Assess Reading Order

Another important check is reading order. Reading order is the order in which an assistive technology like a Screen Reader (Job Access With Speech JAWS) will read aloud the document to the user. When you convert a document from Word or PowerPoint over to Adobe PDF format, you are carrying over the tags (labels) that identify each component of that document into PDF. The reading order depends on these tags (labels) that are carried over into the Adobe PDF document. Tags indicate to the user what items make up the document (headings, links, tables, images, text) and the order in which they will be read to the user of assistive technology. A PDF document may visually seem organized and easy to follow for a sighted user, but if the native documents were not created with accessibility in mind before converting these over into PDF, JAWS and any other screen reading software will unveil a jumble of incomprehensible words to a blind/low vision user trying to access the document. Fortunately, there are a few things you can do in Adobe Acrobat to check for reading order of your PDF.

In Adobe Acrobat, reading order can be checked by assessing the Order Panel and the Tags Panel. Both panels should display the same order so that the content can be read in the same order whether it stays as a PDF or is exported into a Text (Accessible) version. The exported Text (Accessible) version of the PDF displays content in the order specified by the Tags Panel of the PDF. The Read Out Loud Feature in Adobe Acrobat and screen reading software such as Job Access With Speech (JAWS) also reads content in the order indicated by the Tags Panel. Edit the tags and order panels appropriately so that they match by following the steps indicated in the sections below. Since most of your edits to the PDF will be done using the Order Panel and the TouchUp Reading Order Tool, once you are done doing edits in the Order Panel, go to the Tags panel and make sure the tags read in the correct order as shown in the Order Panel. Just because the reading order is correct in the Order Panel does not mean it is correct on the tags panel. Remember, assistive technology reads PDF content based on the reading order indicated in the Tags Panel so be sure it is correct!
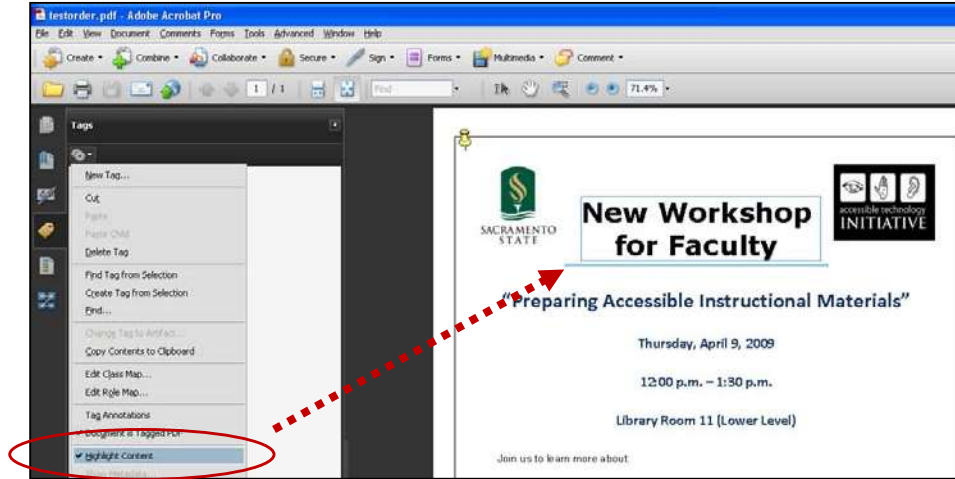
Using the Tags Panel

As mentioned earlier the tags panel displays all the structural elements contained in your document such as paragraphs, headings, links, lists, images etc. The order in which these items are displayed is the order in which they will be read out loud to a user of assistive technology, thus, it is important to ensure that the tag order is correct and that tags are not missing. Begin by opening the tags panel:

step 1. If the tags panel is not showing on the navigation bar, go to the View menu > Navigation Panels > select Tags. This will open the Content, Order and Tags panels in a small window. You can dock each panel on the left navigation bar by clicking on the tab name for each panel and dragging and dropping into the navigation panel. Click on the tags panel to view the tags panel (see **Tools of the Trade** section to learn how to dock these panels).

step 2. In the tags panel you will see an icon labeled tags which has a (**+**) expand button next to it. Click the expand (**+**) button to expand the list of tags. The expanded tags list may still contain collapsed items so you will need to make sure to click on all of

the (**+**) expand buttons to see all tags contained in document. Take note of the tag order.

step 3. To highlight content on your PDF as you click through tag items, click on the **Options** drop down menu > select **Highlight Content**.

step 4. Move tags around by clicking on a tag so that it is highlighted and dragging and dropping it to the correct location.

In this example (at right), the Tags Panel shows reading order beginning with an empty paragraph and a figure. The Read Out Loud Feature in Acrobat and screen reading software like JAWS will read the PDF by announcing the figure information since it goes by what is delineated in the tags panel.
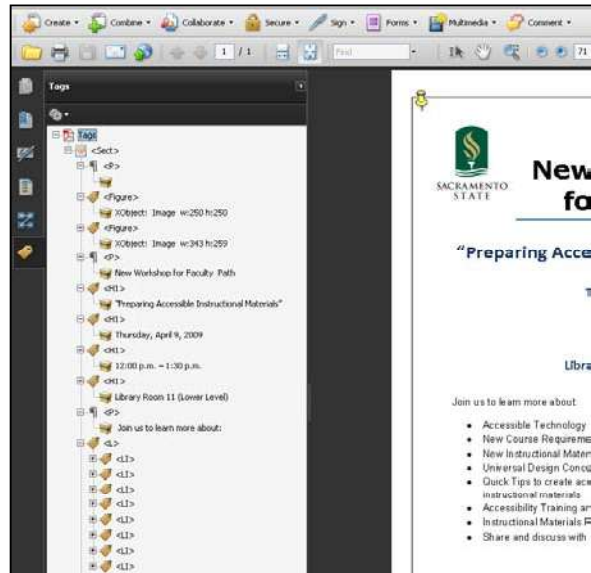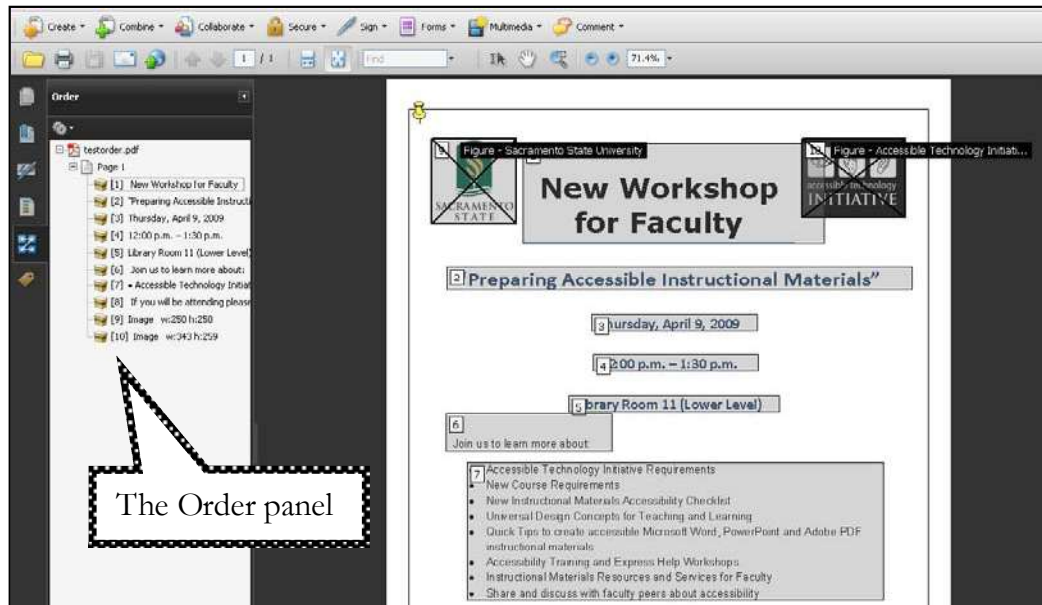

Using the Order Panel

When you open your PDF document in Adobe Acrobat the first thing you will notice are a series of menus at the top and left side of the window. The **Order Panel** is located on the Left side of the window (Navigation Panel) and allows you to view, re-order and re-tag structured PDF information. To view the Order Panel do the following:

step 1. Click the **Order** button located on the navigation panel on the left side of the window. If the Order button is not docked on the left side of the window:

a. Go to the **View** Menu, select **Navigation Panels**, and select **Order**. The **Order** button will now be available for you to select from the Navigation Panel on the left.

step 2. The Order Panel will display. In the Order Panel you will see the outline of all the pages and components that make up your document. If this outline is not already expanded, you can select the maximize button (+) next to the name of the document in the Order Panel to expand it.

The Order panel

When you select the Order Panel, a series of numbered gray boxes will highlight the different components that make up your PDF document indicating numerically the reading order of each component and section on each page. The numbers match up with the numbered items you see in the Order Panel. Notice that when you select an item from the order panel, the gray boxes on the document will become highlighted in light blue. The gray numbered boxes start at number 1 on each page of the PDF document. Take note of any items in the document that are labeled numerically in the wrong order. This will affect in the order the items are read to a user using a screen reader and in the order the information appears in a text version of the PDF document.

Notice that the reading order for the PDF document shown above begins with "New Workshop for Faculty" in the Order Panel. This does not match the reading order in the Tags Panel which begins with information about figures in the PDF as seen in our example in the **Using the Tags Panel** section of this document. You will need to correct the reading order in the Order Panel to match that of the Tags Panel, or if you want the PDF to be read in the order the Order Panel displays, you will need to go back into the tags panel and re-arrange the tags accordingly.

To correct the reading order of a PDF document do the following:

step 1. From the **Order** Panel, navigate to the page of the document that has the incorrect reading order.

step 2. Expand the outline of items for that page by clicking the expand (**+**) button.

step 3. You will see a series of small tan box icons next to each component on that page. Noting the number of the items on the page, place your cursor on the tan box for the component you want to re-order, and drag and drop the box above or below items in the outline. The selected item will be re-numbered according to the location where it

was dragged and dropped. Verify between the document view and the order panel that the items are numbered correctly.

step 4. After editing the reading order go back to the Tags Panel and make sure the tags panel matches the order panel. If it does not, then begin re-ordering tags as appropriate.

Exporting a Text (Accessible) version of PDF

After you have finished editing the reading order so that it matches both in the Order Panel and in the Tags panel you should save as or export the document as a Text (Accessible) file. Doing so will generate a text version of the PDF and allow you to see how the document is organized and would be read by a screen reader. Remember, the Text (Accessible) file is generated based on the reading order established in the Tags Panel!

To Save the file as a Text (Accessible) file:

step 1. Go to the **File** Menu and select **Save As**.

step 2. The **Save As** window appears. From the **Save As Type** drop down menu, select **Text (Accessible) (.txt)** option.

step 3. Click the **Save** button to save the file.

To Export the file as a Text (Accessible) file;

step 1. Go to the **File** Menu and select **Export > Text > Text (Accessible)**

step 2. The **Save As** window appears. Click the **Save** button to save the file.

Once you have saved or exported the PDF file as a Text (Accessible) version, open the text file and review the text to make sure that it is displayed in the correct order. You can use the text file along with the PDF document to compare reading order in the Tags panel and re-order items as necessary. Make sure to go back to the Order Panel and make sure you make the same reading order changes there too. In our example of the Text (Accessible) version of the PDF (see screenshot at right), notice that the text starts with "Sacramento State University" which is Alt Text for figure information so we see that the text (accessible) content is based on the reading order in the Tags Panel.
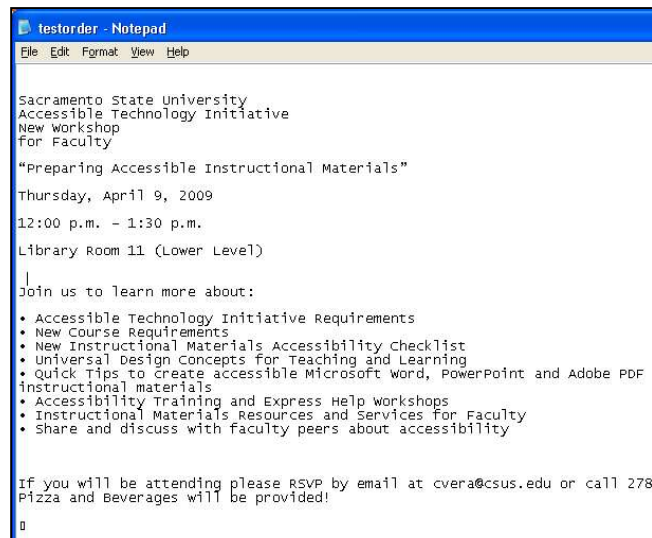
Once you make all necessary checks and corrections to the PDF document to make it accessible, save the file with all the changes, and export or save the PDF as a Text (Accessible) file to provide students with an accessible alternate format of the document. Refer to the Alternate Formats section of this document for more information on alternate formats.

<u>Using Assistive Technology to Check Reading Order</u>

Now that you have visually assessed the reading order of the document, the next step is to use assistive technology software such as JAWS and the built in screen reading feature in Adobe Acrobat, Read Out Loud, to aurally assess reading order.

Assessing Reading Order with JAWS

If JAWS (Job Access With Speech) is installed on your computer, double click on the JAWS shortcut icon on your desktop or go to your start menu to locate the program. When JAWS opens, it will say "JAWS for Windows is Ready" and announce the title of the PDF document. To begin reading the PDF document select the following keystrokes and listen for the order in which the document is read. These are some of the most common keyboard shortcuts used to read the entire document and list items such as links, headings, frames and form fields. To learn about more Keyboard Shortcuts for JAWS visit WebAIM's Keyboard Shortcut for JAWS webpage (http://www.webaim.org/resources/shortcuts/jaws.php), and Freedom Scientifics' JAWS Keystrokes webpage (http://www.freedomscientific.com/training/training-JAWS-keystrokes.htm)

- **Insert + down arrow** = Say All, reads until the end of the page from where the cursor is located
- **CTRL** = Interrupt Speech
- **Insert + Up Arrow** = Say Line, Reads the line at the active cursor
- **Insert + Left Arrow** = Say prior word
- **Insert + Right Arrow** = Say next word
- **Insert + F6 =** List of Headings
- **Insert + F7 =** List of Links
- **Insert + F9 =** List of Frames
- **Insert + F5 =** List of Form fields

Using Adobe Acrobat Read Out Loud Feature

You can also assess the reading order of your PDF document by using the built in screen reader for Adobe PDF, Read Out Loud (available in Acrobat Reader as well). To access Read Out Loud:

step 1. Go to the **View** menu and select **Read Out Loud**
step 2. Select **Activate Read Out Loud**.
step 3. Go back to the **View** Menu and select **Read Out Loud**
step 4. You will see three options: **Deactivate Read Out Loud**, **Read this Page Only** or **Read to End of Document**. Select the appropriate option to read the document.
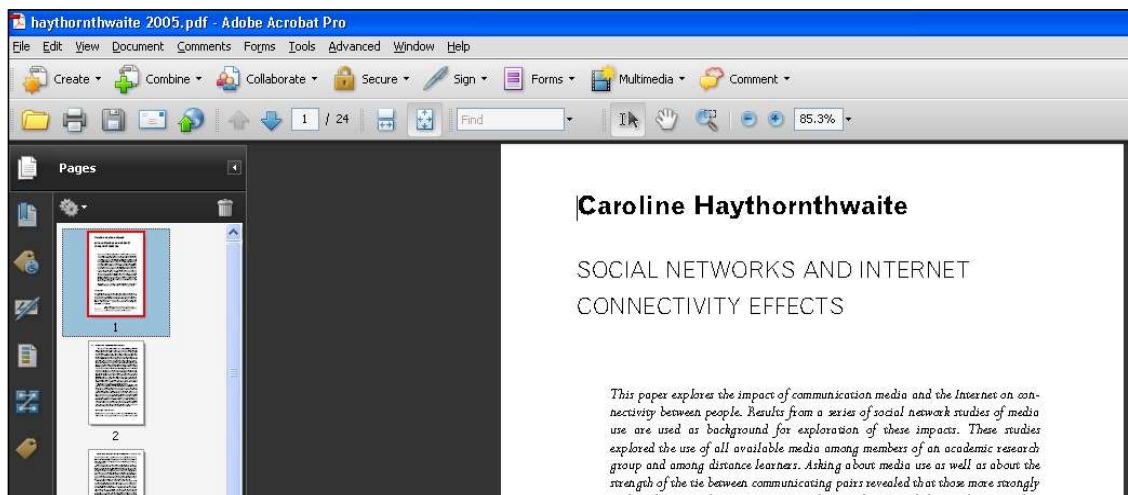
Setting Page Properties for Reading Order

step 1. Go to the **View** menu > **Navigation Panels** > select **Pages** (see screenshot below).
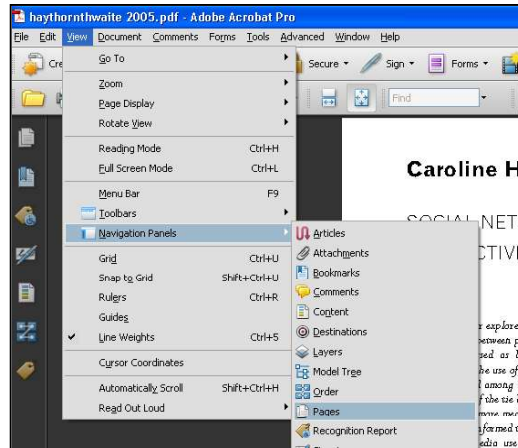
step 2. The **Pages Panel** will display to the left of the screen.

step 3. Click the first page displayed in the Pages Panel Pane so that it is highlighted (below).

step 4. Click **Options** drop down menu button and select **Page Properties…** (screenshot at right)

step 5. The **Page Properties** dialog box displays. Under the "Tab Order" tab, select the **Use Document Structure** option and click the **OK** button.

After going through these steps to assess reading order of your document, you will have an idea of how the document is read to a screen reader user. Performing the **Full Check for Accessibility** will pinpoint exactly where corrections need to be made in the document to make it accessible.