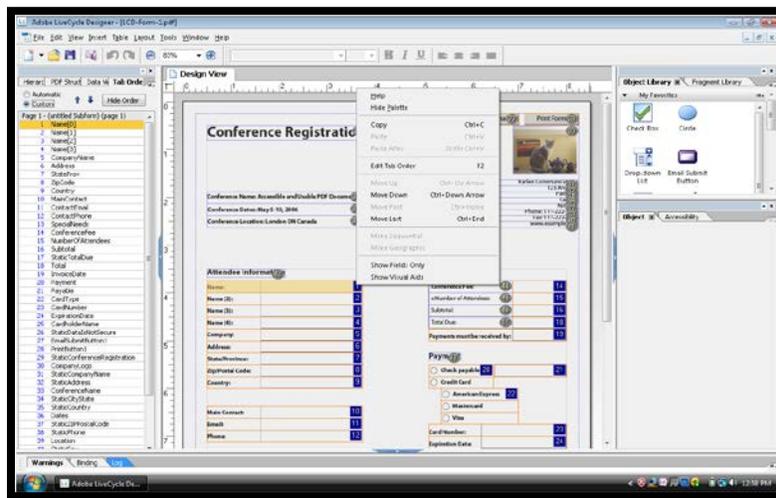


Figure 766 Context menu to edit the Tab Order.

The number to the immediate right of the form control selected in the Tab Order panel becomes editable.

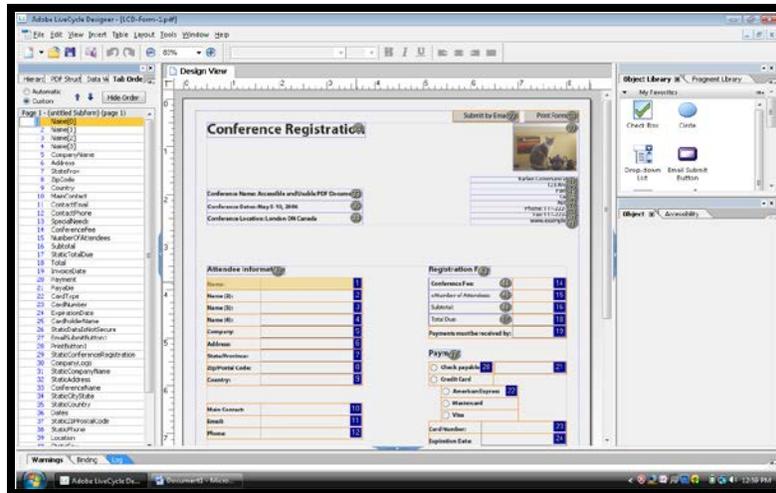


Figure 767 Form control with Tab Order option in edit mode.

Type the new order or position for the form control. Visually it will remain the same. What you are modifying is the order in which someone who can't see the form or who is not using a mouse to click into fields will fill in the requested and required data.

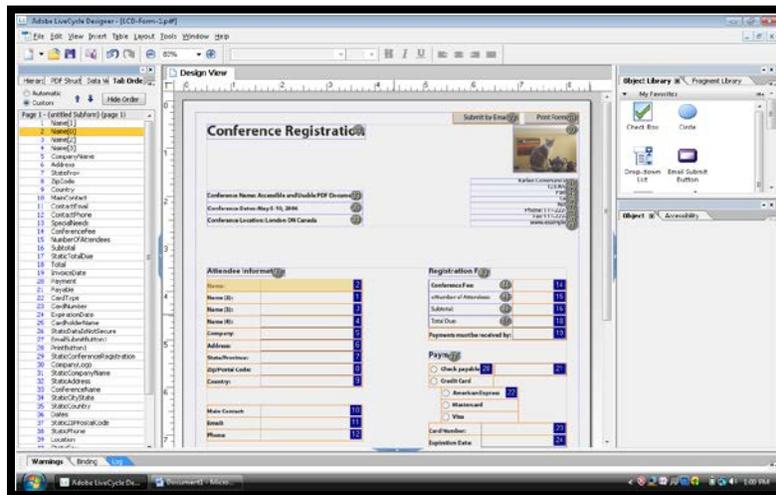


Figure 768 Form control after its Tab Order has been edited.

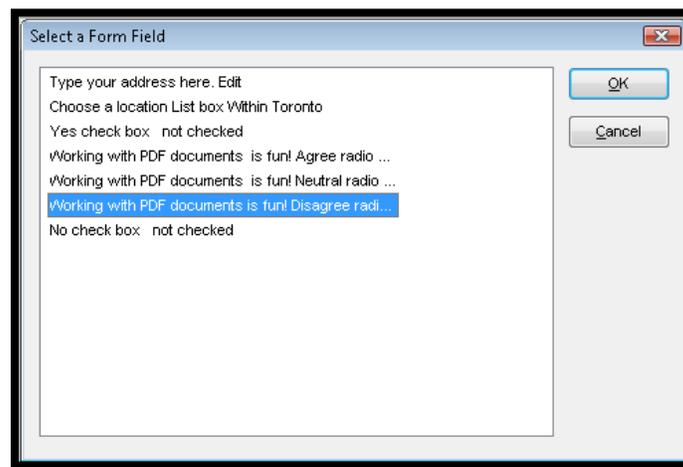
In the preceding image the first visual form control will now be tabbed into after the form control asking for your name. In effect you will be asked for the second presenter's name before the primary presenter's name.

This is why Tab Order is important. You need to ensure that the flow of information you are asking for is logical and not confusing.

**Note:** The same rules and best practices apply for required fields as when they are created in Adobe Acrobat. There has been a recent trend to begin the ToolTip with the word "required." As with links that all begin with the same word or phrase, this removes our ability to use first character navigation to quickly move to the form control in a list of form controls. The word "required" should be after the purpose/label of the form control.

The second method is to drag the form to its logical Tab Order in the list of form controls in the pane to the left of the form.

For the form I created from scratch, I discovered that the current version had some problems. First the check boxes were separated and missing their ToolTips. Second, the Tab Order was out of whack and had to be repaired.



**Figure 769 Incorrect Tab Order for form.**

I dragged the check boxes and the question associated with them to their logical place in the document. When I got the message about the automatic Tab Order I chose yes to modify the Tab Order.



Figure 770 Corrected Tab Order.

I then went ahead and added the ToolTips for the check boxes, saved my document and opened it again in Acrobat. I got a list of form controls from the JAWS screen reader and the list showed the corrections I'd made. I use the JAWS screen reader to access my computer which is why I have it handy to perform spot checks on documents that I work on. For me it fulfils two functions: it gives me access to the computer and it is available to perform spot checks on the accessibility of documents [and software].

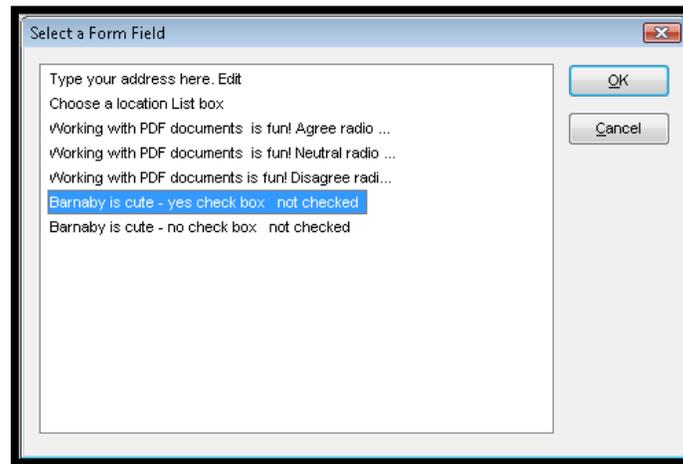


Figure 771 Corrected Tab Order shown in list of form controls using JAWS.

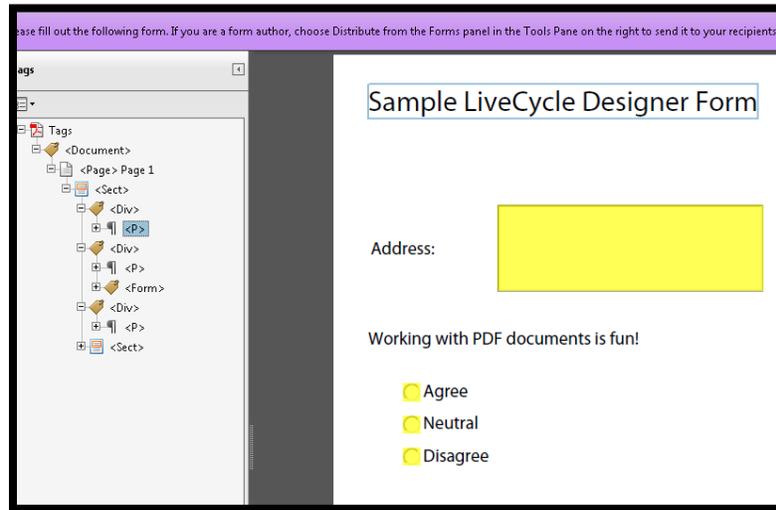
## Saving the Form

Once the form has been created, you need to save it as a PDF document. I've tried to save a form as a dynamic form but Tags don't seem to carry through the conversion process. I'd try this to see if it works for you and then decide which is the best format to use: static or dynamic PDF.

If we look at the List Box form, sparse as it is, we can see that by hovering the mouse over the form control the Tooltip is visible. This is not a reliable method of validation since sometimes this works and sometimes it doesn't.

An option for validating the form in Acrobat or Reader would be to turn on the form reading in the Reader Preferences so that as you Tab from form control to form control, the ToolTip is read out to you.

The Tags Tree for this form is shown in the following image.



**Figure 772 Tagged LiveCycle form viewed in Adobe Acrobat.**

For best results with LiveCycle Designer always create your form from a blank form or from a template you've created and tested for accessibility. This is a way to validate as you go to optimize the accessibility of the LiveCycle form.

An accessible form means that people using adaptive technology have access to both form controls and instructional/informational content. An accessible form must have Tags for content and the form controls.

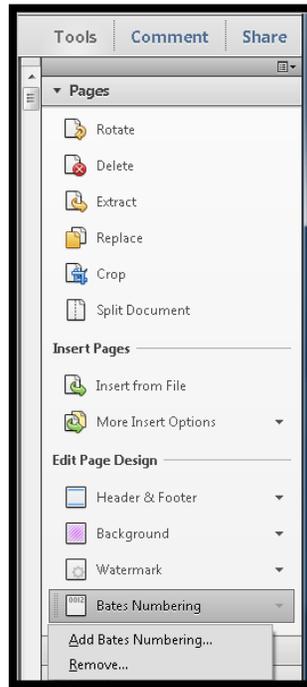
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# Legal Documents: Redaction

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There are two ways of redacting text, one in Word 2007 or 2010 and one in Adobe Acrobat. Adobe Acrobat has the additional tool of the Bates Numbering system so that legal documents can be compiled and organized.

Some may not know that you can use the Bates Numbering to organize your legal documents. It is found in adobe Acrobat in the Pages Toolbar to the right of the document.



**Figure 773 Bates Numbering in Pages Toolbar.**

This chapter deals with using available Redaction tools for both Word and Adobe Acrobat and how they impact adaptive technology and accessibility.

## Manual Solutions

In looking at how legal documents are Redacted when the Redaction tools aren't used, I discovered a cumbersome workaround. For some organizations text is selected in a document and is replaced by a symbol such as a series of dashes, asterisks, apostrophes or other symbol. The background of that "text" is then filled with black to match the text colour. Visually the content is Redacted and it is also not available to adaptive technology. It performs the function of Redaction tools in Word.

However, this method is labour intensive. You have to remember how much of a line or paragraph the content you are Redacting takes up and create enough symbols to replace it. If you don't the formatting is off which affects the integrity of the look and feel of the document.

If there are images, maps, charts, or diagrams in the document, it becomes more difficult to replace the size of the object being Redacted.

On the other hand it was great to see that the accessibility of Redacted content was on the minds of some organizations and that they are thinking of how to Redact content without affecting the accessibility of the document.

## Redaction Tools Overview

Redaction tools are used to delete sensitive information from documents. A digital Redaction tool functions in the same way the black highlighter does on a printed page...you aren't supposed to be able to read the information Redacted from the document.

The digital Redaction tools for Microsoft Word and Adobe Acrobat work the same way. They provide a digital mechanism for removing confidential or sensitive information from digital documents.

One question comes to mind. Is the information that is Redacted digitally a visual Redaction from the document or can adaptive technology still access it? In other words is it a true Redaction or is it simply putting black text on a black background?

The answer is that both the Redaction tools in Word and those in Acrobat are true Redaction tools. The information is deleted from the Word document, any associative metadata and in the case of a tagged PDF document, it is deleted from the Tags Tree, Bookmarks, and other areas associated with the Redacted text.

One ongoing discussion around redacted content is whether or not a Tag is metadata and whether a Tag for redacted content should be removed or not. If redacted content is within a paragraph the remainder of the paragraph text remains in the <P> Tag; however if the redacted content is a heading, should the <H1> Tag be removed or should there be placeholder text such as "redacted content" to indicate that this is still a navigational point in the document? This discussion is ongoing and complex. Document authors should be aware of these types of issues for redacted content. It is

also noteworthy to mention that if a heading is redacted, it also needs to be redacted from a table of contents for a document. This is not a symbiotic relationship in that redacting one does not redact the other.

Let's take a closer look at how current redaction techniques work.

## Redaction Tool for Microsoft Word

This section describes how the redaction tool can work in a Word document. This is a third party solution and you need to read the documentation carefully before installing and using this tool.

There is a [Redaction add-in for Word 2003](#).<sup>30</sup> Now there is a [Redaction Tool for Word 2007 and 2010](#)<sup>31</sup>. The Word 2007/2010 tool is developed by a third party. It is this tool that is the focus of this section of the chapter. You can use the Word 2007 add-in for Word 2010.

You will need .NET framework installed on your computer and the add-in will let you know if you have the right version.

Once the tool is downloaded and installed, it will place a Redaction Group in the Review Ribbon. When you are installing add-ins it is a good idea to close out of all Office applications. I typically close all applications when installing any tools on my computer.



Figure 774 Redaction Group on the Review Ribbon.

To use the Redaction tool in Word 2007 or 2010:

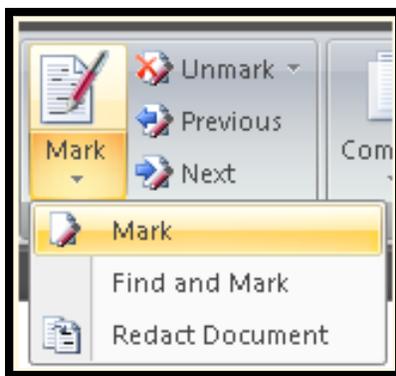
1. Select the text you want Redacted from the document.
2. Press Alt + R, K and choose to mark the selected text.
3. This will open a sub-menu.

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<sup>30</sup> Microsoft Add-ins: Redaction Tool for Word 2007:

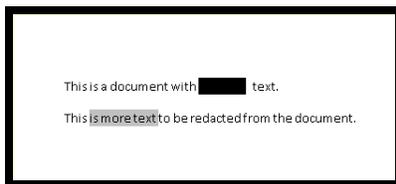
<http://www.microsoft.com/downloads/details.aspx?FamilyId=028C0FD7-67C2-4B51-8E87-65CC9F30F2ED&displaylang=en>

<sup>31</sup> Third party Redaction Tool for Word 2007: <http://www.codeplex.com/redaction>



**Figure 775 Redaction Mark sub-menu.**

4. Choose to Mark the text you have selected.
5. The selected text marked for Redaction will appear with a grey background in the document.



**Figure 776 Document with one Redacted item and one item marked for Redaction.**

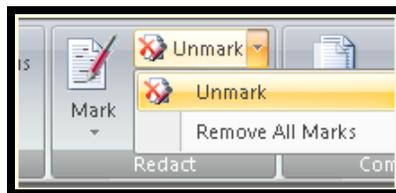
Mark all the text in a document for Redaction before you choose to Redact the document.

You can mark images, charts, maps or diagrams for Redaction too.

You should save a clean copy of the document before Redacting and then save a copy of the document containing all Redacted items.

If you've marked something for Redaction and want to "Unmark" it, select it again and press Alt + R, U, K which will open a sub-menu.

You can either unmark the selection or unmark all items marked for Redaction.

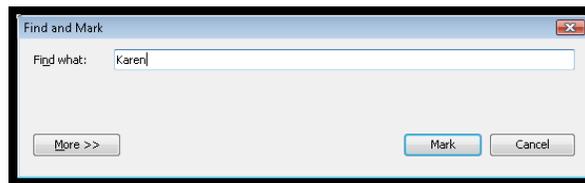


**Figure 777 Unmark Redaction sub-menu.**

**Note:** Once an item is Redacted from the document it cannot be unmarked for Redaction or restored to the document. When a document is Redacted the Redaction is in a separate document so that your original is intact. This means you can start again.

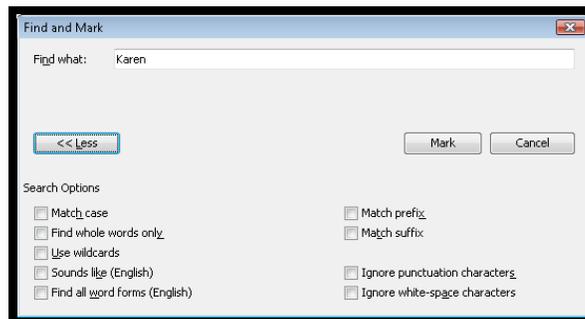
You can find items in a document and mark them all for Redaction at the same time. I created a simple sentence using my name several times. I then pressed Alt + R, K and chose to Find and Mark.

The Find and Mark dialog opens.



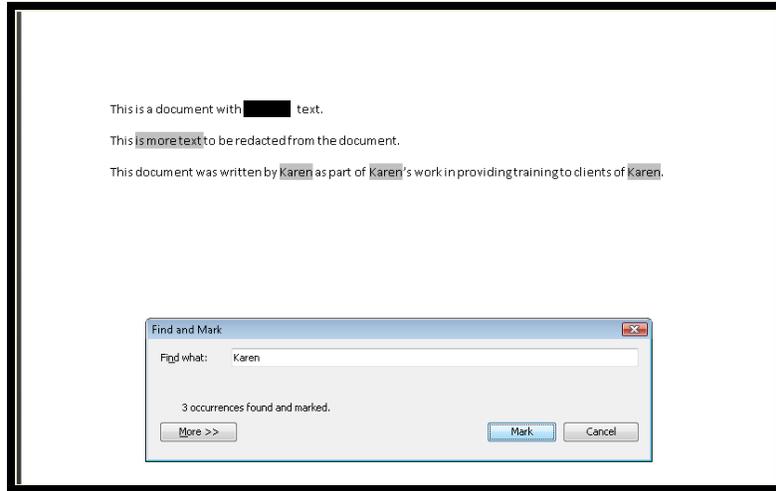
**Figure 778 Find and Mark Redactions dialog.**

You can expand the Details button and refine the items you search for.



**Figure 779 Expanded Find and Mark Redaction dialog.**

Once you activate the Mark button, all instances of the item are marked for Redaction.

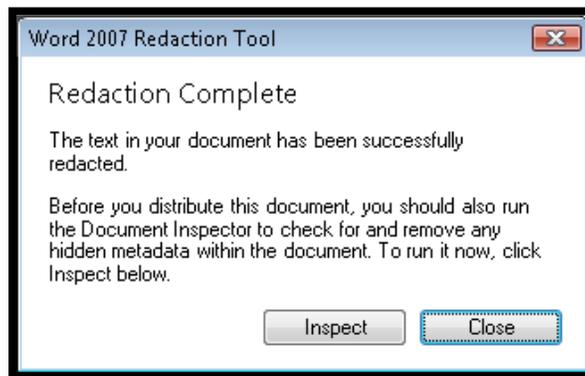


**Figure 780 All instances of an item are marked for Redaction using the Find and Mark option.**

Once you have all items in the document marked for Redaction press Alt + R, K and choose “Redact Document.”

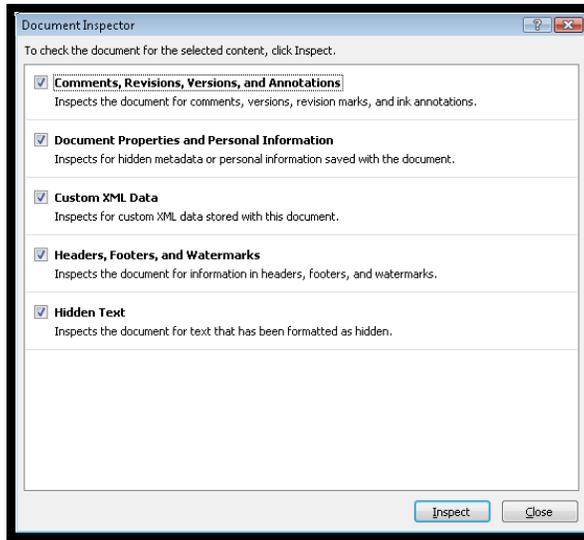
You will see a progress bar as the Redacted items are removed.

There will be a dialog reminding you to perform a document inspection to ensure that any associative metadata is also removed.



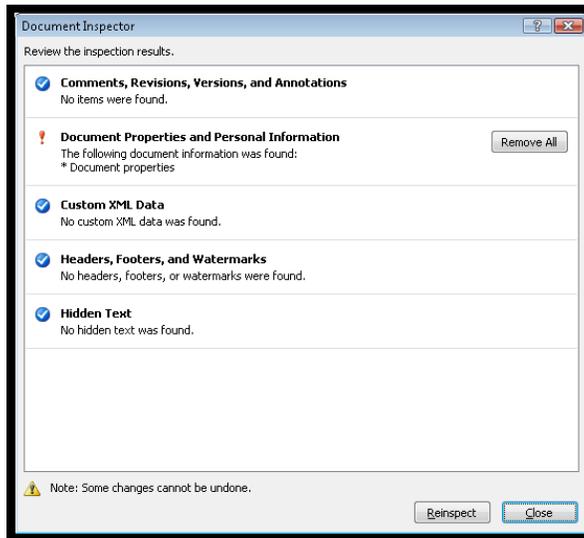
**Figure 781 Redaction Document Inspector dialog.**

Once you activate the Inspect button, the Document Inspector dialog opens.



**Figure 782 Document Inspector dialog.**

When the document is inspected, you will get a report on issues in the document.



**Figure 783 Results of the Document Inspection.**

If you need to manually check document properties, press Alt + F, E, P to open the Document Properties pane at the top of the document just below the Ribbons.



**Figure 784 Document Properties pane in Word 2007.**

When the Document Properties pane opens, you can choose to work with the traditional dialog by choosing Advanced under the Document Properties Options.

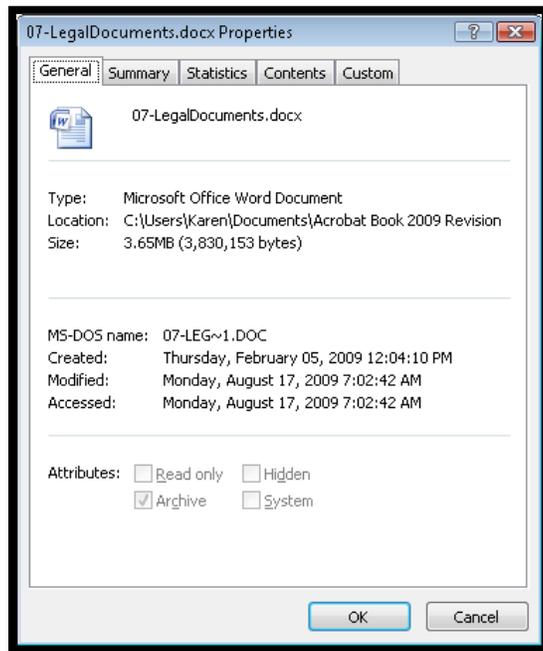


Figure 785 Traditional Document Properties dialog.

Select the text in the Redacted document to see the series of apostrophes.

The document is now ready to convert to tagged PDF or to send out for distribution.

## JAWS and Redacted Content in Word

What does the JAWS screen reader say to the person reading the Redacted document? The Redacted text is replaced with a series of apostrophes which are not rendered to the person using the screen reader. There is no “dictionary item” for this number of apostrophes so they are “ignored.” The text would read: “This is a document with text.”

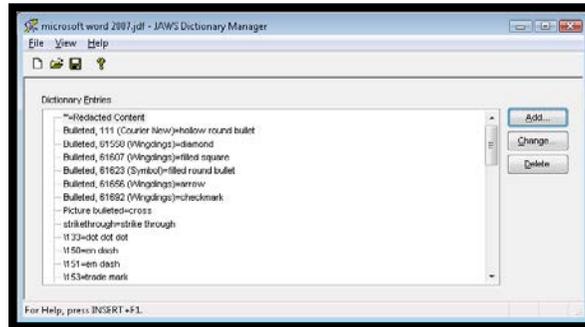
If they move through the document word by word, when the Redacted items are encountered someone using JAWS will hear “apostrophe, apostrophe, apostrophe, and so forth”

A solution to this is to use the JAWS Dictionary Manager to say “when you see a series of apostrophes read them as Redacted content.”

To modify the JAWS dictionary for Word:

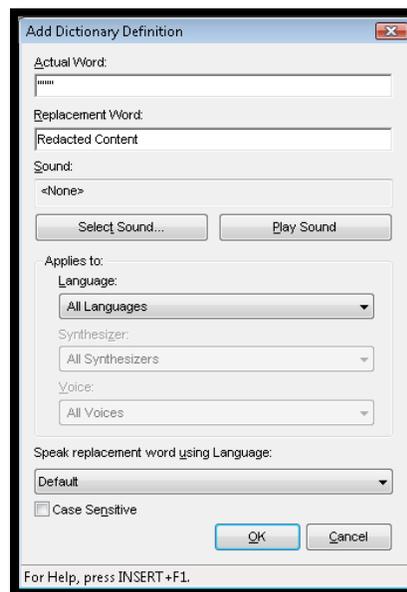
1. While in Word, press JawsKey +D to open the Dictionary Manager for Word.

2. If you want this “pronunciation” available globally open the default dictionary rather than the dictionary for Word. There are instructions for this while in the Word Dictionary Manager.



**Figure 786 JAWS Dictionary Manager.**

1. Press Alt + A to Add the new pronunciation.
2. In the Added Word edit box type a series of apostrophes. Remember that you may have a word of three or four letters that is Redacted and you will need the replacement word to reflect this. I typed in four apostrophes in this example.



**Figure 787 Add new pronunciation dialog.**

In the Replacement Word edit box type “Redacted Content” although you don’t need to capitalize it.

Tab to and activate the OK button.

Press Ctrl + S to save the changes to the pronunciation dictionary.

Press Alt + F4 to close the Dictionary Manager.

As you read the Redacted Word document, JAWS will say “Redacted Content” whenever it comes across the series of apostrophes. It will repeat it for each set of four apostrophes. This will give the person using JAWS an idea of how much content has been Redacted. Of course they can always press the Ctrl key to silence JAWS if they don’t want to hear the entire series of replacement words.

## Converting the Redacted Word Document to Tagged PDF

First, here is the previous sample document converted to tagged PDF showing the Tags for the Redacted text.



**Figure 788 Redacted Word document converted to tagged PDF.**

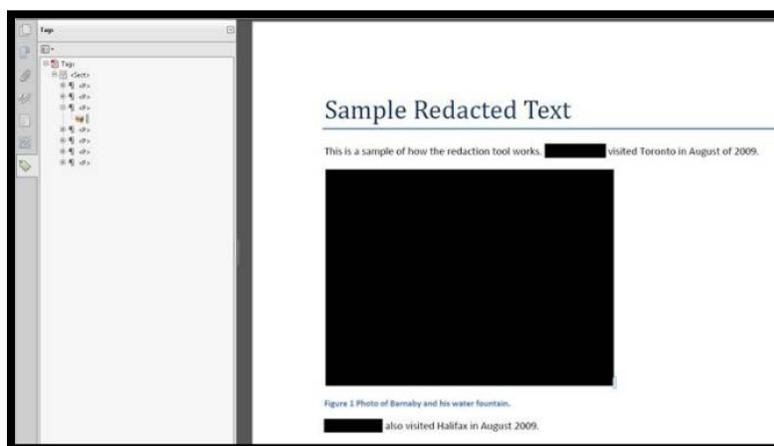
In this image you can clearly see the series of apostrophes.

There is another aspect to Redacted documents from Word that are converted to tagged PDF that we need to examine. What happens to a document that has an image, map, diagram or chart? How does the Redaction of this type of document work when converted to tagged PDF?



**Figure 789 Sample document with image to be Redacted.**

The sample document has Alt Text on the image as well as a caption. If there is text in the Alt Text that needs to be Redacted, this will be done when the image itself is Redacted. The caption text will need to be selected and Redacted separately.



**Figure 790 Sample document with Redacted image.**

In the Word document with the Redacted image JAWS will give the person reading the Word document the information that an image is there and the size of the image but not the Alt Text. This has been reported as a bug to the developers of the Redaction tool. If you look at the Alt Text for the Redacted image, there is no text there. In addition, when you do open the Alt Text dialog for the Redacted image, the entire document is corrupted as it spreads over pages and content disappears. Simply close the document without saving it. As long as you don't open the Alt Text dialog for a Redacted image, the document will be fine.

This makes it critical to have a caption for images even if the caption text is Redacted. This lets the person using the adaptive technology know that there is an image there and that their screen reader is not "broken.": It becomes more important when the Redacted document is converted to tagged PDF. If an image is Redacted in Word, it is not represented at all in the Tags Tree. Whereas text is replaced by the series of apostrophes, Redacted images are not. This is true whether you use the Microsoft Save as PDF or completely inaccessible XPS format plug-in or the Adobe plug-in.

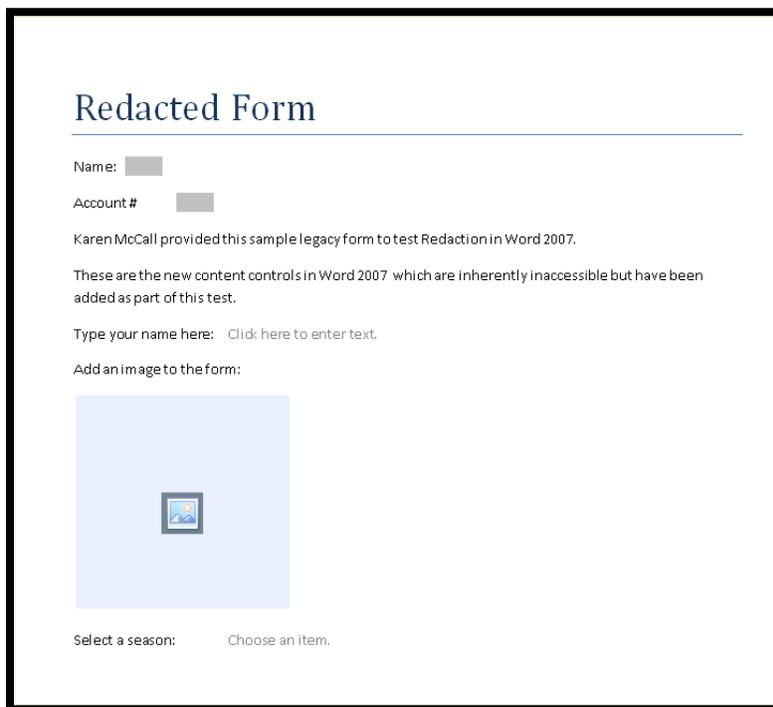
As part of the ongoing conversation around accessible redacted content, someone who can see the document can see how much of the document has been redacted. Should redacted content be replaced with placeholder content such as "redacted content" to give someone who can't see the document the same knowledge as to how much of the document has been redacted as is provided to someone who can see the document?

**Note:** If you are using the JAWS screen reader you can create the dictionary entry for the series of apostrophes just as you did in Word. Since you are only going to use this “pronunciation” in the two applications you can weigh adding it to the default dictionary versus adding it to the Word and Acrobat/Reader dictionaries.

## Redacting Content in a Word Form

Redacting content in a Word form is quite messy and probably not in the scope of the tool. Nonetheless I tried it!

I created a form with both legacy form controls which are accessible and the new content controls which are not.



The screenshot shows a Word 2007 form titled "Redacted Form". The form contains several elements: a "Name:" label followed by a greyed-out text box; an "Account #" label followed by a greyed-out text box; a paragraph of text: "Karen McCall provided this sample legacy form to test Redaction in Word 2007."; another paragraph: "These are the new content controls in Word 2007 which are inherently inaccessible but have been added as part of this test."; a text prompt: "Type your name here: Click here to enter text."; an "Add an image to the form:" label above a large light blue rectangular area containing a small image icon; and finally, two labels: "Select a season:" and "Choose an item.", both followed by greyed-out text boxes.

**Figure 791 Sample form in Word 2007.**

I then added data to the form controls.

**Redacted Form**

Name: Karen McCall

Account # 5520463

Karen McCall provided this sample legacy form to test Redaction in Word 2007.

These are the new content controls in Word 2007 which are inherently inaccessible but have been added as part of this test.

Type your name here: Karen McCall

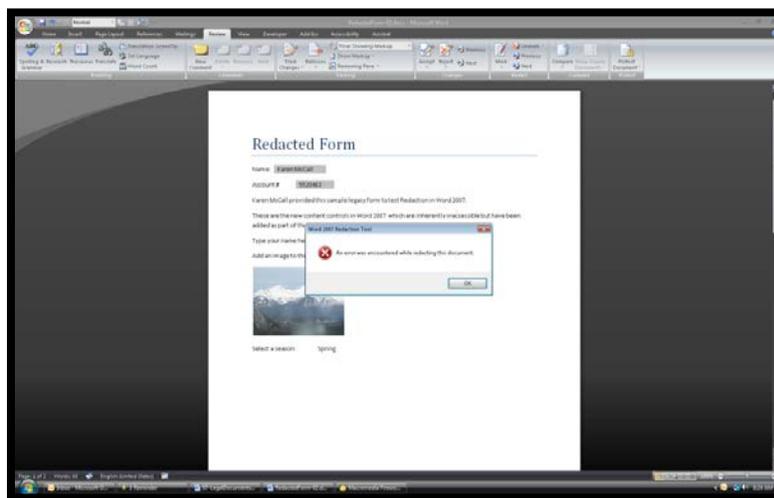
Add an image to the form:



Select a season: Spring

**Figure 792 Sample Word form with data entered.**

If you want to Redact content you will need to select the entire line. Selecting a form control and marking it for Redaction results in an error message.



**Figure 793 Error when Redacting a form control.**

However, if you select the line and the form control, you can Redact the content.

**Redacted Form**

Account#

Karen McCall provided this sample legacy form to test Redaction in Word 2007.

These are the new content controls in Word 2007 which are inherently inaccessible but have been added as part of this test.

Type your name here: Karen McCall

Add an image to the form:



Select a season:

**Figure 794 Redacted Word form content.**

Unlike an image you insert into a document, if you use the image content control to add an image to a document, for example a student or employee intake form, you cannot Redact that image from the document in Word.

You can use the Find and Mark tool, however, when the document is Redacted, all legacy form controls will be emptied. In the example below I marked the content control list box for Redaction and when the document was Redacted all content from legacy controls was deleted. The content wasn't Redacted in the legacy controls, it was deleted and I had an empty form [except for the content controls].

**Redacted Form**

---

Name:

Account #

Karen McCall provided this sample legacy form to test Redaction in Word 2007.

These are the new content controls in Word 2007 which are inherently inaccessible but have been added as part of this test.

Type your name here: Karen McCall

Add an image to the form:



Select a season:

**Figure 795 Redacted Word form showing empty legacy form controls.**

The image content control was also “Redacted” although this didn’t work as shown in the preceding image. The image is still visible. You can Redact images when they are inserted into a document but not when they are inserted using content controls.

**Note:** SmartArt and other objects were not tested for this chapter. If you are using these document parts in your Word documents, do a test run first to ensure that they can be Redacted. You may have to Redact them in Adobe Acrobat.

In summary, it is an awkward process to Redact information from Word based forms. Content that is visually Redacted is also Redacted for people using screen readers or TTS tools. However, due to the inability to Redact some content and the techniques a document author has to use to Redact text entered in fields, this might not be the best way to Redact Word based form information. It might be a smoother process to do the Redactions in Adobe Acrobat.

**Note:** You cannot convert Word based form or content controls to a tagged PDF document. However, if the form has been filled out, you will be able to save the form as a “static” tagged PDF. This means that the data is retained but the form is no longer fillable. You would need to create the form template in Word and add the form controls in Acrobat or LiveCycle Designer.



**Figure 796 Redacted tagged PDF showing Tags Tree for redacted content.**

As with other tagged PDF documents containing Redactions done in Adobe Acrobat, the content is removed from the Tags but the end-user who is using adaptive technology will not know this. There is a solution and you'll find details in the next topic.

## Redaction Tool in Adobe Acrobat

Adobe Acrobat has a Redaction tool for any PDF documents that have text or items that need Redacting.

When you Redact content in a PDF document it also creates a duplicate of the document with the Redactions. This lets you retain a clean copy of the original in case you need it or another person requires differently redacted content.

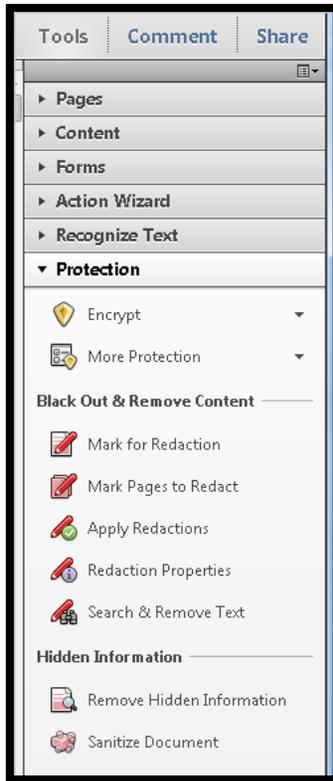
If you are able to Redact content on a scanned image of a document none of the document will be accessible.

If you accidentally select something for Redaction that shouldn't be Redacted, use the right mouse button to open the context menu for that selection and then choose Delete. Only that content marked for Redaction will be "unmarked." The content itself is not deleted, just the identification for Redaction.

To Redact content in a tagged PDF document in Acrobat X and later:

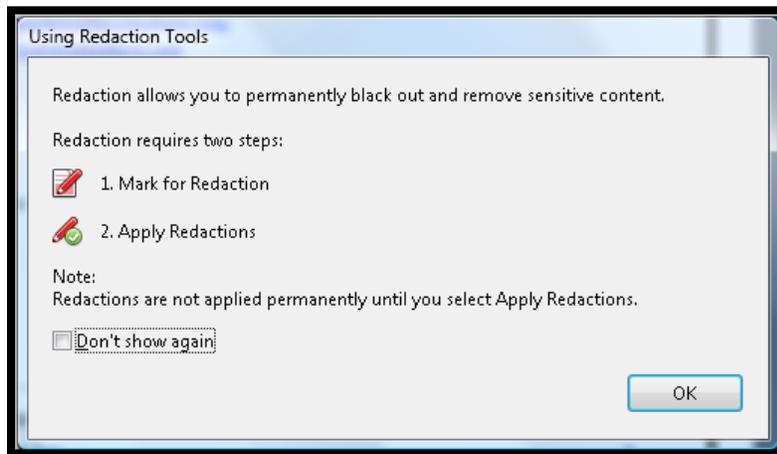
1. Show the Protection Toolbar and expand it.
2. Redaction tools are now called "Black out and Remove Content."

When you activate the item to Mark for Redaction, the mouse cursor changes to a sort of vertical bar with a dotted box through it when it is over the document.



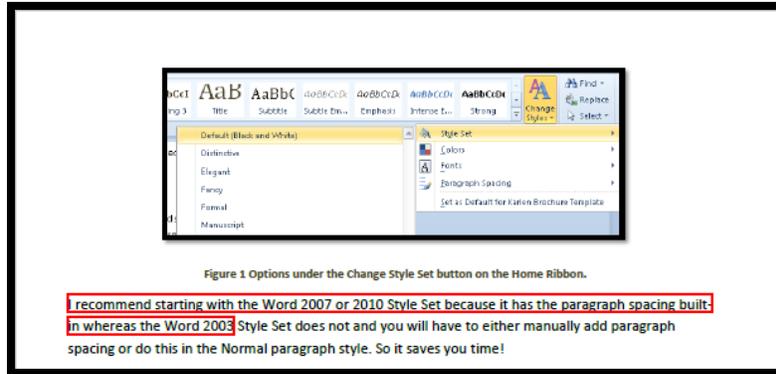
**Figure 797 Redaction tools in Protection Toolbar.**

When you activate Mark for Redaction a dialog opens with some information on redacting content.



**Figure 798 Notification message about redaction when mark content is activated.**

Select the text you want Redacted. It will be outlined in red before it is actually redacted.



**Figure 799 Content marked for redaction in PDF document.**

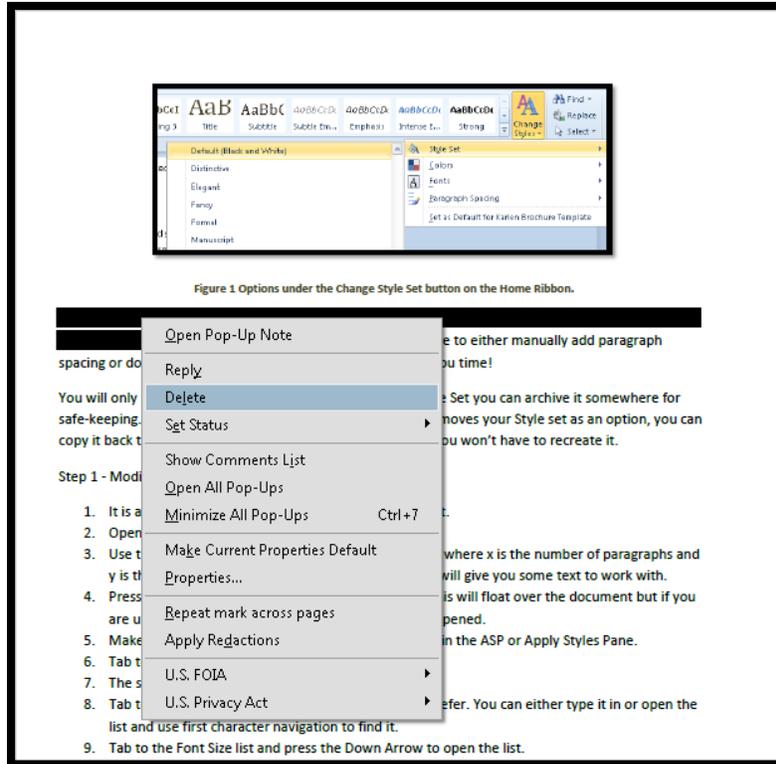
As you hover the mouse over the content marked for redaction, you will see what it will look like once it is redacted.



**Figure 800 Preview of content once it is redacted.**

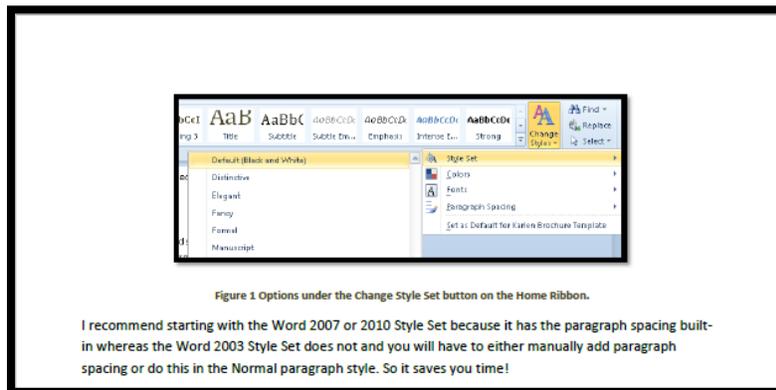
Continue marking content until you have all of it marked for redaction.

If you accidentally mark something that shouldn't be marked for redaction, hover the mouse over the marked content and click the right mouse button. Choose Delete from the context menu. This will only delete the marked up border and not content from the document.



**Figure 801 Deleting the mark-up of content for redaction.**

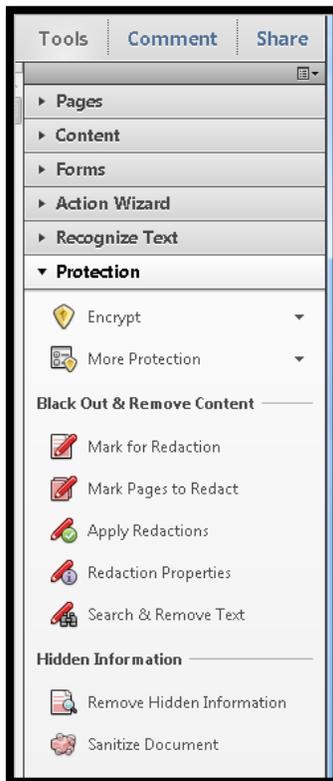
The following image shows the document once I deleted the mark-up. I know, you'll have to trust me that this isn't a "before" image. <grin>



**Figure 802 Document showing mark-up for redaction removed.**

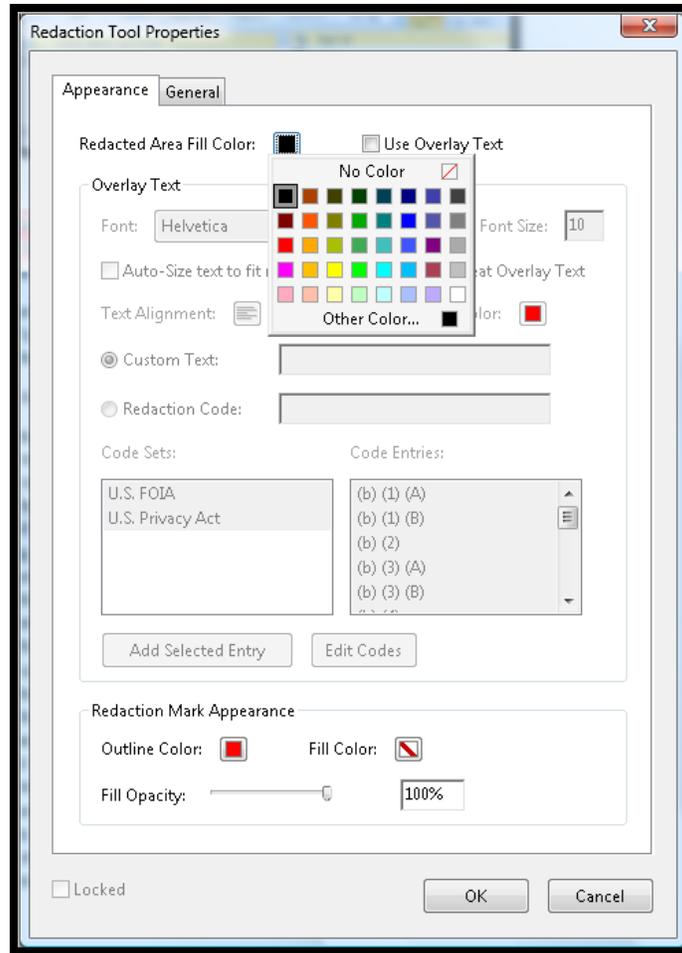
The preceding images are showing the mark-up and potential redacted content outlined and redacted in the default colours. If you have a colour deficit you can go into the Redaction Properties and make some changes to the way marked and redacted content is displayed.

Redaction Properties are found in the Protection Toolbar in the Black out and Remove Content section.



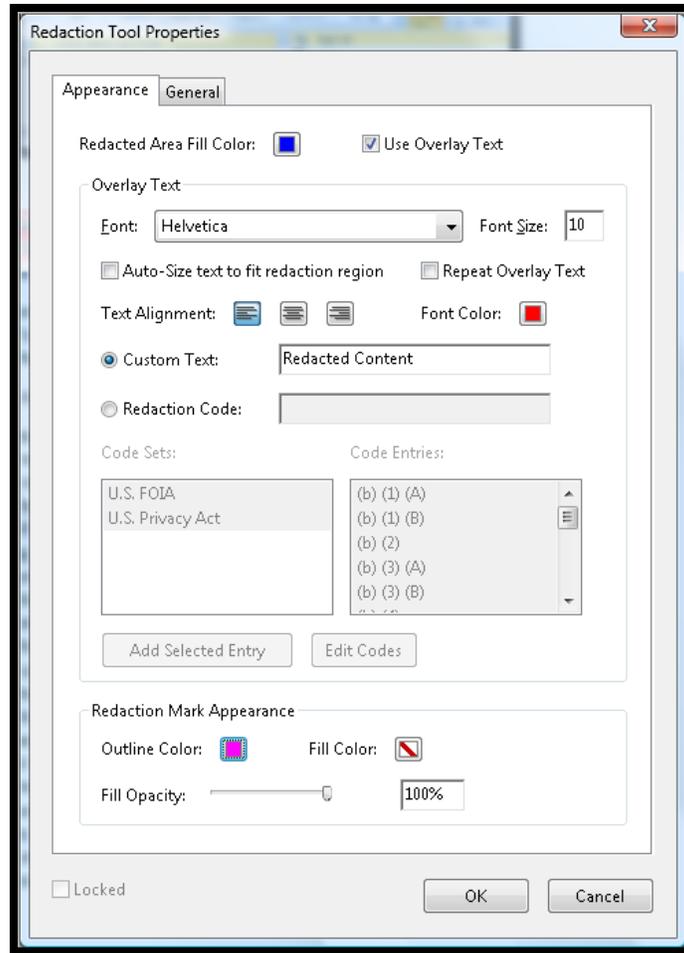
**Figure 803 Protection Toolbar showing Redaction tools.**

Once activated, a Redaction Properties dialog opens. I've made some changes to the way marked and redacted content appears in a PDF document. I've added some text so that someone with a learning, cognitive or visual disability knows what the mark-up means. I can do this if I retain the traditional blacking out of text.



**Figure 804 Redaction Properties dialog showing open colour palette.**

As well as changing the colour for the outline and redaction itself, you can add text to the redaction, in my case I simply added the text “Redacted Content” to be centered on the first line of redacted content. Many organizations will not want this level of customization. I use it as an example of how I can add accessibility for people with learning, cognitive or visual disabilities so they have a visual cue that the content is redacted. This is not available to screen readers.



**Figure 805 Redacted Properties showing Qwerty text added.**

Now the outline is in magenta when I select content to be redacted.

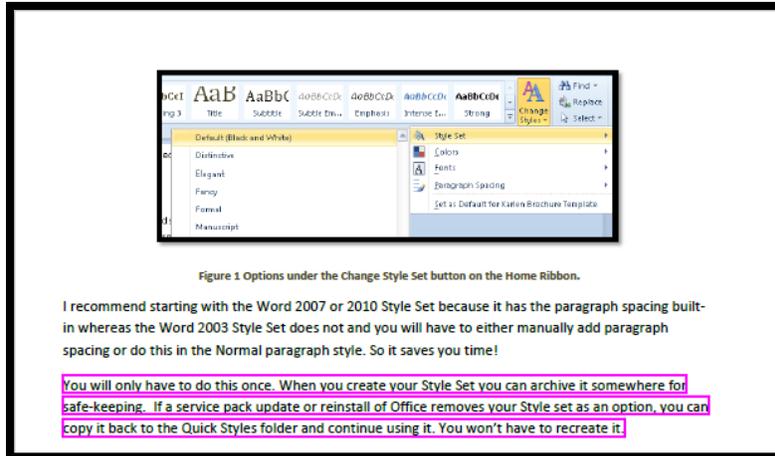


Figure 806 Magenta outline of content marked for redaction.

When I apply the redaction the redacted content is blue with yellow lettering indicating that it is redacted content.

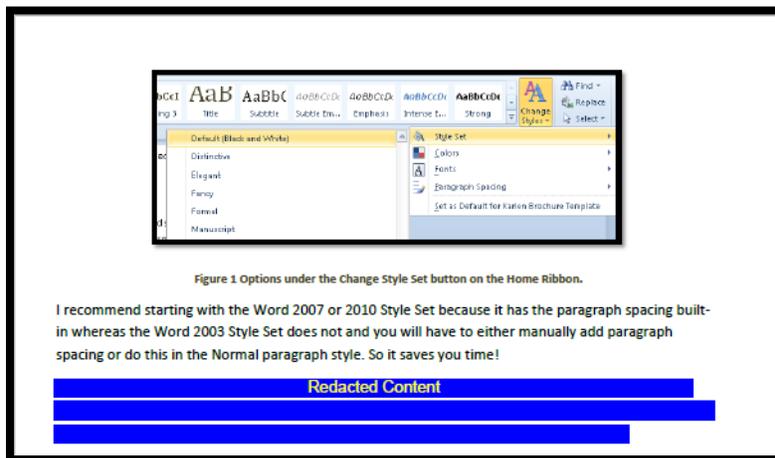


Figure 807 Redacted content using new redaction properties.

Back to our redacting!

If I have a word or phrase that is scattered throughout a document I can mark instances of that word or phrase for redaction quickly.

In the redaction tools in the Protection Toolbar is an item called Search and Redact. When activated, this opens a pane that is separate from Adobe Acrobat. I mention this because it is easy to separate the two on the screen and become disoriented. It is the same pane used for a general search in Acrobat documents with some changes.

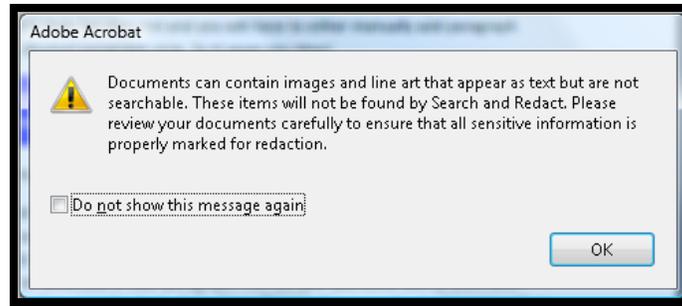


Figure 808 Warning about using the search for images and line art.

The first thing that happens is that you get a warning about using the Search and redact tool for images and line art. Once you dismiss that message, the pane opens to the left of the document

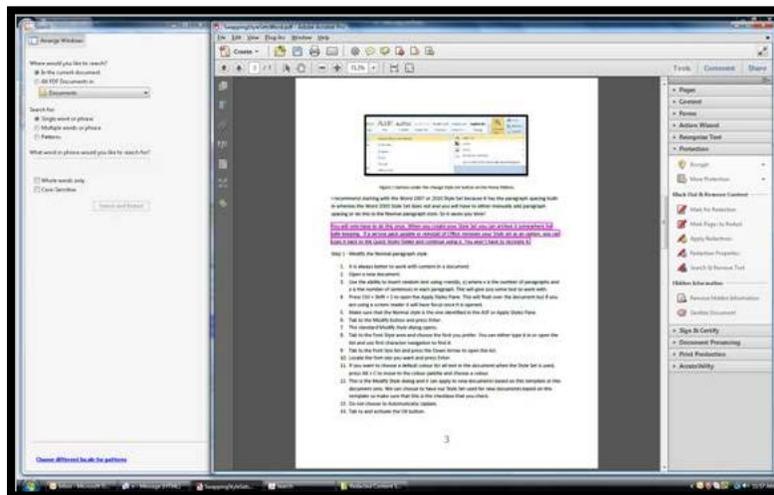


Figure 809 Search and Redact pane open to the left of the document.

You can type in a word or phrase to search for. In this example I'm going to search for the word "press."



**Figure 810 Search and Redact pane up close.**

Once I activate the Search button, all instances of press appear in a list with check boxes next to them. There is also some contextual text to help you make decisions about what should be redacted.

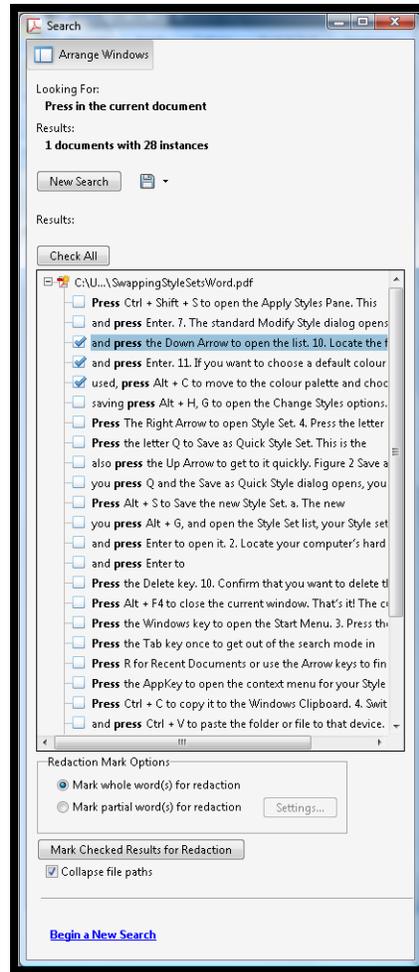
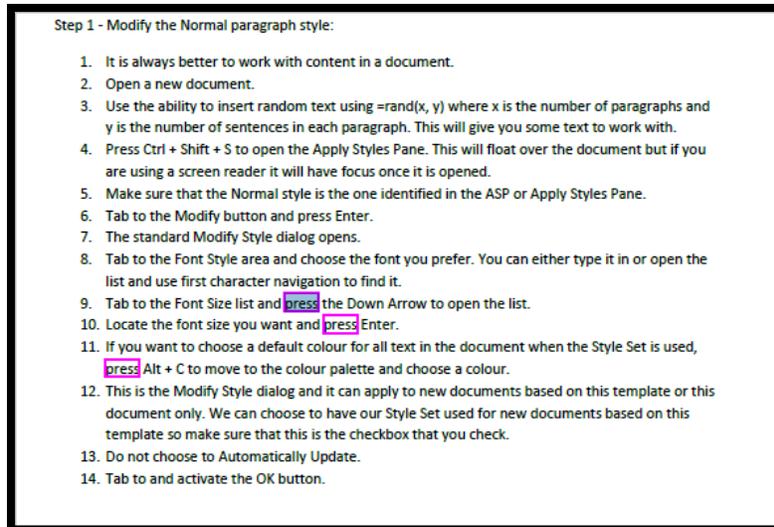


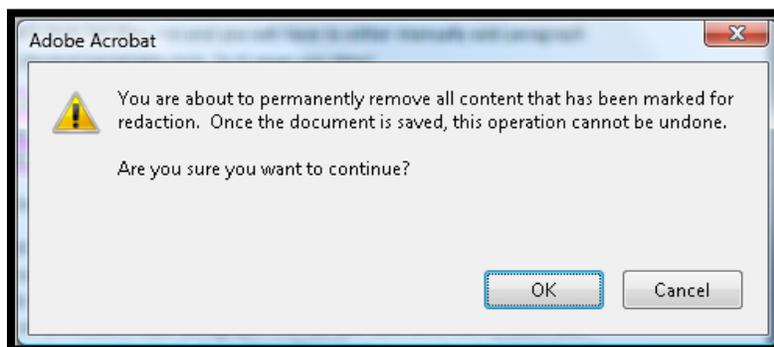
Figure 811 Found instances of the word I searched for.

After you check all the items you want redacted from this list of found items, activate the “Mark Checked Results for Redaction” button at the bottom of the pane. The words or phrases are marked for redaction as shown in the following image.



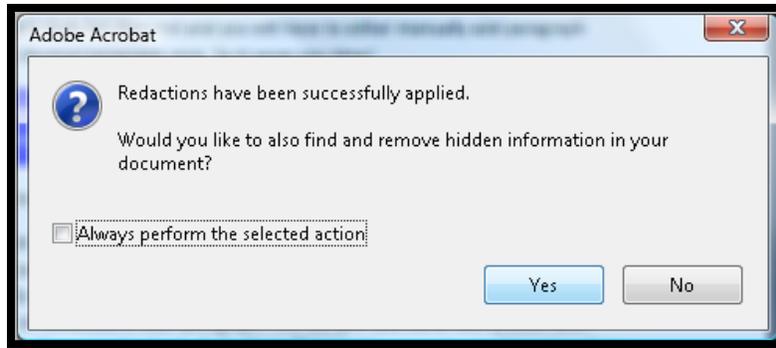
**Figure 812 Search results marked for redaction.**

The final step in the process is to actually apply the redactions. Apply Redaction is found in the Protection Toolbar. Once activate you will receive a warning message about redacted documents.



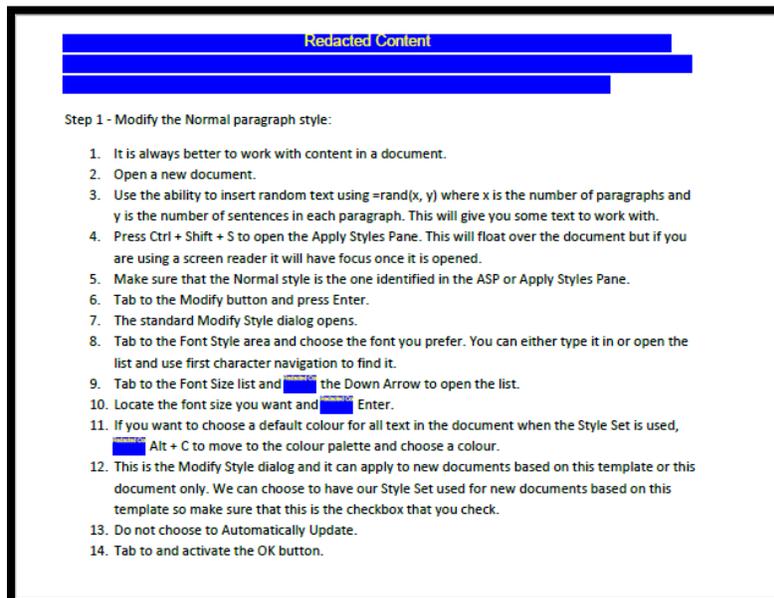
**Figure 813 Warning that redaction permanently removes content from the PDF document.**

When you say OK to this message another message appears letting you know that you will also need to check the metadata for the document to make sure that none of it contains the words or phrases you've redacted from the main document.



**Figure 814 Warning to review metadata for content that needs to be removed from document.**

The following image shows the redacted document. The text I used for redacted content is visible in large pieces of text. In the individual words, it is not readable at normal document view.



**Figure 815 Redacted content in tagged PDF document.**

If the document is zoomed or magnified the text is visible. Notice that some of the text is cut off as the word I chose is not large enough to display the entire phrase.

9. Tab to the Font Size list and [redacted] the Down Arrow.
10. Locate the font size you want and [redacted] Enter.
11. If you want to choose a default colour for all text in the document, press [redacted] Alt + C to move to the colour palette and press [redacted] Enter.
12. This is the Modify Style dialog and it can apply the style to the selected text or to all text in the document.

Figure 816 Close up of individual redacted words.

Once the redactions have been applied, the Review Metadata pane opens to the left of the document. You can then go through the various types of metadata associated with the document and remove it from this redacted version of the document.

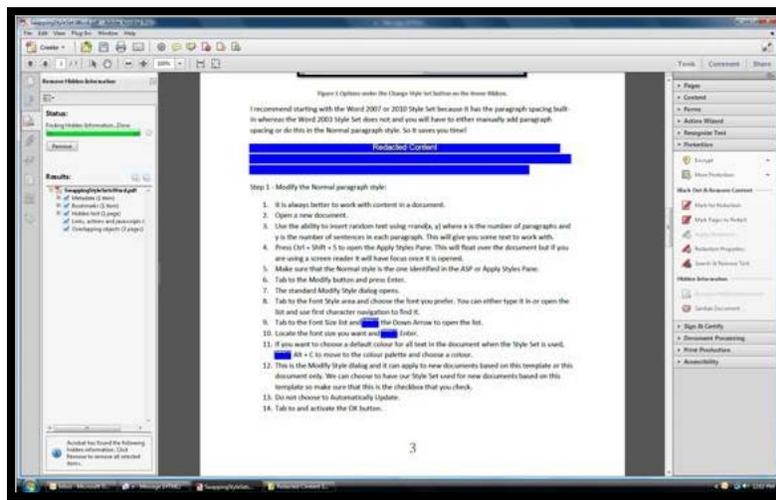


Figure 817 Review metadata for redacted document.

If you just want to accept the default and remove all metadata identified, activate the Remove button. If you only want to remove specific types of metadata, uncheck the types you don't want removed.

Resave your document with a new name. typically I use the same filename but add the word "Redacted" to the filename. I also store it in the same place as the original so that I don't have to hunt for it when I need it. A copy can be put on a web site or sent by e-mail, but I find that keeping all iterations of the PDF document together saves me time looking for the document I need.

The following image shows the resaved document with redactions. Notice that the bullet number is still present as is the text after the redacted content, however any indication that there was text present that has now been redacted has been removed.



**Figure 818 Tags in redacted document showing content not present in Tags.**

Visually someone can figure this out but for people using screen readers who do not have access to the visual representation of redacted content, this would present a problem. Has the document not been tagged correctly? Is my adaptive technology skipping over parts of the PDF document? What is wrong with this document or my adaptive technology.

There needs to be some cue for people who cannot see the visual representation of redacted content that parts of the document have been redacted. Then if we hear things that don't make sense we can determine that this is redacted content.

The question then becomes, would any tagged based information identifying redacted content be considered metadata? A corresponding question would be that if content within a <P> Tag is removed, the <P> Tag or structure for the paragraph is not removed. If a heading is redacted, should the corresponding <H> Tags be removed as well? Again there would be a visual representation that content was there and most people looking at the document would know that it was most likely a heading...shouldn't the same information be available to someone who can't see the document?

This is still under discussion but worthy of note here so that you can start making informed decisions on redacted content and what constitutes "metadata."

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# Scanned Documents to Tagged PDF

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One of the most common forms of PDF documents are scanned documents. These are print pages that are scanned into a computer and typically saved as untagged PDF.

This chapter will guide you through the stages of taking a print document that has been scanned into a computer to the point where it is as accessible as it can be.

The document used for this chapter is an old print brochure from Freedom Scientific. I've used it for each version of this book. If you've bought previous versions of the book, it helps keep scanned documents in perspective by using the same scanned pages for each version. One of the problems in working with PDF documents and accessibility is that no one wants their untagged documents to be used as learning tools. The fear is that they will be criticized for creating the inaccessible content in the first place. Even now, nine years after I began doing workshops and publishing this book, no one wants to be the "sample of inaccessible content" even for educational purposes.

The brochure used in this chapter was available in an accessible format and material for Freedom Scientific products is currently available in accessible format. Like all companies, Freedom Scientific also has print copies of informational material. It is one of Freedom Scientific's print brochures that is used with their kind permission and understanding that we need learning material to demonstrate techniques and methodology. My thanks and appreciation to them for their willingness to be part of the educational process.

If you use adaptive technology and open a scanned PDF document, you receive a message from your adaptive technology notifying you that the document is a scanned image. If you dismiss the image, nothing happens with the document and the adaptive technology will tell you, from this point on, that the document is blank. If you choose to go ahead with the Text recognition, you will then be able to add either Tags or Virtual Tags to the document.



**Figure 819 Scanned document message for JAWS screen reader.**

As I've mentioned before if you are working with a PDF document to add the Tags, you never want to use the tool for creating Virtual Tags as I've found it sometimes interferes with the ability to add real Tags to the document. However, if the document is scanned, you do want to perform the text recognition or CR.

Previous versions of this book have indicated that the OCR or text recognition tool in Acrobat 8 was better than the newly implemented ClearScan tool of Acrobat 9. With Acrobat X some of the issues with the ClearScan tool have been repaired, however I am leaving the information on some of the issues with scanned PDF and ClearScan in this chapter in case you come across them. It will help explain what is going on and offer an alternative in Acrobat 8 for dealing with scanned documents. As we will see in this chapter, this doesn't necessarily mean that the document will be accessible when the Tags are added.

## **OCR in Adobe acrobat X**

Since many of you have updated to acrobat X I'll start the chapter with this tool. Immediately following this topic are the steps to perform OCR and tagging in Acrobat 8.

Some people have Abbyy Fine Reader installed as well on a computer to perform the OCR, resave the document retaining the formatting as an untagged PDF and then add the Tags and do repairs in Acrobat The tools you have will depend on the types of scanned documents you are working with. For example if you work with textbooks you probably already have Abbyy Fine Reader; if you work with journal articles or smaller documents the OC in Acrobat may be just fine..

## **The Process Begins**

The first step is to scan the pages into Adobe acrobat and save them.

You can scan the pages directly into Acrobat. Once you scan one page in, a dialog appears asking if you are done or if you want to add more pages.

I am using the TIF or TIFF files from previous versions of this book so I will combine the pages. If you are scanning directly into Acrobat you can scan several pages into one document that you can work with.

## Step 1: The TIF Files

All of the pages are together in a folder on my hard drive. To combine them I chose File, Create, combine Documents into a Single PDF.

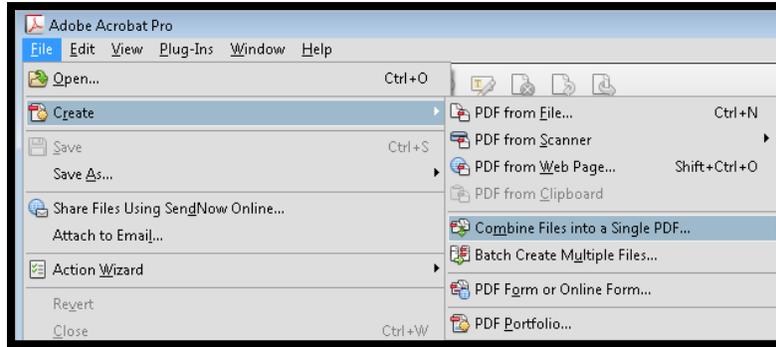


Figure 820 Combining the TIF files.

This opens a dialog where you can locate and identify the files to be combined. Do not choose to create a Portfolio which is one of the two options in the upper right corner of the dialog.

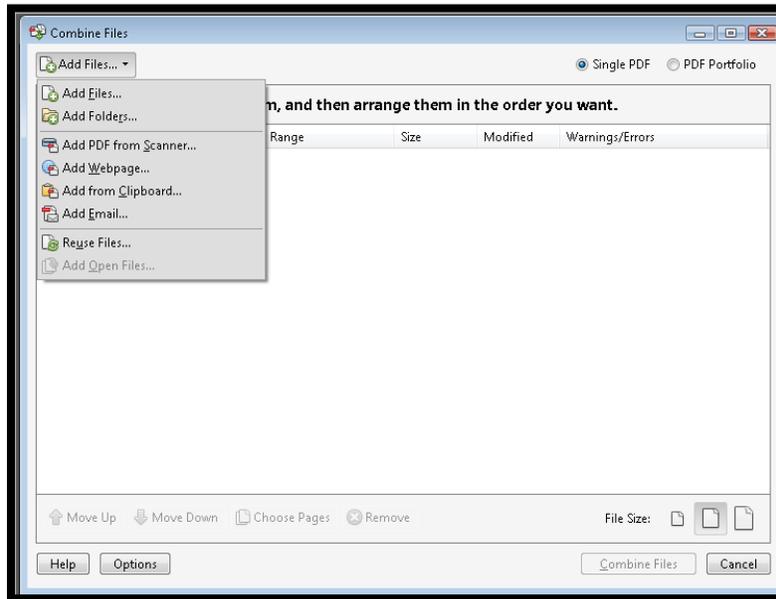
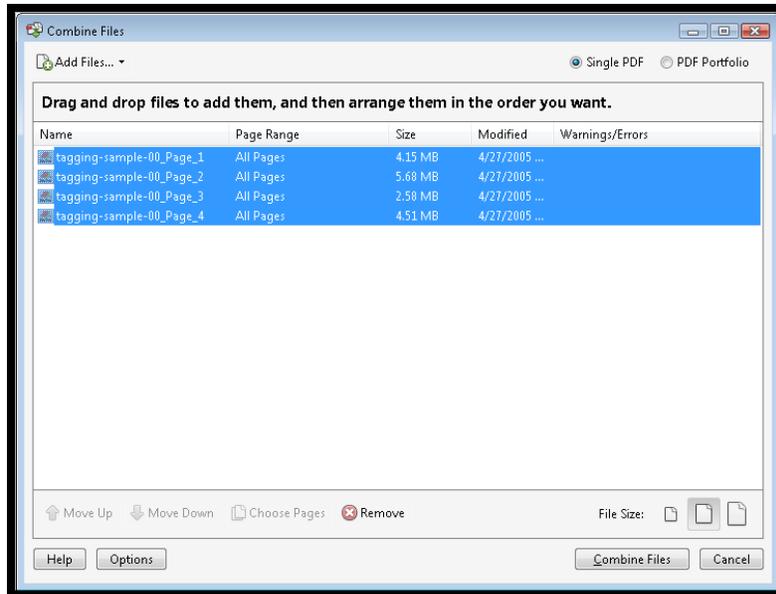


Figure 821 Adding files to be combined.

You can drag and drop files into this dialog but I find it easier to press Alt +A and add them using the keyboard.



**Figure 822 Files listed in the order they will appear in the PDF document.**

Once the files have been identified and loaded into the dialog, you can adjust the order they will appear in the document. I've given my files names that include a page number and they are added in the order I want them in the PDF document.

Move to and activate the Combine button.

The newly created PDF document opens in Adobe Acrobat.

Save the document with a new version number.

## Step 2: Recognizing Text

The tools for recognizing text are found in the Recognize Text Toolbar. Make sure that it is visible to the right of the document. If it isn't, go to View, Tools, and choose Recognize Text.

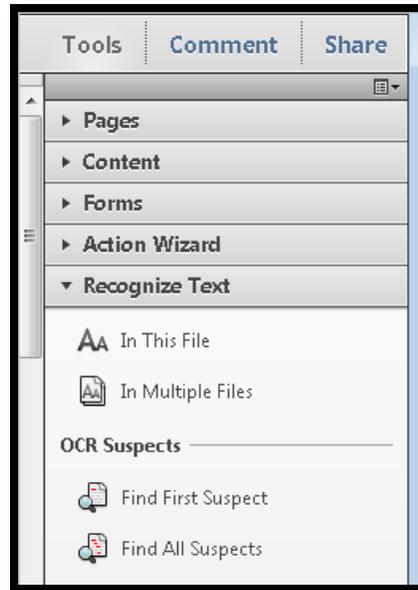


Figure 823 Recognize Text Toolbar.

Choose to recognize text in the current file which is the first item in the Recognize Text Toolbar. This opens a dialog.

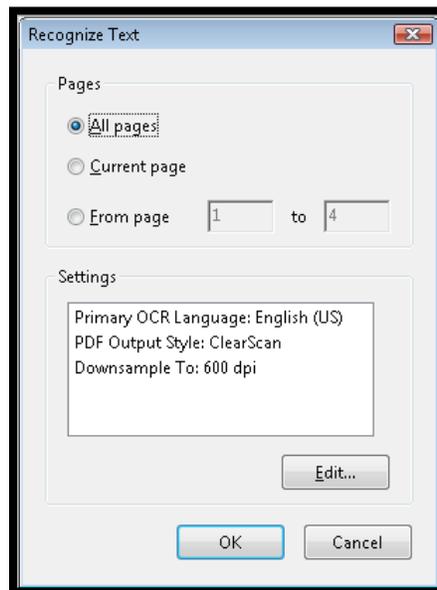
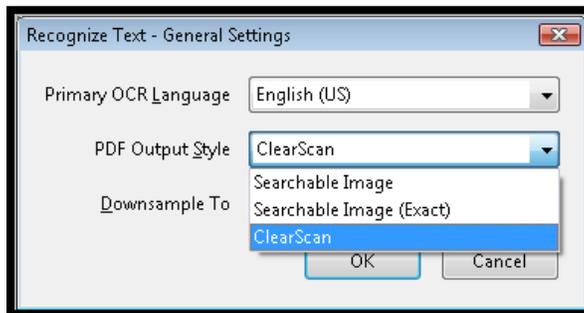


Figure 824 Recognize Text dialog.

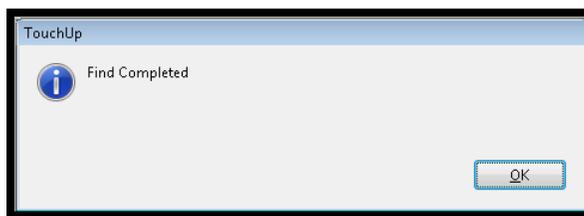
Go into the Edit settings by activating the Edit button in this dialog. Another dialog opens where you can choose the PDF output. Choose ClearScan.



**Figure 825 ClearScan PDF output setting.**

Once you choose ClearScan activate the OK button which returns you to the Recognize Text dialog. Activate the OK button to start the OCR process.

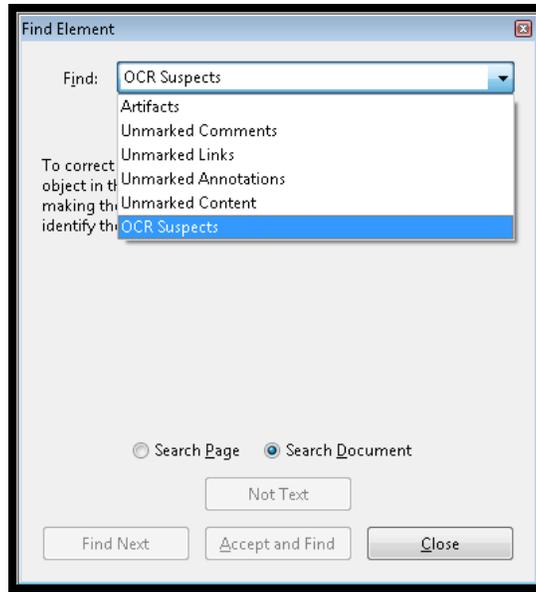
Once the OCR is complete try to find suspect content. Using ClearScan I still do not seem to have access to any suspect text or content that has been misrecognized.



**Figure 826 No suspect text or content found using ClearScan.**

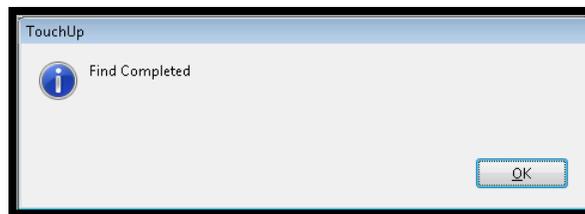
I then went to Find All Suspects to see if there was a difference in results. There wasn't.

However I did expand the list of suspects and found "Unmarked Links" in the list.



**Figure 827 Unmarked links option in find All Suspects dialog.**

I thought that this might be another way of finding and creating links however I got the same results as I did when I asked for general suspect content...nothing was found. There are links in the document so am not sure what the function of this option is.



**Figure 828 No unmarked links found.**

In the next step in the hierarchy of tasks, we need to create the URL's or web addresses in the document.

Save the document with a new version number.

### Step 3: Creating the Links in the Document

Go to the Document Processing Toolbar to the right of the document and choose to Create Links from URL's.

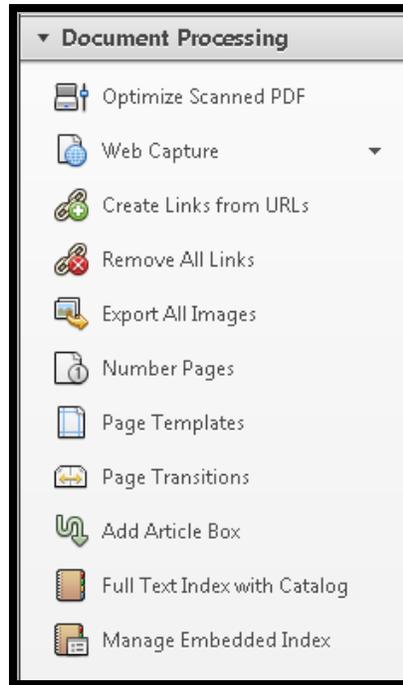


Figure 829 Document Processing Toolbar.

You will get a warning that this action cannot be undone. That's OK because we'll save this as a new version of the document. Once the tool has gone through the document, you will get a summary of how many links were created. Remember that this tool looks for the http prefix to links so if any begin with www they will not be identified.

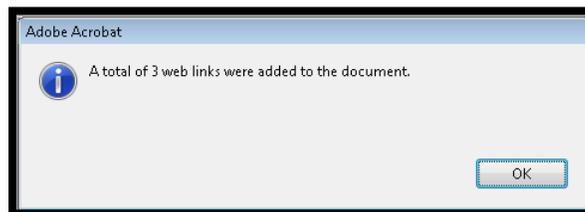
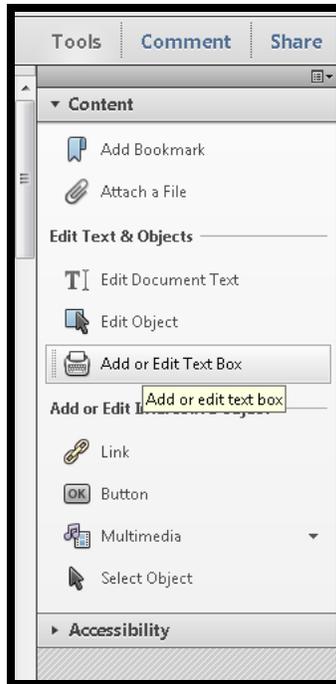


Figure 830 Summary of links created in document.

You can turn on the Link Tool in the Content Toolbar to see which links were created and to add links not created to the document. The Link Tool is found under the Add or Edit Content tools in the Content Toolbar.



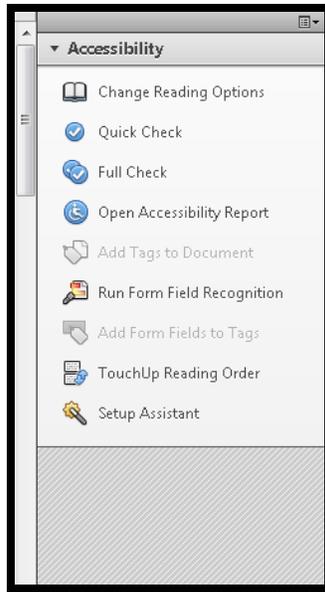
**Figure 831 Add or Edit Content in Content Toolbar.**

Once the links have been added to the document, save the document with a new version number.

#### **Step 4: Tagging the Document**

Now that the document text has gone through OCR and we've added the links, we can Tag the document. We know that this document is not a form so we do not need to add form controls. If this document were a form, the form controls would be added before the document gets tagged.

From the Accessibility Toolbar to the right of the document choose Add Tags to Document.



**Figure 832 Add Tags from the Accessibility Toolbar.**

When the Tags are added an Add Tags Report is visible to the left of the document and an Add Tags Report icon is now visible in the Navigation Panes. If you exit Acrobat you will lose this Add Tags Report.

I generally glance at the Add Tags report to see what the confidence level is just to know whether the tagging tool has a lot of low confidence items or a lot of high confidence items. If there are a lot of low confidence items I can anticipate a lot of repairs.

I immediately move to the Tags Panel to begin a closer examination of the document and what has been tagged as what type of element.

#### **Step 4: Examining the Tags Tree**

In this document I can quickly see that the content has been tagged correctly for the most part on page one. The exception is the link. I didn't use the link tool to add links as I wanted to demonstrate that the "Unmarked Links" tool did nothing for the document.

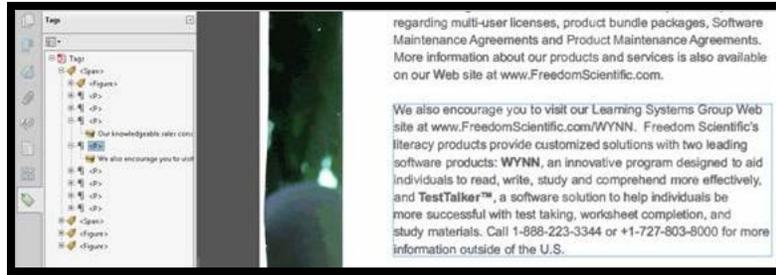


Figure 833 Link in document not identified by Unmarked Link tool.

To be fair, this link starts with www rather than http://. The only other issue on page one is that the last line of one paragraph has been put in its own <P> Tag. This is easy to repair by dragging the last line up into the previous <P> Tag so that all of the paragraph content is together.

As I move to the second page I find a few more minor repairs. The individual TOC or Table of Contents items have not been identified for the first set of TOC items. This may be due in part to the way the TOC is structured with “visual headings” to separate types of content such as training and software. As someone doing the repairs I can decide whether to repair this as one TOC or to identify each topic set as an individual TOC.



Figure 834 Table of Contents and symbols in recognized document.

As I move to the actual <TOCI> Tags I see that both the topic and page number have been tagged correctly however there is not a parent <TOC> Tag. Again this is a simple repair of adding the parent Tag.

Unlike Acrobat 9, I also see that the symbol after the word JAWS has been recognized correctly.

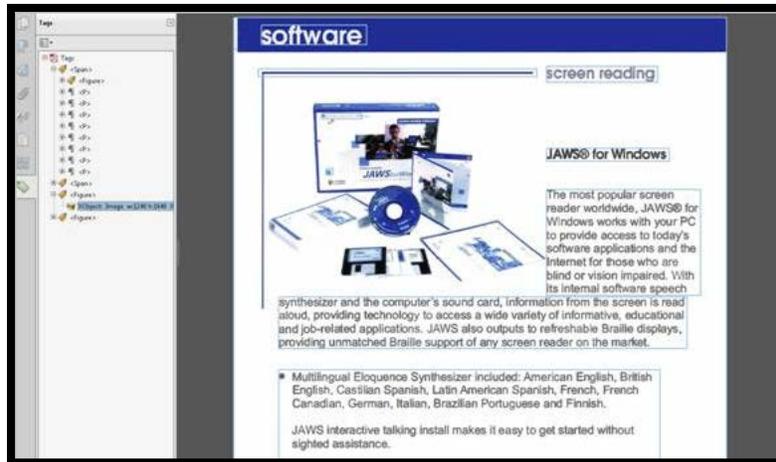


Figure 835 Page three tagged as an image.

Moving to pages three and four I find a major problem. Both pages have been misrecognized as images. This is consistent with what has happened since Acrobat 6 or 7. For some reason these two pages always get misrecognized and tagged as images.

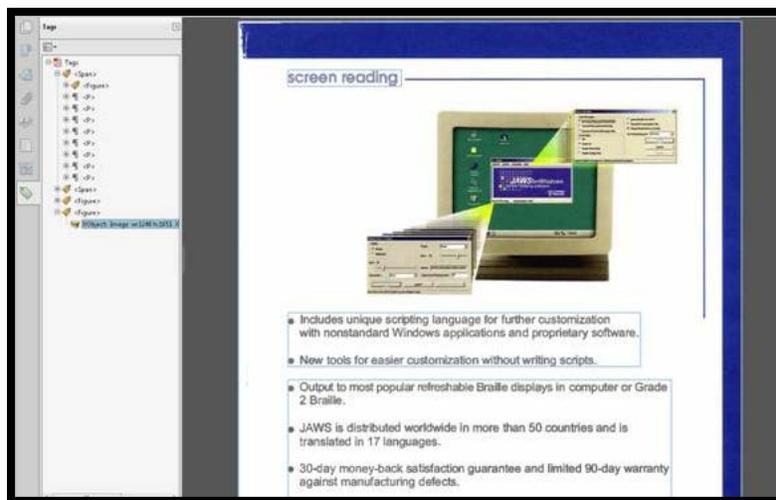


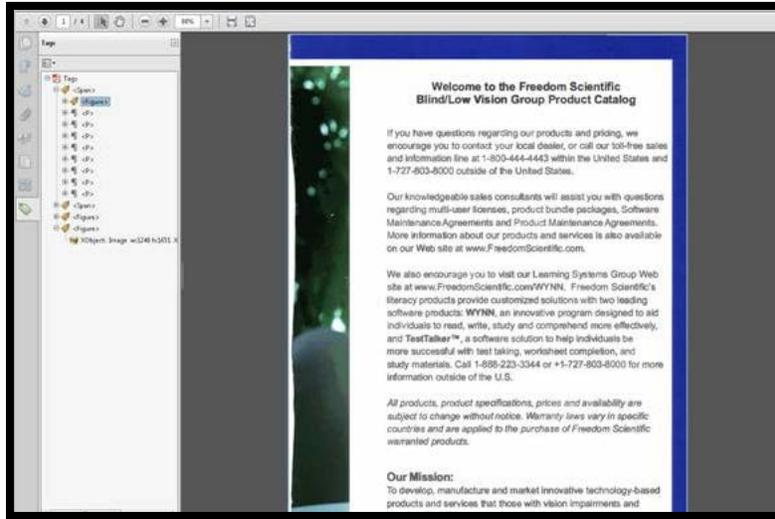
Figure 836 Page four tagged as an image.

Don't panic. As with the previous versions of Acrobat, these pages can be tagged manually.

Save the document with a new version number.

### Step 5: Repairing Page One

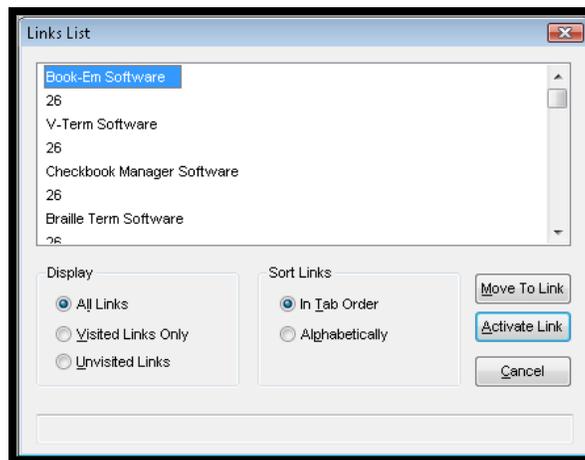
This is an overview of the repairs made to this specific document. You may or may not have to do similar repairs to your scanned documents and the repairs are presented here in summary as a guide.



**Figure 837 Page one before repairs.**

The first repair is to use the Order Panel to put the <Figure> which is the colourful border on the page into the background as an Artifact.

The second repair to page one is to make the title of the page a heading rather than a paragraph. Use F2 to make this type of repair.



**Figure 838 List of links in the document before links were repaired.**

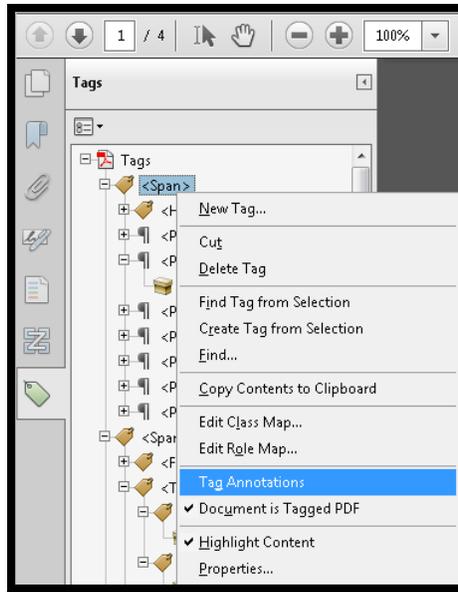
The next repair to the page is a bit more complicated. If I use the JAWS screen reader to get a list of links on the page, neither of the links on the first page are shown and the “links” for the table of contents on page two cannot be activated by keyboard. More on that when we get to page two repairs.



**Figure 839 Links on page one that are not tagged correctly.**

Looking at the Tags Tree we can see that there is no <Link> Tag.





**Figure 841 Tag Annotation option in Tags Tree.**

We then need to go to the Content Panel to the right of the document, Add or Edit Content and activate the Link Tool.

Select the first link in the document which is [www.freedomscientific.com](http://www.freedomscientific.com) and delete it using the Delete key.

The text should just be plain text in the paragraph now with no indication that it is a link.

Create a new Link Tag just under the paragraph content...to the <P> Tag but the paragraph content itself. The link is at the end of the paragraph so once we create this link we won't have to drag it to its logical place in the paragraph reading order.

Once the <Link> Tag is created, use the Select Text tool to select the web address in the document and create the link. When the create Link dialog opens choose the option to Open a web page.

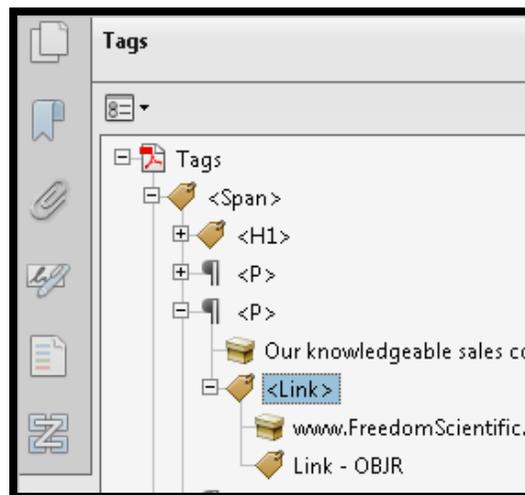
This in turn will open a dialog where you can either paste or type in the URL. Remember to type the http:// before you enter the www and the entire web address.



**Figure 842 Paste or type in the web address to create a link.**

Once the link has been created review the <Link> Tag to ensure that the Link-Objr is present and that the web address is present too. If the web address isn't present, select the <Link> Tag in the Tags Tree, use the Select Text tool to select the web address in the document and use the Create Tag from Selection to add it to the <Link> Tag. You will have to place your cursor just before the link because you will get the link cursor if you try to use the mouse to select it directly. Hold down the Shift key and use the arrow keys to select the entire web address before choosing to Create Tag from Selection.

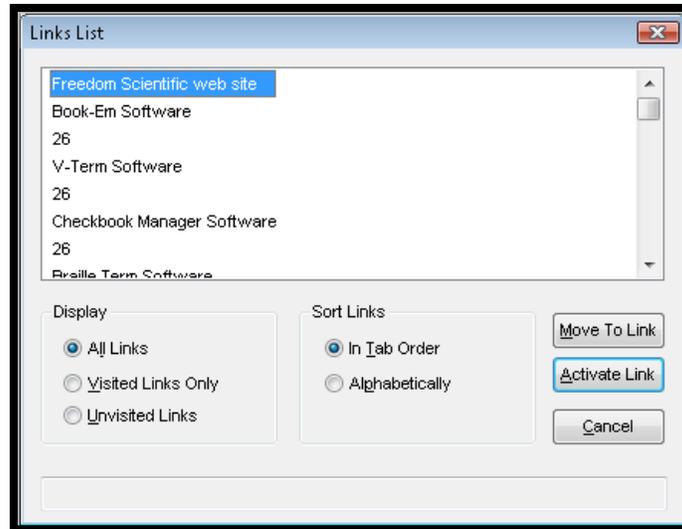
Once finished, the Tag should look like the following image...with both the Link-Objr and the web address under the <Link> Tag.



**Figure 843 Properly tagged link in document.**

This repair will be needed for all links on this page.

Once I got a list of links for this page, the link I created for the Freedom Scientific web site was in the list of links and I could activate it using the keyboard.



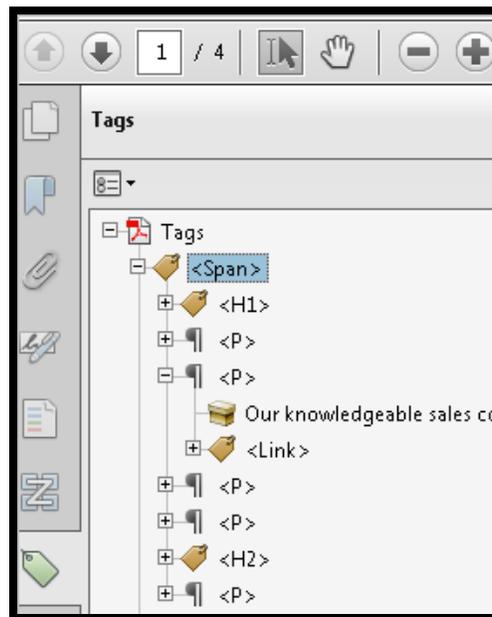
**Figure 844 New link in JAWS list of links.**

I did go into the <Link> properties and provide the link with Alt Text.

The next repair is to move the straggler line of the fourth paragraph up to the previous <P> Tag and delete the empty one.

On this page “Our Mission” needs to be an <H2>.

The following image shows the repaired Tags for this page.



**Figure 845 Repaired Tags for page one.**

Save the document with a new version number and move to page two to begin making repairs to that page.

## Step 6: Repairing Page Two

Page two represents what you might be in a document that has a table of contents. As we've seen in this book you can create a linked table of contents. In this document the tagging tool has attempted to create a linked table of contents however it didn't quite work. While we can get a list of links using the JAWS screen reader, the links cannot be activated using the keyboard.

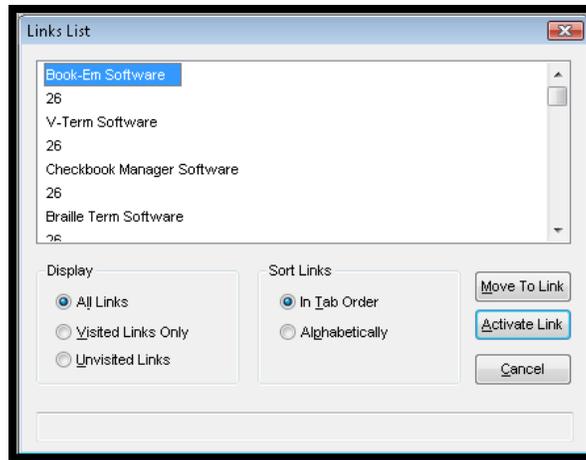


Figure 846 List of links from JAWS screen reader.

I use the list of links from the JAWS screen reader to visualize for you what the Tags do. This is one method of using the JAWS screen reader or any other adaptive technology that can give you a list of links in a PDF document to spot check the validity of the links. In this document the page numbers are separate “links” from their topic and if the Enter key is pressed on any of them, nothing happens. The person using the screen reader does not go to that place in the document.

In order for a link to be activated by both mouse and keyboard there needs to be two parts visible in the <Link> Tag: the Link-OBJR and the actual web address.

In the actual Tags for the document, we can see that the link Tag is not there or is not complete.



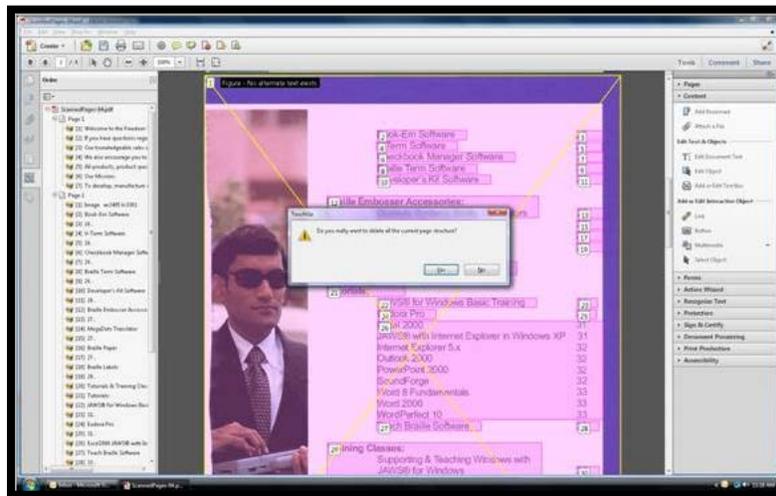
Figure 847 Incorrect link Tags on page two.

We need to make a decision about a linked table of contents at this point. For documents with an extensive table of contents where I've been instructed to try and build it, the table of contents quickly gets corrupted as you try to only select the TOCI or table of contents item for an individual entry. Links end up overlapping each other or being merged...it gets quite messy, time consuming and often doesn't produce the results you want...a linked table of contents.

In this document I'm going to use headings to identify the topics in the table of contents, support navigation using Bookmarks and remove the quasi TOC links on this page.

If I turn the Link Tool on, The "links" aren't identified on the page. This is how I know they are broken. The fact that I can't see them outlined on the page means I can't repair them. If you can't find them in the Tags Tree you can't repair them.

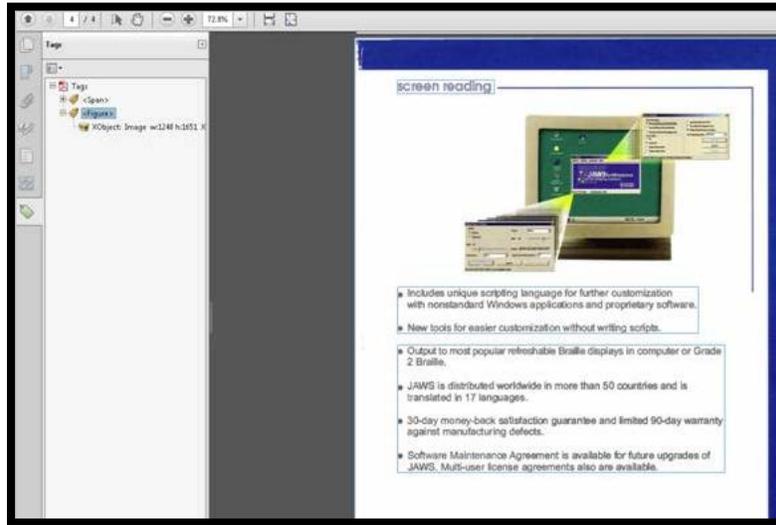
Using the TouchUp Reading Order Panel I clear the structure from this page only.



**Figure 848 Removing the structure from page two.**

When I removed the structure from page two the structure was also removed from page three. I'm not worried because I had to manually build the structure for page three anyway. On the other hand in a subsequent document this might happen so I'll be on the lookout for it. If I see this happen I can close the document without saving, open the last good copy of the document and remove the page, remove the structure and Tag the page individually then reinsert it back into the document. I can do this IF the content on the page is not tied to a table of contents. If it is, then the link is broken.

The technique I use when I have to create Tags for an entire page is to create a lot of <P> Tags so that a framework is established, and then use the "Create Tag from Selection" in combination with the Select Text tool to add the content to the page. If I need to modify any single <P> Tag to be a heading I can simply press F2 and make the edits. On a page like this the work goes faster using this method. There are also no lists or tables on this page. It is pretty simple which is why this technique works well.



**Figure 849 Structure of pages two and three have been removed.**

The next step is to build the structure on page two manually. This is easy using the keyboard to select each individual item that would have been used for a TOC. I don't want to create paragraphs because then the content would be read as a continuous flow of information rather than as separate items. It is not a list in the true sense of the word so I don't want to add a list structure that would confuse someone using adaptive technology. In this instance, paragraphs are fine.

I added a <Part> tag for page two and one for page three. This lets me keep the content separate and lets me know where I am working. Since each page was separated by a parent Tag it also retains the "structure" of this scanned document.

Add the link at the bottom of the page using the technique shown for links on page one of the scanned document.

Then move on to page three.

## **Step 7: Repairing Page Three**

On Page three of the scanned document I need to build the structure manually. I add the <Part> Tag if I haven't already and then add several empty <P> Tags. I do this by choosing New Tag and then typing Paragraph in the name of the new Tag. Once you get used to living in Tags you will know what the various Tag types are and how to do these types of shortcuts.

If I make everything a <P> or paragraph Tag and populate the Tags with their corresponding content I can press F2 on any that need to be headings or lists and quickly modify them. For lists, if there are a lot in the document I can copy and paste the right Tag once I'm in edit mode as illustrated previously in this book. You cannot copy Tags but you can go into edit mode, press Ctrl +



Before I continue I want to check the accessibility of the first three pages. I want to make sure that I haven't created more headaches than I need to. I have no doubt that my Tags are correct. What I am looking for are problem links and pieces of the background that have been flagged as inaccessible elements or elements/images with no Alt Text. For some documents it is not possible to completely get rid of these small pieces of the background and I want to check to see if this is such a document. For documents that have been manually tagged, often one space after the last period of a paragraph is flagged as inaccessible content or content not in the structure tree.

## Step 8: Examine the accessibility of Pages One through Three

Before running the Accessibility Full Check, make sure the language has been identified for the document. Press Ctrl + D to open the Document Properties dialog and move to the Advanced tab. The Language attribute list is at the bottom of the Advanced options.

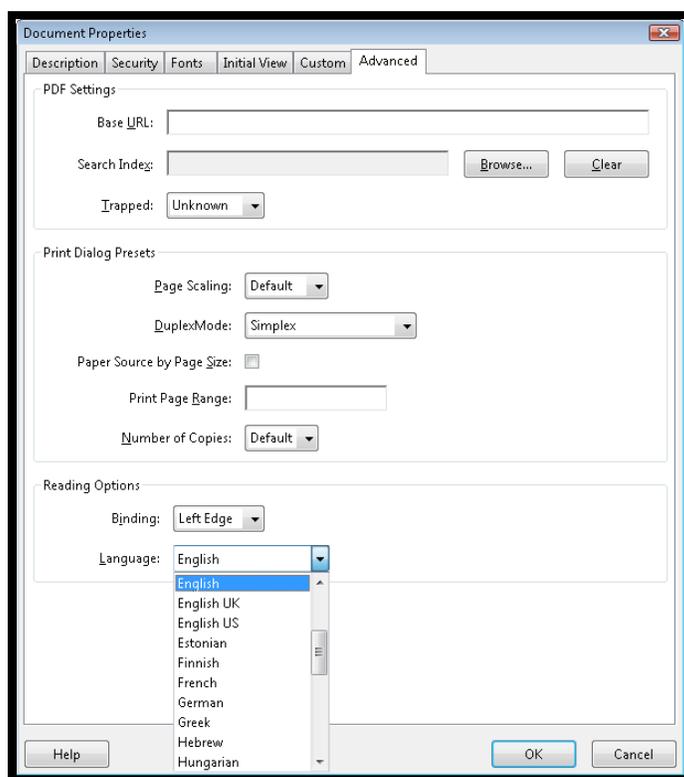


Figure 852 Advanced tab in the Document Properties dialog.

The next thing to do is to make sure that the Tab Order of content for the document is set to document structure. Activate the Pages icon in the Navigation Panes and select all pages in the document. Press the AppKey and choose Properties. The radio button to use the document structure for Tab Order should be the radio button set.

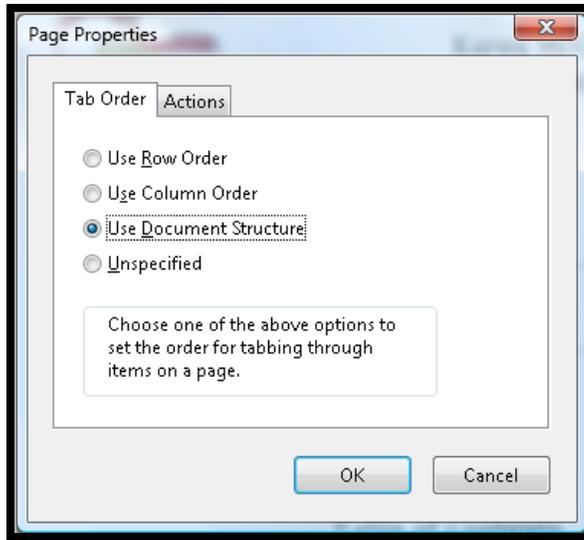


Figure 853 Tab Order in Page Properties dialog.

When the Accessibility Full Check Report opened there were errors on each page. The two errors on the first page were a web address that needed to be repaired. The and a single space after the period at the bottom of the age that needed to be put in the background. I recreated the link and used the TouchUp Reading Order Tool to put the space in the background. The Accessibility Full Check was run again and this time page one had no errors. The errors found were on page three.

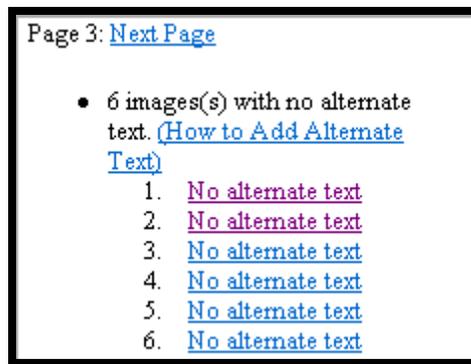
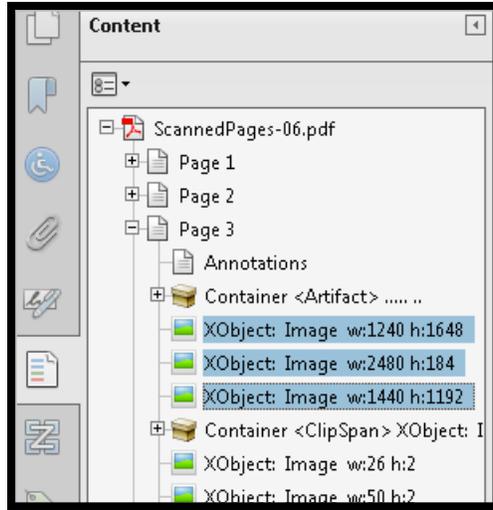


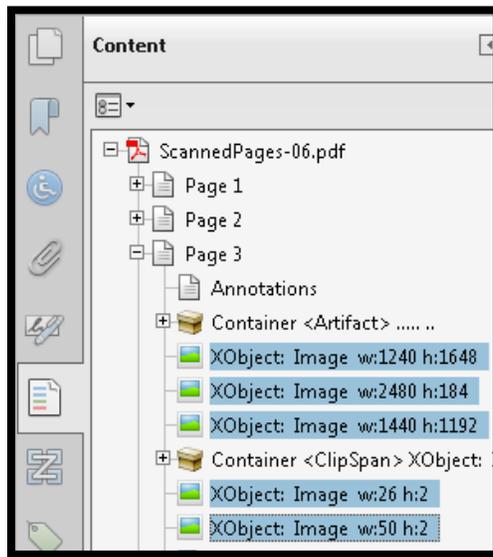
Figure 854 Accessibility report for page three.

These errors were not visible using the Tags Panel or the Order Panel. I had to go to the Content Panel in the Navigation Panes to locate them and make them Artifacts. Use the Shift and Down Arrow keys to select more than one item to be made an Artifact.



**Figure 855 Multiple pieces of content to be made Artifacts.**

If the items are not contiguous, hold down the Ctrl key and click the pieces of content that need to be Artifacts.



**Figure 856 Non-contiguous pieces of content to be made Artifacts.**

In this case the piece of content identified in the content Panel as “ClipSpan” also needed to be made an Artifact before the page could get a clean full check.

Let’s look at these items on the page.





Figure 859 Pieces of background on page three identified as inaccessible elements.

The last “inaccessible element is a space at the bottom of the page after the last period.

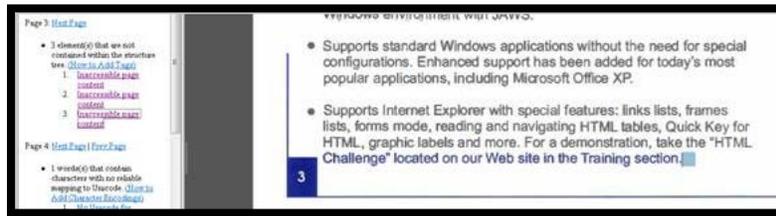


Figure 860 Space after last period on page identified as inaccessible element.

This is to be expected because I manually tagged the paragraph. It is difficult when manually tagging text to snag the single space after the paragraph without snagging other content with it...in this case it would have been pieces of the background which would have created more repair headaches. So while this is a repair, it is a minor one.

When the Accessibility Full Check is run again, the Accessibility Full Check Report indicates that the only problems with the document are on the page I have left to Tag, page four.

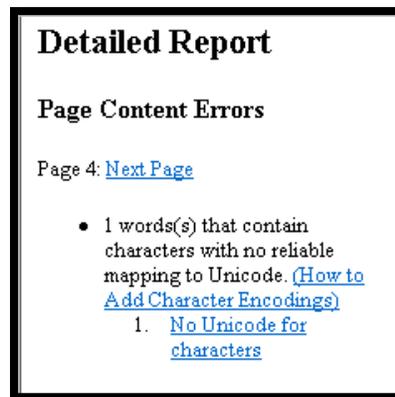


Figure 861 Accessibility Full Check Report after initial repairs were made.

Save the document with a new version number. Let’s finish the document by tagging page four and doing a final Accessibility Full Check.

## Step 9: Repairing Page Four

The first thing I did for page four was to use the Order Panel to put the <Figure> representing the entire page content into the background as an Artifact.

I then went to the Tags Panel and the Tags Tree and added an <L> Tag and empty <LI> Tags. All of the content on this page is a list.

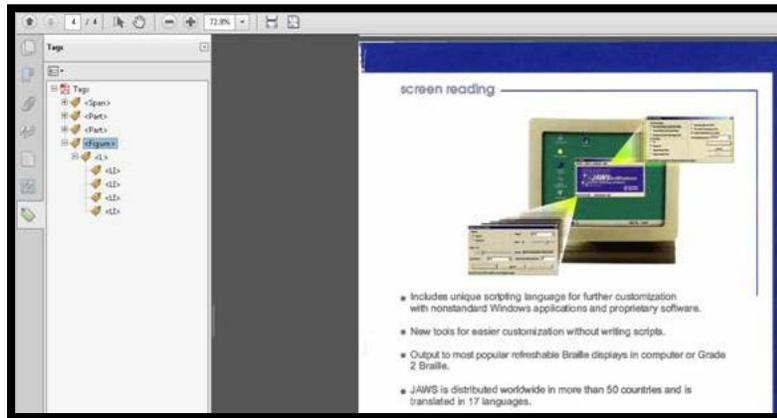


Figure 862 List structure added for page four.

After adding the content I performed an Accessibility Full Check. Unfortunately for me there is a problem with the page that often occurs and can't be "repaired." Fortunately for this chapter in the book there is a problem that often occurs and can't be "repaired."

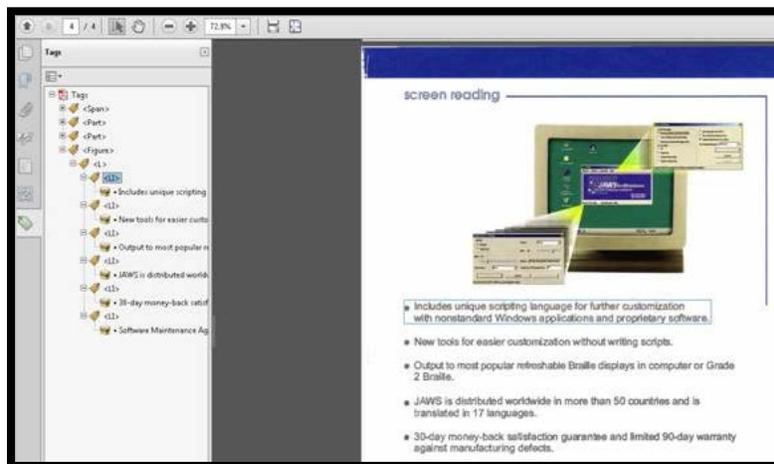


Figure 863 Content added to list structure for page four.

The problem is that the list I've created has been identified as an image with no Alt Text.

The preceding image shows that the Tags I added have indeed created a proper list containing appropriate content.

When I move to the Order Panel, the “text” is misrecognized by acrobat as an image.

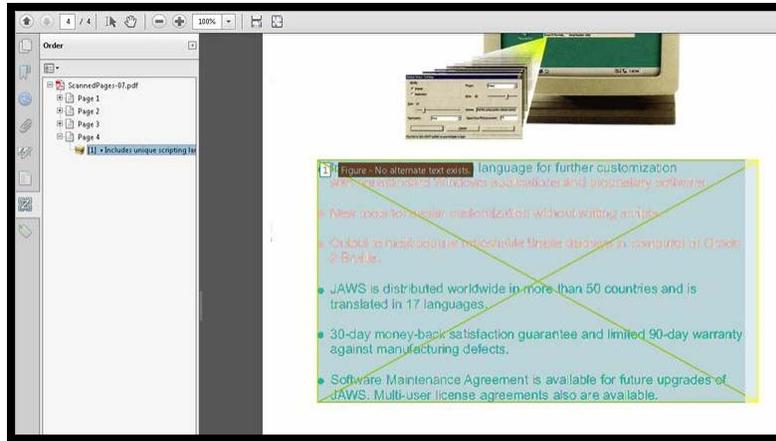


Figure 864 Text misrecognized as image.

The following image is a close up of the misidentified text on page four.



Figure 865 Problem content identified by Accessibility Full Check.

I used the TouchUp Reading Order Panel to make this text. I knew this was text and not an image because I could select the content and create my list Tags.

I then had to go back to the Tags Tree and create my list again. This is where having the ability to select text on a page and identify it as a list, building the structure in the Tags Tree would be useful to have. Maybe in Acrobat 11?

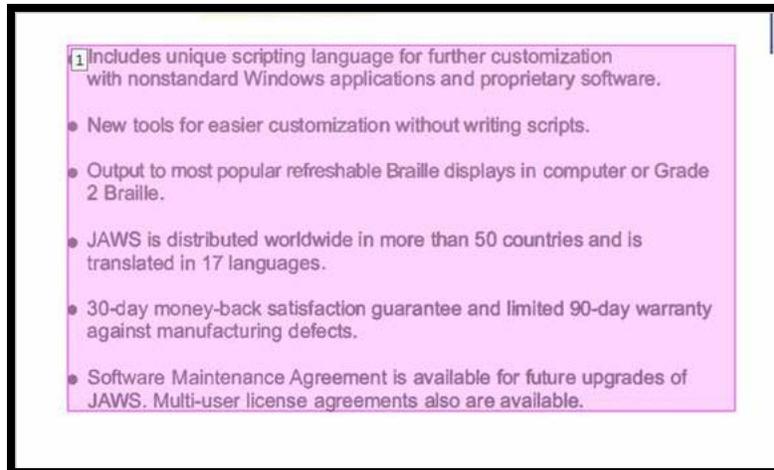


Figure 866 Text on page four now identified as text.

When I perform another Accessibility Full Check, the only remaining issue in the document is a piece of the background identified as having no Unicode character.

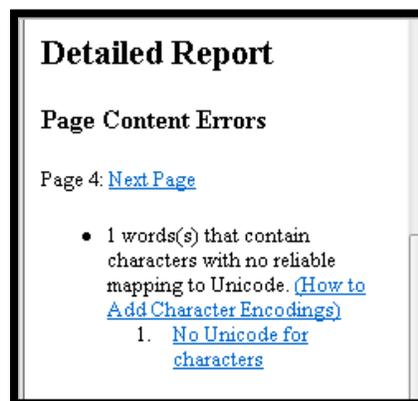


Figure 867 No Unicode character accessibility error.

This one small problem represents a huge headache. If your organization requires a clean Accessibility Full Check, this is not possible with this document.

Typically non Unicode characters are either non-standard bullets that have been used in a document or linguistic characters that have been drawn in applications such as Illustrator. We've talked about this type of character in previous chapters in this book.

Not to disappoint, always eager to show you something new, the non-Unicode character in this document is a piece of the image of the computer monitor that represents a form control!

And it doesn't show up in the Content, Order or Tags Panels.

I tried using the TouchUp Reading Order Panel to make this element an Artifact but that didn't work.

This element will never be flagged by adaptive technology. It is not part of the content that contributes to the understanding of the content. It is a piece of a computer monitor that is an image on the page.



Figure 868 Piece of image flagged as non-Unicode character.

The entire image? The entire image is shown below.



Figure 869 Complete image containing the small non Unicode character error.

I even tried tagging this page separately, changing the order in which I added content, nothing I tried got rid of the non-Unicode error from the Accessibility Full Check and some of the other approaches created more problems.

In this specific document this non Unicode character cannot be repaired. It doesn't affect the accessibility of the document. BUT if your organization mandates a clean Accessibility Full Check as part of its definition of what an accessible PDF is, this document will never pass that checkpoint.

Save the document with a new version number. This will be the final version.

## OCR in Adobe Acrobat 8

This is one of those topics where the outcome is to have both Adobe Acrobat version 8 and Acrobat X installed on separate computers if you are working primarily with scanned documents. Some people have Abbyy Fine Reader installed as well on a computer to perform the OCR, resave the document retaining the formatting as an untagged PDF and then add the Tags and do repairs in Acrobat. The tools you have will depend on the types of scanned documents you are working with. For example if you work with textbooks you probably already have Abbyy Fine Reader; if you work with journal articles or smaller documents the OC in Acrobat may be just fine..

Why do I need Adobe acrobat 8 for scanned documents?

In Adobe Acrobat 9, Adobe introduced “ClearScan” which replaces the old OCR software built into Adobe Acrobat. While ClearScan has the potential to be a better OCR tool, it does not always identify suspect content or elements in your PDF documents. As a result some of the content is misrecognized but not identified as misrecognized content so doesn’t read properly once tagged.

You can, however, do this using Adobe acrobat 8. For documents with symbols or web addresses, this makes a huge difference in the amount of repair time.

For example, in the document we will be working on there is the registered trademark symbol after products that are registered trademarks of Freedom Scientific Blind/Low Vision Group. Using ClearScan they are “recognized as “~>” rather than ® which would be read by adaptive technology as the registered trademark. Using Acrobat 8 they would be read as “~>” without the quotes. This has no meaning or reference point for anyone using adaptive technology. When the “Find all suspects” is activated, we are told that there is no suspect content. Without the ability to find and repair suspects, this cannot be fixed in Acrobat 9.

With ClearScan you don’t realize this mistake was made until you Tag the document. The visual document looks right, the trademark is represented by ® but the “interpretation of it is not. I am currently investigating a way to repair this in Acrobat 9 but it will add time to repairing a document with these types of symbols.

The good news is that unlike Adobe Acrobat versions prior to version 8, the integrity of Artifacts has been retained. In the days of Acrobat 7, when the OCR tool was used, many pieces of the background that should have been Artifacts were tagged as “Figures with no Alt Text.”



Figure 870 Scanned document in Acrobat 7 showing pieces of background tagged as figures with no Alt Text.

This required some innovative repairs. If you experience this type of mistagging, hold down the Ctrl key and select multiple instances of mistagged background using the mouse and then use the TouchUp Reading Order Panel to put them all in the background at once. This saved some time but the initial panic at seeing this mess was memorable.

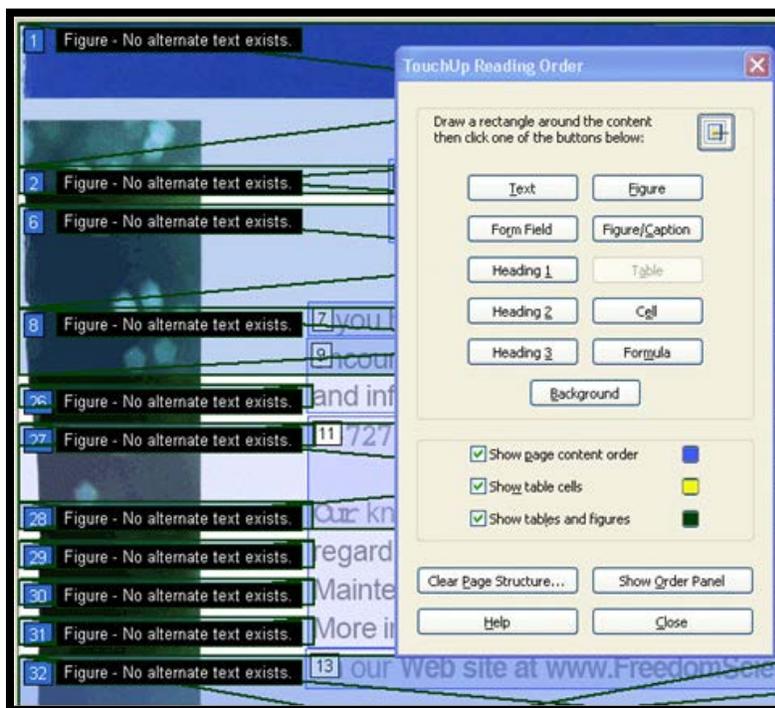
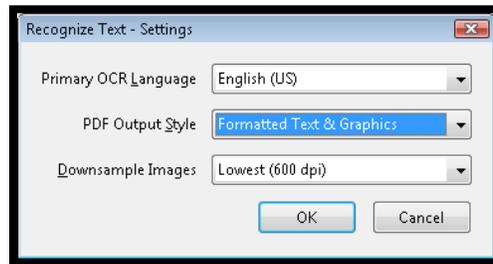


Figure 871 Adobe Acrobat 7 scanned PDF document with several pieces of background selected for repair.

I used the same print document for this revision of my book so that we can examine the evolution of the OCR software in Adobe Acrobat.

In Adobe Acrobat 8, when you choose to recognize using OCR and access the settings by activating the Edit button, you want to choose “Formatted Text and Graphics” as the output style. This will let you add the Tags and make the document accessible.



**Figure 872 Formatted Text and Graphics option for scanned documents in Acrobat 8.**

It will also let you find text that hasn't been recognized properly. You cannot use the ClearScan tool in Acrobat 9 and then take the file into Acrobat 8 and find the suspicious text. Once you choose to use ClearScan there is no ability to make any contextual or spelling repairs to the document.

## The Process Begins!

In this case, our document has been created specifically as a learning tool for this workshop. Freedom Scientific Blind/Low Vision Group has given permission to scan a portion of one of their print brochures to assist with the demonstration of tagging difficult documents. This document has a bit of everything including a table of contents, images, links, and lists.

### Step 1: The TIF Files

Many of the scanned documents start out as TIF or TIFF which stands for “Text and Image File Format.” Others start as untagged PDF. In an effort to cover all aspects of this type of file, I am going to start with a TIFF file, or rather a series of TIF files - one for each of the four sample pages.

These pages of the brochure were scanned into Adobe Acrobat using the File > Create PDF > From Scanner option.

If you choose to use File, Save As, TIF each page will be separated as an individual TIF file. If you choose to save the document as a PDF document, they will be kept together. One of the reasons for saving as a TIF file is that if you are working in an alternate media production centre you will be able to access the TIF file using other OCR software such as OpenBook or WYNN, the K-1000 or K-3000, OnmiPage Pro, TextBridge, or Abbey Fine Reader. You would use these tools to create Word, RTF, or DAISY versions of a document.

For this reason we are going to look at taking TIF documents and making them an accessible PDF document.

**Note:** Starting at this point, I always save several versions of documents when working with scanned PDF. You never know when you won't be able to do something and being able to go back to a previous version is critical to keeping down costs of repairs. The process identified in the following steps may actually result in 20 versions or more of the document.

## Step 2: Inserting Pages into a PDF Document

As it turns out, this will also give us practice at building a document from individual ones!

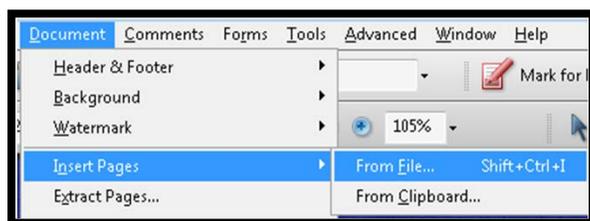


Figure 873 Recognize using OCR menu and sub-menu.

There are two ways to create the single PDF document.

### Save as Single PDF Document Option 1

1. Open the first page which is a TIF document. You will need to choose "Files of Type" and then all Files in order to see the TIF files.
2. Press Ctrl + Shift + the letter I to insert a page into this new PDF document. Locate the next page and insert it after the current one. Repeat this process for all pages you want to add to the PDF document.

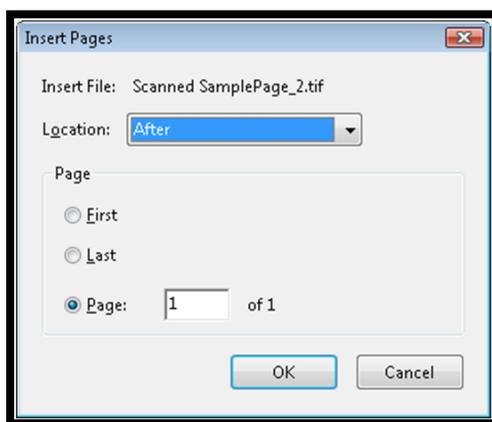


Figure 874 Insert Pages dialog.

Once the pages are all in the same document, save the new PDF document with a meaningful name.

#### Save as Single PDF Document Option 2

In the File Menu under Create PDF there is an option to “Merge files into a single PDF.” If you choose this option, a dialog opens and you can add the files that you want to create the PDF document from.

**Note:** One of the radio buttons in the upper right corner allows you to create a PDF Portfolio. DO NOT do this. We need a single document to work with and we need it to be a PDF document not a Portfolio of documents.

Make sure you add the files in the order in which you want them to appear in the final document. If you don't you will have to reorder them in the PDF document or delete this version of the document and start again.

### Step 3: Performing the OCR

We now have a PDF document; however, it is still a series of images and if we tag it in its present state, we will only have image or <Figure> tags. We need to perform OCR on this document so that we can then tag and repair it.

In the case of a document that is going from a TIF file or a scanned PDF file, there will be repairs needed, most of them extensive, and this should be expected.

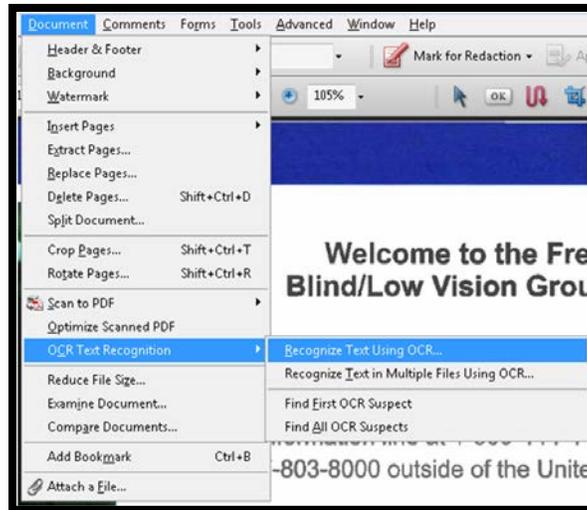
Let's review our hierarchy of tasks:

1. Is the document scanned?
  - a. If yes, perform OCR.
2. Does the document have form controls?
  - a. If yes, add the form controls.
3. Does the document have links?
  - a. If yes, then use the Advanced, Document Processing, Create links from URL's.

Once these tasks are addressed, we can add the Tags to the document.

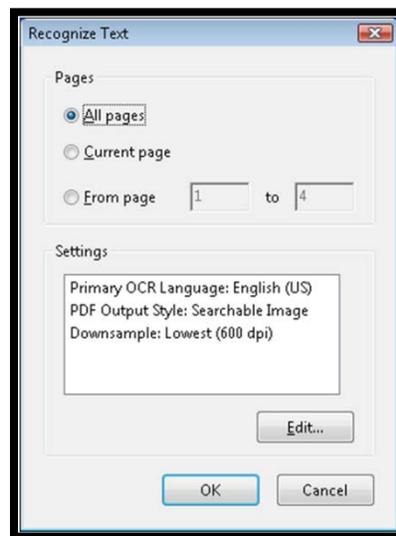
The next step in the process is to perform OCR or text recognition on the PDF document. This is done in Adobe Acrobat.

Choose Document, OCR Text Recognition, Recognize Text Using OCR.



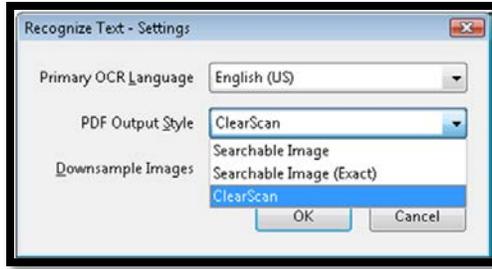
**Figure 875 OCR Text Recognition menu and sub-menu**

A dialog opens where you can determine which pages you will perform the OCR on. Typically you would choose “All.”



**Figure 876 Recognize Text dialog.**

The next step, before performing the OCR is to tell acrobat what the output will be. As mentioned, in the past the output has been “Formatted text and Graphics.” In Acrobat 9 we want to choose “ClearScan.”



**Figure 877 Recognize Text Settings dialog.**

To choose the ClearScan option activate the edit button in the Recognize Text dialog. This opens the Recognize Text Settings dialog. The PDF Output style is the middle list box.



**Figure 878 Recognize Text Settings showing all settings.**

In Adobe Acrobat 8, the next logical step would be to go back to the Document, OCR Text Recognition menu and choose “Find All Suspects” from the sub-menu. Once all suspect text is found, return to the OCR Text Recognition sub-menu and choose to “Find Next Suspect.” The option to find suspect items is not available in Acrobat 9. If you do choose to activate this process in Acrobat 9 you will always get the message that no suspects were found even though you will eventually see Tags containing “~>” or other malformed content.

**Note:** If a suspect in Acrobat 8 is a symbol or language character, you can use Word to type the character or symbol and copy and paste it into the Suspect dialog as the correct “spelling.” This is handy for copyright and trademark symbols.

It is hoped that as the ClearScan tool for scanned documents evolves that we will have the ability to repair misrecognized text in scanned documents. For now the only solution is to use Acrobat 8 if you find significant problems with recognized content.

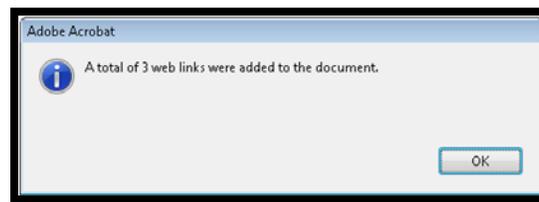
It would be at this step that if we could not make a repair to text that we would then switch to the “Fit Text to Selection” tool to touch up any text that we can’t repair using the suspects tool. If you are using Acrobat 8, you will be able to identify these types of errors and use the “Fit Text to Selection” tool to repair them. If you are using Acrobat 9 you won’t. You will be stuck with whatever

the ClearScan process produces. This may create an inaccessible document in that the content may be gibberish in some places.

#### **Step 4: Create Links from URL's**

The next step is to try and identify all the links in the document using the Advanced, Document Processing, Create Links from URL's.

Immediately we can see a problem with this. The links in the document do not begin with http://... But rather with "www" which means that if they are recognized and tagged, we still will have repairs to them.



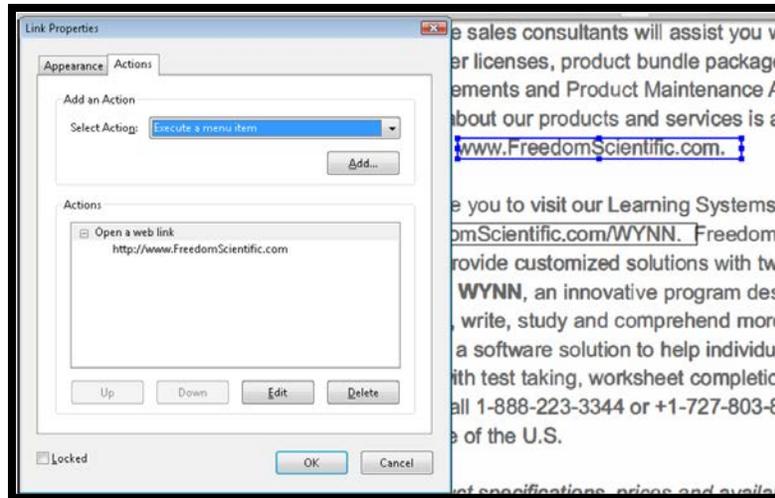
**Figure 879 Create Links from URL's notification of two links in document.**

**Note:** You can tell if a link can only be activated using the keyboard by checking to see if the <Link> Tag is present and that both link information such as http prefix is present as well as the Link - OBJR attribute. If the Link-OBJR attribute is missing the link cannot be activated using the keyboard even if it shows up in a list of links from a screen reader.

When you run the Create Links from URL's tool and receive a message dialog indicating that fewer links were created in the document than actually exist in the document, you will need to add these manually.

What do we mean by this?

Switch to the Links tool in the Advanced Editing Toolbar. All links in the document should be visible.



**Figure 880 Link in the document with Link Properties dialog open.**

In this document for example, we are told that some links were created. If we use the mouse to open the context menu for a link and choose Properties, and then the Action tab we see that although the web address began with “www,” it appears that the complete web address has been implemented. We will need to verify this once the Tags are added to the document.

At this point we will trust that the links that have been created will be correct.

The next step in the process is to find any links that were not created and using either the Select Text tool or the Links tool to create any missing links in the document before you add the Tags.

We do have an example of this in the sample document. Although this is a print document, there is blue text that directs people to look at the Freedom Scientific HTML Challenge. We could make this a link for the PDF version.

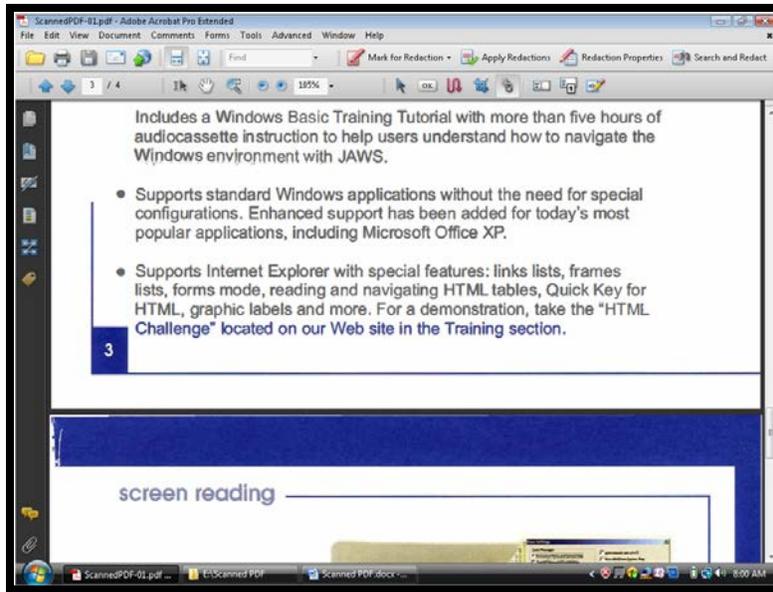


Figure 881 Text in document example directing people to look at the HTML Challenge.

For this we'll use the Select Text tool.

We can't use the link tool because it will not let us span two lines of content without having the link apply to all of the text on both lines. The best way to create this link is to use the Select Text tool.

Once the text is selected, press the right mouse button to open the context menu for the selected text and choose "Create Link."

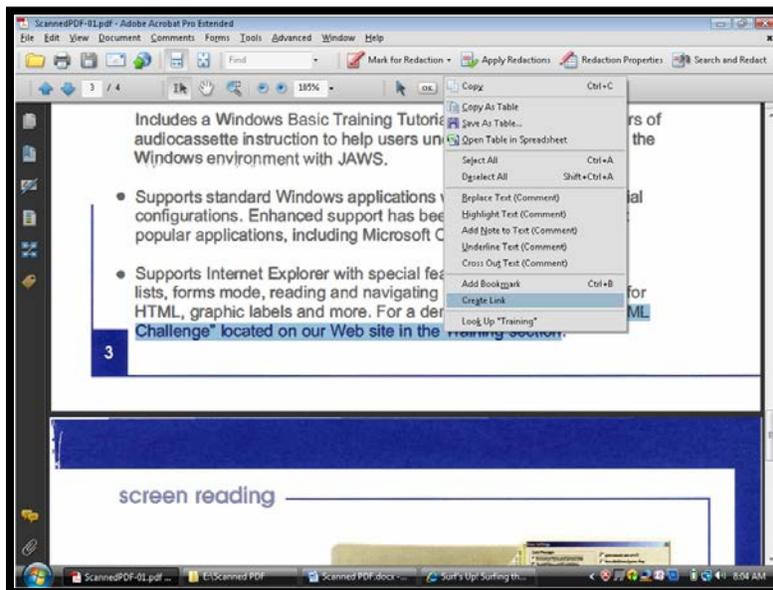
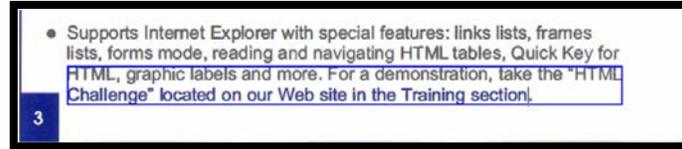


Figure 882 Selected text for link and context menu open.

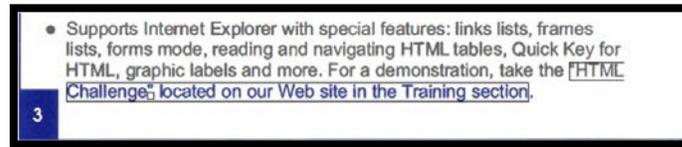
This will guide you through the standard Create Link dialog.

Once the link has been created, don't panic if you see that both lines of text seem to be "in the link parameters."



**Figure 883 Both lines of text appear in the link parameters.**

Once we Tag the document and review the Tags, we will see that only the text we've selected has been made into the link.



**Figure 884 Link identified properly viewed through the Tags Tree.**

Once all of the links are added to the document, it can be tagged.

### **Step 5: Add Tags to the PDF Document**

We've now worked through the hierarchy of tasks and have answered all the questions. We've performed OCR, we are not working with a form, and we've added links to the document. We can now add the Tags to the document.

Choose Advanced, Accessibility, Add Tags to Document and the document will be tagged. The repairs now begin in earnest!

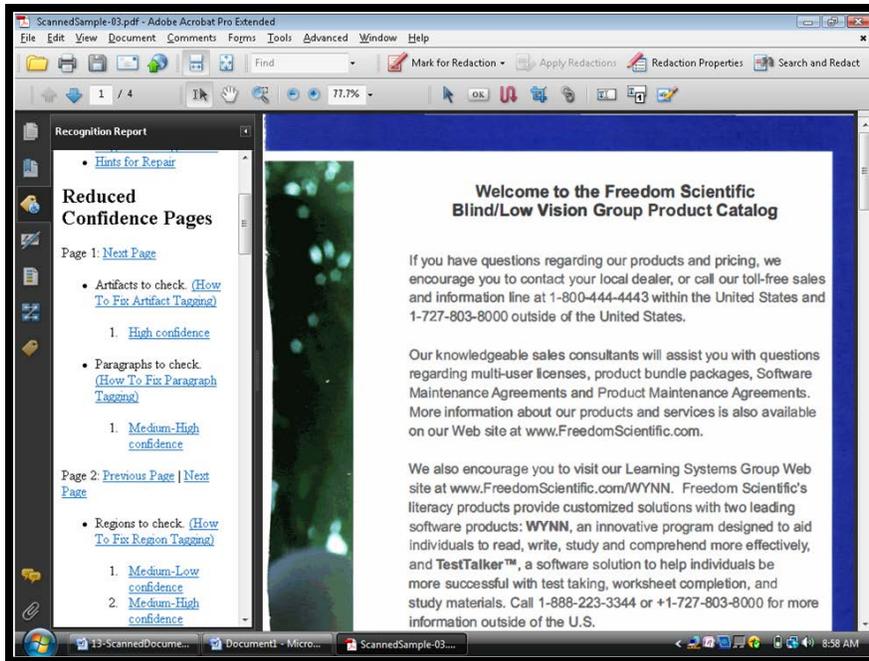


Figure 885 Add Tags Report for scanned document.

The Add Tags Report will open in the Navigation Panel on the left of the document. It will have its own icon. I generally review one or two items to get a feel for the types of issues it thinks exist in the document. This is, after all, a mechanical tool. Use it to identify types of repairs needed. I seldom go through every item in an Add Tags Report. There simply isn't enough time.

The first couple of items seem to indicate that some of the text has been flagged as questionable content. Since I go through the Tags Tree of documents, I make mental note to look for these types of confusing Tags.

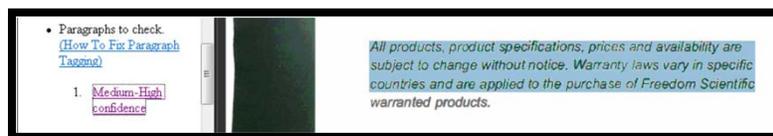


Figure 886 Medium confidence tagging problems might exist.

Consistently this printed brochure has not recognized or tagged the last two pages properly since Acrobat 5. I'm not sure why but it is interesting that this is a consistent and persistent problem. Even using the new ClearScan tool there seems to be something about these two pages that impedes OCR. But then it gives us practice!

The assumption would be that both of these pages, unlike the rest of the brochure were created as images of pages rather than using text and images to create the look of the page. This is common in documents that have come from desktop published applications. Remember that the intent of

desktop publishing is to produce camera ready artwork for printers not to create digital documents that can either be “camera ready artwork” or “accessible digitally.”

Then again, it might be the way the scanner scanned the page or the way the OCR tools in Acrobat from version 5 on [including the new ClearScan] interpret the scanned page. There are many variables when working with scanned documents.

One test is to see if we can select the text on the pages and create the Tags manually. Again consistently with these two pages I’ve been able to do this and add the text to the pages then ensure the Tags are the correct ones for the content.

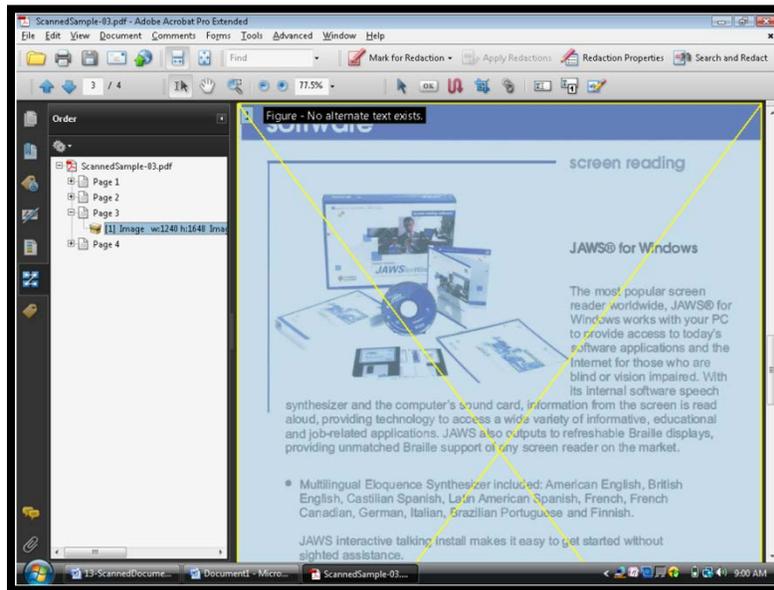


Figure 887 Page 3 recognized as a figure.

After briefly looking at the Add Tags Report, I switch to the Order Panel in the Navigation Panel. This gives me a more global view of the problems with the document. This is a scanned document which means that the tendency to have pieces of figures in the PDF document are increased. This is what I am primarily looking for at this point. Are there any pieces of the background that have been tagged as part of the document. If I can get those out of the way visually, I can get a better idea of what the actual repairs are. While I am doing this I will go ahead and add the language to the document and change the Tab Order globally to use the document structure. Try to get all “standard” Accessibility Full Check flagged items out of the way when you begin working on a document. If you do this, they will follow through the other iterations of the document as you work on it and you won’t have to remember to do these things at the end of the repair process or after you perform and Accessibility Full Check.

Now I can focus on the content of the document and not be distracted by irrelevant content. A lot of my work will also be done depending on how much of the background and decorative images are tagged as figures with no Alt Text.

Let's look at some of the problems the add Tags Report identified for this document.

On page one it wants me to check the tagging of the text for the entire page.

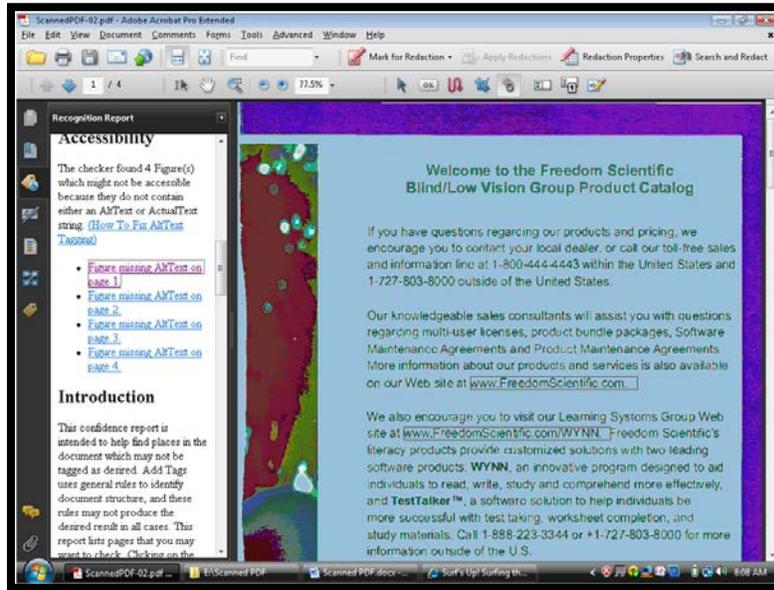


Figure 888 Add Tags report showing first page problems.

If I quickly switch to the Order Panel and look at the same page, I can see that the text has been identified properly.

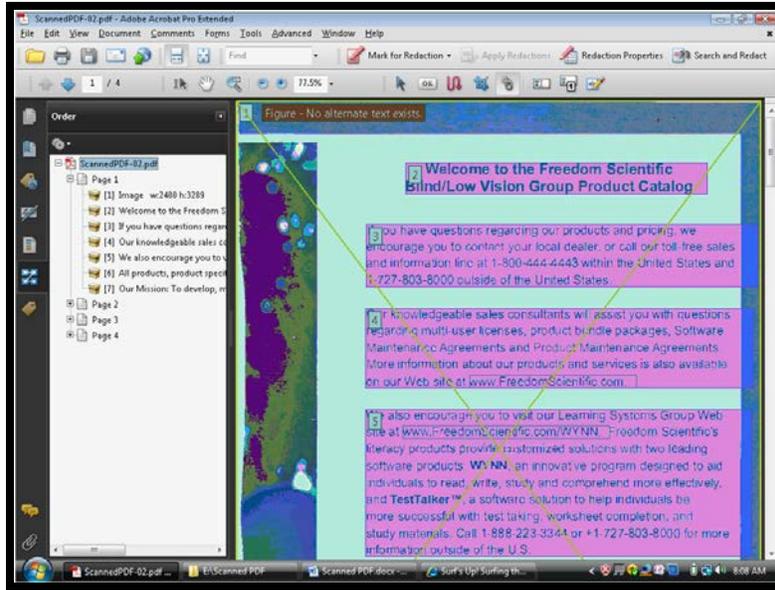


Figure 889 Order Panel view of page one.

While in the Order Panel I can reassign the <Figure> Tag, which I don't need on this page, to be in the background.

To do this I activate the right mouse button on the first page element in the Order Panel and then choose "Tag as Background" from the context menu.

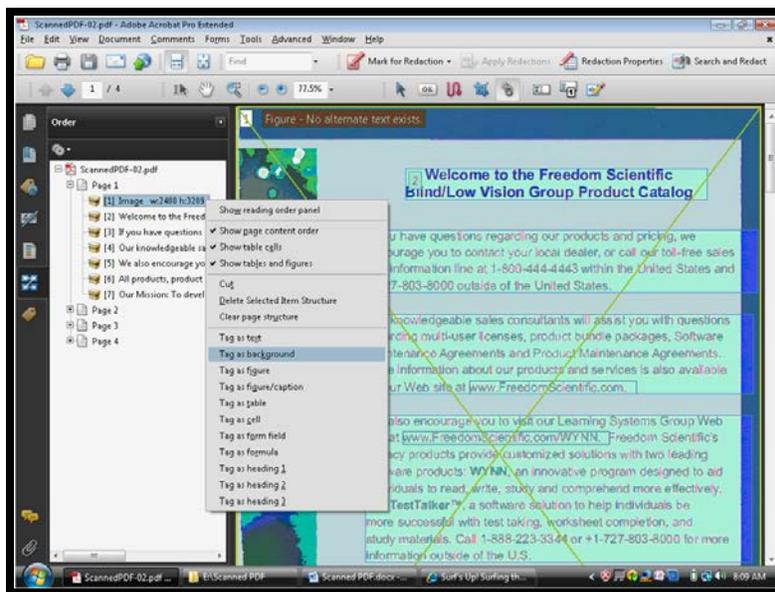
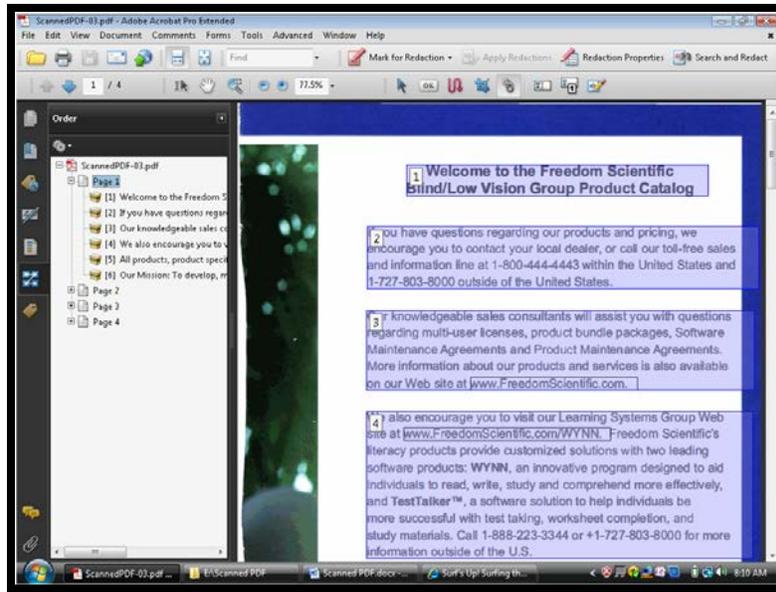


Figure 890 Context menu for figure element on first page.

Once this repair is completed, we can easily see the content tagged on the page.



**Figure 891 Page one with figure assigned to background.**

While we are in this view we can also check on the logical reading order of the content. The pieces of content should start with the number 1 at the top of the page and then follow consecutively to the end of the page.

By combining tasks we save time.

Switch to the Add Tags Report and select some random problem areas to examine. This will give you a good idea of the repairs that you will have to do.

## **Step 6: Repairing the Document**

With pages three and four, before I reassign the <Figure> Tag to an Artifact, I want to be sure that the text isn't associated with the figure. In this case, if I first reassign the figure and it turns out that the text is associated or in some way attached to the figure element, it means I won't be able to select it and Tag it properly.

One of the "small discoveries" you'll make about working with scanned or desktop published documents is that sometimes if you can select the text and Tag it before you reassign the errant <Figure> as an Artifact it works. Sometimes if you reassign the errant <Figure> Tag first, you won't be able to select any of the text and Tag it. This is one of the reasons I always try to Tag any text that hasn't been identified before I start reassigning errant <Figure> Tags as Artifacts.

It is also true that sometimes you can't identify text blocks using the TouchUp Reading Order Panel but you can select them using the Select Text Tool and the Tags Panel and then Tag them into the document. This is another reason having the last clean version saved as an iteration of the process

is helpful. You can go back to the point just before you tried troubleshooting tagging errors and proceed with the solution that works best.

For some scanned or desktop published documents it is important to know at the start what pieces of content you can and can't tag. This determines whether any content will be missing from the document and how creative you will need to be in order to provide optimal accessibility for this type of document. There will be documents for which you won't be able to Tag some of the content. You won't even be able to make it a <Figure> with Actual Text.

If you have a document with "wonky fonts" or non-Unicode or non-standard fonts; or, if you have a document where fonts haven't been available to the document author and characters were created in a graphics application, these documents will not be accessible even if you get a clean Accessibility Full Check.

Why will the document be unreadable?

Words won't be pronounced properly and will sound like gibberish. For this reason you should review the content of the Tags to ensure that the text IS readable and not just "present and accounted for" as a Tag. This is good practice even with documents that have not been scanned. You never know what is under the hood until you look.

On page three of our example document it appears that the entire page content has been tagged as a <Figure>.

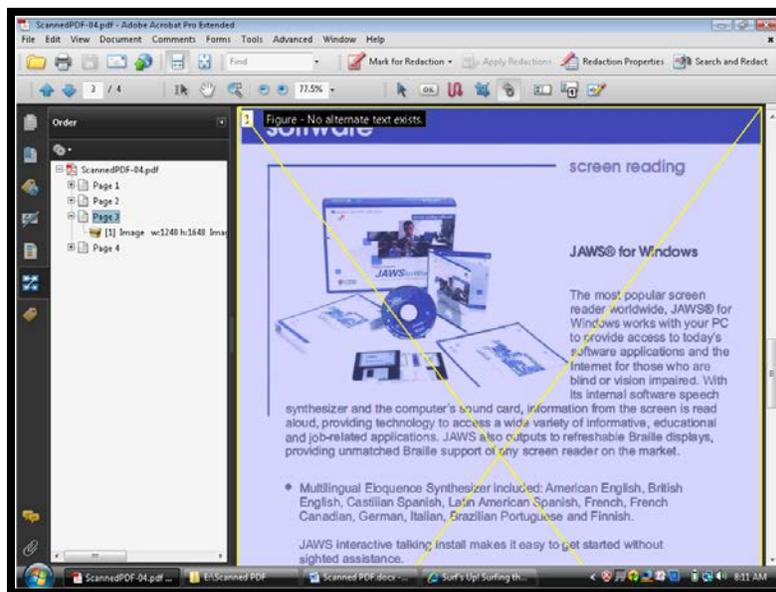
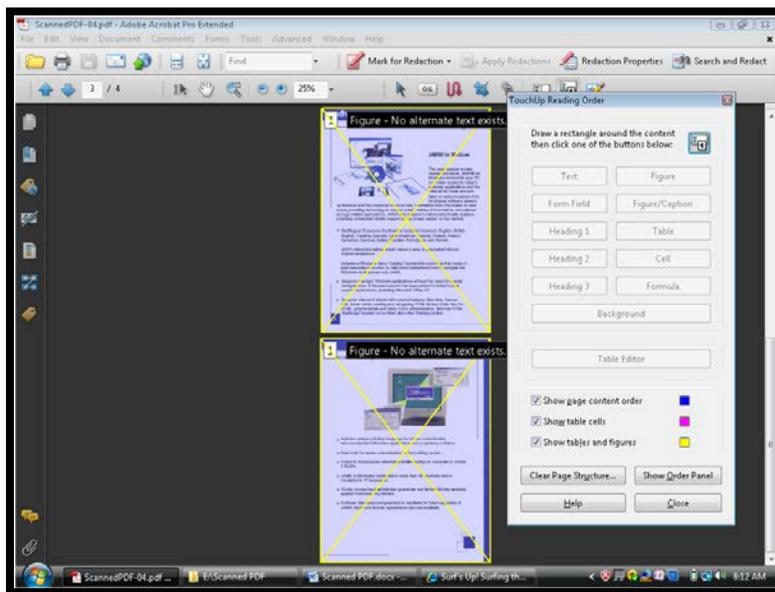


Figure 892 Page three tagged as a figure.

We need to see if we can Tag the text.

This is where using the Zoom Tool comes in handy. If I activate the TouchUp Reading Order Panel, it will cover most of the page even if I close the Order Panel. I won't be able to accurately select text.

I reduce the zoom to about 50% or 35% so that I can see all of the content I need to select. The repair of this document was done on my laptop using an external monitor. You will need to gauge a Zoom level for your own computer and monitor.



**Figure 893 Page three zoomed to 35%.**

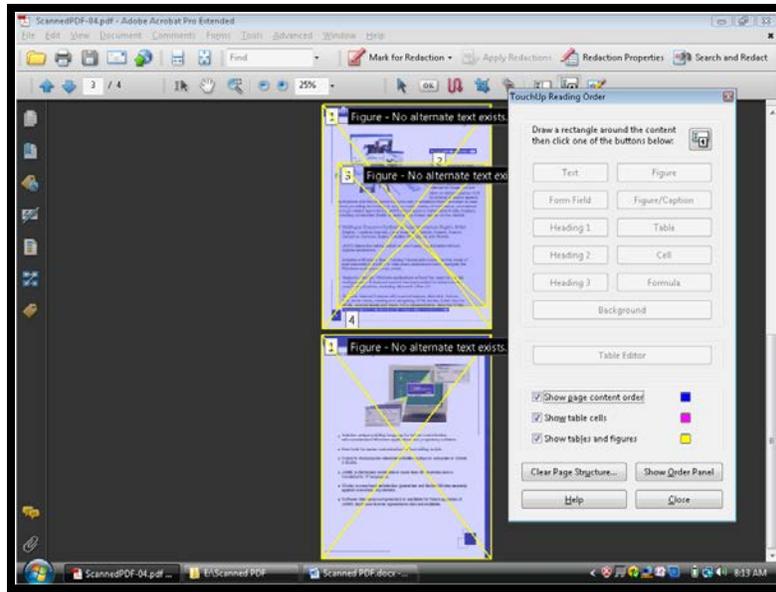
At this level I can also see that the same issue occurs on page four.

I use the mouse to select the heading for the page, Tag it as a heading and then select the lower half of the first paragraph and Tag it as text.

Why would I do this and not select the entire paragraph?

Again experience dictates that it is easier and faster to try to select a shaped paragraph using this method than trying to select the entire block of text. Because the page was tagged as a <Figure> and there is a figure to the left of the first part of the paragraph I need to be careful in selecting that content so that pieces of the background aren't attached to it. If I can select the lower half of the paragraph and Tag that part of the paragraph easily, I can then turn my attention to the piece of content above it knowing that the lower half of the paragraph is tagged.

I may have to switch to the Tags Panel to Tag the top half of the paragraph. I won't know until I try to Tag it here.

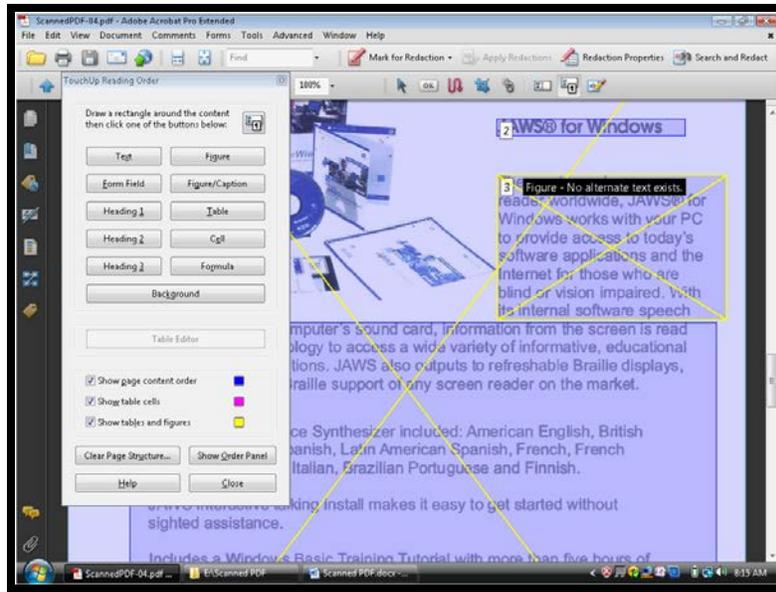


**Figure 894** Page three with two pieces of text reassigned.

The top part of the paragraph is now hidden under other Tags. I need to adjust the Zoom so that it is more visible and easy to select. I put the Zoom to either 75% or 100% again depending on your monitor.

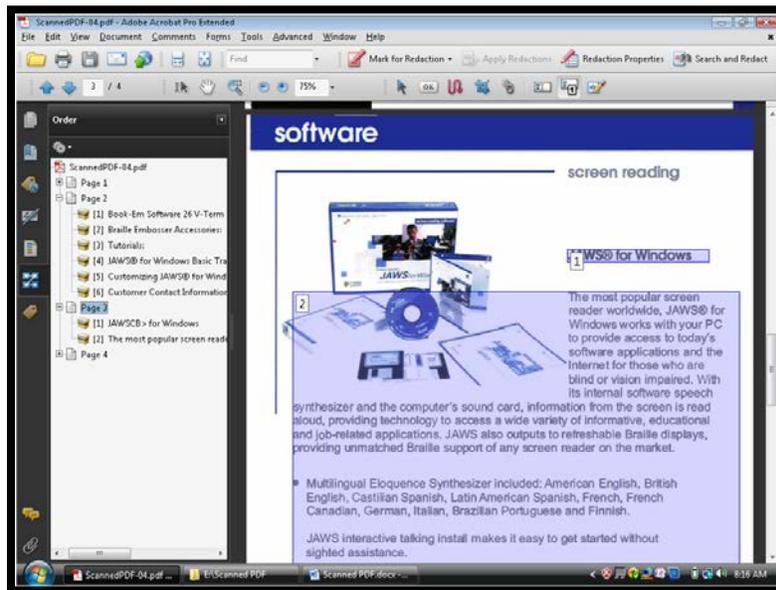
I can then use the mouse to select the top part of the paragraph and reassign it. Notice that it has been identified as a <Figure>.

**Note:** Normally you cannot “reassign” content from a <Figure> to text. With some scanned or desktop published documents, because the tagging process was not sure what to do with content, it “took a guess.” In these instances it is possible to “reassign” a <Figure> to text. Know that for the most part you will not be able to do this.



**Figure 895** First part of paragraph tagged as a figure.

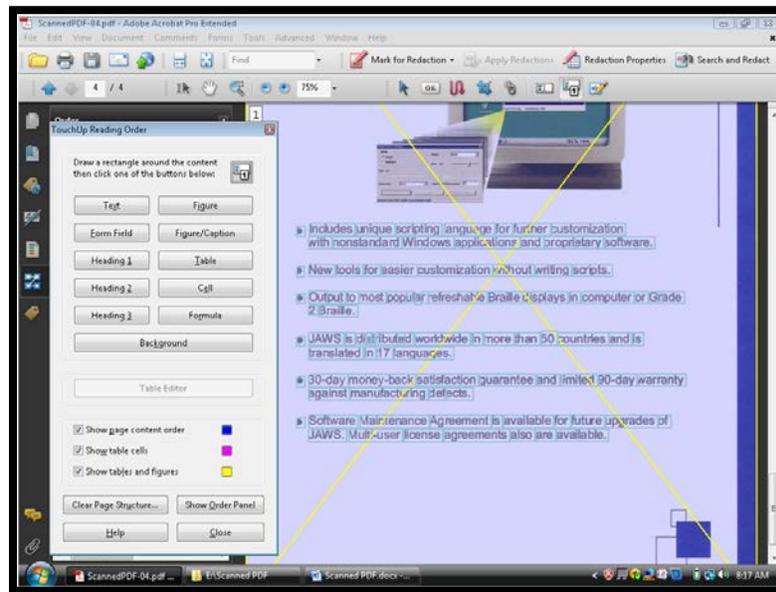
I can select the <Figure> element and activate the “Text” button in the TouchUp Reading Order Panel. In this case the “figure” can be reassigned as text.



**Figure 896** Text on page three tagged as text.

Switch to the Order Panel to get a better view of the content tagged on page three. Once the text on page three has been tagged properly review the logical reading order and make any changes by dragging content in the Order Panel to its logical place.

We can now look at page four. Page four has a bulleted list but this is under the image of the screen reader on a computer. Once Again the entire page has been identified as a <Figure>.



**Figure 897 Page four with TouchUp Reading Order Panel open and content selected.**

In this case we are going to try and identify the entire block of bullets as one paragraph.

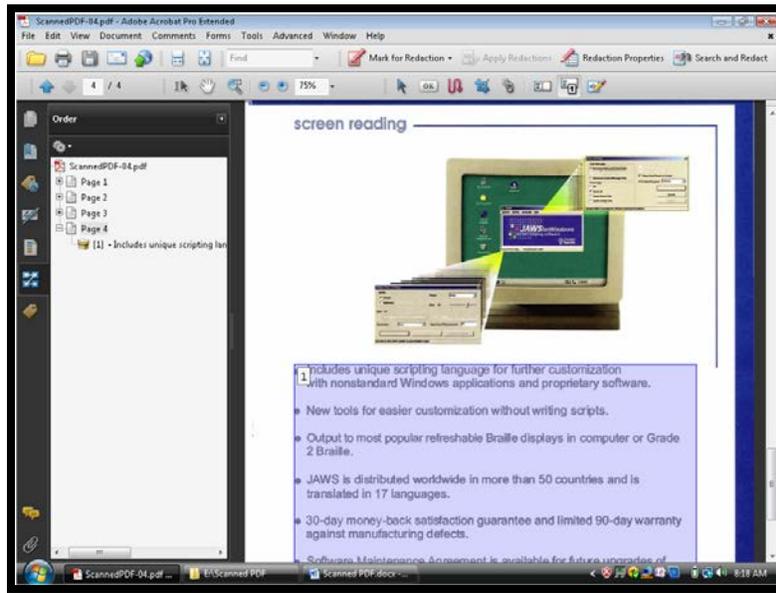
Why would I do this?

If I create the bulleted list structure in the Tags Panel and then try to Tag the content, I may not be able to. At this point, knowing that the document has come from a scanned image [or desktop published document] I am troubleshooting as I work. If I can Tag the bulleted list as a paragraph, I know it can be tagged. If I can't I may have to remove the page and try to work on it independently and then reinsert it into the document. I may have to move to the Content Panel to see if I can make any repairs there and then come back to the Order or Tags Panel and try to identify it as text. What I am concerned about now is "can I Tag it at all?" Building the list structure at this point in time would potentially waste time.

To Tag the content on a page and create a new Tag for it:

1. Switch to the Select Text Tool.
2. Switch to the Tags Tree.
3. Locate the Tag immediately before the one you want to work with.
4. In this document it is the <Figure> Tag for page four.
5. Press the AppKey and choose New Tag.
6. When the New Tag dialog opens, type in "Paragraph" without the quotes.
7. Tab to and activate the OK button in the New Tag dialog.

8. Make sure that the new <P> Tag is selected in the Tags Tree.
9. Move to the document and select the text you want under the new <P> Tag.
10. In this example it is the bulleted text on page four.
11. Move to the Tags Panel and activate the Options button.
12. Choose “Create Tag from Selection.”
13. All of the text that has been selected is now under one <P> Tag.



**Figure 898 Repaired page four.**

I can now switch to the Order Panel and reassign the <Figure> to an Artifact.

The other option for the <Figure> Tag is to add the Alt Text that indicates there is an image of the JAWS screen reader software on the page. This will be a decision you will need to make. Although the <Figure> Tag encompasses the entire page, we have the text tagged properly so using this <Figure> Tag to represent the smaller image which wasn't tagged is an appropriate action. Of course the text is a continuance of the content from the next page so the words “screen reading” at the top of the page don't need to be tagged. They represent a header or Artifact. So, does the image really need to be there? If you decide the answer is no, reassign these types of figures to Artifacts.

For this document, I chose not to keep the Tag for the <Figure>. I determined that it was more important for the continuous flow of information to be available to the person reading the document than to have that information interrupted with the Alt Text for a decorative image

## Step 7: Repairing the Links

Although I created the links properly and did review their properties, when I spot test the links using the JAWS screen reader, it is immediately clear that the links are not functional and were not created properly.

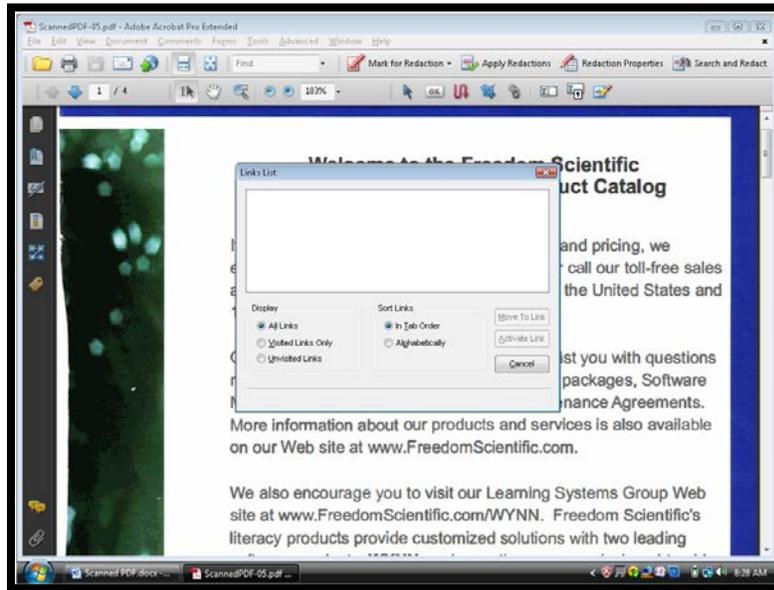


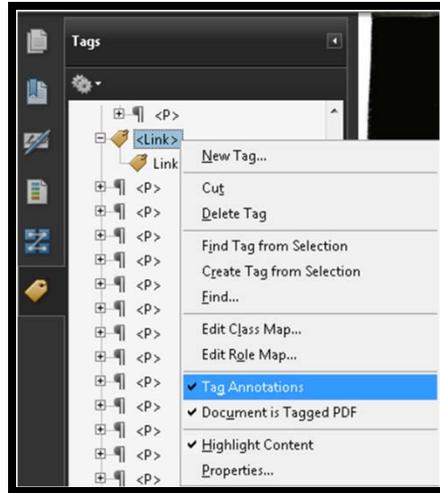
Figure 899 List of links showing no links in the document.

There are times when links aren't properly created that a screen reader will not even display the Links List dialog. All you will hear is that there are no links in the document.

We now need to go to each link and repair it manually. What we will find is that as we move the mouse over the links, they can be activated, however, if someone is not using a mouse they will not be able to activate the links. Using a screen reader to double check the functionality of links is one way to incorporate the use of a screen reader as a tool in the QA or quality assurance and workflow process. You don't have to sit and read an entire document. Just perform spot checks on content you suspect is problematic based on your knowledge of the document and the Tags Tree for it.

To repair links manually:

1. Open the Tags Tree and move to the <Link> Tag for the link you need to repair.
2. If it is missing, select the Tag closest to where you need to add the <Link> Tag.
3. Activate the Options button and turn on "Tag Annotations."
4. We need Tag Annotations turned on so that we can see the full Tag of the Link we'll create.



**Figure 900 Context menu for Tags Tree showing Tag Annotations turned on.**

The following image shows a <P> Tag that contains both the text for the paragraph and a link that is not accessible by keyboard but is accessible by mouse.



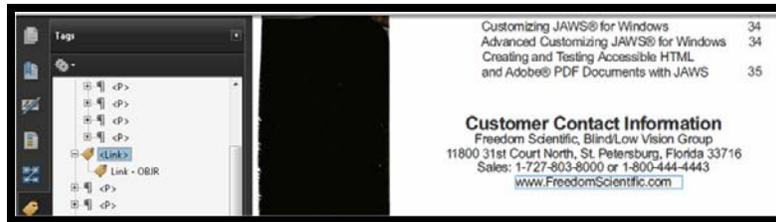
**Figure 901 Paragraph without a <Link> Tag.**

If there is a <Link> Tag we need to delete it.

We also need to turn on the Link Tool, select the link and delete it.

In other words we'll need to start this process from scratch and we can't have any remnants of the mistagged link still in the document.

The following image is another example of what you might see in a broken link Tag. In this sample, the URL text is missing.



**Figure 902 Link with partially correct Tag.**

Select the text you want to create the link with. Typically this is the entire web address although you can select text.

Create a Tag that just contains the actual URL or web address. Sometimes you will be able to create a <Link> Tag that will have all components under it and sometimes you will need to create two Tags and then combine them into the <Link> Tag.

Once you have the actual URL in a Tag, select the text again and this time open the context menu by activating the right mouse button.

Choose Create Link.

This will open the Create Link dialog which should be familiar to you.

Follow the options in the dialog and copy and paste or type in the web address.

You should now have both the web address or text to be used for the link and the “Link-objr” that is necessary for a properly functioning link.

If both parts of the link aren’t under the <Link> Tag, move both of them under it and delete any empty Tag that results.

The following image is of the empty link Tag once the content under it has been deleted.



**Figure 903 Link on the bottom of page one that needs repair.**



Figure 904 Mistagged link selected in Tags Tree and reflected in document.

Now you can retest the links using a screen reader such as JAWS. The following image shows the list of links from the JAWS screen reader once the <Link> Tag was repaired and Alt Text had been added using the <Link> TouchUp Properties dialog.

**Note:** You will need to close both the document [remember to save it first], close Adobe Acrobat and then start the adaptive technology to test. Launch Adobe Acrobat again and open the document. If you do not do this you will not get consistent results and the document will not read properly.

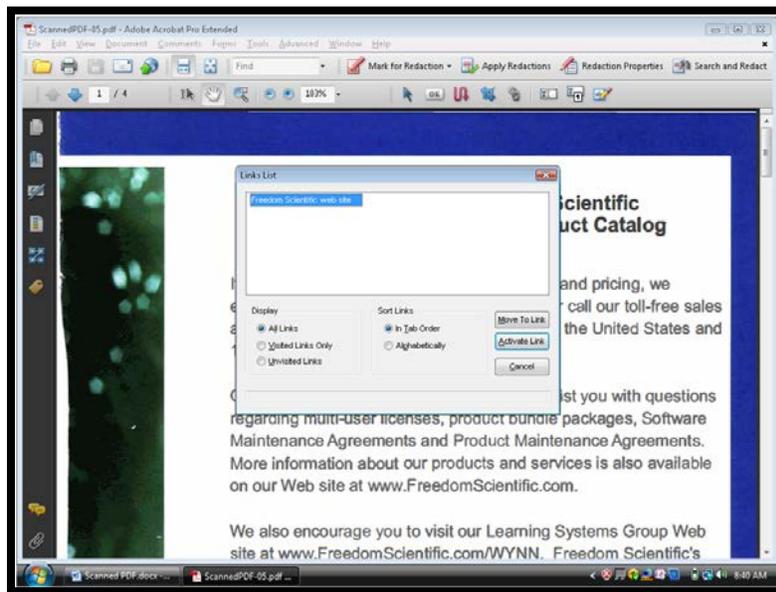


Figure 905 Repaired link at the bottom of page one.

Before moving on to the next set of repairs, make sure that all links the in the document are able to be activated using the keyboard.

## Step 8: Repairing the Table of Contents Page

The main content is now tagged and attention can be turned to fine tuning the Tags for the table of contents.

If we look at the table of contents page we notice that some of the “heading” text has been incorporated into the table of contents item and some of the items have been tagged as two separate pieces of text because they span two lines.

We need to ensure that any headings in the table of contents are tagged properly and that text that is part of a <TOCI> or “Table of Contents Item” has the appropriate Tag. If the table of contents had been tagged with a parent <TOC> and each entry was also tagged as a <TOC> this would also be acceptable.

The “good news” is that once you are in edit mode by using F2 on a Tag, you can copy and paste it to other Tags. In this case we can press F2, type in the right Tag, select the entire <TOC> and then copy it down to the other table of contents elements. In the images for this example, I copied the <TOCI> to each child Tag of the table of contents or <TOC> Tag.

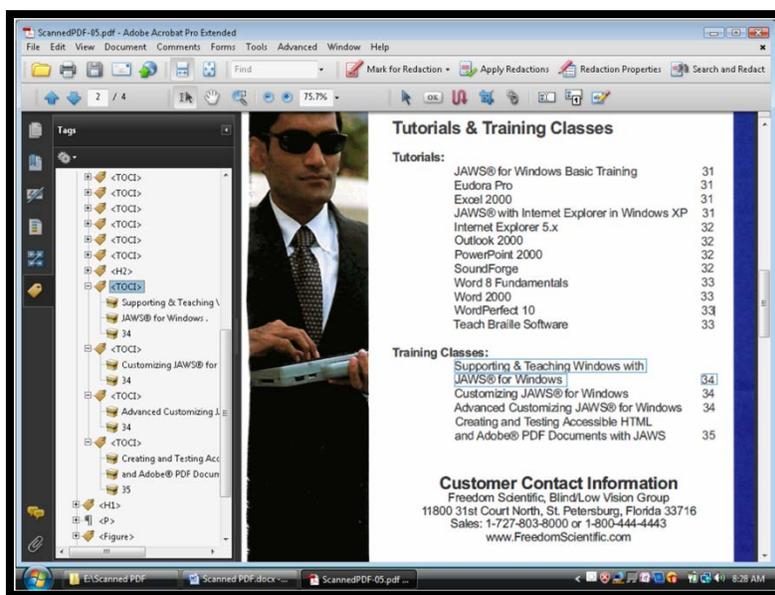


Figure 906 Tags for the table of contents.

Each table of contents entry has to have its own Tag. Since all of the content was tagged just not tagged separately, we can create new Tags and drag the content under the appropriate one. In some cases, when we do this we will have an empty Tag which we can then edit and drag other table of contents content under.

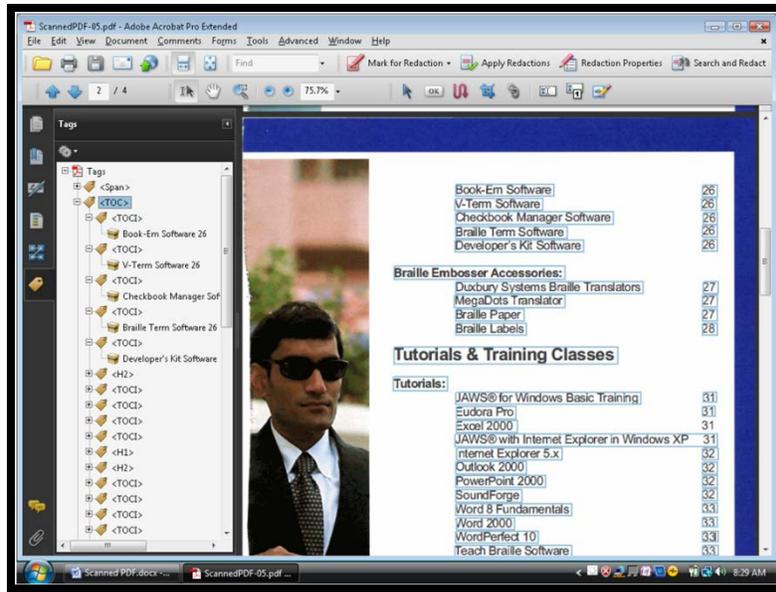


Figure 907 Parent Tag selected showing expanded <TOCI> content under it.

Notice that in the <TOC> Tag there are heading Tags which identify the different topics in the table of contents. You can either leave them as they are within the <TOC> parent or create a <TOCI> for them. Either repair would be correct.

## Step 9: Repairing Page Four

The last thing we need to do is to create the bulleted list for page four. We've already tagged the text for the content of the bulleted list as a single paragraph so we know it can be tagged. If we do not repair this Tag someone using a screen reader will not know that this is a bulleted list. It will be read as one paragraph of content.

To create the list, move to the <P> Tag and press F2 for edit mode.

Replace the letter P with the letter L. Case is important.

Move to the content under the new <L> Tag and add a new Tag. Choose "List Item" from the list of new Tag types.

We did this so that we know where the new Tag will be inserted and can easily find it.

Move the <LI> Tag to just under the <L> Tag.

Our list is beginning to take shape.

Drag all of the content under the one <LI> Tag.

We can now begin to separate it and create individual <LI> or list items. We do this so that each bulleted point will be read as a single bulleted point by adaptive technology. If we only have one <LI> element then it is read as a bulleted list of one item.

Create the other <LI> Tags under the first one. It will be a sibling Tag not a child Tag.

Select the second <LI> Tag.

When we select and Tag the second bulleted list item it will separate the list into subsequent bulleted list items and we can drag the content to its appropriate <LI> Tag. This means we don't have to select and Tag each list item, we can Tag every other one and use the separated list items effectively.

The following image shows an example of this technique. When working with bulleted or numbered list items this technique really does save time.

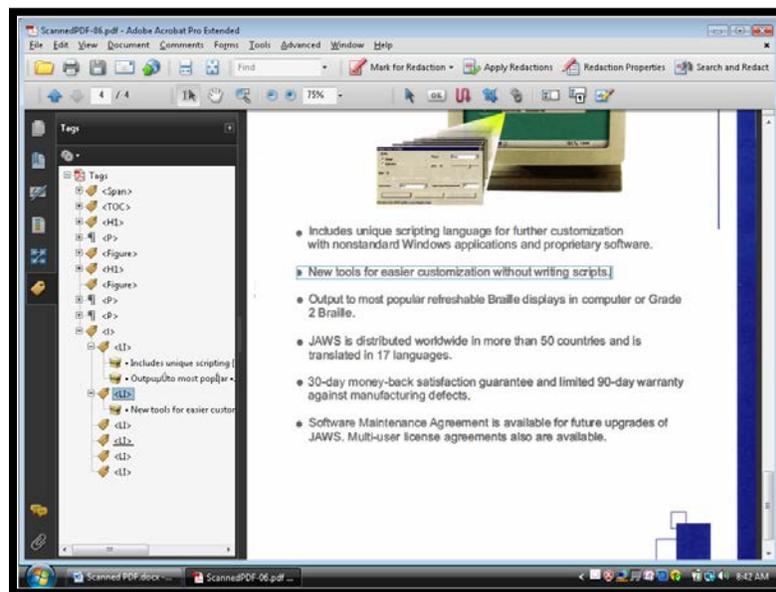


Figure 908 Creating a list effectively.

At this point, I would drag the second "line of content" from the first <LI> to the third <LI>. I would then move to the empty <LI> Tag representing the fourth bulleted item. I move to the document and select the fourth bulleted item and use the "Create Tag from Selection" option. I can now repeat this process for the fifth and sixth bulleted items and so on. It is like playing leapfrog with the Tags.



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# 1 Adobe InDesign Desktop Publishing

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As with the rest of this book, this topic is not going to teach you how to use Adobe InDesign CSX. It will provide you with in-depth techniques on how to use the tools in Adobe InDesign to create tagged accessible PDF documents.

The techniques are easy to incorporate into your workflow. By adopting these techniques you will lessen the repairs needed to a resulting tagged PDF document which in turn will save your client financial resources.

This topic is intended to help you become aware of the relationship between what you design and create and its accessibility when exported to tagged PDF or tagged in Adobe Acrobat.

Let's get started!

## **Guard Your Assets!**

One of the common issues when working with tagged PDF documents that have come from any desktop publishing application is the use of corrupt assets in the source document.

What is a corrupt asset?

This is a "real life" example of what is often encountered in desktop published documents. The "truth" was discovered when tracking content back to its origin while troubleshooting accessibility problems. Once the asset was recreated properly the accessibility problems disappeared.

A page of text began its life as text in a word processor. It was taken into Adobe Illustrator and emerged as an image file. The newly created image of text was then taken into Adobe PhotoShop and given a new identity as a different image format. The new image of the text was then sent to Adobe Acrobat and emerged as a PDF document. The PDF document was then inserted into an InDesign document. The InDesign document was exported as a tagged PDF document to make it accessible.

Confused?

The result?

The page of text was tagged as part image and part text...in effect it had an identity crisis. Words, lines, sentences and paragraphs were a hybrid of text and images making it impossible to make the content of that page accessible without retyping the text into the original InDesign document to allow a clean export of text.

Similarly if you have an image and it also goes through several “format enhancements” it will not be possible to reduce the file size of the exported PDF document without compromising the quality of the images. In most cases the hybrid images blur and become unrecognizable.

Adding Tags to documents increases the file size automatically. Many organizations have file size criteria for PDF documents that will be uploaded to their web sites for people to download and read. If you can't reduce the file size without compromising the ability to see the images in the document clearly, the file will have to remain cumbersome or be returned to the desktop publishing source to be created so that the asset is clear when the file size is reduced.

**Note:** If you are requesting an RFP for desktop published documents ensure that the assets are clean and not corrupt and that the document is tagged properly for accessibility as a condition of sign-off. If you do not you will either end up with a product that cannot be made accessible at the end of the contract or have to pour more financial resources into making it accessible which may involve creating the document from scratch again. If the original contractor for the InDesign document cannot make the source document an accessible PDF, you may need to hire another contractor to redo content or the entire project. It is also a good idea to ask for samples of accessible product to let your QA or Quality assurance staff review it before signing a contract. Knowing that your desktop publishing contractor knows how to use InDesign to create accessible PDF documents before you sign a contract will save you time and money. Implementing a QA or Quality Assurance process before signing off on the tagged PDF will ensure that you get what you paid for.

## Multiple Layers

Limit the number of layers in your InDesign documents to one. Adobe Systems recommends that a single text layer for InDesign documents be used rather than several layers of content. Another accessibility issue common to desktop published documents is that they are flawed or fragile due to the number of layers in the document that can become separated when trying to repair the logical reading order or Tags in Adobe Acrobat.

If you need to add layers, keep them to a minimum and keep all text you need rendered to the end-user in one text layer of the document. This would include any page numbers that the client wants provided for adaptive technology.

An example of layers separating, again based on real life documents, is that repairing a Tag on page 5 separates layers on page 9 resulting in the footer layers...of which there were 7 in this case...separating and floating over the PDF document page. In this particular document, even the logical reading order could not be repaired as it would make content disappear as the layers shuffled like cards in a deck.

In other instances content disappears from the visual document when attempts are made to correct the reading order or repair Tags. The content is still there but since Adobe Acrobat and Adobe Reader see all the layers, the layers have in effect been reordered so that background layers are now covering the main text layer. This is very difficult and time consuming to repair if you can make the repairs.

This is what is meant by fragile or flawed PDF documents. Any attempts to repair the Tags results in the document “breaking.” Compressing or flattening layers does not solve this problem since Adobe Acrobat and Adobe Reader still see the original number of layers in the document. The “merge” tool in InDesign is not the same as compressing the layers and is primarily for merging images or shapes.

This relates to creating InDesign documents with good assets and not trying to “layer your way to visual perfection.”

Think of taking a croissant or Phyllo pastry and trying to extract only one layer of pastry without touching or affecting any of the other layers. This is similar to what repair technicians are faced with when trying to make these multi-layered fragile and flawed PDF documents accessible.

In some cases individual pages can be removed, tagged and inserted back into the document, however, there are cases where this is not possible. You also don’t know that this is a solution you will need to try until after you spend time working on the document as a whole. Once again, there is time and resources wasted that did not have to be.

## **Where to Start**

There are many components and elements of InDesign documents that need to be included in a tagged PDF that it sometimes seems overwhelming when choosing where to start the process.

As mentioned, at the core of what you do are pristine assets that can easily be tagged and are not affected by the tagging or resizing of the PDF document.

Now we turn to InDesign itself and the tools we have to create tagged PDF when your work is exported to tagged PDF.

Throughout this chapter, I will assume that you know how to work with InDesign documents but don’t know where to find the accessibility tools or how to implement them.

There are several tools available to you and these are not in any particular order:

- Add untagged items.
- AutoTag
- Add new Tag.
- Add new element.
- Add new attribute [an attribute is something like Alt Text]
- Paragraph Styles Panel.
- Tags Panel.
- Structure Panel.
- Convert to header row [for tables] .

We'll start with the Tags Panel and work our way through the other tools. This will give us the relationships between the tools as we go.

## Paragraph Styles

Other than limiting the number of layers in an InDesign document, the use of paragraph styles is critical to the accessibility of the resulting tagged PDF document.

This is where we begin to build in the accessibility of a tagged PDF document exported from InDesign.

Even if InDesign does not Tag content correctly or chooses to ignore Adobe's own tagging elements, if each part of the document has a named style, its Role Map can be modified in Adobe Acrobat which will lessen the repair time. Consider using the Role Map to edit a "bullet" style as opposed to manually repairing EVERY bulleted item in a document to be an <LI> Tag. By using the Role Map to make the global changes, you can then add parent Tags such as the <L> Tag for bulleted or numbered lists and simply move the <bullet> Tag under it. A lot of time is saved!

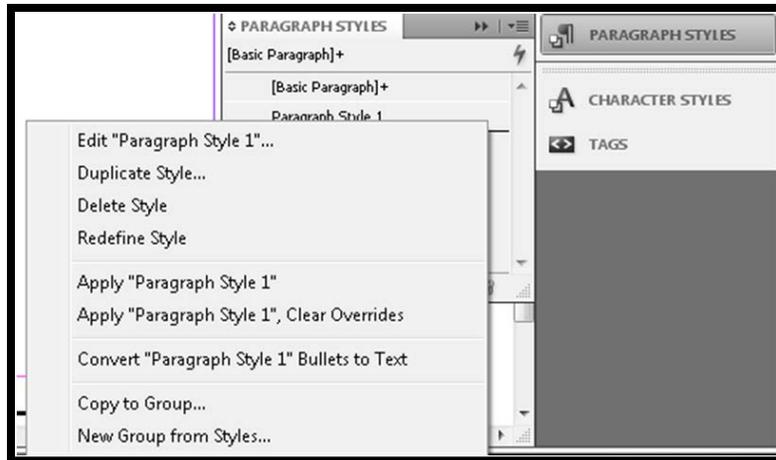
The best way to do this in InDesign is to add the text to a text frame and then format it.

Make it larger, add colour and any other effect you want. This will be a heading 1 so the formatting should reflect this.

Select the newly formatted text and move to the paragraph Styles Panel.

Create a new style by using the right mouse button to open the context menu and choosing "Edit Paragraph X" where X is the number of styles you've created so far, which is the default name of the new style. If you leave this as "Basic Paragraph X it will have no structural meaning to anyone repairing the tagged PDF document.

Rename the style to "Heading 1." Once the style is renamed, move to and activate the OK button to close the Paragraph Style Options dialog.

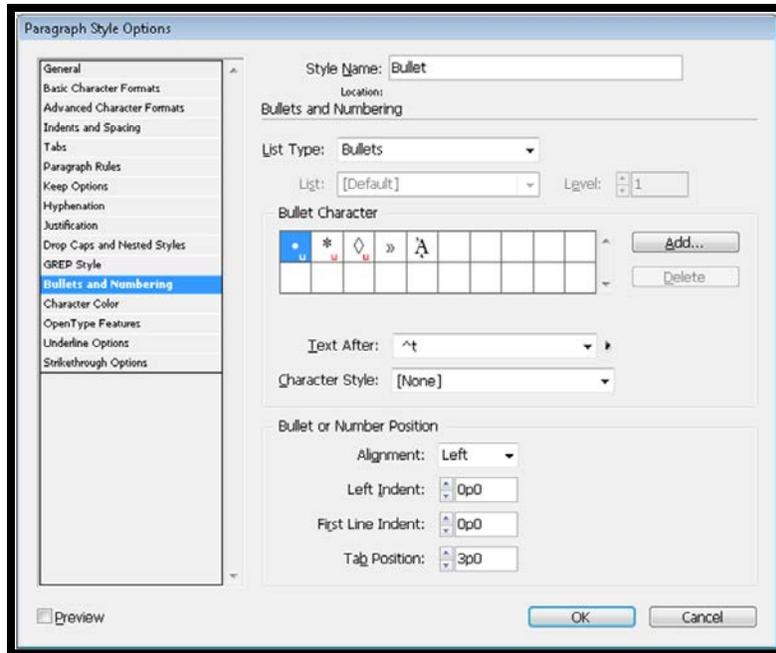


**Figure 910 Edit Paragraph Style from the Paragraph Styles Panel context menu.**

Unfortunately you must then select every heading you want to be a level 1 in the InDesign document individually and open the Paragraph Styles Panel and click on the Heading 1 Style to apply it to each heading. This must be done with each document part/element of the document.

If you are working with bullets or numbering:

1. Select the series of items to be bulleted or numbered and activate the bullets or numbers icon in the main toolbar.
2. This visually formats the list as bullets or numbers. For this example I will use bullets.
3. Select one of the bulleted items and move to the Paragraph Styles Panel.
4. Create a new paragraph style.
5. Right click on it and choose to Edit "Paragraph Style X."
6. Change the name of the style to "Bullets" without the quotes.
7. Make sure that it is based on the bullets and numbering format. You'll find this further down the categories on the left side of the dialog.
8. Move to and activate the OK button.

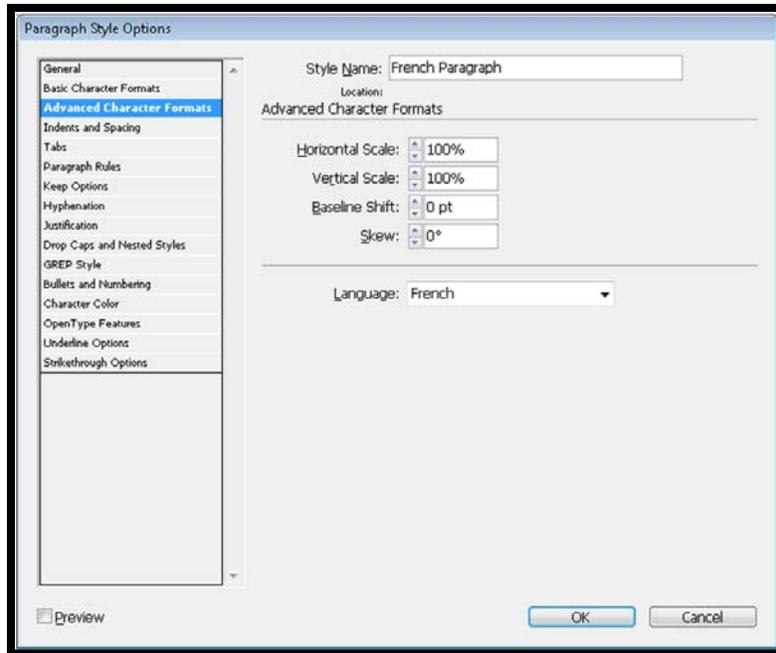


**Figure 911** Bullet and Numbering options in the Paragraph Styles Options dialog.

You must now select each bulleted or numbered item individually and then open the Paragraph Styles Panel and choose “bullet.” If you don’t, the underlying structure of the bulleted or numbered list will be a plain paragraph Tag.

Once you have all the styles identified and applied in the InDesign document, you then move to the Tags Panel.

If you are working with a document that is multilingual and you don’t have a CSS for documents, you can apply the language while in the Paragraph Styles Options dialog.



**Figure 912** Language identifier in Paragraph Style Options dialog.

## Tags Panel

If you read documentation for Adobe InDesign you might be confused about which is the Tags Panel and which is the Structure Panel. For the purposes of this topic, you turn on the Tags Panel by choosing Windows, Tags and then anchoring the Tags panel to the right of your workspace.

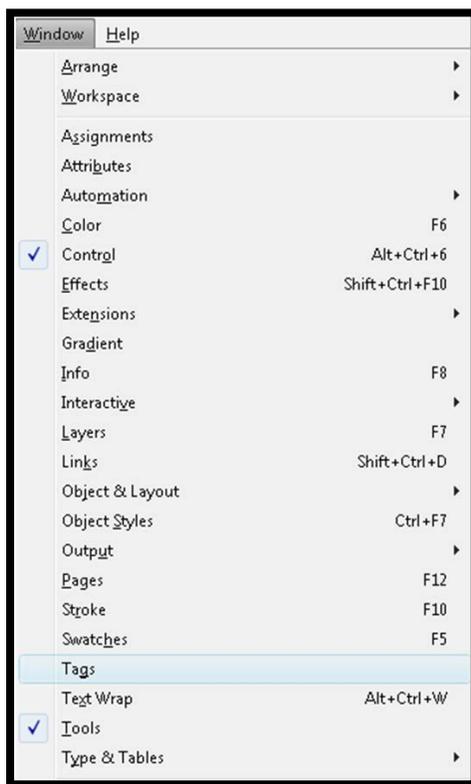


Figure 913 Windows menu with Tags selected.

I recommend always having the Tags Panel open and ready to use.

If you use the "AutoTag" button at the left of the buttons in the lower right corner of the Tags Panel, you will have the Tags for Story added but little else. All other Tags have to be manually added.

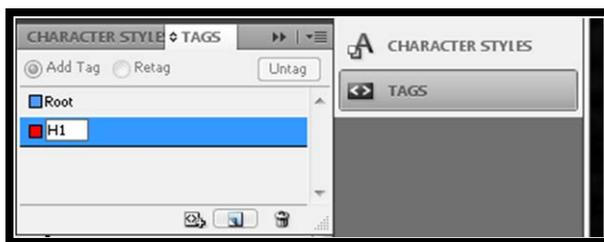


Figure 914 Tags Panel open to right of document.

The preceding image shows the default Root Tag and an additional Tag in Edit Mode. Once you add a Tag you must edit it and give it a role/name of one of the accepted Tags for a PDF document.

You can create Tags for any element you need as long as it is within the parameters of the PDF 1.7 Specifications. For a list of viable Tags see the list of Tags types in the New Tag dialog of Adobe Acrobat.

The Tags Panel lets you see what Tags were added to the document as well as letting you create new Tags such as <Table>, <TD> which is the Tag for a Data Cell, or <TR> which is the Tag for a Table Row. The Tags Panel is where you come if you notice that an item was not tagged and you need to use it.

Unfortunately as of InDesign CS4, you have to open the Tags Panel every time you open a document or create a new document. It is not treated like the other panels that remain open and usable once you decide to show them and anchor them to the right of the document.

You must create the Tags in the Tags Panel and map them to Styles and map the Styles to Tags in the Structure Panel before you can add untagged items to the structure tree in the Structure Panel. I've tried only mapping one of these options but Tags get missed or mistagged so I generally map both.

I typically add every Tag I think will be in the document with the exception of parent Tags such as <L> or <TOC> since you can't use them in the Structure Panel of InDesign anyway. The <TH> Tag is another one that will need to be added once you are out of InDesign. The Tags I can add include <Table>, <TR>, and <TD> as well as <Figure>, various heading levels, and of course the <LI> Tag for list items. I can also add a <TOCI> for Table of Contents Items.

It would be easier if you had a DTD or XML based "Document Type Definition" to load instead of having to always add the Tags and structure manually. You can also create a CSS or Cascading Style Sheet for documents and use these to provide Tag and Structure based information.

Even with the capability of InDesign to Tag exported PDF, there are critical elements and attributes that must be repaired in Adobe Acrobat.

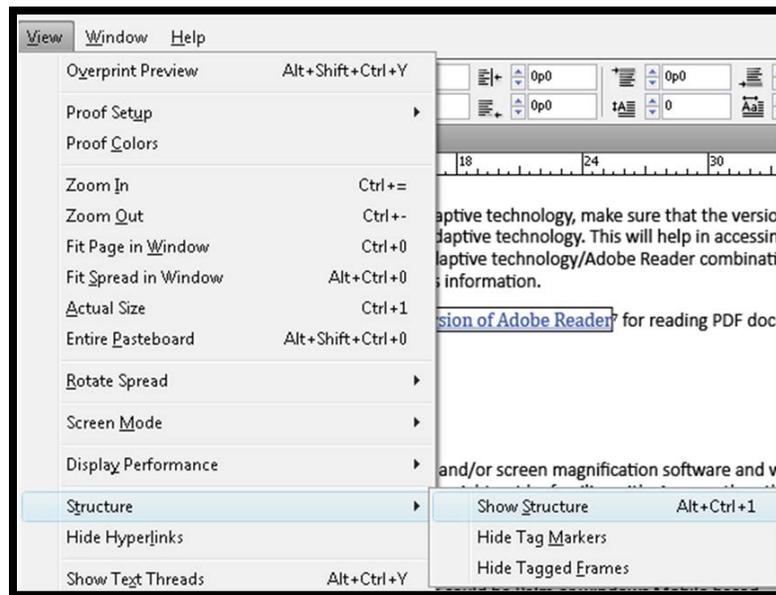
Best practice is to build as much accessibility into the InDesign document as you can to lessen the repairs in Acrobat. This means using the Paragraph Styles, Tags Panel and Structure Panel in an effective manner and trying your best to get them all "talking to each other."

Let's continue with the tools you can use before we get to the problems with tagged PDF from InDesign.

## Structure Panel

The Structure Panel lets you see the structure of the document. You can view headings, figures, paragraphs, tables and then determine if they have been threaded properly or if they require rethreading. You can then work with the InDesign document to ensure that the elements are tagged and in their logical reading order.

You will need to work with the Tags and Paragraph Styles Panels before you move to the Structure Panel. You'll find the Structure Panel under View, Structure. I recommend showing all options in this panel.



**Figure 915 View menu showing Structure sub-menu open.**

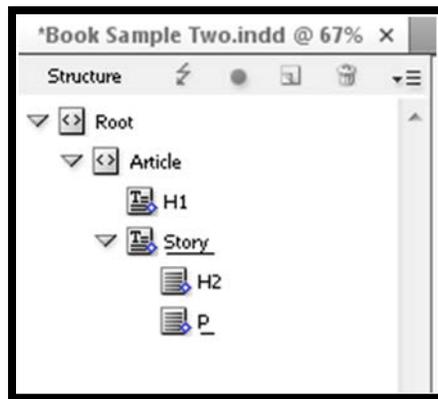
This opens the Structure Panel to the left of the document. By default the structure only has a “Root.” You must add the Tags using the Tags Panel or by loading a DTD and then apply their structure to the document.

- Create the styles and make sure they all have meaningful names.
- Create the Tags and make sure that every part/element of the document has been individually selected and associated with its corresponding Tag.
- Map the Tags to the Styles.
- Map the Styles to the Tags.
- Add Untagged items through the Structure Panel Options menu.
- Review the Structure Panel to make sure everything is present.
- Add any alt attributes for figures or images.



**Figure 916 Open Structure Panel.**

The preceding image is of a Structure Tree before adding the untagged items.



**Figure 917 Structure Panel with tagged content.**

If you don't individually select document parts or elements and try to create the Structure Tree the only visible "content" will be the Storey or Section identifiers. You won't be able to see the finer details of the Tags.

The Structure Panel will automatically update as you add content and Tag it.

## Adding Attributes to Structure Elements/Figures

To add the Alt attribute or alternate text to a figure in an InDesign document, select the figure element from the Structure Panel and activate the round black button at the top of the Structure Panel. A dialog opens.

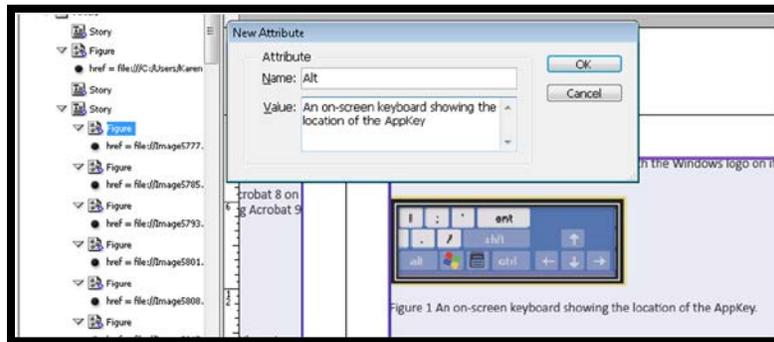


Figure 918 Alt attribute for a figure element in the Structure Panel.

You can also add “Actual Text” by typing Actual Text in the Name edit box. You cannot have spaces or special characters in the attribute name. You can in the Alt or Actual Text edit boxes.

**Note:** Although the PDF Specifications indicate that the value for Expansion Text [used for acronyms] is “E” there is currently no technique for adding that attribute to an element in the structure Panel. This repair will need to be done in Adobe Acrobat.

The fastest way to add the language attribute in a multi-lingual document is to create a paragraph style where the language reflects the language you need. For example create a French Paragraph Style based on the Basic Paragraph Style with the only change being the language of the paragraph.

When the InDesign document is exported to tagged PDF, a screen reader will automatically switch to the French synthesized voice [in this case] and read the French text properly.

In the case of the figure, if the Alt Text is in a language other than the base language of the document, use the Add Attribute button to add the language. The name would be Lang and the value would be the language, in this case French.

# Tagging Multilingual Documents

As mentioned, you can create paragraph styles for multilingual documents that will properly Tag when exported to PDF. This greatly reduces the time a repair technician has to spend on a document and the additional financial resources required.

To create a paragraph style with a different language:

Select the paragraph in the document with a different language.

1. Open the Paragraph Styles Panel.
2. Choose Add New Style.
3. A "Basic Paragraph #" will be added to the Paragraph Styles Panel.
4. Right click on the new style and choose "Edit Basic Paragraph Style #."
5. Move to the Advanced Character Formatting category.
6. Choose the language for the paragraph.

In this example I renamed the Basic Paragraph # to "French Paragraph" so I could find and apply it easily.

This also helps if the language doesn't convert to tagged PDF. I can apply the French language in Adobe Acrobat. Having a formatted piece of text indicate its language as part of its style name makes the work easier.

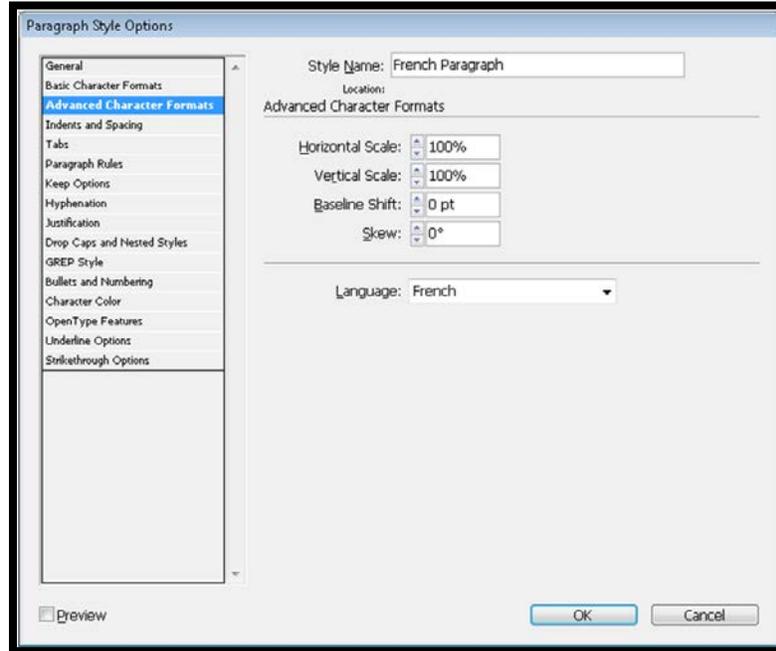
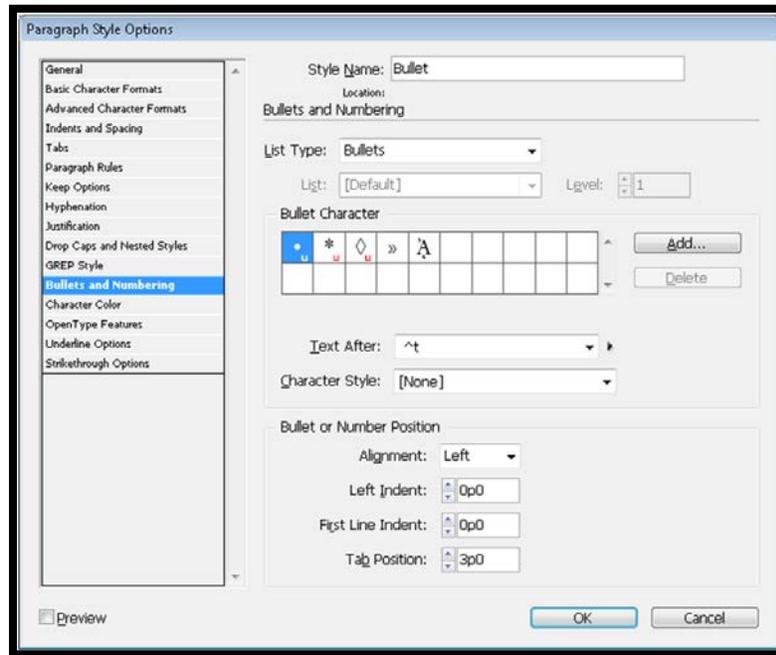


Figure 919 Changing the language of a paragraph in InDesign.

## Lists in InDesign

As with other applications, you need to create a properly structured list in InDesign. This means creating a Paragraph Style called "Bullets" or "Numbered List" or something similar. This paragraph style should have a bulleted or numbered list format in its definition.



**Figure 920** Bullet and Numbering attribute for a Paragraph Style.

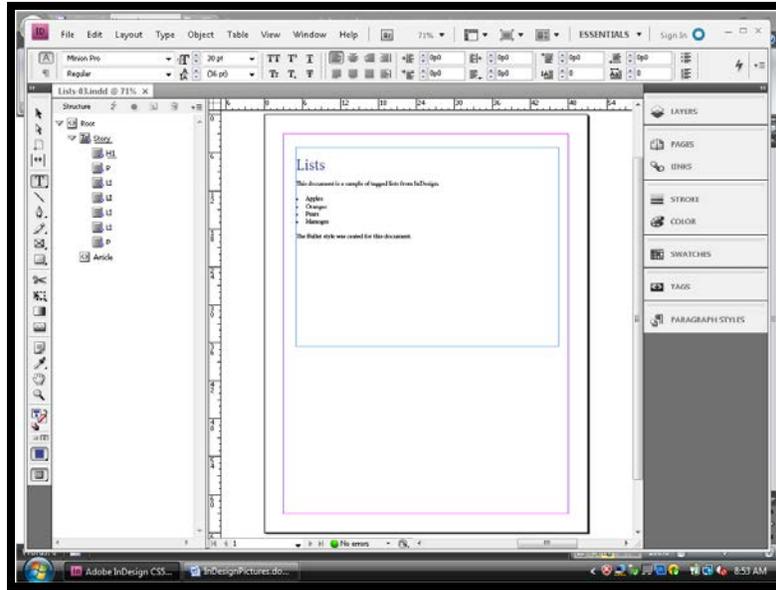
You can create the <LI> Tag in the Tags Panel.

You can create the parent <L> Tag in the Tags Panel.

You will need to select each list item and apply both the Paragraph Style "Bullets" and the Tag <LI>.

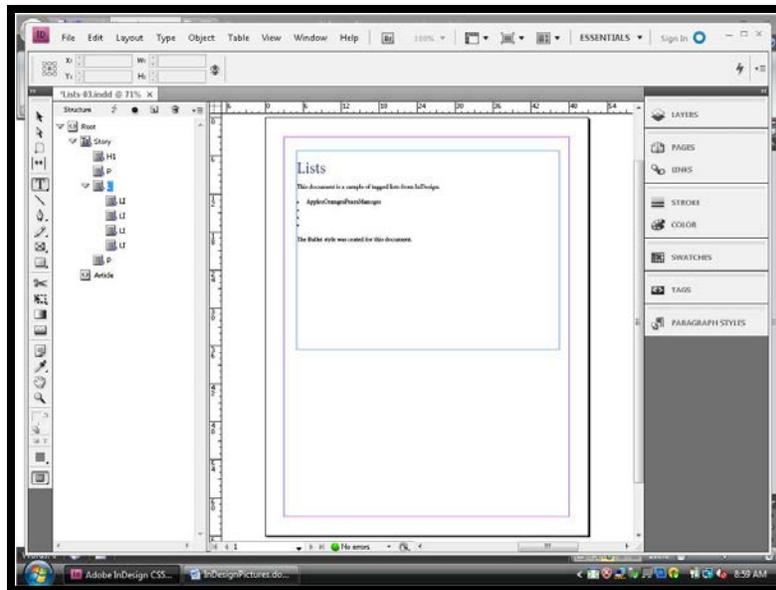
You may also need to map the Tag to the Style or Style to the Tag.

This creates the list of list items in the Structure Panel.



**Figure 921 List items in the Structure Panel.**

You may have to add the parent <L> Tag in Adobe Acrobat. Each time I try to add the parent Tag and move the list items under it in the Structure Panel, the list text becomes separated from the bullets and appears as one line or paragraph of text in the InDesign document.



**Figure 922 List of items appearing as a single line of text in an InDesign document.**

I've only been able to add the parent list element in Adobe Acrobat. This is why it is critical to have all styles named to represent their structural place in the document. Another reason is that if the

underlying <LI> Tag in this example did not convert to a Tag, I can use the "Edit Role Map" in Adobe Acrobat and change the Role of the "Bullets" style to be <LI> instead of <P>. This reduces repair time substantially. I can then select all the "Bullets" style in the Tags Tree of Acrobat and move them under an <L> Tag that I add. The repair process is again smooth since I can easily identify elements in the Tags Tree and by modifying their Role Map give them their proper role in the document.

I have talked with people working with InDesign who have been able to add the parent <L> Tag in InDesign so it is possible.

I am also not able to get the parent <TOC> or Table of Contents Tag to work in InDesign and have to make that repair in Adobe Acrobat as well.

Remember to use Unicode bullets or standard bullets for text and not to reinvent the wheel. These one offs cause problems with checking the underlying structure of the tagged PDF once you are in Acrobat and perform an Accessibility Full Check.

Also remember to add any additional spacing around bulleted or numbered lists by making the spacing part of the Paragraph Style rather than pressing the Enter key or creating a separate style for additional spacing. If you do not keep the <LI> and their respective content together, the "list" will be identified to people using screen readers or TTS technology as individual lists. This removes the relationship you wanted by listing the items to begin with.

## **Table Header Information**

One of the ways people who use screen readers or TTS technology use to read data tables is the use of table header row. Table headers are not the same as headings or page headers. In a tagged PDF document a column or row title should have the <TH> Tag to identify it as a table header. Table headers are structural elements in a tagged PDF document as they are in HTML documents.

The use of the <TH> Tag as discussed earlier in this book lets the adaptive technology access column or row title information while someone is reading data in a cell.

In InDesign, although you can create the <TH> Tag in the Tags Panel, create a Paragraph Style for table headers, and map Tags to Styles and Styles to Tags identifying a basic table structure as part of the Tags Tree, the <TH> Tag will not be applied.

InDesign has a tool to identify table headers as shown in the following image.

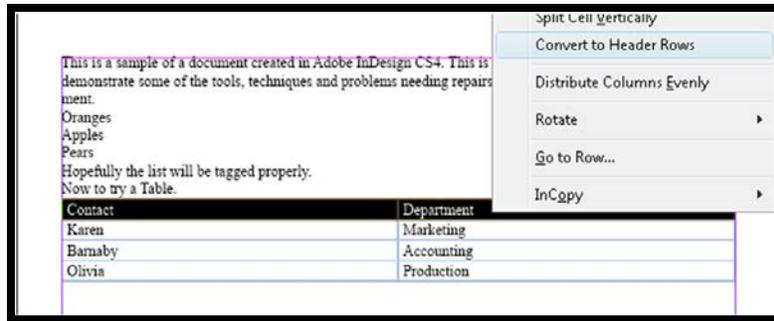


Figure 923 Identify table headers in InDesign.

However it is not clear what this tool does since it does not create <TH> Tags and does not seem to have any formatting associated with it.

You will have to manually add the <TH> Tags once you are in Adobe Acrobat.

Remember to add them for both column and row titles where appropriate.

## Repairing InDesign Documents in Acrobat

What types of repairs need to be done to the tagged PDF document exported from InDesign?

Even if you use a DTD or create every Tag available to you in Adobe Acrobat to apply to document elements in InDesign, there are still repairs needed to the resulting tagged PDF.

- The parent <L> Tag for a list.
- The parent <TOC> Tag for a table of contents.
- The <TH> Tag for table column and row titles.
- The Scope attribute for table cells.
- Expansion Text attribute for acronyms.

Of these the missing <L> Tag is the only one that might show up in an Accessibility Full check. The others will not. The repair technician will have to manually review all Tags and make the repairs.

When a paragraph of text is converted to tagged PDF from InDesign, it is not tagged as one continuous flow of text like the text you are seeing in this paragraph. Instead, each line of the paragraph is tagged as a separate line under the global <P> Tag.

Why mention this?

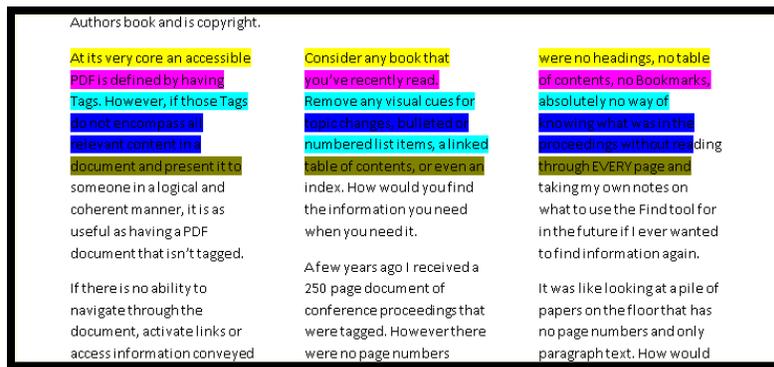
When a screen reader or TTS tool reads content it follows conventions such as appropriate pauses at the end of a line or paragraph. This means that text doesn't sound like one huge run-on paragraph. If a paragraph of text is tagged as separate lines of text, adaptive technology will pause the appropriate amount of time for the end of one line or beginning of another. If someone is using

their adaptive technology at a high speech rate it may not be as noticeable as for someone using a slower speech rate.

First, don't panic when you see each line of a paragraph as a separate element under its parent <P> Tag. This is what InDesign does.

Second, be aware that you may get reports of truncated or choppy reading of content in a tagged PDF document.

The other reason for mentioning this is something covered in an earlier chapter: that columns can be tagged as lines of text.



**Figure 924 Columns mistagged as lines of text.**

As stated previously in this book, if this is the result of tagging from InDesign and you don't have access to the source document, you will need to manually repair this in Adobe Acrobat. This is done by using the keyboard rather than the mouse to select each line of a paragraph or each character of a line depending on how fragile the document is, and creating a new Tag nested under the parent <P> Tag. In some fragile and flawed documents this will not be possible and although the document will pass an accessibility full check, you can see by the colour coding of the content order that the content is not readable.

To try and avoid this type of mistagging, make sure that each paragraph in each column is mapped to a Tag and corresponding style.

## Exporting from InDesign to DAISY

One of the innovative features of InDesign CS is the ability to export your structured document to DAISY or “Digital Accessible Information System” format. DAISY was mentioned in the introduction to this book as a “DTB” or “Digital Talking Book” format.

In the United States, textbooks for elementary and secondary schools can be produced in NIMAS or [National Instructional Materials Accessibility Standard format](#)<sup>32</sup>. This allows authors and publishers to provide XML based content for the material they hold copyright for and provide the other material in the textbook as a PDF document.

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<sup>32</sup> NIMAS or National Instructional Materials Accessibility Standard resource page:  
<http://nimas.cast.org/index>

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# Index

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This is my first attempt at an Index in one of my books. I'm user I've left out a lot...and not cross referenced properly. I'm trying this instead of a table of figures as I think it might be more useful. It should be improved for the next edition of the book!

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