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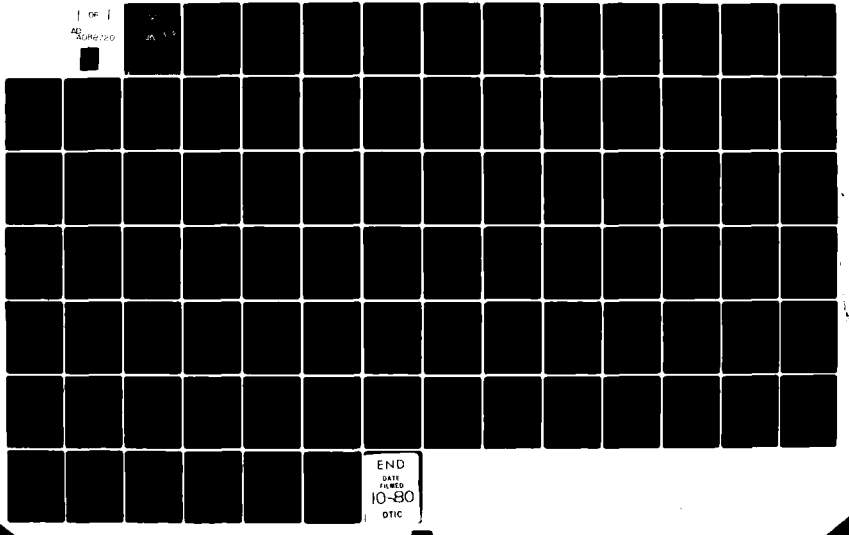

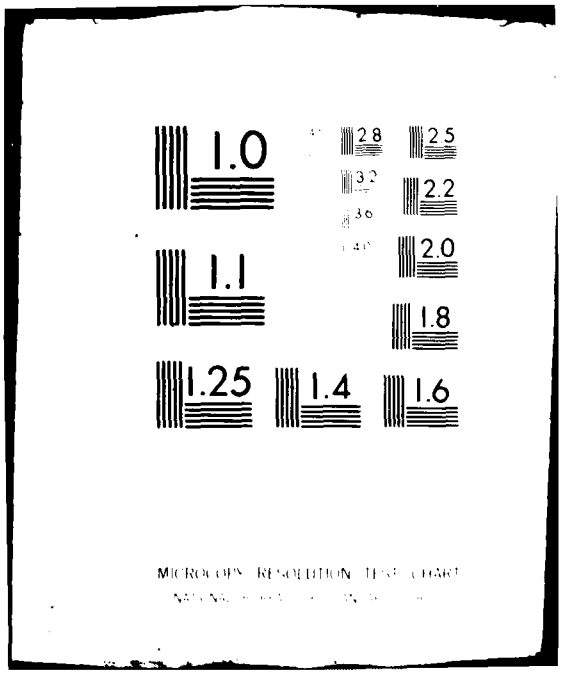
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Wright-Patterson Air Force Base, Ohio

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A COMPARATIVE ANALYSIS OF THE MINUTEMAN EDUCATION PROGRAMS AS CURRENTLY OFFERED AT THE SIX SAC BASES

Douglas A. Grant, Captain, USAF
Kim H. Keller, Captain, USAF

LSSR 32-80

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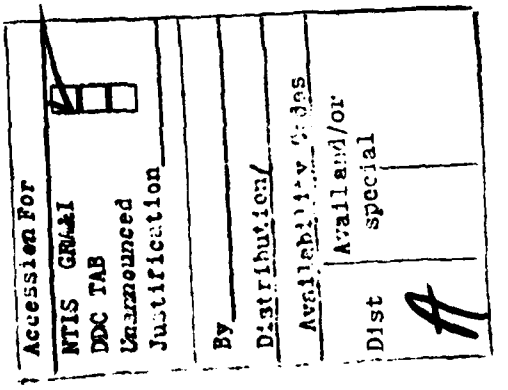

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The Minuteman Education Program is currently costing the Strategic Air Command $2.2 million per year. Due to the inflationary pressures on the civilian institutions providing the education, it appears that the cost will increase annually. Since the funding for the program comes from SAC's limited operations and maintenance budget, a more economical way to conduct the program needs to be found. The comparative analysis of the six individual programs contained in this study serves as one of the steps required in the search for a more economical alternative. Specifically, this study conducted a comparative analysis across a borad range of areas within each of the six programs. Based on the results of the analysis, the feasibility of placing the Minuteman Education Program under a single manager system (headquartered at the Air Force Institute of Technology) was ascertained. The study indicated that the single manager system is a viable alternative, provided certain policy decisions are made.

LSSR 32-80

A COMPARATIVE ANALYSIS OF THE MINUTEMAN EDUCATION PROGRAMS AS CURRENTLY OFFERED AT SIX SAC BASES

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science of Logistics Management

By

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Captain, USAF

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June 1980

This thesis, written by

Captain Douglas A. Grant

and

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and has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

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COMMITTEE CHAIRMAN

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CHAPTER I

INTRODUCTION

Background

The preservation of the security of our nation is, in part, assured through a combination of political and military policies. The steady state of a deterrent force comprised of nuclear bombs and missiles is the most pronounced and potentially devastating facet of the security program. This deterrent arsenal is made up of land based bombers, Submarine Launched Ballistic Missiles, and the Minuteman/Titan Intercontinental Ballistic Missile (ICBM) force.

The minuteman system represents roughly ninety percent of the ICBM inventory which falls under the control of the Strategic Air Command (SAC). The Minuteman system is dispersed over a six state area and is divided among six SAC missile wings (19:40). The location of each missile wing is contained in Figure 1.

Each missile wing is responsible for the daily control and, if necessary, execution of a selected number of ICBMs. Within a given wing, the responsibility for controlling the assigned missiles is divided among several Launch Control Centers (LCC) which are manned on a

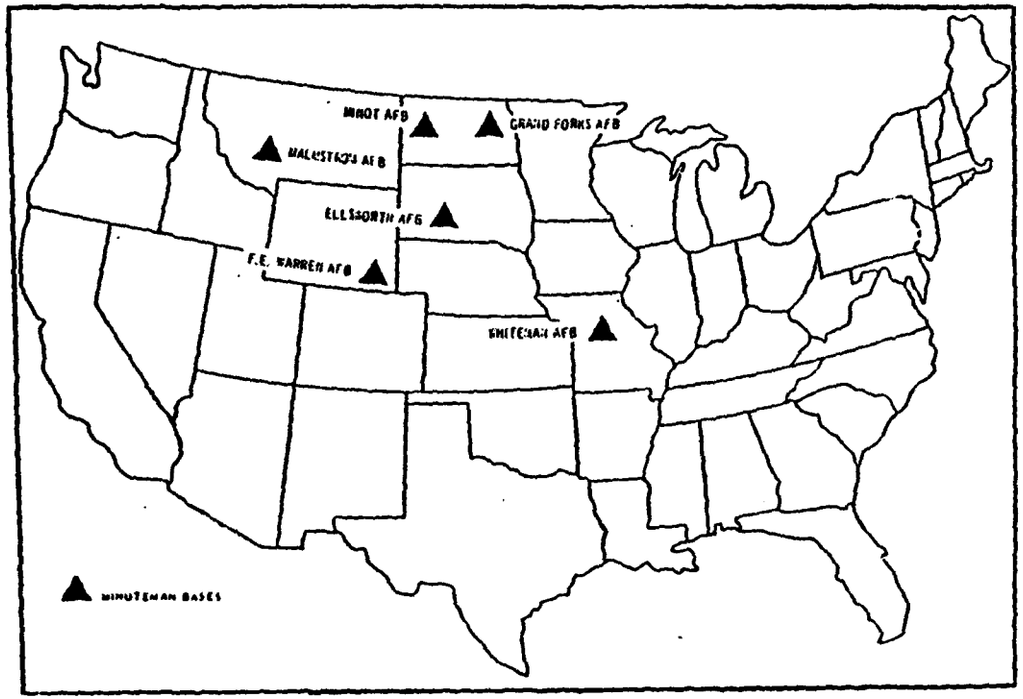

Figure 1

Location of Minuteman Bases

twenty-four hour basis by two highly trained Air Force officers. Simply stated, the responsibility of each on-duty missile crew member is to monitor the status of each remote missile and if required, launch these missiles without hesitation (19:2). Although the ultimate responsibilities of the missile combat crews are awesome and, if carried out, could result in the devastation of life as we know it, their daily routine affords the missile crew member little or no room for interpretation.

Since missile crew duty allows no innovation and affords very little personal growth in the officer/manager area, many officers view an assignment to the minuteman operational field as undesirable. This situation has caused SAC to investigate programs which would motivate officers to volunteer for missile crew duty and, once assigned, help offset the boredom of the routine (21:2-1). One such program is the Minuteman Education Program (MMEP).

The MMEP is an educational program which initially restricted enrollment to missile crew members. Though other Air Force officers and selected civilians are now permitted to enroll, the MMEP is still primarily a major motivational program aimed at recruiting minuteman operations officers (7:9).

Problem Statement

The Minuteman Education Program is currently costing the Strategic Air Command $2.2 million per year (21:3-21). Due to the inflationary pressures on the civilian institutions actually providing the education, it appears that the cost will increase annually. Since the funding for the MMEP comes from SAC's limited operations and maintenance budget, a more economical way to conduct the program needs to be found. One step in this search for a more economical alternative involves a comparative analysis of the programs conducted at each of the six locations in order to ascertain the feasibility of consolidating the educational programs offered by the various contracting civilian institutions into a single educational program.

Value of Graduate Education

Education at the graduate level or higher is a catalyst in the development of orderly, yet flexible, creative thought and actions. The knowledge and experience which is gained through the graduate educational system affords men and women greater adaptability in their work environment. Furthermore, the skills which are developed through the educational process enables these individuals to function more effectively when faced with complex problem solving situations (13:173,16:40). From a military

viewpoint, the benefits derived from advanced education can be summed up by the following:

> . . . education does make a very substantial contribution to the preparation . . . of an officer's ability to grasp large, complicated situations and to adapt creatively to changing circumstances [13:503].

Education, as well as experience, yields individuals capable of productive activities and increases their ability to cope with changing situations (3:27). An individual with varied experience and/or educational background is, by virtue of his ability to function effectively in different work environments, a far more valuable asset to the military. The contribution of education to the development of an experienced, effective manager stems from its ability to create the "capacity for problem solving - a trained predisposition, an inner confidence - that can substantially facilitate a person's capacity for creative engagements with obstacles and dilemmas of various kinds (3:41)." Senior managers within the armed services are becoming increasingly more aware of the need to develop this capacity.

Lieutenant General John B. McPherson stated that:

> . . . the attaining of higher levels of professionalism and competence by individuals (through graduate education) leads to better managed organizations, improved performance, and the ability to accomplish more with fewer people [14:45].

General McPherson emphasized that the specific benefits which are derived from advanced education cannot always be measured quantitatively and are therefore often not

considered when viewing education as an asset to the services. In his opinion, though graduate education frequently draws criticism from the Congress, it is a source of incalculable value in the maximization of the defense dollar (14:45).

The educational process also establishes a base from which future growth, through experience, is possible. In an era of rapid technological change, the expansion of one's own knowledge is essential to an individual's ability to stay current in his chosen field. In addition to expanding the abilities of those involved in the educational process, the educational establishment also discovers and cultivates otherwise unknown human resources.

> The capabilities of . . . mature students can never be known until they have been found and cultivated. R. S. Eckaus presents the basis of this proposition succinctly: "It just does not seem to be true that human talent will always appear no matter how discouraging the environment and inadequate the cultivation. One of the functions of the educational system is to act as a mechanism for seeking out and selecting potential talent." It pays to have an educational system that is arranged to discover human talent and that seeks to improve its techniques for achieving this objective [16:40].

Thus, the educational system identifies a pool of talented resources from which the military may draw its managers and technical specialists.

History and Mission of AFIT

The idea that special education was necessary in the performance of certain military duties dates back to before 1919 when aviation officers were educated at the Massachusetts Institute of Technology. In 1919, another institution, the Army's Air School of Application (AASA) was established at McCook Field in Dayton, Ohio. With the inception of the Air Corps in 1926, the AASA was renamed the Air Corps Engineering School (ACES) and moved to Wright Field (20:2-3). During the next several years, the ACES continued to offer a variety of militarily oriented courses of study.

After World War II, the Army Air Force Institute of Technology was opened and became a part of the Air Material Command. When the Air Force was approved as a separate service in 1947, the institution gained its present title of the Air Force Institute of Technology (AFIT) which by this period in time was divided into three schools; the College of Engineering Sciences (CES), the College of Industrial Administration (CIA), and the Civil Engineering School (20:3).

The controlling command for AFIT shifted to the Air University (AU) in 1950 and the two colleges, CES and CIA, were combined into the AFIT Resident College. A series of short courses, offered in the logistics area, were

incorporated into the School of Logistics in 1958, and this school, in turn, became a part of the AFIT Resident College (20:3).

The 83rd Congress authorized the Commander of the AU to confer degrees upon graduates of the AFIT Resident College who met completion requirements. The early 1960's brought about several structural changes in the AFIT Resident College which yielded the current school organization. Along with changes in the Resident College, a non-resident, graduate degree program was developed for use at the six Minuteman Missile Wings across the country. This program was entitled the Minuteman Education Program (20:3).

Today AFIT is the:

> . . . primary manager of the Air Force advanced education programs. The institute has developed into a flexible educational system comprised of resident and civilian institution programs which can readily meet Air Force educational requirements [20:2].

To date, the AFIT degree programs have graduated over 42,500 individuals of various services and nationalities (20:3).

As a graduate degree granting facility which offers resident and non-resident educational programs, AFIT has a multi-faceted mission. The AFIT mission is:

> . . . to plan, organize, conduct, and administer degree-granting and continuing education programs in engineering, systems and logistics, civil engineering, management, medicine, and other fields at Wright-Patterson Air Force Base, Ohio, at other sites and through contracts with civilian educational and health care institutions and industrial organizations in response to United States Air Force and Department of Defense requirements [20:2].

The ability to adequately perform this mission is contingent upon the constant examination of these educational requirements and a persistant search for up to date methods of education.

History and Mission of MMEP

On December 5, 1961, by direction of the Commander-in-Chief, Strategic Air Command, a proposal to provide the Minuteman missile crew members the opportunity to earn advanced degrees through off-duty classroom attendance was submitted to Headquarters United States Air Force (7:8). Final approval for the implementation of the Minuteman Education Program was received by SAC in April of 1962. The number of graduates from the program through fiscal year 1978 totaled 1,879, with an estimated total graduate level of 2,066 by the end of fiscal year 1980 (21:3-28,3-29).

The MMEP is available through the efforts of SAC, AFIT, and several civilian universities. From its inception, the concept of the MMEP was to establish a campus representation at each of the six minuteman bases. This representation, or branch, of the campus includes faculty members, a library, classrooms, and educational support equipment. Headquarters SAC budgets for and funds all aspects of the MMEP as well as providing guidance concerning enrollments, pre-counseling, and reporting of its officer participants. This guidance is carried out at each base

by Air Force officers assigned as AFIT Detachment Commanders. The individual SAC wings schedule crew members for MMEP participation as part of their normal duty and furnish housekeeping support for the local program. The specific degrees offered, past and present, through each MMEP are outlined in Table 1 (7:8).

The Air University provides command level guidance and support for all Air Force Institute of Technology programs, including the MMEP. The Special Programs Division of AFIT's Civilian Institution Directorate, located at Wright-Patterson Air Force Base, Ohio, is responsible for the daily administration of the MMEP. The Division Chief supervises each of the six AFIT Detachment Commanders, officed at their respective missile wings. The Detachment Commanders monitor contractual compliance with the civilian institutions, counsel and monitor student progress, and coordinate matters of local concern among university and military members (21:2-1).

The universities contracted under the MMEP provide accredited instruction leading to a graduate degree as outlined in the agreement. Each university submits a budget proposal annually for the services to be rendered in the coming fiscal year. After review and approval by the Air University a contract is agreed upon and the next class year begins. Subsequent increases to the annual budget are allowable but limited to a ceiling of six percent per year. Inflation, enrollment changes, charge in fees, and program

TABLE 1

THE MINUTEMAN EDUCATION PROGRAM

Base	Degree	Starting Date	University
Malmstrom AFB Montana	M.S. Engineering	June 63	Air Force Inst. of Technology
	*MBA (with Logistics minor)	June 68	University of of Montana
Ellsworth AFB South Dakota	MBA	Sep 63	Ohio State U.
	M.S. Economics	Jan 67	South Dakota S.U.
	*MBA	Jul 75	Univ. of S. Dakota
Minot AFB North Dakota	M.S. Industrial Management	May 64	Univ. of N. Dakota
	*MBA	Sep 72	Univ. of N. Dakota
Whiteman AFB Missouri	*MBA (with computer science program)	Aug 64	Univ. of Missouri
F.E. Warren AFB Wyoming	(Undergraduate)	Jul 65	Univ. of Wyoming
	M.S. Business Administration	Aug 68	Univ. of Wyoming
	*MBA	Sep 72	Univ. of Wyoming
Grand Forks AFB North Dakota	M.S. Industrial Management	Sep 66	Univ. of N. Dakota
	*MBA	Sep 72	Univ. of N. Dakota

* Degrees currently being offered.

modifications requested by the Air University can cause fluctuations in the approved budget (7:8,21:2-1).

The broad objective, or mission, of the MMEP is to attract volunteers to the SAC minuteman missile combat crew force by offering the graduate education at no cost to the crew members (21:2-1). The specific goals of the MMEP are:

1) recruiting, 2) establishing a worthwhile activity for the missile crew members to relieve the boredom of the Launch Control Center duty, 3) developing a resource of officer-managers to meet the educational needs of the Air Force, and 4) increasing the educational opportunities for personnel at the minuteman bases (9:14).

Thus, the MMEP serves as the major motivational tool to attract young officers in the missile operations career field. Various studies have been conducted in an effort to evaluate the MMEP in terms of its ability to attract officers into the minuteman crew force. Most of these studies have indicated that the MMEP is indeed the largest incentive for officers to enter the operational career field (9:2-3).

Justification for Research

The benefits to the Air Force from the continuance of the MMEP as compared to the cost incurred have been questioned repeatedly throughout the seventeen year history of the program. The first such occurrance was in 1964 when Headquarters USAF directed the discontinuance of the program upon the graduation of the first class. HQ SAC, however, conducted a lengthy study and requested the continuance of the MMEP on the following grounds:

1. The initial capital expenditures totalling $673,700 in building and start-up costs would be better

amortized over a longer period.

2. The 1965 Air Force Education Requirements Board established a requirement for 14,512 advanced degree holding officers over the following one to four years (7:12).

In 1967, Lieutenant General Paul K. Carlton, Commander of Fifteenth Air Force, strongly reacted to the $3,579 per student cost of education and the low attendance factor of 27.6% (7:12). The issue of the cost of the program was again formally discussed in 1976 when the Deputy Chief of Staff for Personnel, Fifteenth Air Force stated:

> . . . (MMEP) represents a direct SAC annual expenditure of almost two million dollars. While I believe the program to be beneficial to our missile combat crew members, I nevertheless believe there are substantial savings that can be realized . . . Since its inception in mid 1962 the MMEP operation has involved SAC, the Air University, and AFIT . . . While this management "Triad" is workable, there are a number of distinct financial and managerial advantages to be realized through a single operational concept [7:13].

The Fifteenth Air Force Deputy Chief of Staff for Personnel, in response to a directive issued by the SAC Deputy Chief of Staff for Personnel empaneled a committee comprised of members of Education, Inspection, Comptroller, and Missile staff agencies to perform a comprehensive reevaluation of the MMEP. The purpose of this study, entitled: A Comprehensive Reevaluation of the Minuteman Education Program: (SCN# 77-18), was to analyze the success of the program based on its ability to achieve the stated goals. Based on the findings of the study, several recommendations

were proposed. The first was a majority recommendation which indicated that the MMEP should be terminated once currently enrolled students have completed their course of study, and civilian contracts expire. It was further recommended by the majority of committee members that, if the MMEP was to be retained in any form, an Active Duty Service Commitment should be imposed (7:89). While the above recommendations were supported by a majority of the committee, there were no conclusive guidelines proposed. One of the reasons for this lack of conclusiveness was that there were several opposing, minority recommendations. One of the alternate recommendations addressed the possibility of combining the six MMEPs into a single manager system (7:60,80). While the study suggested that there were benefits to this proposal, only passing consideration was given and no elaboration as to its feasibility was presented.

To date, the annual increase in total MMEP contract expenditures has continued along the same lines as in the past and the program is still conducted under six sets of distinct academic guidelines. This thesis is one of three separate studies concerned with the feasibility of altering the structure of the MMEP in order to make it more cost effective. Together, these research papers will provide senior managers within the Air Force additional information upon which to base their decision regarding the future structure of the MMEP.

Objective Statement

The objective of this research is to perform a comparative analysis of the Minuteman Education Programs conducted at the six bases. Through this comparison of programs the feasibility of unifying them into a single system will be ascertained.

Research Questions

1. What are the similarities and differences among the six graduate programs in terms of the contents of the graduate degrees offered, general program elements, and the computer systems utilized in support of the academic programs?

2. Based on the results of the comparative analysis, what is the feasibility of combining the programs under a single manager?

CHAPTER II

METHODOLOGY

Overview

Chapter I introduced the Minuteman Education Program as a program designed to motivate officers to volunteer for missile combat crew duty and also to develop a source of highly educated managers which the Air Force would be able to utilize when their crew duty tour was completed. As stated earlier, the objective of the research was to perform a comparative analysis of the six separate MMEPs and, through the results of the analysis, determine whether or not the individual programs could be unified under a single manager. The specific questions which had to be answered were:

1) What are the similarities and differences which exist between the major functional areas of the six graduate programs?

2) Is it feasible to combine the six programs into a single system, under a single manager?

In order to accomplish the above, several areas had to be analyzed. This chapter contains discussions concerning the population, the source of data used, the plan for data collection, and the method of analysis.

Population

Data were gathered from a single population composed of the six Minuteman Education Program offices located at the respective missile wings. Data concerning the course structures, curriculum, days and hours that the courses are offered, and the composition of the teaching staff were gathered from 1979 sources. Prerequisite course requirements, graduation requirements, the computer systems abailable, and accreditation standards data were extracted from sources covering the years 1977-1979.

Definition of Terms

The following is a list of definitions of terminology used in the course of this research paper:

1. The major functional areas of the MMEP graduate education program consist of: a) program content; b) general program elements; and c) the computer systems used in support of the educational programs.

2. Program content includes: a) prerequisite or background course requirements; b) required graduate courses; c) elective options; d) thesis/individual study/comprehensive examination requirements; and, e) total credit hour requirements.

3. General program elements include: a) accreditation; b) faculty composition; c) admission requirements;

d) allowable graduate transfer credits; 3) class scheduling patterns and duration; f) length of academic terms; and, g) time limits for degree completion.

4. A computer system is the type of computer and ancilliary equipment that is used in conjunction with course requirements.

5. A curriculum is a document, or plan, developed for use by teachers in developing teaching strategies and represents the overall intent of the educational institution (4:3). It is a guide to the accomplishment of educational goals and accrediation requirements.

6. The single manager system is a system which would develop, implement, and control all the MMEPs from a central location. Under this system, each of the six programs would be standardized in terms of the contents of the three major functional areas.

Data Collection

As stated earlier, the individual MMEP detachments were the major source of the documents from which the data were drawn. While the Minuteman Education Three Year Plan was reviewed for general guidelines of data requirements, more current data were desired. Collection of the data from the detachments was divided into three phases.

First, after initial telephone interviews (Appendix A) the Detachment Commanders were contacted in order to obtain data concerning the administrative policies which guide the individual programs. Specific areas covered with the Detachment Commander included; scheduling procedures, length of academic terms, faculty composition, and procedures for enrollment. Also, more general areas such as conflicts in duty and class schedules, and policies concerning monitoring student progress were discussed. The Detachment Commanders were asked to furnish informational documents to support the telephone interviews. Specifically, program catalogs, university catalogs, course syllabi, monthly schedules, and general information concerning entrance requirements and administrative policies were requested. Data not obtained during telephone interviews was extracted from these publications.

The second phase of the data collection process concentrated on gathering information concerning the contents of each of the programs. The data required was obtained through telephone communications with the civilian Resident Administrator at each of the detachments and through written documents received from the universities. The Resident Administrator was asked to furnish information in the following areas; 1) prerequisite requirements, 2) elective options, 3) core course requirements, 4) thesis requirements, 5) accreditation, and 6) entrance requirements.

The data obtained in this phase, as well as the first phase, represented current 1979/1980 university and MMEP policies.

The third phase of data collection concerned the computer systems that are used to support the academic programs at each of the detachments. The computer analyst at each detachment was contacted and asked to furnish information regarding the type of system in use, the languages used, and the interfacing capability with other systems. Also information concerning the number of terminals available and the hours of operation was obtained. Finally, information as to ownership of the system and whether or not the computer is linked with the university computer or independent was requested.

After the requested information required for the study had been received it was separated into three major functional areas. Data of an administrative nature were grouped into the general program element area, computer system data were grouped as such, and all information concerning the content of the programs was grouped into the program content major functional area.

Method of Analysis

An analysis of the data and information obtained through the research provided the answers to the established research questions. The first of these questions dealt with determining the similarities and differences that existed

between the six MMEPs. As already outlined, the MMEPs had been divided into three major functional areas; program content, general program elements, and computer systems. The areas of program content and general program elements were further subdivided into more specific areas of concern.

The information obtained from each detachment was cataloged by functional area and, in the program content and general program element areas, the data were further separated into each of the elemental areas. Data from each of the MMEPs concerning a given elemental area were then grouped together so that a clear representation of the similarities and differences would be possible.

The analysis of the data is presented in two forms. The first is a discussion of the similarities and differences found in each of the major functional areas' elements. The discussion in any given area is centered around the similarities that exist among the programs and also any major differences. The second method used to present the analysis is tables. For most of the elements discussed, a table was constructed to present the similarities and differences discussed in the textual portion of the study. The tables present are designed to enable the reader to visualize and quickly grasp the similarities and differences between the detachments.

The analysis of a given element within a major functional area was directed towards revealing the

similarities among the programs that would support the single manager system concept, and the differences that might render this concept infeasible. The results of the analyses of all elements concerned were reviewed as a whole in order to determine the overall feasibility of combining the Minuteman Education Program into a single manager system.

Summary of Assumptions

The following assumption was made in conjunction with the research:

- 1. The Minuteman Education Program will continue to exist throughout the foreseeable future.

Summary of Limitations

The limitations of this study were:

1. Degree requirements and accreditation standards of the programs studied in this thesis were extracted from current (1979-80) publications. Future changes in requirements or standards could invalidate the conclusions of this study.

2. This study did not attempt to affix a monetary value to any alteration in the present MMEPs which might have resulted from the research.

CHAPTER III

DATA ANALYSIS

Overview

Chapter II presented a description of the major functional areas of the MMEP graduate education programs and detailed the methodology that was used in the comparison of these elements. This chapter deals with the analysis of the data obtained and is divided into three sections which correspond to the major functional areas of the MMEP programs. Each of these is further divided into topical areas corresponding to the elements within the respective major functional area. The results of the data collection for a given element are analyzed for similarities and differences and, where applicable, are displayed in tabular form for quick reference.

Program Content

This major functional area deals with course content and program requirements. It is comprised of several elements which outline the academic requirements of the various graduate programs. The elements which make up this area include; prerequisite course requirements, graduate course requirements, graduate elective options,

thesis/individual study/comprehensive examination requirements, and total credit hour requirements.

Prerequisite Course Requirements

No consistant similarities exist in the emphasis placed on certain subject areas from program to program. For example, Ellsworth AFB requires that eleven out of twenty-nine credit hours be in accounting and economics, while the emphasis at F.E. Warren appears to be in mathematics and business management (11,22).

Table 2 contains a summary of the prerequisite, or background, courses that each of the detachments requires in its program. A listing of the titles of each individual course at a particular base is presented in Appendix B (5,8:7-8,10:3-4,15:7,23:3).

All of the detachments require background courses in accounting, economics, computer systems, statistics, marketing, business management, and finance. As mentioned earlier, there are no universal similarities throughout the six programs in any subject area, however, there are similarities among some of the MMEPs. For example, Ellsworth and Malmstrom place the greatest emphasis in accounting and economics. Grand Forks, Whiteman, and Minot have no overriding emphasis in any of the required subject areas (6, 11,12,17,18,22).

TABLE 2

PREREQUISITE/BACKGROUND COURSES (in semester hours)

	Ellsworth	F.E.Warren	Grand Forks	Malmstrom[a]	Minot	Whiteman
Accounting	6	5	3	6	3	3
Economics	5	3	3	9	3	3
Computer	3	1	2	3	2	3
Statistics	3	3	6	3	6	3
Marketing	3	3	3	3	3	3
Business Management	3	6	3	6	3	6
Finance	3	3	3	3	3	3
Mathematics	0	8	3	0	0	3
Business Law	3	0	0	3	0	0
Total	29	32	26	36	23	27

a - Quarter hour system

Three of the six programs require a background in mathematics, only one of which requires more than one course. Furthermore, only two of the detachments (Ellsworth and Malmstrom) require a background in business law (6,8,12,17).

Required Graduate Courses

The analysis of the required graduate courses at each of the six MMEPs was conducted by identifying nine major areas of graduate level course concentration, and placing the courses offered within each program into this classification scheme for comparison purposes.

The nine areas of graduate level course concentration were; 1) Accounting and Finance, 2) Quantitative Methods, 3) Economics, 4) Business Management, 5) Marketing, 6) Business Policy, 7) Computer, 8) Business Research, and 9) Thesis/Individual Study. Table 3 contains the course requirements by each of the major areas across the six MMEPs. Appendix B lists the total graduate course requirements for the six MMEPs (5,8:9,10:5-7,15:7,23:3).

The graduate programs are similar in the respect that they all require a broad spectrum of subject areas. These areas include the study of management (organization behavior and theory), the development of skills and tools for use in the business environment (economics, accounting, and finance, etc.), and the tools that will support the

manager in managerial decision making (quantitative). Only minor differences in these study areas were noted and they consisted of a greater emphasis in one area that a particular school felt was necessary. For example, the Ellsworth MMEP requires no graduate level accounting course but includes three courses in business management. The F.E. Warren MMEP does not require an economics course but offers three elective courses in this area. Finally, all the MMEPs require a course in marketing and a capstone business policy course (5,8:9,10:5-7,15:7,23:3).

The major differences in the programs are in the requirements for computer courses, thesis/individual study, and the number of elective courses that are available to the student.

There are currently two MMEPs that offer structured programs in computer operations, F.E. Warren and Whiteman. The method of course arrangement in each of these programs is different. If a student at F.E. Warren elects the computer concentration option, he/she substitutes four required computer courses for four elective options. At Whiteman, if the student elects the computer concentration option, several requirements are altered. First, the accounting requirement and one course in the Business Management area are dropped. Secondly, a computer course is substituted for the elective course requirement and finally the student electing the computer concentration

TABLE 3

REQUIRED GRADUATE COURSES (in semester hours)

	Ellsworth	F.E.Warren[b]	Grand Forks	Malmstrom[c]	Minot	Whiteman[a]
Accounting & Finance	3	6/6	6	6/6	6	6/3
Quantitative	6	3/3	6	3/3	6	3/3
Economics	3	0/0	3	3/3	3	0/0
Business Management	9	3/3	3	9/9	3	6/3
Marketing	3	3/3	3	3/3	3	3/3
Business Policy	3	3/3	3	3/3	3	3/3
Computer	0	0/12	0	0/0	0	3/9
Research	3	0/0	1	3/3	1	0/3[d]
Thesis/Ind Study	0	0/0	2	0/5	2	0/3[d]
Total	30	18/30	27	30/35	27	24/27[e]

a - Administrative Management/Computer Concentration
b - Non Computer Option/Computer Option
c - Non Thesis/Thesis Option in quarter hours
d - Computer concentration students select either a research course or individual study
e - Three additional hours required if all prerequisite courses are waived

is required to take three computer oriented courses. In addition, the student is required to take a research methods course or conduct an individual study project (5, 10:9,17,22).

The second major difference between the MMEPs is the requirement for a thesis or individual study. The Minot and Grand Forks MMEPs require the completion of an individual study project prior to graduation. The Whiteman and Malmstrom MMEPs do not require a thesis or individual study but an individual study project can be elected as part of the computer option at Whiteman and a thesis option can be selected in lieu of elective courses at Malmstrom. There are no requirements for either a thesis or an individual study project in either the Ellsworth or F.E. Warren MMEP (6,11,12,17,18,22).

The final area of difference is the number of electives that are offered in each of the programs. The range is from one elective course required in the Ellsworth and Whiteman (Administrative Management option) MMEPs to six electives required in the Malmstrom non-thesis option, program. These differences are discussed in the next section.

Elective Options

The elective requirements, in semester hours, for each of the six programs are detailed in Table 4. All

TABLE 4

GRADUATE ELECTIVE OPTIONS
(in semester hours)

Base	Electives
Ellsworth	2
F.E. Warren[a]	12/0
Grand Forks	6
Malmstrom[b]	18/10
Minot	6
Whiteman[c]	3/0

a - Non Computer/Computer Option
b - Non Thesis/Thesis Option in quarter hours
c - Administrative Management/Computer Concentration

elective courses at each of the detachments must be of the graduate level (5,8:9,10:7,15:7,22).

An analysis of the data reveals a wide range of elective credit hour requirements. The programs at Ellsworth AFB and Whiteman AFB require only a single elective course, while the Malmstrom program requires eighteen elective credit hours for a student who elects not to write a thesis, and ten credit hours for students selecting the thesis option. The single course is required in the Whiteman program only if the student participates in the Administrative Management concentration of the MBA program (6, 11,17).

This situation is also true at F.E. Warren where, if a student pursues a computer oriented concentration within the program, he has no elective option. The twelve hours are made up of four pre-determined computer based courses. If the student elects to participate in the management concentration, then he/she is required to take four elective courses of his/her choice. The programs at Grand Forks and Minot have the same requirement for two elective courses (12,18,22).

Thesis/Individual Study/Comprehensive Examination

In addition to required course work, the MMEP programs differ in graduation requirements in the following areas: formal thesis requirement; individual study with research paper; and, comprehensive (oral or written) examinations. The requirements within the area of individual study include the completion of a research methods course and the acceptance of a library research paper. Table 5 contains the requirements for each of the MMEPs (6,11,12, 17,18,22).

While none of the six programs require a formal thesis, the Malmstrom detachment has an option to select either a thesis or a written comprehensive examination. Minot, Grand Forks, and Ellsworth all require both individual study and comprehensive examinations. The examination at Ellsworth is oral and is centered around defending the

TABLE 5

THESIS/COMPREHENSIVE EXAM REQUIREMENTS

Base	Thesis	Individual Study	Comprehensive Exam
Ellsworth	NR	R	R
F.E. Warren	NR	NR	NR
Grand Forks	NR	R	R
Malmstrom	O	NR	O
Minot	NR	R	R
Whiteman	NR	NR*	NR

R - Required
NR - Not Required
O - Optional
* - Optional with Computer Concentration

written results of the independent study. The programs at Minot and Grand Forks require written comprehensive exams which encompass the overall graduate field of study. F.E. Warren has no requirement in any of the three areas. For students enrolled in the computer concentration at Whiteman AFB, the individual study requirement is optional. In this case, the student has the choice of enrolling in a research course or conducting individual research and submitting a research paper. Students in the management concentration at Whiteman are not required to participate in any of the three options (6,11,12,17,18,22).

TABLE 6

TOTAL CREDIT HOUR REQUIREMENTS
(in semester hours)

Base	Prerequisite Hours	Required Graduate Hours	Elective Graduate Hours	Total Hours
Ellsworth	29	30	2	61
F.E. Warren[a]	32/32	18/30	12/0	62/62
Grand Forks	26	27	6	59
Malmstrom[b]	36/36	30/35	18/10	84/81
Minot	23	27	6	56
Whiteman[c]	27/27	24/27[d]	3/0	54/54

a - Non Computer/Computer Option
b - Non Thesis/Thesis Option; in quarter hours
c - Administrative Management/Computer Concentration
d - Three additional hours required if all prerequisite courses are waived

Credit Hour Requirements

An analysis of the total credit hour requirements at the six detachments revealed similarities between the programs. Table 6 segregates the requirements into prerequisite (undergraduate) hours, required graduate hours, and elective graduate hours (5,8:7-9, 10:2,15:2-3,23:2-5).

Prerequisite courses at each of the detachments will be waived if the student has already completed a similar course during his/her undergraduate education and approval of transfer credit is obtained. The decision to

waive any of the prerequisite courses lies with the civilian resident administrator (6,11,12,17,18,22).

Even though the program at Malmstrom AFB appears to require the heaviest load of prerequisite courses, it must be noted that this program works in quarter hours where all other detachments use the semester hour system. A semester hour equates to one and one half quarter hours. Therefore, the thirty-six prerequisite quarter hours required at Malmstrom equates to twenty-four semester credit hours. This figure is then consistant with the requirements at Grand Forks, Minot, and Whiteman. The program at F.E. Warren requires the greatest number of prerequisite credit hours with thirty-two followed by Ellsworth with twenty-nine (6,11,22).

Similarities exist between three programs in the area of required course hours. Whiteman, Minot, and Grand Forks all require twenty-seven credit hours. No consistancies exist among the other three detachments because the number of graduate course credit hours depends on options which the student may select within his/her program (5, 8,9,12,17,18,22).

The programs at Minot and Grand Forks each require six hours of graduate elective courses. There are no other consistancies between the other detachments. The range of required elective hours is from zero to twelve. Again, the specific number of hours required at F.E. Warren, Whiteman,

and Malmstrom are dictated by the course of study options that a student selects.

Reviewing total credit hour requirements indicates that three of the programs; Grand Forks, Ellsworth, and F.E. Warren are similar in the number of hours required. Each base requires from fifty-nine to sixty-two credit hours. When the total required hours for Malmstrom is changed to semester hours, Malmstrom, Whiteman, and Minot are consistant and range from fifty-four to fifty-six credit hours.

General Program Elements

The second major functional area to be examined is the area of general program elements. This area contains several elements which center around the administrative guidelines of the individual MMEPs. Elements in this area, such as enrollment requirements, transfer credits, length of academic terms, and time constraints for degree completions are established by the university from which the degrees are offered. Other elements in this area such as scheduling patterns and faculty composition are established within each detachment (6,11,12,17,18,22).

Accreditation

Table 7 identifies the three agencies which accredit the six MMEPs (6,11,12,17,22). The programs at

TABLE 7

ACCREDITING AGENCY

Base	Accreditation
Ellsworth	AACSB[a]
F.E. Warren	NCA[b]
Grand Forks	NCA[b]
Malmstrom	NASHS[c]
Minot	NCA[b]
Whiteman	AACSB[a]

a - American Assembly of Collegiate Schools of Business
b - North Central Association of Colleges and Secondary Schools
c - Northwest Association of Secondary and Higher Schools

Whiteman and Ellsworth are currently accredited by the American Assembly of Collegiate Schools of Business (AACSB). The AACSB has been recognized by the Council on Postsecondary Accreditation and by the U.S. Office of Education; Department of Health, Education, and Welfare as "the sole accrediting agency for baccalaureate and masters degree programs in business administration [1:17." The AACSB accredits only business programs and stipulates that in order for a graduate business program to be awarded approval, the undergraduate program must also be accredited by the AACSB (1:1).

The universities which provide the degrees for the F.E. Warren, Grand Forks, and Minot programs are accredited through the North Central Association of Colleges and Secondary Schools (NCA). The NCA does not specifically accredit the business programs at these universities. The NCA investigates the overall graduate program at a given university and, if warranted, grants accreditation to the graduate school in general (12,18,22).

The University of Wyoming, which offers the MBA program to F.E. Warren, recently applied for, but failed to receive accreditation through the AACSB. The University of North Dakota, which represents the programs at Minot and Grand Forks is not currently pursuing accreditation through the AACSB (12,22).

The program at Malmstrom is conducted through the University of Montana which is presently accredited by the Northwest Association of Secondary and Higher Schools (NASHS). Like the NCA, the NASHS accredits the graduate program in general which encompasses the MBA program. The University of Montana is in the process of applying for accreditation through the AACSB (6).

Faculty Composition

The current faculty composition at the six MMEPs is depicted in Table 8. The Ellsworth MMEP has six permanent faculty members, if the detachment commander instructs.

TABLE 8

FACULTY COMPOSITION

Base	Faculty (Perm)	Faculty (Visiting)	Graduate Assistants	Total
Ellsworth	6[a]	¼	0	6¼
F.E. Warren	7	0	0	7
Grand Forks	5	½	0	5½
Malmstrom	5	1	1	7
Minot	5	0	0	5
Whiteman	5	¼	¼	5½

a - Detachment Commander teaches

In addition, one faculty member from the main campus instructs an average of one quarter per year. Both the F.E. Warren and Minot programs have only permanent faculty, with seven and five full time faculty members respectively. The Grand Forks MMEP has five permanent faculty members and two visiting instructors during the academic year. The Malmstrom program has five permanent faculty members, an average of one visiting faculty member per academic term, and a graduate assistant during each term. The Whiteman MMEP has five permanent faculty and an average of one visiting faculty member and one graduate assistant per academic year (6,11,12,17,18,22).

The number of permanent and visiting faculty members is a function of the different courses that are required in the MMEP. Each instructor generally teaches two sections of one course per academic term, four terms per academic year, for an average annual teaching load of twenty-four credit hours. Expansion or contraction of the number of students enrolled in a particular MMEP appears to have limited impact on the number of faculty members required. The diversity of instructor backgrounds required for the various undergraduate and graduate course requirements (i.e. Marketing, Quantitative Methods, Economics, etc.) dictates a minimum of five full time faculty members required at each of the detachments. In addition, visiting faculty are required at several detachments to augment the permanent faculty members. Since class size ranges from ten to twenty students, significant fluctuations in total student enrollment have little effect on the overall faculty requirements.

Admission Requirements

The structure of the admission requirements at the six MMEP's are very similar. Admission to the MMEP generally requires; 1) a baccalaureate degree from an accredited college or university, 2) a grade point average (GPA) of some minimum predetermined level and/or a minimum score on the Graduate Management Aptitude Test (GMAT), and 3) the

student's demonstrated command of a common body of knowledge in Business Administration. Even though these three elements are common in the admission requirement structures, each MMEP has a slightly different method of determining admission eligibility based on undergraduate GPA and GMAT scores. Each of the MMEP's methods of determining eligibility are highlighted below (5,8:6,10:2,15:4,23:1).

The Ellsworth program requires a minimum of 950 total points based on 200 points multiplied by the individual's four year undergraduate GPA plus his GMAT score, or a minimum of 1000 points based on 200 points multiplied by the individual's last two years GPA plus his GMAT score. A student that does not meet either of these requirements can be admitted to the MMEP on provisional status. To be upgraded from provisional status the student must demonstrate his competence by achieving "B" or better grades in twelve credit hours of course work. There is no limit on the number of provisional status students allowed in the Ellsworth program (8:6-7).

The formula for enrollment eligibility at the Malmstrom program is identical to the Ellsworth program. The difference in enrollment requirements is the number of provisional students that can be admitted to the program. Only fifteen percent of the total MMEP enrollment may be on a provisional student status (5).

The F.E. Warren program formula for admissions is also identical to the Ellsworth program. The entrance requirement difference is the number of provisional status students allowed. The total number of provisional students in the F.E. Warren program cannot exceed twenty percent of the total number of students enrolled in the program (10:2,22).

The Minot and Grand Forks MMEP's have the same requirements for enrollment as both are under the University of North Dakota Graduate School. These programs require the entering student to have a minimum GPA of 2.75 for all undergraduate work or 3.00 for his last two years, and a GMAT score of at least 450. Students not meeting these qualifications are placed on provisional status and must achieve at least "B" grades on all prerequisite courses in order to upgrade to regular status (12,15:4,18).

The Whiteman program requires the entering student to have a 3.00 GPA for all undergraduate work and a minimum score of 500 on the GMAT for automatic acceptance. If the student has a GPA of 2.5 to 2.99 or a GMAT score of 450 to 500 he will be admitted to the program on a provisional basis and must complete twelve hours of "B" or better work. There is no limit on the number of provisional students allowed in the Whiteman program, however, the total number of provisional students enrolled in the University of Missouri

cannot exceed twenty percent of the total enrollment (17).

Each MMEP differs slightly in the manner in which they compute a raw score for assessing an individual's past aptitude in the business field and how they handle provisional status students. The similarity between the programs is the three phase admission requirement structure consisting of the requirement for: an undergraduate degree; meeting some minimum point criteria based on GPA and GMAT; and, an evaluation of the student's ability to comprehend and complete a graduate level program.

Allowable Graduate Transfer Credits

The six MMEP programs place an upper limit on the total number of graduate academic transfer credits that they will allow. The number of transfer credits authorized by the six programs are listed in Table 9. The range of graduate transfer courses permitted is from two in the F.E. Warren and Whiteman MMEP's to four in the Malmstrom MMEP (6,11,12,17,18,22).

In general, the transfer credit process involves the Resident Administrator evaluation of the student's transcript for applicability. If it is determined that a student is eligible for transfer credit, the graduate level course will be waived and the student's GPA will not be affected. To be eligible for transfer credit the student must have completed the course from another graduate

TABLE 9

ALLOWABLE GRADUATE TRANSFER CREDITS
(in semester hours)

Base	Transfer Credits
Ellsworth	9
F.E. Warren	6
Grand Forks	8
Malmstrom[a]	12
Minot	8
Whiteman	6

a - Quarter hours

institution of approved standing and the course cannot be considered obsolete. A course is considered obsolete if it was completed prior to the maximum period for degree completion listed in Table 11. In no case will a grade of less than "B", or courses that were completed by correspondence, be eligible for transfer credit.

Class Scheduling Patterns and Duration

Although the patterns and duration of classes at the different bases vary, the procedures used in developing and implementing the basic class schedules are very similar. The Resident Administrator at each of the detachments builds a yearly schedule for the required and elective

courses in the program. Each course is offered every third or fourth term, so that students may enter the program during any quarter and not be required to wait long periods of time to participate in a particular course.

The Resident Administrator is responsible for reviewing the course requirements of each student and assigning the student to the courses he/she needs. Once course assignments have been made (two courses per term is the maximum allowed at each detachment), the Resident Administrator sends the information to the Air Force Missile Operations Scheduling Officer. The scheduling officer then schedules the combat crew members for classes prior to assigning normal Air Force duties. When the process is complete, the combat crew member has an integrated quarterly schedule of education and mission requirements. MMEP participants who are not combat crew members are scheduled by the Resident Administrator (6,11,12,17,18,22).

Various differences exist among the six programs in the areas of class duration and frequency. Students at Malmstrom, Ellsworth, and Grand Forks are required to attend each course once each week for three hours. Each course at Malmstrom is offered three days each week, thus a student may not attend a given class on the same day each week. The programs at Ellsworth and Grand Forks are divided into two sections, each section offers each course once a week for a three hour period (6,11,12).

At Minot, the students are scheduled to attend each course six or seven times each month. Like Grand Forks, Ellsworth, and Malmstrom, the classes are conducted on a three hour basis. Minot also has two sections of students. Each section offers classes once every four days (excluding Sundays). As is the case at all of the detachments, if a student fails to attend a scheduled class, he/she may attend the lecture in the other section (6,11,12,18).

The class duration at Whiteman and F.E. Warren is two hours and forty minutes; however, there are differences in the frequency that the classes are offered. The program at Whiteman offers the required classes once every four days (excluding Sundays). The students at F.E. Warren are divided into three sections, one of which conducts classes in the evening for the benefit of the non-crew members. Each section offers classes three times in a two week period. Students are required to attend all classes scheduled for his/her section. Combat crew members have strict class schedules, however, non-crew members and civilian participants have complete autonomy in selecting which sessions to attend (17,22).

Length of Academic Terms

The six MMEPs are very similar with respect to both the academic term scheduling and the length of an individual academic term. The only exception is the Ellsworth

TABLE 10

LENGTH OF ACADEMIC TERMS
(in weeks)

Base	Term Length
Ellsworth[a]	12
F.E. Warren	10
Grand Forks	11
Malmstrom	10
Minot	11
Whiteman	11

a - Three twelve week tri-mesters and one eight week summer term

program. Table 10 lists the length of each academic term at the respective MMEPs (6,11,12,17,18,22).

The MMEPs operate on a four quarter basis with the fall quarter commencing in October and ending in December, winter quarter commencing in January and ending in March, spring quarter commencing in April and ending in June, and the summer quarter commencing in July and ending in September.

With respect to the length of each term, the MMEPs are ten to eleven weeks in duration. The difference between the programs is whether finals are conducted during the last week of courses or during the eleventh week of the course.

The major difference is in the structure of the Ellsworth MMEP. The Ellsworth MMEP operates on a twelve week tri-mester system with an eight week summer term.

Time Limit for Degree Completion

The individual graduate programs have established maximum periods within which the graduate students must complete their graduate level work. The required time limits for degree completion are listed in Table 11 (6,11, 12,17,18,22).

TABLE 11

TIME LIMIT FOR DEGREE COMPLETION
(in years)

Base	Time Limit
Ellsworth	7
F.E. Warren	6
Grand Forks	5
Malmstrom	8
Minot	5
Whiteman	8

Ordinarily, graduate level work that exceeds these time limits are considered obsolete and cannot be counted as fulfilling course requirements for the appropriate advanced degree program. This rule can be waived if; 1) the

over-aged course is from the same institution as the degree granting institution, 2) the student demonstrates knowledge of the subject matter of the course that is current and up-to-date either through a written examination, an oral examination, or both, and 3) with approval of the Dean of the Graduate School. Under no circumstances will courses that exceed these time limits be accepted as transfer courses in the graduate level program.

Computer Systems

The introduction to and use of the computer is an integral part of each MMEP in terms of applications and cost. The cost of computer support detachment wide was nearly seven percent of the total MMEP budget for fiscal year 1979 (21:3-21). Computer applications at the detachments range from business games and introductory programming experience in support of the major graduate courses, to extensive training in the use and application of computers in the business environment. Two detachments, F.E. Warren and Whiteman, offer computer concentration options to their MBA programs.

The six MMEPs are supported by either an on site independent computer system or a ground line link to the centralized university computer system. Table 12 lists the computer systems utilized by each detachment. This section

TABLE 12

COMPUTER SYSTEMS

Base	Computer System
Ellsworth[a]	TRS-80, CD 6400
F.E. Warren[b]	Data General Eclipse 200
Grand Forks	IBM 370
Malmstrom[b]	Digital Electronics Corporation PDP11
Minot	IBM 370
Whiteman[b]	Digital Electronics Corporation PDP11

a - TRS-80 is an independent system
b - independent systems

details the various computer systems and ancilliary equipment that are currently being utilized at each of the detachments (6,11,12,17,18,22).

The F.E. Warren program utilizes a Data General Eclipse 200 computer system. This system is totally independent from the University of Wyoming and supports only the F.E. Warren MMEP. Support equipment includes five cathode ray tubes (CRT) or video monitors and two printers. This system incorporates five computer languages including; 1) Assembler, 2) FORTRAN IV, 3) COBAL, 4) ALGOL, and 5) Extended BASIC. The computer system at F.E. Warren augments the business and quantitative methods courses, in addition to the computer concentration option that is offered (22).

The Whiteman program utilizes a Digital Equipment Corporation (DEC) PDP11 computer system which is independent from the centralized university computer. This computer system supplements the business and quantitative methods courses. The Whiteman program also offers a computer concentration option. Support equipment includes one CRT, one printer, and a batch processing capability which includes two keypunch machines and a card reader. Computer programming languages include FORTRAN, COBAL, and BASIC (17).

The Malmstrom MMEP also utilizes a DEC PDP11 computer System that is independent from the centralized university system. Ancilliary equipment includes two CRT's and a modem or direct dial telephone hookup. The Malmstrom program utilizes the computer in support of specific business courses (6).

The Ellsworth MMEP maintains a dual computer system capability. These systems consist of; 1) two Decwriter printer terminals that are connected to the Control Data (CD) 6400 computer system at the South Dakota School of Mines and Technology, and 2) two Radio Shack TRS-80 micro computers with cassette and disk attachments. The TRS-80 system is an independent system utilized in support of the introductory computer courses, and various business courses (e.g. Management Information Systems, Quantitative Methods,

Statistics, and Production Management). It is primarily used as an introductory programming and game playing system. The CD 6400 computer system enables the student to access higher level programs such as the Statistical Package for the Social Sciences (SPSS) (11).

The Minot MMEP receives its computer support from the University of North Dakota (UND) IBM 370 computer system. The detachment equipment consists of one CRT and two printers that are hardwired to the IBM-370 computer at UND (18).

The Grand Forks program receives its computer support from the North Dakota State University IBM-370 computer. The detachment equipment consists of three CRT's and one printer that are hardwired to the IBM-370 computer (12).

The primary purpose of the computer systems at each detachment is to expose the graduate student to the fundamental need for and many applications of a computer in today's complex business environment. A graduate program would not be complete without this vital exposure. This need is demonstrated by the number of prerequisite and graduate core courses that utilize the computer. It has been further recognized by two detachments, F.E. Warren and Whiteman, in that their MBA programs are supplemented with computer concentration options.

CHAPTER IV

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE STUDY

Overview

Chapter III presented an analysis of the similarities and differences which exist between the six Minuteman Education Programs. The analysis was presented in textual and tabular form and served as the answer to the first research question. This chapter is intended to answer the second research question; whether or not it is feasible to combine the six programs into a single manager system. Under the single manager system, the six MMEPs could be standardized in content and administratively controlled by AFIT.

Chapter IV is divided into two sections; discussion and conclusions, and recommendations for future study. The discussion and conclusions section covers four of the areas outlined in Chapter III which would require special attention if the single manager system were to be implemented. Within each of these areas, the decisions and actions that would be required are discussed. The second section presents recommendations for future study in areas that, while

not covered in this study, would be crucial to the overall decision of whether or not to implement a single manager system.

Discussion and Conclusions

The analysis of the data presented in Chapter III indicates that a single manager system is a feasible alternative to the present MMEP. There exist many similarities and differences among the individual programs; however, most of the differences are minor in nature and could be easily accommodated should a decision be made to switch to a single manager system. The analysis also indicates that there are four areas which would require special, additional consideration. That is, prior to any standardization activities, several key issues must be raised and decisions made concerning the nature of the new single manager program. The four areas requiring this attention are presented in this section and include; 1) faculty composition, 2) allowable transfer credits, 3) scheduling patterns, and 4) computer systems.

Faculty Composition

The analysis of the faculty composition at the six MMEPs indicates that all of the instructors, except one, are civilian teachers. The services of these individuals are obtained and provided by the civilian universities

offering the educational programs under contract with the Air Force. If a single manager system were implemented, the contracts with the universities would probably be terminated and a new source of instructors would be required.

Several policies and decisions concerning the nature of a revised MMEP would necessarily precede the selection of a new teaching staff. First and foremost, would be a decision concerning the content of the program under a single manager system. Specifically, decisions would have to be made in the following areas:

1. Would the MMEP continue to offer masters degrees in business administration or would other masters level degrees be offered?

2. Based on the degree offered, what would be the course content of the program?

3. Would conventional teaching methods or electronic teaching devices (e.g. electronic blackboards, video cassettes, etc.) be used?

Once these questions were answered, and firm policies as to course content established, then the staffing requirements of a revised program could be determined. Once the requirements were established, decisions concerning the source of the instructors would be required.

Transfer Credits

The area of allowable graduate transfer credits is another topic that would require special attention prior to implementing a single manager system.

Since there would be a substantial number of current MMEP participants at various stages of degree completion at any point in time, a liberal transfer credit policy would be required to; 1) insure the current participants were not unduly penalized by a program change, and 2) get the revised program off to a strong start. If the Air Force Institute of Technology were to serve as the single manager and actually conduct the educational programs at the Minuteman bases, it would be prudent to coordinate the transfer policy with the institute's accrediting association in advance so as to preclude subsequent reaccreditation problems.

Course and Student Scheduling

Course and student scheduling is a third area that requires the examination of several alternatives prior to implementation of a single manager concept. The nature and seriousness of the scheduling problem would largely depend upon the nature of the program and decisions on how the program would be offered (i.e., complete faculty at each detachment or electronically importing some of the courses).

If the faculty is composed of full-time members at each of the detachments then the scheduling system that is currently utilized would not require change. The resident administrator would coordinate with the wing scheduling office to determine the class schedule for each academic term. This could minimize the conflicts between student class and work schedules.

If, however, electronic devices were used to transmit course instruction from a central site to each of the MMEPs, then the scheduling patterns and course offerings would have to be standardized. By standardization, it is meant that the length of the classes, the number of classes offered per period, and the time of day that each class is offered would be the same throughout the six programs so that the transmission of instruction would reach all of the detachments simultaneously. If the central site were AFIT then the associated problems of transmitting across three time zones would have to be considered.

Computer Support

Computer systems support at the MMEP detachments is currently achieved through two procurement methods, leasing (from the universities or private industry) and/or buying. The detachment computer support equipment ranges from remote ancilliary equipment (CRTs, printers, etc.) that are groundline linked to a centralized university computer, to

totally independent computer systems. The two procurement methods are combined with the various systems support requirements to yield the different types of computer system support available at each detachment. For example, the F.E. Warren MMEP leases the Data General Eclipse 200 which is not linked to the university computer system. The Ellsworth MMEP has two TRS-80 micro-computers (Air Force owned) which are independent systems, and leases time on the CD6400 computer system located at the South Dakota School of Mines and Technology. The Minot MMEP has remote terminals (CRTs) that are linked to the University of North Dakota IBM-370 computer system. The computer time and equipment are leased.

Additionally, the computer languages incorporated in the computer systems utilized at the detachments vary. The range is from introductory languages such as BASIC, to higher level languages such as ALGOL, COBAL, and FORTRAN. Also sophisticated programs such as SPSS are available on the university owned computers.

The detachments that are currently leasing their computer system support would loose these systems under a single manager concept. In addition, a standardized, single manager system would dictate the use of a standardized computer system at each detachment to support the degree requirements. Prior to implementation, decisions regarding computer system requirements and programming languages

would have to be made, and necessary procurement actions taken.

Recommendations for Future Study

The feasibility of combining the six MMEPs under a single manager was based on an analysis of the similarities and differences between the individual programs. This study identified the major areas requiring attention should a single manager system be seriously considered. Analysis of the following areas should be conducted prior to implementing a single manager concept:

1. A current determination of Air Force needs, and the desires of the crewforce should be accomplished. If these are not compatible, crewmembers may not participate in the MMEP and continuation of the program may not be warranted.

2. A determination of the curriculum requirements for a program that meets the needs of the Air Force should be made.

3. Once the needs of the Air Force and the curriculum requirements are established, alternative methods of providing the program requirements should be analyzed. Specifically, contracting with civilian universities versus an AFIT single manager system should be examined.

4. A cost analysis of the various alternatives should be conducted to determine the most economical method

of structuring the MMEP.

5. If a single manager system is determined to be the most economical method of conducting the MMEP, an analysis of the political impact of changing to a single manager system should be conducted and a detailed plan for transitioning to the new system should be developed.

APPENDICIES

APPENDIX A

DETACHMENT COMMANDER/RESIDENT ADMINISTRATOR INTERVIEW QUESTIONNAIRE

Interview Questions

1. How do students select topics for thesis/individual study?
2. How is the scheduling of classes conducted and coordinated with the operational wing?
3. What is the length of an academic term?
4. What degree options or areas of concentration are available?
5. What are the elective options at the graduate level?
6. By whom is the graduate program accredited?
7. Explain the requirements for enrollment?
8. Explain provisional student status and how one is upgraded?
9. Explain the transfer procedures for undergraduate and graduate level courses? How many transfer credits are allowed?
10. How many courses can a student take in one term?
11. What process for completion is available to a student who has to PCS during the program?
12. How is a student handled when his GPA drops below the minimum level?
13. What is your current faculty composition?
14. Explain the computer system used in your program?

APPENDIX B

COURSE REQUIREMENTS FOR THE MINUTEMAN EDUCATION PROGRAMS

MMEP AT ELLSWORTH AFB
(University of South Dakota)

Course Title	Semester Hours	
Required Prerequisite Courses		
Principles of Economics	5	
Principles of Accounting	6	
Introduction to Data Processing	3	
Business Finance	3	
Principles of Marketing	3	
Business Statistics	3	
Business Law	3	
Management	3	
Total prerequisite hours		29
Required Graduate Courses		
Financial Administration	3	
Quantitative Analysis	3	
Production	3	
Organization Theory and Behavior	3	
Business and Its Environment	3	
Marketing Administration	3	
Administrative Policy	3	
Management Information Systems	3	
Managerial Economics	3	
Research Problem in Business	2	
Oral Exam on Research Paper	1	
Elective (any graduate course)	2	
Total graduate hours		32
Total hours		61

MMEP AT F.E. WARREN AFB
(University of Wyoming)

	Course Title	Semester Hours	
	Required Prerequisite Courses		
	Introduction to Computer Programming	1	
	Mathematical Analysis for Business	3	
	Calculus for Behavioral Sciences	5	
	Financial and Administrative Accounting	5	
	Intermediate Theory	3	
	Managerial Finance	3	
	Management and Organization	3	
	Production Operations Management	3	
	Marketing Management	3	
	Statistical Analysis for Research Workers	3	
	Total prerequisite hours		32
	Required Graduate Courses		
	Seminar in Management Accounting	3	
	Seminar in Corporation Finance	3	
	Business Policy	3	
Select one	Seminar in Marketing Management	3	
	Seminar in Contemporary Marketing Management	3	
Select one	Seminar in Contemporary Problems in Personnel Management	3	
	Seminar in Organizational Behavior	3	
	Seminar in Organizational Theory	3	
Select one	Inventory Control	3	
	Production Planning	3	
	Technical Planning for Managers	3	
	Electives[a]	12	
	Total graduate hours		30
	Total hours		62

a - Computer option requires 12 credit hours of computer courses in lieu of elective requirements.

MMEP AT GRAND FORKS AFB
(University of North Dakota)

Course Title	Semester Hours	
Required Prerequisite Courses		
Data Processing	2	
Survey of Accounting Principles	3	
Elements of Economics	3	
Elementary Business and Economic Statistics	3	
Intermediate Business and Economic Statistics	3	
Principles of Management	3	
Corporation Finance	3	
Principles of Marketing	3	
Mathematics Methods I	3	
Total prerequisite hours		26
Required Graduate Courses		
Policy Formulation and Administration	3	
Management Theory and Behavior	3	
Production Management	3	
Financial Management	3	
Marketing Administration	3	
Managerial Economics	3	
Accounting Information for Decision and Control	3	
Quantitative Analysis for Management Decisions	3	
Business Research	1	
Electives	6	
Independent Study	2	
Total graduate hours		33
Total hours		59

MMEP AT MALMSTROM AFB
(University of Montana)

Course Title	Quarter Hours	
Required Prerequisite Courses		
Financial Accounting	3	
Managerial Accounting	3	
Introduction to Quantitative Economic Analysis	3	
Microeconomic Analysis and Applications	3	
Macroeconomic Theory and Policy	3	
Financial Management	3	
Human Behavior in Business	3	
Management of Enterprise	3	
Statistical Methods	3	
Legal Environment	3	
Marketing Management	3	
Electronic Information Processing	3	
Total prerequisite hours		36
Required Graduate Courses		
Administrative Accounting Controls	3	
Research Methods	3	
Managerial Economics	3	
Quantitative Analysis	3	
Problems in Financial Management	3	
Internation Aspects of Business	3	
Human Resource Management	3	
Advanced Management Problems	3	
Problems in Marketing Management	3	
Business and Its Environment	3	
Electives[a] (non-thesis option)	18	
Total graduate hours		48
Total hours		84

a - Ten hours of electives and five hours for thesis work under the thesis option. Total program length 81 hours.

MMEP AT MINOT AFB
(University of North Dakota)

Course Title	Semester Hours	
Required Prerequisite Courses		
Data Processing	2	
Survey of Accounting Principles	3	
Elements of Economics	3	
Elementary Business and Economic Statistics	3	
Intermediate Business and Economic Statistics	3	
Principles of Management	3	
Corporation Finance	3	
Principles of Marketing	3	
Total prerequisite hours		23
Required Graduate Courses		
Policy Formulation and Administration	3	
Management Theory and Behavior	3	
Production Management	3	
Financial Administration	3	
Marketing Administration	3	
Managerial Economics	3	
Accounting Information for Decision and Control	3	
Quantitative Analysis for Management Decisions	3	
Business Research	1	
Electives	6	
Independent Study	2	
Total graduate hours		33
Total hours		56

MMEP AT WHITEMAN AFB
(University of Missouri-Columbia)

Course Title	Semester Hours	
Required Prerequisite Courses		
Selected Topics in Analysis	3	
Organization Theory and Behavior	3	
Managerial Accounting	3	
Computer Applications for Planning and Decision Making	3	
Managerial Statistics	3	
Economics for Managers	3	
Production/Operations Management	3	
Managerial Finance	3	
Managerial Marketing	3	
Total prerequisite hours		27
Required Graduate Courses		
Managerial Decision Science	3	
Business Environment and Policy	3	
	6	
Administrative Managerial Option[a]:		
Controllership	3	
Current Topics in Data Processing	3	
Advanced Financial Management	3	
Management of Labor Relations	3	
Organizational Behavior and Group Dynamics	3	
Advanced Marketing	3	
Elective	3	
	21	
Computer Concentration[a]:		
Current Topics in Data Processing	3	
Data Based Management Systems	3	
Advanced Financial Management	3	
Business and Economic Research	3	
Management Topics	3	
Advanced Marketing	3	
Select one: Research Design and Methodology	3	
Select one: Management Problems	3	
	21	
Total graduate hours		27
Total hours		54

a - Student selects Administrative Management Option or Computer Concentration.

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