

Technical Writing Elements of a Formal Report

Introduction

In this exercise, you will identify and categorize the elements of a formal technical report. This organization will be required for all the laboratory deliverables submitted in EA203, as well as laboratory content of all subsequent courses in Aerospace Engineering.

To accomplish the goals of this exercise, it will be necessary to procure a technical article from an engineering journal in the library holdings at USNA. Bound journals are located on the Second Deck of Nimitz Library. Some are available as electronic journals through the library's web site.

Procedure

Follow these steps to execute this laboratory exercise:

- 1) Form into teams of two members each. Locate an interesting bound journal in Nimitz Library; they are shelved in alphabetical order on the Second Deck. Identify an article of interest by searching the index. Look for something related to aircraft performance, aerodynamics, propulsion, structures, or stability and control. Some suggested journal titles are:
 - NOTE: Aerospace America is NOT considered a journal!!!
 - The Aeronautical Journal
 - AIAA Journal (American Institute of Aeronautics and Astronautics)
 - Journal of Aerospace Engineering (American Society of Civil Engineers)
 - Journal of Aerospace Engineering (Institution of Mechanical Engineers)
 - Journal of Aircraft (AIAA)
 - Journal of Guidance, Control, and Dynamics (AIAA)
 - Journal of Propulsion and Power (AIAA)
 - Progress in Aerospace Sciences
- 2) Get your instructor's approval for your article. The article should have substantive technical content with a graphical presentation of results.
- 3) Photocopy the article at sometime during the exercise. Most journal articles are 10-20 pages in length, so bring enough change for the photocopy machine. The article might seem like gibberish now, but you'll be amazed at how much of it you understand at the end of the semester.
- 4) Identify the eight parts of a formal technical report by writing down the section headings of your article. Correlate these with the heading names discussed in class (Introduction, Theory, etc).

Deliverables

Only one submission is required per team. You must completely answer the following questions on a separate sheet of paper, and attach a copy of your article. Do not leave the library until you've handed in your answers.

Questions

- 1) Write down the complete citation of your journal article.
- 2) How long is the article (in pages)?
- 3) Does the article have a cover page? What kind of information is listed at the head of the article?
- 4) How many sentences are in the abstract? Try to categorize each sentence (i.e., what was done, how it was done, what were the principal results, etc.).
- 5) List out a few of the conclusions (even if you can't understand them). Is the conclusion section just a summary? What can you learn about the research just by reading the abstract and the conclusions?
- 6) What kind of information is included in the introduction (or equivalent)? Sometimes this section is labeled as "Background."
- 7) Is there a theory section? What kind of information is included there?
- 8) What was used to generate the data and results? Are the equipment, codes, or methods detailed in the paper? How is it discussed?
- 9) Are there figures, pictures, or diagrams? How are they used? List some of the attributes of well laid-out graphics. Pay particular attention to the relative sizes of comparative plots, or the details of graph labels or annotations.
- 10) How is the results section organized? Is there a separate discussion section? How is that section organized? What is the relative percentage of the results/discussion, in number of pages (approximately)? How many data tables and plots are included in this section?
- 11) Is there an appendix or appendices? What is included there that isn't presented in the body of the report?