How to prepare the final report

All managers are idiots

Oops

Write for the uninformed reader

1. Explain
   • Nothing is too simple
   • Much is too hard, esp if steps are left out

2. Convince
   • You want your proposal to be accepted
     • Not mine

3. But don’t overstate your case (best possible)

Structure of the report

1. Follow GWE, Chapter 6

2. Read Student Guide

3. One approach:
   • Complete subsystem analyses
   • Update memos to include new or missing information
   • Each person rewrite memos to be part of whole
     • Uses third person, for example
   • Assign one person to be Redactor
     • Redactor combines memos into coherent whole
     • Creates consistent style
     • Numbers figures, tables consistently

4. Another approach:
   • Crowd around the best typist and bark orders
Figures

1. Present *most important figures* within written report
   - Number *consecutively*
   - Cite all figures in report in *order*
     - Figures may be placed at end of text
   - Write descriptive *caption*
     - *Below* figure
   - Do not put *box* (frame) around small figure

2. Present *separate* graphics portfolio as supporting material
   - *Number* all figures
   - Present all figures with *border, title block*
     - Even early rough sketches
   - Latest figures *computer-drawn*, except where hand-drawn clearer
     - Perspective
     - Shading
     - Etc., etc., & so forth

3. Possible organization: Group figures according to *topic*
   - *Chronologically* within topic
Tables

• Use only horizontal *rules* (lines)
  • And *very few* of them
  • (Don’t be a slave to Microsoft’s defaults)
• Give each table descriptive *title*
  • *Above* the table
• Work all tables into text
  • Cite *by number* and *in order*
• Put *units* into column headings
• Align *decimal points* vertically
• Sample table:

<table>
<thead>
<tr>
<th>Magnifying power</th>
<th>Focal length,(^a) mm</th>
<th>Numerical aperture</th>
<th>Useful magnifying power,(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>16</td>
<td>0.25</td>
<td>75</td>
</tr>
<tr>
<td>20</td>
<td>8</td>
<td>0.45</td>
<td>150</td>
</tr>
<tr>
<td>40</td>
<td>4</td>
<td>0.65</td>
<td>180</td>
</tr>
<tr>
<td>100</td>
<td>1.6 (^c)</td>
<td>1.3</td>
<td>400</td>
</tr>
</tbody>
</table>

\(^a\) Assuming 160-mm tube length.

\(^b\) Approximately 300 x NA.

\(^c\) Oil immersion.

Graphs

• Keep them simple
• No grid lines
• No frames
• No excessive color
• No unnecessary shading
Numbers and units

1. Use SI (International System) of units throughout
   • Except for specifying building materials

2. Use SI prefixes (2.5 mm, not 2.5 \times 10^{-3} m)

3. Format correctly
   • Insert space (1 mm not 1mm)
   • Use superscripts not ^
   • Use \cdot or \times not *

4. See http://www.mines.edu/~mmyoung/numbers.pdf