# FLIGHT MECHANICS, INC.

# INTRA-COMPANY MEMORANDUM

**Date:** June 21, 2011
**To:** Jan Yuari, Chief Design Engineer
**cc**: Uttar Reeder, Head of Research
**From:** Jill Brilliant and Shirley Smart, Research Managers
**Subject:** Recommendation of New Wing Design based on Tunnel Testing
**Ref:** Contract #1817-aa1

**Foreword**

Statements of Problem, Task, Purpose of Communication

**Summary**

Recommendation for wing design. Conclusions on wing design that support recommendation (each conclusion represents a criterion of judgment). Support details that justify conclusions, comprising noteworthy results (data/numbers) shown with respect to benchmarks (numbers for comparison).

**Detailed Discussion of the Wing Analysis**

**Introduction**
Full statement of Problem (statement in foreword is a "snapshot" of problem, and this full statement is often much more detailed than the snapshot in the foreword).
Statement of task (same as in foreword)
Statement of thesis (same as in summary)

Hint: try to rewrite and not copy verbatim. (Sample where task and thesis are combined to avoid verbatim copying of sentences in Overview: "We used a physical testing apparatus, a computer-linked data collection system, and standard statistical analyses to determine that the wing is acceptable for use.")

**Thesis Description**
Briefly explain and illustrate (diagram) the overall proposed recommendation

**Criteria Rationale**

Explanation of the generic criteria you used to reach your recommendation.
Put them in ranked order of importance.
Give the measurement and unit that is used to judge each criterion.
Give the benchmark for each measurement (for example, the number that must be met or surpassed to say that the criterion is fulfilled).

**Support for Thesis**

Provide a brief introduction to the various sections of your support, such as "We show that our recommendation of the wing is supported by its satisfaction of three out of the four criteria."

**Details of Criterion 1**

Testing Setup and Procedure (show a setup diagram)
Testing Results (show a Plot)
Analysis of Results with Respect to Fulfilling Criterion 1

**Details of Criterion 2**

Testing Setup and Procedure (New setup diagram OR refer to previous one)
Testing Results (show a Plot)
Analysis of Results with Respect to Fulfilling Criterion 2

**Details of Criterion 3**

Testing Setup and Procedure (Setup diagram)
Testing Results (show a Plot)
Analysis of Results with Respect to Not Fulfilling Criterion 3

**Details of Criterion 4**

Testing Setup and Procedure (Setup diagram)
Testing Results (show a Plot)
Analysis of Results with Respect to Fulfilling Criterion 4

**Alternatives**

An optional thesis, or further reasons for rejecting any alternative

**Omissions**

Admit that your work may have been limited or simplified.

**Errors**

Admit any errors or "poor" results in your work (that are not so severe as to render your thesis meaningless and invalid).

**Limitations**

Discuss criteria you did NOT evaluate in your tests or analysis, as well as assumptions that were not mentioned in the "Omissions" section.

**Conclusion**
One-sentence restatement of thesis (for the fourth time)

**Appendix A:**

Raw data tables

**Appendix B:**

Alternative Thesis Diagram

**Attachment A:**

Table of Metals and Critical Characteristics