

TITLE

THESIS

Joseph Q. Public, Captain, USAF

AFIT-ENY-MS-15-M-000

DEPARTMENT OF THE AIR FORCE

AIR UNIVERSITY

###### AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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An Analysis of the efficacy of the LCOM in estimating maintenance manpower productive capacity

THESIS

Presented to the Faculty

Department of Aeronautics and Astronautics

Graduate School of Engineering and Management

Air Force Institute of Technology

Air University

Air Education and Training Command

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in xxxxx

Joseph Q. Public, BS

Captain, USAF

March 2015

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# Abstract

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Joseph Q. Public

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**TITLE**

# I. Introduction

## General Issue

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## Problem Statement

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## Research Objectives/Questions/Hypotheses

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## Research Focus

Text

## Investigative Questions

Text

## Methodology

Text

## Assumptions/Limitations

Text

## Implications

Text

## Preview

Text

# II. Literature Review

## Chapter Overview

The purpose of this chapter is

## Description

**Overview**

Text



Figure 1. Figure Example

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## Relevant Research

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**Manpower Productivity**

Text

Table 1. Table Example

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Text

## Summary

Text

# III. Methodology

## Chapter Overview

The purpose of this chapter is

## Test Subjects

Text

## Summary

Text

# IV. Analysis and Results

## Chapter Overview

Text

## Results of Simulation Scenarios

Text

number Equation

Where:

X *bar* = population mean of sorties produced by squadron (LCOM)

μo = Actual number of sorties produced (Actual FY2002)

S = Standard deviation of the population mean of sorties produced (LCOM)

n = 75 replications

## Investigative Questions Answered

Text

## Summary

Text

# V. Conclusions and Recommendations

## Chapter Overview

Text

## Conclusions of Research

Text

## Significance of Research

Text

## Recommendations for Action

Text

## Recommendations for Future Research

Text

## Summary

Text

# Appendix

# Bibliography

Abalateo, Mila D. and Lee, Joni R. “Benchmarking Practices of Air Cargo Carriers: A Case Study Approach,” AFIT Thesis AFIT/GLM/LAL/93S-1, (Sep 93)

American National Standards Institute (ANSI). <http://www.ansi.org/> Accessed 15 Dec 2002.

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