Technical Reports II

Continuation of Technical/Research Reports.

Proofreading

The most effective way to proofread is to carefully do it yourself – aloud – and to then have someone else read the document to you aloud. Since you know the material, you will often skip words and miss punctuation because you are mentally filling in the blanks, but you will catch technical errors. The other person will detect awkward structure, undefined terms, and so on, and is more likely to read word-for-word. (Brian played an amusing Victor Borge clip about phonetic punctuation: https://www.youtube.com/watch?v=eixevXANKAo&t=5s.)

Technical Report Writing Process

The early stages of writing a report involves the following steps, adapted from the Technical Communication Process:

1. Read, understand, and follow the instructions!
2. Pick a topic. Clearly and specifically define what you will and will not include.
3. Know who you are writing to and what they need/want.
4. Plan your “spin,” or the lack thereof. In this class, your report must be objective and neutral, not persuasive. The reader should not know your opinion of the issue or subject. Avoid emotional language, even on clearly one-sided topics like child abuse.
5. Research, and feel free to research more as you need to. Collect bare facts only, along with the details of the source. If you have only a few words on an index card, you won’t be accused of plagiarism.
6. Organize your material (Post-Its™ on a wall, or whatever), structure it (outline, if you wish), then fill it out to form the report.
7. Cite as you write (in-text cites only are fine, for now) so you don’t forget.
8. Proofread and get peer review – lots and lots of both.

Writing style/process hints:

- Avoid personal pronouns. Try not to refer to yourself or the reader; if you must, use “the author” and “the reader”, not “I” and “you”.
- Don’t directly address the reader. Say “This report will…” if you need to.
- Avoid rhetorical questions – those that you intend to immediately answer yourself. Instead, make a statement. (Example: Don’t say “What is an internal combustion engine? It is…”). Do say “An internal combustion engine is…”.
- Avoid exclamation points. Keep the writing formal.
- Eliminate suspense (but forward-referencing is ok: “This will be explored in detail in ‘History of the Preposition’ later in this report.”
- Avoid slang, idioms, or informal language.
- Edit out “fluff” or unneeded adjectives or adverbs – keep writing tight and concise.
• Proofread and peer review to eliminate spelling, punctuation, grammar, or other mechanical errors; content errors; and inconsistencies.
• Define terms, acronyms, and abbreviations where they are used.
• Keep like material grouped together. “Flashbacks” and jumping around should be reserved for creative writing.

Line “Padding”

The default setting for Microsoft Word (and many other word processors) is to insert extra space before or after paragraphs, while leaving the line spacing within the paragraph in its normal single-spaced size (or double-spaced, if you’ve selected that). If you press Enter after every line in a return address, for example, the return address will appear double-spaced, an undesirable appearance. There are three ways to remedy this:
• In Word’s Styles pane, choose the “No spacing” style, which is a normal paragraph configuration but without any extra spacing before or after.
• Highlight the offending text, then right-click, then choose Paragraph…, then change the Spacing Before and/or Spacing After settings to zero.
• Instead of pressing Enter at the end of the line, hold the Shift key down and press Enter. This creates a “soft return”: It forces a new line, but that line is still part of the same paragraph. The spacing before/after doesn’t affect the lines within the paragraph.
• (There are a number of other variations on these. Don’t be afraid to experiment or use the Help facility of your word processor.)

Technical Reports III

Continuation of Technical/Research Reports.

Structure

Structure the body with clear, hierarchical headings. Use typography to differentiate them visually. Think of headings as “buckets” that hold information of a specific type; don’t put information in the wrong bucket, and don’t put identical information in several buckets. Level-1 headings often will contain level-2 and perhaps level-3 headings (buckets within buckets!).

It is perfectly acceptable to use transitions at the end of a section (level-1 heading’s area) that guide the reader smoothly into the next section.

Outlines, Headings, and the Table of Contents

As you learned a while back, the outline is your planning tool for the technical report. Do all your restructuring while still in the outline stages. The wording in the outline is not important. Treat the outline as a skeleton, which you will “inflate” with text without altering the skeleton’s basic shape:
Creating Headings:

As you write your report, the major points (usually the “Roman numeral” items) will become level-1 headings, the second level of outline points will become level-2 headings, and so on. You must reword the outline items so that they become informative headings that tell the reader what is coming. Headings must be consistent in writing style and use consistent terminology, as well as having a consistent appearance.

Headings should be distinct from the text, and from each other. Higher-level (more important or overreaching) headings should be bigger, bolder, colored, spaced, all caps, etc. to make them appear more significant than lower-level margins. You should be able to tell which is which from across the room. Level-1 headings are essential; level-2 headings are helpful, even in 10-13 page papers (!); level-3 and below headings are unusual except in very large papers and books. Do not use just color to differentiate levels of headings: if the document is photocopied or the reader is colorblind (common!), all your headings will look the same.

Creating the Table of Contents

The table of contents is essentially your outline, simplified. It contains only level-1 and level-2 headings, in the exact wording of the headings in the document. A page number is given for each heading. The typography of the table of contents does not have to be the same as the headings themselves; it is usually much simpler, and is designed to look good and be very usable. Next week, we’ll talk about how to have the computer do this for you.

Document Design: Typography

It’s helpful to know a little about typefaces and page design. That way, you can make choices that best meet your readers’ needs.

Fonts:

“Fonts” and “typefaces” are not really the same thing, but we’ll use the terms interchangeably in this course. Most fonts are either serifed (example: CTA. Note the “doodads” or serifs on the ends of the strokes) or sans serif (example: CTA. Note the clean ends.)

**Serifed:**
- Easier to read in large blocks, most often used for body text.
- Should be 11pt to 13pt for readability.
- Examples: Times New Roman, Cambria, Century Schoolbook, Courier

**Sans serif:**
• High impact, great for headings. Also used for technical drawings
• Should be 14pt to 20pt (depending on level) in headings
• Examples: Arial, Calibri, Helvetica, Comic Sans

The height of a font is given in “points”. (One point is 1/72”. ) These days, even in the same point size, one font may be a different height than another. That drives purist font designers crazy; the rest of us just make small adjustments so things look right.

Choose a font based on the following:
• Legibility
• Aesthetics
• Impact
• Coordination with the other fonts and general style of the document
• Portability – will the reader’s computer have the same fonts? Automatic substitutions can undo your careful design work. Either choose common fonts (best) or use Embed Fonts in Document option of the Save As… dialog.

**Justification:**

This text is “left justified” (CTRL-L in Word). It is pushed up against the left margin, and the line breaks wherever a word ends. Because the lines have different lengths, this is often called “ragged right”. It’s easy to read.

This text is “right justified” (CTRL-R in Word): pushed up against the right margin. This is rarely used in technical writing.

This text is centered (CTRL-E in Word). Centered text most often appears in headings and titles.

This text is “fully justified” or sometimes just “justified” (CTRL-J in Word). It is pushed up against both the left and right margins. It’s actually harder to read than ragged right, but most books are set this way anyway. Large spaces can occur with some word processors or low-resolution printers.

This text is indented with a tab or a margin change: it starts to the right of the normal left margin.

This text has a “hanging indent” (CTRL-T in Word). Hanging indents are most often used to put headings in the left margin, or for bullets.

This text has a block indent, usually used for long quotations and for Notes/Cautions/Warnings. Create the indents.
Margins:

Margins apply to the entire page. If you want paragraphs to look different, indent them using the techniques described earlier.

In bound books, the margins where the pages are glued together (the “gutter margins”) are often wider so the text isn’t lost in the seam.

Tabs

Most typefaces you are used are “proportional” – different letters are different widths (example: iwiwi); “monospaced” fonts’ letters are all the same width (iwiwi). The problem with using proportional fonts is that it is very difficult to get things to line things up vertically. Trying to use blank spaces gets close, but it’s ugly (the examples below also shows all the non-printing characters revealed by the ¶ button):

Item one Item two tabbed over Item three spaced over
Item number four Item five tabbed Item six spaced over

Tabs can help. Set tabs by clicking on the Ruler where you want the tab to be. If you press Enter at the end of a line with tabs, the new line you create will have the same tabs. You can highlight several lines and set all their tabs at once. Tabs can also be “fine tuned” and given enhancements like leading dots (. . . . . . . ) from within the Paragraph format dialog box.

Paragraph and Page Behavior

Paragraphs can have “padding” or extra spacing above or below it. This can make one-line paragraphs look double-spaced even when they are not (this often shows up in your Cover Text area...
Letter’s address areas). You can work around this by using Shift-Enter instead of Enter; this forces a line break but does not create a new paragraph. You also can right-click on the paragraph and choose Paragraph from the menu; change the Spacing Above and Spacing Below to 0, and set the Line Spacing to Single.

Sometimes a heading and its paragraph will be split across a page boundary. You can force the heading down with blank lines, but you may also choose to open the Paragraph format dialog, choose the Line and Page Breaks tab, and click the Keep with Next and/or Keep Together boxes.

If you absolutely want something to start at the top of a new page, no matter what happens on previous pages, use CTRL-Enter or Insert Page Break. You should do this for your Table of Contents and bibliography pages.

Handy Word Processor Keystrokes

These keystrokes can save you a lot of trouble:

- CTRL-Z (Undo) reverses your last action. Depending on the application, you may be able to Undo several previous actions, or just one.
- CTRL-Y (Redo) redoes your last action. It can “undo undo,” or more commonly, will allow you to repeat a formatting or other operation in another location.
- F1 (Help) brings up the application’s Help facility. You can also get help on YouTube and on the web.
- The ¶ button at the top of the page shows hidden characters and functions like spaces (·), tabs (→), paragraph breaks (¶), line breaks (→), and page breaks (------ Page Break ------)

Headings

Headings are used to break up the text, and serve two functions: as navigation aids and as previews of the material to follow. The Table of Contents contains the exact text of the headings, but they are likely to have a different appearance there.

Outline-to-Heading

If you use the Outline view to design your document, choose “Level 1,” “Level 2” etc. to select your outline level. When you go to normal view, these will automatically translate to “Heading 1,” “Heading 2,” etc. and will have appearance designated by the default or selected heading style.

Modifying Headings’ Appearance

In most versions of Word, you can choose different sets of headings using the Change Styles dropdown in the Home tab. You also can change the appearance of the default or other heading set. Simply change one heading to look like you want (font, size, spacing, color, etc.), then right-click on that heading’s box in the Style area of the Ribbon and choose Update Heading to Match Selection. All headings of that level will immediately have the new appearance.
Inserting Illustrations the Easy Way

In this class, do not try to use advanced illustration placements like wrapping (where text flows around the illustration), anchoring (where illustrations are attached to a point on the page), or frames (anchored boxes that hold the illustrations). Instead, do things the easy way:

1. At the point where you want your illustration to be, press the Enter key 5-6 times to create blank lines.
2. Copy your illustration from its source site. If it is in a file, open the file and copy the illustration.
3. Click on one of the middle blank lines and Paste (CTRL-V).
4. Use CTRL-E or another method to center the illustration.
5. Press Enter twice to create two centered blank lines.
6. Type the figure’s caption (number, title, and citation) on the second centered blank line.
7. Highlight the caption, the blank line above the caption, and the illustration.
8. Position the mouse cursor over the caption, right click, and select Paragraph.
9. In the resulting Paragraph dialog box, click on the Line and Page Breaks tab.
10. Check the Keep with Next box and click OK. The caption will now always stay with the illustration.
11. Delete any unnecessary blank lines to create specified spacing above and below the illustration.

Automatic(!) Tables of Contents in Word

Word has a powerful automatic Table of Contents feature that works well, provided that you have set your heading levels using the styles on the ribbon. (The exact mechanism varies from version to version of Word.)

Creating an Automatic Table of Contents:

1. Ensure that all headings have been set using Styles as described above.
2. Set the insertion point (vertical bar cursor) where you want the table of contents to be, by clicking the mouse cursor there.
3. Click the References tab, then click Table of Contents on the left side of the menu area.
4. Choose one of the two Automatic Table of Contents selections.

Tables of Contents in OpenOffice Writer

Writer has not caught up to Word in the Table of contents department.

Creating a Table of Contents (TofC):

1. Position the cursor where you want the TofC to appear.
2. Click Insert, then Indexes and Tables, then Indexes and Tables again. A dialog box will appear.
3. If you will wish to modify any text in the table, uncheck the box that says “Protect against manual changes”.

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4. Click OK. The TofC will be created, and will show all headings that you have created so far. Note also that a number of Contents entries appears in the list in the movable Styles and Formatting box; those will be hidden if you click in text outside the TofC.

**Changing Table of Contents Formats:**

1. Click somewhere inside the TofC. The Contents entries will reappear in the moveable Styles and Formatting box.
2. Right-click on the Contents level you wish to change, and choose Modify.
3. Select the tab that corresponds with what you want to change, then make the changes. When done, click OK. All TofC entries of that level will change to the new format.