

AE 721 Report 1 Required Contents

Due Wednesday 11 September 2024 9am

by e-mail to <kuaerodesign@gmail.com>

AE721_Report1_Individual's Last Name.docx *example: AE721_Report1_Barrett.docx*

AE721_Report1_Individual's Last Name.pdf *example: AE721_Report1_Barrett.pdf*

Individual Assignment

Note that the work to be performed for this report is to be done by an individual student. Teamwork is not allowed.

Total Points: 50

What follows is a specification for the minimum required contents of the AE 521 Report Block number 1. Your report must be organized in this manner. You may, within each section, add sub-sections if you so desire. Each chapter must start with a statement of purpose, except the Introduction and the Summary/Conclusions chapters.

Report Title: AE 721 Report 1 (Chosen Missile)

Cover - This is a good idea for both the .doc and .pdf files as it will be necessary when the file is printed to a hard copy.

Title Page - This page should be the first page of the report (if a cover is used, then it will be within the cover page). This page should be numbered as page "i."

Acknowledgments – Optional, make them real. Thank Mom/Dad/HS Teachers/Pets as you feel appropriate.

Table of Contents - The table of contents shall be structured as follows:

<u>Table of Contents</u>		<u>page</u>
LIST OF SYMBOLS		iii
ACKNOWLEDGMENT		iv
1. INTRODUCTION		1
2. CHAPTER 2 MAJOR HEADING		3
2.1 Chapter 2 First Section		3
2.2 Chapter 2 Second Section		5
2.2.1 Chapter 2 First Subsection of Second Section		5
etc.		

Page Numbering - The first section of the report containing the list of symbols, acknowledgment, list of tables and list of figures etc. shall be numbered with lower case Roman numerals. The body shall be numbered sequentially with Arabic numerals 1, 2, 3, etc. The Appendices shall be numbered with the letter of the appendix first followed by a dash and a page number: A-1, A-2, A-3; B-1, B-2, B-3 etc.

List of Symbols - You must include any symbols that are used in this report. You must give the names of the symbols and the units. After the main body of the symbols, you should include Greek symbols, then subscripts, followed by acronyms.

1. Introduction: Missile Choice - Explain to the reader why you “the author” chose a specific missile to explore. Be sure to write in the 3rd person.

2. Mission Specification

Deliver a cleaned-up version of the AIAA Mission Spec. Cast as much as possible into a table in an organized fashion as per the example report.

3. Mission Profile, Performance, Payload-Range, Intercept, Engagement, Flight Speed/Time of Flight Characteristics

List in tabular form all major performance characteristics of the missile system family. Include a reasonable number of variants (<10). List these characteristics in English units, then SI units in parentheses. Include figures as appropriate -- with references, of course.

4. Geometric and other Salient Characteristics, Form Factor

List in tabular form all major geometric and salient characteristics including mass (weight) in English, then SI units in parentheses. Include figures as appropriate -- with references, of course.

5. Development History

Spend no more than 2 pages, < 500 words describing the development history of the missile family. Include figures as appropriate -- with references, of course.

6. Service Record and Fielding

Spend no more than 2 pages, < 500 words describing service record (number of kills/targets engaged/systems installed on etc.). Find numbers on economics if possible and report them. Include figures as appropriate -- with references, of course.

7. Summary

Sum up the major points made in each of aforementioned chapters in less than ½ page. Report on future program direction and programs.

References

The references must follow AIAA Journal format (below) and be sequentially numbered as well as referenced throughout the report:

... Therefore this design is shown to meet the take-off and landing requirements as given in Ref. 1. ... From the Polhamus equation (Ref. 3) it can be seen that the lift-curve slope of the low aspect ratio wing is ...

Journals:

Walker, R. E., Stone, A. R., and Shandor, M., "Secondary Gas Injection in a Conical Rocket Nozzle," *AIAA Journal*, Vol. 1, Feb. 1963, pp. 334 - 338.

Books:

Turner, M. J., Martin, H. C., and Leible, R. C., "Further Development and Applications of Stiffness Method," *Matrix Methods of Structural Analysis*, 1st ed., Vol. 1, Macmillian, NY, 1964, pp. 203 - 207.

Sergre, E. (ed.), *Experimental Nuclear Physics*, 1st ed., Vol. 1, Wiley, New York, 1963, pp. 6 - 10.

Reports:

Billman, R., and Cryderman, J., "Left-Brain, Right Brain, The Continuing Debate on How to Drive Dr. B. Nuts," Crazy Student Corp., Auburn, Alabama, CSR-666, May 1994.

Transactions/Proceedings:

Soo, S. L., "Boundary-Layer Motion of a Gas-Solid Suspension," *Proceedings of the Symposium on interaction between Fluids and Particles*, Institute of Chemical Engineers, Vol. 1, 1962, pp. 50 - 63.

Technical Consultation:

(these are generally discouraged, but in some rare circumstances are appropriate, they may be in person, over e-mail or on the phone)

Barrett, R. M., "Technical Discussion on Weight Sizing and Late Penalties," The University of Kansas Aerospace Engineering Department, 9:45 - 9:58 pm, 20 October 2007.

Web Sites:

(these are generally discouraged, but in some rare circumstances are appropriate, there is no finite standard set throughout the industry, however, all of the relevant information is contained in the format below)

Anon., "How to Design an Airplane," *Design and Research Corporation, DARCorp Web Site* [<http://www.darcorp.com/>] DARCorp, Lawrence, Kansas 66044, 21 October 2007, 3:58 am.

Appendices: Barred. All information to be referenced must be included as embedded, pop-up windows.

Grading Guidelines: There are numerous ways to loose points, including specifically not following content guidelines spelled out for each section. Some of the more common ways to loose points are listed below:

cannot trace equations/improper reference
failure to follow format for headings
fluff/jibberish
improper page breaks
improper references of equations
inconsistent/missing units
no chapter intro. paragraphs
no table or figure titles
poor graphics/no computer usage

failure to adhere to outline
faint photocopies
fonts too small/inconsistent
improper page breaks or widowing sections/figures/text
incorrect orientation of tables, figures, text or graphs
margins broken
no name
non-sequential or improperly called-out references
spelling/grammar diction