**AE 522/722**

**Aerospace Design & Design Laboratory II**

**Spring 2025**

**Report Block 12**

Due 28 April 2025 8am to kuaerodesign@gmail.com

**Preceding Chapters & Contents, reworked as directed as well as Appendices A–Q & Z.**

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| **UG Missile UG Individual, Interceptor & Grad.** | **Avery & May** |
| Do all sections below as appropriate. Write up fault tree analysis going all the way from system requirements per certification base to actuator and component reliability spec.’s. | Cast in AIAA J. format. Structure figures first, then write to the figures including the following:  Abstract  Nomenclature  Introduction  Technical Approach  Results  Conclusions  Recommendations  References |

Chapter 11 Class II Sizing of Landing Gear­­

Chapter 12 Class II Weight and Balance

Chapter 13 Class II Systems (as appropriate)

13.1 Flight Control Systems

13.2 Fuel System

13.3 Hydraulic System

13.4 Electrical System

13.5 Environmental Control System & Cabin Sterilization

5.1. Pressurization System

5.2. Pneumatic System

5.3. Oxygen System

5.4. Air Conditioning System

5.5. Cabin Sterilization

13.6 Cockpit Instrumentation

13.7 De-Icing

13.8 Window Rain, Fog and Frost Control

13.9 Escape Systems Ingress/Egress Systems and Compatibility

13.10 Lavatory, Galley, Water and Waste Systems

13.11 Safety and Survivability

13.12 Checked Baggage or Major Cargo Handling Systems

13.13 Cabin Baggage or Infantry Accommodations

13.14 Ground Equipment and Vehicles Compatibility

Chapter 14 Fault Tree Analysis of Flight Critical Systems

Chapter Q Class I Structural Layout

Chapter Z Compliance Matrix

i.) Continue long-term projects for coming reports:

a.) Class I Configuration Definition (enter in AAA)

b.) Class I Performance Estimation (enter in AAA)

c.) Class I Cost Analysis (translate Roskam Part VIII equations into Word and begin analysis in AAA)

ii.) Continue long-term projects for coming reports:

a.) Update Class II Configuration Definition with Class II Weights Information (enter in AAA)

b.) Initiate Class II Performance Estimation (enter in AAA)

c.) Initiate Class II Cost Analysis

d.) Initiate Class II Stability and Control Analysis

iii.) List of all team member actions and contributions. Note that some team members may be assigned a "long term" job and may not show up as contributing to this section. That's okay, but it needs to be noted.

References (always at end of report)

**Report 12**

Due 24 April 2024 8am to kuaerodesign@gmail.com

All previous sections +

Chapter 14 Class II Stability and Control

Chapter 15 Class II Performance with Electric Motors and Energy Handling

Chapter 16: Advanced CAD 3-View, Situational Rendering & Exploded View

Chapter Z Compliance Matrix

i.) List of all team member actions and contributions. Note that some team members may be assigned a "long term" job and may not show up as contributing to this section. That's okay, but it needs to be noted.

References (always at end of report)

**Report 13**

Due 1 May 2024 8am to kuaerodesign@gmail.com

All previous sections +

Chapter 17 Manufacturing, Fielding, Logistics, Handling & Deployment

Chapter 18 Class II Cost Analysis

Chapter Z Compliance Matrix

i.) List of all team member actions and contributions. Note that some team members may be assigned a "long term" job and may not show up as contributing to this section. That's okay, but it needs to be noted.

References (always at end of report)