U. S. AIR FORCE EDUCATIONAL PROGRAMS: A STUDY OF SUCCESSFUL LIFELONG LEARNING PROCESSES AND PROGRAMS

An Applied Project

Presented To

the Graduate Faculty of the

School of Education

Morehead State University

In Partial Fulfillment

of the Requirements for the Degree

Specialist in Education

by

Henry W. Easterling, Jr.

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Accepted by the graduate faculty of the School of Education, Morehead State University, in partial fulfillment of the requirements for Specialist in Education Degree in Higher Education.

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ABSTRACT OF APPLIED PROJECT

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by

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ABSTRACT OF APPLIED PROJECT

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Director of the Project: Dr. Paul Ford Davis

Statement of the Problem

With the advent of the technological age and the rapid increase in knowledge, man has been forced to reexamine his views and to reorient his thinking in regard to learning. No longer can he complete his education in his youth and expect such learning to remain valid for the rest of his life. During the past several decades it has become imperative for man to continue his learning or to face obsolescence in the skills needed to compete in society.

Government officials, educators, and industrial and labor leaders have recognized the need for lifelong learning and have been active in establishing or promoting the concept. While they have been successful in developing more comprehensive and meaningful programs, they have not always made use of the ideas, theories, principles, and procedures that have been developed by the institutions which have pioneered in the field. It is believed that many of the ideas and principles that have proven effective for these institutions can be applied equally well in any modern organizational structure.

In neglecting to use the concepts and ideas developed by some of the pioneering institutions, leaders in various areas are not providing

as comprehensive a program as might be developed. These leaders need to examine such programs in depth and to consider the implications that they might provide for their own particular institutions.

Methodology

Research into the civilian aspects of lifelong learning was conducted at the Johnson Camden Library of Morehead State University. This included the reading of books by eminent adult educators, government officials and international authorities; reviewing abstracts of doctoral dissertations pertaining to adult and continuing education; and examining periodicals and special studies that address the subject of lifelong learning. Additional information was obtained by an interchange of ideas in adult education classes, by conversations with the faculty and the students of Morehead State University, and by a visit to the Mount Sterling, Kentucky, Adult Learning Center. A tour was made of the center, and an informal conference was held with the director of the facility. Joining in the discussion was the director of the adult education center at the Ashland Community College, Ashland, Kentucky, who was visiting the Mount Sterling center at that time.

In addition to the above, interviews were conducted with citizens from many walks of life. These people were questioned about their views regarding the value of adult education, the needs of their communities, and the role of lifelong learning in their personal aspirations and goals.

Visits were made to Wright-Patterson Air Force Base, Dayton, Ohio, for research into the military aspects of lifelong learning. In addition to the excellent base publications library, the Wright-Patterson complex offered the extensive facilities of the Air Force Institute of Technology. Information was obtained from school catalogs, Air Force

regulations, manuals, pamphlets, fact sheets, and related material, and from professional military periodicals such as the Air University Review, the Air Force Magazine, and Airman. Additional military material was obtained through correspondence with information officers at the Air Force Academy, Air University, and Air Training Command.

A personal visit was made to the Air Force Institute of Technology, and an informal interview was conducted with the assistant director of education and plans. This official provided an overview of the programs offered by the institute, and he reiterated the institution's commitment to continuing and lifelong learning.

Many of the observations and statements made in this study reflect the researcher's personal experiences based on more than than twenty years in the United States Air Force. As a product of the Air Force educational system, he has attended many of the schools and has participated in many of the activities described in this study. Consequently, several of the ideas and methods presented in this report were acquired through long years of experience and practical application.

Conclusions

As a result of this study, the following conclusions are drawn in regard to lifelong learning and United States Air Force educational programs:

1. Lifelong learning is no longer a belief or a theory, but a fact to be reckoned with. Scientific and technological developments in the last two decades have made it imperative that individuals continue learning throughout their life span or face obsolescence in the skills needed to compete in society. This fact has been recognized by the

United States Congress, by UNESCO, the educational arm of the United Nations, and by eminent educators and government officials around the world.

2. If educators, government officials, and industrial leaders are to provide individuals with opportunities to pursue lifelong learning, they should examine some of the ongoing programs that were developed by institutions which have pioneered in the field.

3. The United States Air Force was one of the pioneers in the development of lifelong learning programs. The Air Force programs were developed with the cooperation and assistance of prominent civilian educators, and they represent the best efforts of the military and civilian communities. The programs are continually updated to incorporate the latest concepts and ideas, and they are designed so that inputs can be made from many elements of our society. These safeguards enable the Air Force to avoid the dangers of excessive traditionalism and rigidity of thought, and to develop truly innovative programs for its people.

4. Air Force programs have implications for civilian educators, government officials, and industrial leaders. While some of the programs are not feasible for civilian institutions in their present form, they can be adapted with relative ease. Managerial and leadership techniques are universal in nature, and while the application of the principles may differ, the underlying theories and ideas remain valid in almost all situations.

Recommendations

1. Leaders of civilian institutions should examine Air Force programs and determine if the various theories, principles, techniques,

and concepts that have worked for the Air Force can be adapted to their own institutions.

2. After the study is completed, and if implications are found to exist, the civilian leaders should make every effort to develop the most comprehensive and meaningful programs and implement them with the least possible delay.

3. Military and civilian leaders should maintain close liaison with each other and cooperate fully in developing new programs that will promote lifelong learning and a better society. Special attention should be devoted to reducing and eliminating the bias that exists or may develop as each group studies the other's programs.

4. Military and civilian leaders should explore the possibility of establishing a joint educational commission to study the concept of lifelong and continuing education. This will enable military and civilian educators to periodically exchange ideas and to compare theories, concepts, and techniques. Such a commission should prove mutually beneficial and enhance considerably the effectiveness of adult education.

Accepted by: Paul Ford Davis, Chairman

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APPLIED PROJECT

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Graduate School

Morehead State University

1977

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Chapter 1

INTRODUCTION

Lifelong learning is not a new phenomenon or a philosophy of learning that originated in modern times. In fact, the idea is as old as man and was practiced long before our ancestors knew the basic skills we normally associate with education today.

Prehistoric man's very survival depended on acquiring new skills throughout his lifetime. The forces of nature were unrelenting and were often unpredictable, capricious, and hostile. Man's entire life was devoted to obtaining new means of survival. His success in this effort was usually the difference between existence or nonexistence. The flint, the wheel, the battle axe, and other inventions were products of necessity as he experienced life, overcame or succumbed to obstacles, and continued to grow in knowledge.

Throughout history man has valued education as a lifelong pursuit. The Greeks, the Romans, and more ancient civilizations recognized and advocated the need for continuing education. Socrates believed that the unexamined life was not worth living and that the examination should never cease. Other educators down through the ages held similar views, and even during the dark ages, the monks and scribes followed education as a lifelong vocation.

Ironically, these monks and scribes of the Middle Ages are usually the ones credited with developing the pedagogical methods and procedures that are held in disrepute by many experts today. Of course,

the methods they developed were not meant to be used to educate the masses, but as a means of imparting religious training to the people they wished to convert. Their pupils were never educated to the degree of mental or intellectual awareness but only to a degree of trust and reverence. Unfortunately, as the dark ages began to fade and the people became more enlightened, the methods of the monks were adopted and when necessary adapted by secular educators. Some changes were instituted during the following centuries; however, the underlying principles remained the same. Also in the process, the idea of learning as a lifelong pursuit was abandoned by all except the most astute and persevering scholars. One reason for this was that rulers and governments were not interested in providing the masses with more than the very rudimentary elements of an education, if any at all.

So, as our modern society emerged and as we progressed to the point where education became an increasingly important goal for most elements of our society, the idea of educating the masses became important. At first education was rudimentary; then it progressed to incorporate certain elementary and secondary goals, and finally, today more than half of our high school graduates enroll in some type of college program.

Sometime during this educational evolution, the American people came to view education and life as two separate entities. Education was viewed as a process engaged in by children and youth, and after a predetermined date in life, the student was expected to put off childlike activities and engage in the art of earning a living. Society tolerated educators, philosophers, poets, and a few other scholarly types who sought educational goals as a lifelong pursuit; however, the

average American divorced himself from education at a certain stage in life and did not return to it--even for short periods of time.

For many years this separation of education and life caused no real concern for the educator or society. What an individual learned in childhood or youth enabled him to profitably pursue a career with little likelihood that his skills would become obsolete during his lifetime. The technological revolution changed all of this. The increase in knowledge, the development of new production methods, and other rapid changes in industrial practices all combined to render obsolete the skills of yesteryear. Adults have been forced to learn new skills and to update their education or face the possibility of unemployment. Thus education and life are terms that are no longer mutually exclusive of each other; and the individual who seeks success in our society must think of learning as a lifelong endeavor, and be ready to continue his education at periodic intervals during his career.

Statement of the Problem

With the advent of the technological age and the rapid increase in knowledge, man has been forced to reexamine his views and to reorient his thinking in regard to learning. No longer can he complete his education in his youth and expect such learning to remain valid for the rest of his life. During the past several decades, it has become imperative that man continue learning throughout his lifespan or face obsolescence in the skills needed to compete in society.

Government officials, educators, and industrial and labor leaders have recognized the need for lifelong learning and have been active in establishing or promoting the concept. While they have been

successful in developing more comprehensive and meaningful programs, they have not always made use of the ideas, theories, principles, and procedures that have been developed by the institutions which have pioneered in the field. It is believed that many of the ideas and principles that have proven effective for these institutions can be applied equally well in any modern organizational structure.

In neglecting to use the concepts and ideas developed by some of the pioneering institutions, leaders in various areas are not providing as comprehensive a program as might be indicated. These leaders need to examine such programs in depth and to consider the implications that they may provide for their own particular institution.

Purposes of the Study

One American institution that has long been a proponent of life-long learning is the United States Air Force. The diverse educational and training programs have been carefully designed to provide Air Force members with certain skills and values as they progress through the various stages of their careers. These courses were designed to assist the individual in qualifying not only as a technician, a leader, and a professional military person, but they also provided human relation skills that enabled and assisted him in managing his personal affairs, and in becoming a more responsible member of his civilian community.

It is believed that an examination of Air Force programs may have important and significant implications for the civilian community. First, the study describes a system of lifelong learning that is functioning with considerable success. Secondly, the study provides a comprehensive view of the various programs and describes how they relate,

to one another, in the overall organizational structure. Thirdly, the study acquaints the reader with the various principles on which the learning is based and provides him with insights as to how these principles may be applied to civilian institutions.

Limitations of the Study

This study is limited to a historical, narrative report and is based primarily upon library research. Findings and conclusions are based on comparisons of existing institutions as they are described by the institutions themselves and by the observations and comments of educators and industrial leaders. These views have been tested to some degree by obtaining the comments of administrators, faculty, students, and the average citizen.

The Air Force is a military organization capable of enforcing compliance on its members in certain situations. While this is also true in a more limited degree in civilian institutions, the fact remains that there is an essential difference between the two. Civilian institutions are loosely structured with many organizational forms and diverse missions. They are elective and eclective in nature and provide many alternative methods of achieving a given goal. The Air Force is highly structured and has a definite mission. Many of its programs are mandatory or they are required for an orderly career progression. However, there still remains a wide realm in which all organizations and institutions function. It is in this area that this report will concentrate.

This study is restricted to an examination of formal Air Force educational programs. While programs developed by other branches of the

armed services may also have implications for the civilian society, this review concerns itself with limited goals and well defined parameters. These are mainly initial career and basic training, periodic professional training, and continual or lifelong learning that will upgrade skills, provide training in new concepts, or maintain competency levels.

This study, while comprehensive in nature, does not present certain elements of Air Force programs. This approach is necessary to insure that only pertinent data are presented, and also to provide a more detailed examination of those programs that may have implications. The examination ranges from the initial or basic training received when an individual first enters the Air Force to the postgraduate course offered to selected individuals in the military.

Definition of Terms

1. Air Force: As used in this study, the term refers to the United States Air Force.

2. Airman: Air Force, by regulations, applies the term "airman" to both commissioned officers and enlisted men. However, in practice, the term is sometimes used to denote enlisted personnel only, especially the lower ranking enlisted men. (See Appendix A for a description of Air Force grade structure.)

3. Chief of Staff: The Air Force Chief of Staff is the official military leader of the U. S. Air Force. He reports directly to the Secretary of the Air Force (a civilian), and due to his position, outranks all other Air Force officers. At lower echelons of command, the Chief of Staff is the third ranking position following the Commander and Vice-Commander.

4. Classified: When referring to documents, this term means that the written material is sensitive and therefore limited in distribution to personnel eligible to examine it. A security classification such as Confidential, Secret, Top Secret, or other designation is stamped on the document.

5. Commandant or Commander: The officer in charge of a particular military organization. The term "commandant" is usually restricted to officers in charge of schools or institutes.

6. Continuing Education: As used in this study, the term means the education an individual engages in after he completes his bachelor of arts degree. Sometimes it is confused and used interchangeably with the terms career education, lifelong education, and lifelong learning.

7. Lifelong Education: Sometimes associated with the term "lifelong schooling," this word is used in this study as a synonym of lifelong learning.

8. Lifelong Learning: As used in this study, lifelong learning means the continued education that an individual pursues throughout his life. This could include any type of adult education and is therefore nearly unlimited in its scope. (See Appendix B for the definition of this term as provided by the U. S. Congress in the Education Act of 1976.)

9. Logistics: The branch of military science that is concerned with moving, supplying, and quartering troops.

10. Logistician: An expert in the science of logistics.

11. Major Commands: In the Air Force administrative structure, these are organizations that fall in line immediately belowe the Department of the Air Force. These commands are charged with conducting

operations within a specified geographical area or with providing expertise in a given field of endeavor; for example, Air University provides professional training. They are administrative in function and managerial in nature. Examples are: Alaskan Air Command, Air Training Command, Air University, Strategic Air Command, and Tactical Air Command.

12. Professional Military Education: A term used by the Air Force to distinguish between initial, basic, or technical training, and the training it provides to emphasize management and leadership. Professional training is common to all fields and is provided to all personnel in leadership positions, both officers and noncommissioned officers.

13. Staff Officer: An officer who has expertise in at least one specialized field. He serves on the commander's staff and is consulted on matters pertaining to his speciality. For example, most commanders have an administrative officer, a chaplain, an engineer, and other speciality officers serving on their staffs.

Methodology

Research into the civilian aspects of lifelong learning was conducted at the Johnson Camden Library. This included the reading of books by eminent adult educators, government officials and international authorities; reviewing abstracts of doctoral dissertations pertaining to adult and continuing education; and examining periodicals and special studies that address the subject of lifelong learning. Additional information was obtained by an interchange of ideas in adult education classes, by conversations with the faculty and the students of Morehead State University, and by a visit to the Mount Sterling, Kentucky

Adult Learning Center. A tour was made of the facility, and an informal conference was held with the director of the center and the director of the adult education center at the Ashland Community College, Ashland, Kentucky.

In addition to the above, interviews were conducted with citizens from many walks of life. These people were questioned about their views regarding the value of adult education, the needs of their communities, and the role of lifelong learning in their personal aspirations and goals.

Visits were made to Wright-Patterson Air Force Base, Ohio for research into the military aspects of lifelong learning. In addition to the excellent base publications library, the Wright-Patterson complex offered the extensive facilities of the Air Force Institute of Technology. Information was obtained from school catalogs, Air Force regulations, manuals, pamphlets, fact sheets, and related materials, and from professional military periodicals such as the Air University Review, the Air Force Magazine, and Airman. Additional military material was obtained through correspondence with information officers at the Air Force Academy, Air University, and Air Training Command.

A personal visit was made to the Air Force Institute of Technology, and an informal interview was conducted with the assistant director of education and plans. This official provided an overview of the programs offered by the institute and he reiterated the institution's commitment to continuing and lifelong learning.

Many of the observations and statements made in this study reflect the researcher's personal experiences based on more than twenty

years in the United States Air Force. As a product of the Air Force educational system, he has attended many of the schools and participated in the activities described in this study. Consequently, several of the ideas and methods presented in this report were acquired through long years of experience and practical application.

Basic Assumptions

It is assumed that lifelong learning is no longer a belief or a theory, but a fact to be reckoned with. All civilized countries of the world need to develop educational systems that will provide their citizens with education at any given time in their life span. The programs must be flexible and ever-changing so that they can accommodate the needs of the individuals and permit them to enter or leave the learning environment as their needs dictate.

Another assumption is that most learning takes place informally, not formally, and that the traditional educational institutions may not be adequate to administer the needed programs.

Review of the Literature

Literature relating to lifelong learning abounds. The review that follows presents accounts of the concept as reported in professional periodicals, books and pamphlets, dissertation abstracts, Air Force Publications, UNESCO publications, and other references.

One advocate of lifelong learning is Professor Malcolm S. Knowles of North Carolina State University, the best known of the authors who stress the differences between children and adults in learning situations. He believes that the central task of the adult educator is to develop in the adult the attitude that learning is a lifelong

process. He asserts that scientific and technological developments in the last two decades have made it imperative that the individual continue learning or face obsolescence in the skills needed to compete in today's society.[1]

Cyril O. Houle also regards lifelong or continuing education as a necessity. In one article he refers to the need of the practicing professional to continue his development, and he states that these individuals need to grow as persons as well as professionals.[2]

According to Alexander N. Charters, the one concept that adult educators hold in common is that education be viewed as extended over the entire life span. He states that in the past this could be viewed more as a belief than as a fact, but in recent years adults themselves have begun to feel the need for continuing learning. Consequently, the concept is becoming more valid and the individual who neglects his continued development runs the risk of being left out of mainstream America.[3]

Jane Berry and Rosalind K. Loring present a convincing case for the woman as a lifelong learner. With increasing numbers of women entering the work force--many after absences of several years--the need for additional or refresher courses is evident. If they are to compete in

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[1]Malcolm S. Knowles, The Modern Practice of Adult Education. (New York: Association Press, 1976), pp. 37-55.

[2]Cyril O. Houle, "The Role of Continuing Education in Current Professional Development," American Library Association Bulletin (March, 1967), pp. 259-267.

[3]Alexander N. Charter, "Continuing Education for the Professions," in Handbook of Adult Education, ed. Robert M. Smith, George F. Aker, and J. R. Kidd (New York: Macmillan Publishing Co., Inc., 1970), pp. 487-497.

the world of work with men, women must be willing to reenter school and acquire the skills that will make them competitive.[4]

Glen Jensen argues the case for continued education for self-fulfillment. He admits that unfortunate stereotypes still persist that regard the adult who is past 35 years of age as well on his way to senility. However, he believes that this idea is slowly changing and that many adults are beginning to realize that they can learn whatever they have a sincere desire to learn. He indicates that in years to come, adults will become increasingly interested in education as a means of self-fulfillment and that programs of these types may well be one of the stronger elements of lifelong learning.[5]

Smith, Akers, and Kidd in their Handbook of Adult Education are convinced that lifelong learning is no temporary phenomenon. They cite a long list of publications devoted to adult and continuing education, and they point to the growing number of information centers, clearing houses, special libraries, and industrial and government agencies that actively engage in promoting the concept.[6]

The United States Congress also recognizes the need for lifelong learning. In Appendix B, a section of the Education Act of 1976 is

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[4]Jane Berry and Rosalind K. Loring, "Continuing Education for Women," in Handbook of Adult Education, ed. Robert M. Smith, George F. Aker, and J. R. Kidd (New York: Macmillan Publishing Co., Inc., 1970), pp. 499-511.

[5]Glen Jensen, "Education for Self-fulfillment," in Handbook of Adult Education, ed. Robert M. Smith, George F. Aker, and J. R. Kidd (New York: Macmillan Publishing Co., Inc., 1970), pp. 513-526.

[6]Robert M. Smith, George F. Aker, and J. R. Kidd, ed., Handbook of Adult Education (New York: Macmillan Publishing Co., Inc., 1970), pp. 527-547.

reproduced that reflects this interest. Particularly important is the fact that Congress recognizes the impact of technological changes and has identified the scope and goals of lifelong learning.[7]

UNESCO, the educational office of the United Nations, proposes lifelong learning as the "master concept" for educational policies in the years to come. As defined by the UNESCO Institute of Education, lifelong learning incorporates the following:

1. It is all education, not just adult education.
2. It includes both formal and informal patterns.
3. The community plays an important if not a vital role.
4. Educational institutions can no longer exist in isolation from other educative or learning agencies in society.
5. It is characterized by flexibility and diversity.[8]

A number of doctoral dissertations have been written about lifelong learning. Topics range from the need for continuing education for professionals to the strength of the program in foreign countries.

Linden G. Leavitt, Jr., feels that adult educators should provide a liberal arts program for doctors of medicine who wish to participate in continuing education. He indicates that medical curricula have long been deficient in liberal art subjects, and that continued

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[7]National Advisory Council of Extension and Continuing Education. Proceedings of the Invitation Conference on Continuing Education, Manpower Policy and Lifelong Learning (Leesburg, Va.: Xerox International Center for Training and Management, Jan. 10-11, 1977), p. 60.

[8]UNESCO, Learning to Be--The World of Education Today and Tomorrow. (Paris: UNESCO, 1972)

education would provide these professionals with the opportunity to become more enlightened in these areas.[9]

A program to provide financial assistance for continuing education is proposed by John B. Holden. He conducted random samplings of adult populations in three communities in Michigan, each of a different size. His purpose is to determine the factors and attitudes involved in the individuals who decided to pursue continuing education. His findings reveal that:

1. People will pay more readily for adult or continuing education that will increase earning ability than for other types of programs.

2. People were willing to pay part of the cost of such education, but not all of it.

3. Financing of these programs should be a joint effort including boards of education, tuition charges to students, support by industry and businesses, and by both state and federal governments.[10]

Early identification of the educational needs of engineers and scientists is proposed by Edward A. Wheeler. He reports that a review of the literature clearly indicates that obsolescence is prevalent in many industries. The time spent by industries in combating obsolescence is inadequate, and he feels their most pressing need is to update the skills of senior engineers and scientists and to establish a program to identify

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[9]Linden G. Leavitt, Jr., "An Analysis of the Need and Opportunity for the Continuing Liberal Education of Doctors of Medicine." (Unpublished Ed. D. dissertation, University of Southern California, 1962)

[10]John B. Holden, "Factors Relating to the Financial Support of Continuing Education Students." (Unpublished Ph.D. dissertation, Ohio State University, 1955)

and correct these deficiencies early in the professionals' careers. He believes that continuing education, properly administered, will solve the problem.[11]

Howard D. Southwood stated that continuing education works well in Scandinavian countries. He reports that such programs stress the value of work and that educational efforts by adults will improve their opportunity to obtain a higher standard of living.[12]

The Air Force concept of lifelong learning has been examined and discussed in a number of professional periodicals, books and pamphlets, Air Force publications, and other sources. The authors do not always refer to Air Force educational efforts as lifelong learning; however, Air Force methods, procedures and philosophies are described and the concept is definitely implied.

Perhaps the most comprehensive coverage to appear in a professional magazine is the series of articles in the Summer 1976 issue of Education. Articles in this publication covers Air Force education and training practices and philosophies at the Air Force Academy, the Air University, Air Training Command, and the Community College of the Air Force. The magazine publishers recognize the Air Force's efforts in education and presents the "Gold Medal Educator of the Seventies" award to General David C. Jones, the U. S. Air Force Chief of Staff. In

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[11]Edward A. Wheeler, "Industrial Sponsorship of Continuing Education for Anti-obsolescence of Engineers and Scientists." (Unpublished Ed. D. dissertation, Lehigh University, 1965)

[12]Howard D. Southwood, "Adult Education in Scandinavia: A Study in Democracy and Its Meaning for Continuing Education in the United States, Especially as it Pertains to Community Colleges." (Unpublished Ed. D. dissertation, University of Florida, 1956)

accepting the award, General Jones explains that it had always been Air Force policy to devote a major portion of its efforts to developing educational and training programs that will meet continuing and expanding requirements. He states that when such needs cannot be met through conventional educational systems and processes, the Air Force pioneers programs of its own. The remaining articles describe some of the more important programs and explain how they contribute to the overal mission of the Air Force.[13]

An article in Air Force Magazine entitled "Utah Project: Air Force Training Goes Civilian," is an excellent review of the Air Force effort to provide optimum training programs. Funded by the U. S. Office of Education, the study attempts to determine how well Air Force technical training courses can be adapted to the vocational needs of a particular state. Federal, state, and Air Force educators all agree that the study proves the value of such training and that the courses are readily adaptable to civilian needs. Techniques, cost effectiveness and other factors are found to be equal and in some cases superior to the civilian ones.[14]

While the publication contains some information that is no longer current, the pamphlet Fifty Years of Aviation History at Maxwell Air

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[13]David C. Jones, "An Overview of Air Force Education," Education (Summer, 1976), pp. 307-310.

[14]"Utah Project: Air Force Training Goes Civilian," Air Force Magazine (March, 1972), pp. 71-73.

Force Base 1910-1960 provides a condensed history of Air University and lists some of the objectives and goals of the institution.[15]

Other important publications that provide pertinent information are the school catalogs, regulations, manuals, pamphlets, fact sheets, and related material which are published periodically by Air Force organizations. These publications contain information on the history, organization, accreditation, admission procedures, staff and faculty, curriculum, current enrollments, number of students graduated during specified periods, and other statistical data regarding the schools' activities.

Professional magazines such as the Air University Review, the Air Force Magazine, and Airman are also excellent sources of information about Air Force educational activities.

While most educators are proponents of lifelong or continuing education and learning, there are opponents of the concept that view such programs as a conspiracy against the individual by the ruling elite of a technological society. Other detractors are less radical in their views, but they are convinced that such programs bode no good for individual members of society.

Perhaps the most radical and influential individual in this group is Ivan Illich, a native of Austria who has been active in several countries including the United States. He co-founded the widely known and controversial Center for Interculture Documentation (CIDOC) in

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[15]Fifty Years of Aviation History at Maxwell Air Force Base 1910-1960. (Maxwell AFB, Alabama: Air University, Office of Information (Historian), 1960)

Cuernavaca, Mexico. While Illich has written several books, his most notable work is Deschooling Society which outlines his views on how the ills of education can be solved. His philosophy in regard to lifelong learning can be summed up succinctly by the following quote which appeared in an article he wrote for the London Times.[16]

> The institutionalization of permanent education will transfer society into an enormous planet-sized classroom watched over by a few satellites. Only the labels will enable one to distinguish it from an enormous hospital ward, from a planetary mental home, and from a penitentiary universe, where education, punishment, medical care and imprisonment are synonymous.

Professor David C. Gueulette, University of Texas at El Paso, takes a position somewhat less radical, but still ardently against the concept of lifelong learning. He admits that Illich's position is a little extreme, but he does believe that the reason educators favor lifelong learning is because they will reap many rewards from such a program. He believes that businessmen and government officials (the power elite) have aligned themselves with educators because expanded schooling is either designed to secure more production or result in more compliant participants in the economic or social order of the nation. He fears that in the end this will lead to compulsory schooling, and this in turn to social and political control by the power elite that will be "inhumane, sterile, and joyless."

Gueulette does distinguish between lifelong (permanent) education, learning and schooling. He does not object to permanent learning

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[16] Ivan Illich and Etienne Verne, "Imprisoned in the Global Classroom," The London Times - Educational Supplement (March 21, 1975), pp. 21-23.

or education if it does not automatically mean schooling. However, he does suggest adoption of the "Cuernavaca Manifesto," a radical program proposed by a group associated with Ivan Illich. This manifesto is reproduced in Appendix C.[17]

Another opponent of lifelong learning is John Ohliger, a professor at Ohio State University. In an article entitled "Adult Education - 1984" he describes the prospect facing the individual born in 1984--the first year of the "Permanent School."

Ohliger pictures a society in 1984 in which the school board--a committee made up of members of the ruling elite--will make all the important decisions in an individual's life. The board decides on what career he will pursue, when he can marry, how many children he can have, and other important matters affecting his life. From an infant school beginning at age six months to a geriatric learning center in which he dies, the individual must be ever learning. Even at death the process is not completed for the minister who preaches his funeral will assure all those present that the deceased is already enrolled in an "Angel's School" in his heavenly home.[18]

While the opponents of lifelong learning have quite purposely overstated their case, there are those in our society who consider their statements as gospel and are violently opposed to any form of lifelong learning. Perhaps part of the problem is semantic and a confusion of the

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[17]David C. Gueulette, "Exorcising the Spectre of Permanent Schooling," Adult Education, (Fall, 1976), pp 48-53.

[18]John Ohliger, "Adult Education - 1984," Adult Leadership (January, 1971), pp. 223-224.

terms, lifelong learning, lifelong education, and lifelong schooling. Only a minute segment of our society would advocate a school that never ends, or one where lifelong participation would be compulsory. However, few people would deny that learning takes place throughout our lives--inside the classroom or out. The question is: What role does the educator play in the process? Clearly, some guidance would help most people, but no serious educator would suggest that schooling be mandatory, or that we should use it to control men's lives.

Chapter 2

INTRODUCTION AND OVERVIEW OF AIR FORCE EDUCATIONAL PROGRAMS

Introduction

Because they are designed for military personnel, Air Force educational programs are sometimes viewed by civilian educators as alien systems which have little in common with the programs designed for the civilian populace. To a limited degree this may be a valid view, for military programs are in many ways unique and the methods and techniques used would not be appropriate in the civilian situation. However, Air Force educational programs have always been developed with the assistance and active participation of civilian educators. This has enabled Air Force officials to utilize the latest concepts and ideas of the civilian educational community and to plan their programs in accordance with the most current educational thought.

In addition, the Air Force is made up of both officers and enlisted personnel who represent a cross section of American society. Individual members come from all walks of life and from every social stratum. Their educational preparation varies as much as their social background, and some of them are lacking in basic educational experiences. Therefore, the Air Force educational network strives to provide these individuals with additional educational experiences that will be meaningful and will be the basis of further growth and development as they progress in their careers. Thus, Air Force programs must build on an

individual's existing educational experiences, and these are as varied as the individuals themselves.

This constant influx of new personnel with varied educational backgrounds has a decided influence on the educational programs that are developed by the Air Force. The programs must be constantly revised to provide for the needs of new members, and in many cases the new members with extensive educational experiences are utilized by the Air Force in policy making positions. In this way, civilian institutions have extensive and continuing influence in the development of Air Force programs.

Another factor that prevents Air Force programs from becoming totally militaristic in methods and techniques is the wide use of civilian educators in many of the schools. Several key staff positions at the Air Force Academy, the Air University, and other major schools are filled by civilians and faculty members are often civilian educators.

Because of these factors, Air Force educational programs reflect the best efforts of many elements of our society. These outside influences are positive ingredients of the total program and go a long way toward warding off the dangers of excessive traditionalism and rigidity of thought. As a result, the curricula of the various schools are fluid and change frequently, and the methods and procedures in use are constantly being reviewed and revised.

While the Air Force has been quite willing to utilize the best talent offered by the civilian community, and to update its educational programs in light of the most current educational thought, civilian educators and business leaders have continued to look upon Air Force programs with a jaundiced eye.

The very mention of military education is usually enough to cause the average civilian educator to become suspicious and apprehensive. His immediate line of reasoning places all military personnel in the milieu of regimentation, drill, discipline and traditionalism. Therefore, he may be unable to objectively examine the truly innovative aspects of the programs and to consider them for possible application to the needs of his own institution. As a result, many of the ideas that have proven to be effective in Air Force programs are ignored or neglected because they have a military slant. It is toward the erradication of this line of thought that this study is directed.

Overview of Air Force Educational Programs

The remainder of this study will be devoted to a comprehensive coverage of the pertinent Air Force programs that may have implications for civilian educators. A brief overview of these programs is presented below.

In Chapter 3, the Air Force Academy, the best known of all Air Force educational institutions is described. Designed for "total environment education," the Academy provides cadets with an atmosphere where they work, eat, play, and sleep in an Air Force setting. A unique institution with a unique mission, this institution is responsible for providing the best possible education for future Air Force leaders.

Chapter 4 is devoted to outlining the various training activities performed by Air Training Command. The command's primary missions are to recruit new personnel and to provide them with military, technical, and flying training.

Air University is described in Chapter 5. This institution is responsible for conducting professional military education courses, providing education in managerial, technological, and scientific areas, supervising pre-commission programs at civilian universities, helping to develop Air Force doctrine, concepts, and strategy, and for conducting research in designated fields.

A subordinate organization of the Air University, the Air Force Institute of Technology, is the subject of Chapter 6. The institute offers university-level educational programs in scientific, engineering, technological, managerial, medical, and other fields. It is fully accredited and offers resident degree programs through the doctorate. It is also responsible for conducting continuing training in a number of scientific, technological and engineering fields.

The Air Force has a number of programs in continuing education and training that is conducted by various organizations at all military bases. These activities are covered in Chapter 7 and include such practices as on-the-job training, Air Force utilization of military schools administered by other branches of the armed forces, the Commander's Call Program, off-duty educational programs, the Community College of the Air Force and other related activities.

The last chapter is devoted to the summary and conclusions. The various programs are presented as representing a unified whole, with each contributing toward the overall Air Force mission. Conclusions are drawn from the review, and these are presented as possible guides for civilian educators and industrial and/or labor leaders.

Chapter 3

THE AIR FORCE ACADEMY

Introduction

The Air Force Academy is a major command of the United States Air Force and is perhaps the best known and the most visible of Air Force educational institutions. Its stated mission is:

> To provide instruction and experience to all cadets so that they graduate with the knowledge and character essential to leadership and the motivation to become career officers in the United States Air Force.[19]

To accomplish this mission, the Academy has structured its curriculum into three major areas: (1) the leadership, military training, and aviation programs, (2) the academic program, and (3) the physical education and athletic programs. The military phase is intended to provide cadets with the professional skills they will need to function as leaders and to acquaint them with the responsibilities they will face as Air Force officers. The academic program provides the cadet with the intellectual background that he will need as a leader. This includes a general education in the basic and engineering sciences, the social sciences, and the humanities. He will also specialize in a major of his choice. The physical education and athletic activities place emphasis upon competition, acquatics, body development, and recreational sports. The key to the whole program is challenge, both mental and physical; and

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[19] The United States Air Force Academy Catalog, 1977-78. (U. S. Air Force Academy, Colorado, 1975), p. 10.

through this challenge to produce officers fully committed to the service of their country.[20]

A Brief History of the Academy

Prior to World War II, the Air Force was a branch of the U. S. Army, and its main role was to provide support for its parent service. However, during World War II, the decisive role of both tactical and strategic airpower was quickly recognized. After the war was over, the nation's leaders realized the growing importance of airpower and, in 1947, Congress established the United States Air Force as an independent service under the Department of Defense. While the Air Force did procure a certain percentage of the graduates of the Military and Naval Academies, Air Force leaders saw the need for an academy specifically designed to educate a nucleus of career officers for the new service. A campaign was started to gain approval for such an institution, and finally on April 1, 1954, Congress passed a law authorizing the Air Force to establish an academy. The Secretary of the Air Force promptly appointed a selection committee to find an appropriate site for the institution.

Pending the selection of a permanent site, Air Force officials prepared a temporary facility at Lowry Air Force Base, Colorado; and on July 11, 1955, the first class of 306 cadets were sworn in and the academy dedicated.

After inspecting several sites throughout the United States, the selection committee finally decided on an area along the Rampart Range

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[20]Ibid., p. 11

of the Rocky Mountains just north of Colorado Springs, Colorado. Construction was started in the fall of 1955 and the facility was ready for occupancy on August 29, 1958. On June 3, 1959, the Academy commissioned its first officers.

Since the first class graduated, the Cadet Wing has grown to over 4,000 members. Women were offered appointments for the first time in the class of 1980. This was the result of legislation that became law on October 7, 1975. The first group of young women were admitted on June 28, 1976. According to the law, women will comprise ten percent of each entering class, which usually totals about 1,500 cadets.[21]

Basic Cadet Training

The cadet's first exposure to military life begins when he enters Basic Cadet Training, a rigorous program of orientation that starts when he first reports to the academy and continues for a period of six weeks. Upperclassmen serve as instructors during the period of training, and they demand the most exacting and rigorous standards of the new recruit. The instructors have been through the same strenuous programs, and it is their intent to make every phase of the activities as competitive, rapidly paced, and challenging as possible. The program is meant to tax the cadets' endurance and force them to find hidden reserves of energy in order the maintain the pace. After he has completed Basic Cadet Training, the new cadet receives his shoulder boards during an acceptance parade

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[21] Ibid., p. 2.

and is officially accepted into the Cadet Wing. He is then considered ready to enter his fourth class academic year.[22]

The Oath of Allegiance

Taking the oath is one of the first and probably the most important step the cadet takes in entering the armed services of the United States. It is one of the biggest decisions of his life, and it should be taken without any reservation whatever. By this oath, the cadet pledges to support and defend the constitution of the United States against all enemies and to faithfully discharge his duties as a cadet. It is a commitment to carry out national objectives that are established by the congressional and executive leaders of our government. The cadet must be willing to abide by these policies in times of war and peace. The oath is administered as part of the cadet's orientation training and is his official acknowledgment that he is willing to abide by the academy's standards.[23]

The Honor Code

"We will not lie, steal, or cheat, nor tolerate among us anyone who does." This code belongs to the cadets and the cadets stricly enforce it. The code means just what it says, and the new cadet is expected to guide his life by the principles of honesty and integrity. His word is trusted and he trusts the word of his fellow cadets. The cadet is expected to report himself for any honor violations and to report

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[22]Ibid., pp. 14-17.

[23]Ibid., p. 14.

any violations of the code by others. The code is administered by elected senior cadets who have studied the code in depth and have had the opportunity to observe its implications and enforcement. Each new cadet is expected to embrace the code and immediately upon entering the academy he is given instructions in it. After he is accepted into the Cadet Wing as a fourth class cadet, the individual must be prepared to live by the code and to cherish it as an honored possession.[24]

The Curriculum

Cadets are provided with programs of education and training throughout the year, and the yearly calendar is divided into three sessions: a summer term, a fall semester, and a spring semester. The summer term is approximately nine weeks long and begins immediately after the senior class graduates. The fall and summer semesters last for approximately 17 weeks and begin in August and January, respectively.

The curriculum consists of over 180 semester hours and includes both core and major courses. (See Appendix D for a complete description of the courses and semester hours required.) The core courses are normally taken during the freshman and sophomore years, and the last two years are devoted to major courses and electives. Prior to entering the fall semester of his junior year, the cadet must select his major area of study. He is assigned an adviser to assist him in planning his course program, and his final program must include those required for his major plus any remaining core courses. The following majors are offered:[25]

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[24] Ibid., p. 14 and p. 41.

[25] Ibid., p. 28.

DISCIPLINARY MAJORS

Science and Engineering

Aeronautical Engineering
Astronautical Engineering
Biological Sciences
Chemistry
Civil Engineering
Computer Science
Electrical Engineering
Engineering Mechanics
Engineering Sciences
Mathematics
Physics

Social Sciences and Humanities

Behavioral Sciences
Economics
Geography
History
International Affairs
Management

INTERDISCIPLINARY MAJORS

Operations Research

DIVISIONAL MAJORS

Basic Sciences
Engineering
Humanities
Social Sciences

INTERDIVISIONAL MAJOR

Aviation Sciences

The Faculty

The faculty at the Air Force Academy is composed primarily of Air Force officers and a few officers from the United States Army, Navy, and Marine Corps. A few officers from the military forces of allied nations serve in a liaison capacity, and visiting lecturers from civilian colleges and universities are frequently used. All faculty members are required to hold master's degrees in their fields and many have earned doctorates. Faculty members are also required to serve as sponsors for extra-curricular activities and to participate in local and national meetings of educational and professional societies.[26]

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[26]Ibid., p. 30.

Accreditation

The Air Force Academy is fully accredited by a number of accrediting societies. These include the North Central Association of Colleges and Secondary Schools, The Engineers' Council for Professional Development, and the Committee on Professional Training of the American Chemical Society.[27]

Instructional Methods

The entire range of teaching techniques is employed by the faculty of the academy. Lectures, discussions, demonstrations, tutorials, and seminars are all used. The method selected depends upon the subject matter and the judgment of the instructor. Academy classes are usually small--15 to 20 students, and this enables the teachers to utilize a number of techniques. The discussion approach seems to be the most practical and popular of the methods used. Testing techniques range from essay questions and themes to short-answer and multiple-choice items. Final examinations are usually prepared by a committee composed of instructors.

Typical Daily Schedule for the Cadet

The following is a typical daily schedule for a cadet:

6:35	Reveille
7:00- 7:20	Breakfast
7:30-11:20	Classes or Study Periods
11:40	Lunch Assembly/Parade
11:55-12:20	Lunch
12:40- 3:30	Classes or Study Periods
4:00- 5:50	Intramurals/Drill/Study

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[27] Ibid.

6:35- 7:00 Dinner
7:30-11:00 Study Period/Military Activities
11:00 Taps

Unless the cadet participates in intercollegiate athletics, he is required to play on an intramural team two afternoons a week after class. The other three afternoons are spent in drill, extracurricular activities, or study. After dinner the cadet is required to study in his room or in the library. The cadet must be in his room and in bed at taps, unless he has special permission to study late.[28]

Leaves and Privileges

Privileges vary for the cadets as they move from their Freshman to their Senior years. Visiting privileges, the right to own a car, weekend passes, and other activities are controlled and will sometimes vary depending on individual achievements or deficiencies. The cadets are allowed four days of leave at Thanksgiving, two weeks at Christmas, and one week during the spring. They are also given three weeks leave during the summer.[29]

Graduation and an Air Force Career

After completing four years at the academy and meeting all the requirements, the cadet is commissioned a second lieutenant in the Regular Air Force. Upon graduation, the young officer is obligated to serve in the Regular Air Force for five years. If he enters flying training when he graduates, he must serve five years after completing the

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[28]Ibid., p. 42.

[29]Ibid., pp. 42-43.

training. An extensive career information and counseling program is conducted to assist the officer in choosing a career field. The program is intensified in the cadet's junior and senior years, and by the time of graduation he is ready to request a specific field. Air Force requirements and the individual's qualifications are two important factors in deciding what career field the officer will enter.[30] Regardless of the field he enters, the academy graduate is assured of a rewarding career in the Air Force if he performs as expected. He may be selected to attend graduate school, he is eligible to apply for legal or medical training, and he is offered a number of opportunities to increase his technical or scientific knowledge through selected Air Force schools. These schools and programs will be discussed further in later chapters of this study.

Conclusions

Programs offered at the Air Force Academy prepare cadets for careers in the Air Force, and this training serves them well after they graduate and enter the military community. Equally promising careers await cadets who serve their required commitments and return to civilian life. The lessons learned in self-discipline, commitment to high ideals, endurance, and exemplary conduct are traits that will prove valuable to them regardless of their choice of occupations. However, regardless of the value of this training, the Air Force considers it initial training only. It is a foundation on which to build, not a completed structure.

The cadet may have much potential as a future leader, but unless this potential is cultivated and developed, he may prove to be a

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[30]Ibid., pp. 41-42.

disappointment to himself and the Air Force. So in order to promote further growth and development, the Air Force has established continuing and lifelong learning patterns for the cadet as well as for all other personnel who might decide to take advantage of educational opportunities. These programs and courses are presented at critical stages in the individual's career and enable him to move to positions of increasing responsibility. The following chapters describe these programs and relate how the individual is affected by them.

Chapter 4

AIR TRAINING COMMAND

Introduction

The primary missions of Air Training Command (ATC) are to recruit new personnel and to provide them with military, technical, and flying training. To accomplish these missions, the command directs the activities of 14 bases located in eight states and has deployed a network of training units that operate on 65 Air Force bases worldwide.

ATC is located at Randolph AFB, near San Antonio, Texas, and is the largest military training system in the free world. Its flying training mission alone involves an inventory of about 1,641 aircraft, and personnel in the command logged approximately 620,166 flying hours during fiscal year 1976. Aircraft and other equipment within the command (including real estate) are valued over $2.885 billion, and its annual operating budget exceeds $1.310 billion.

Air Training Command is charged with providing most of the initial training for Air Force personnel. Except for Air Force Academy and ROTC graduates, nearly all personnel entering the Air Force are required to attend an initial training course at one of the ATC bases. For those who obtain their initial training elsewhere, the odds are that they will take some type of continuing training at a ATC base. So Air

Training Command is the medium through which nearly all must pass who seek admission to the Air Force family.[31]

A Brief History of Air Training Command

Established on July 7, 1943, ATC was a major command before the U. S. Air Force was created as a separate branch of service in September, 1947. Prior to 1943, the flying and technical training programs were operated as separate institutions. The decision by military leaders to merge the two commands was an outgrowth of the centralization process that was occurring throughout the services at that time.

During World War II, the command operated more than 600 training installations and personnel strength was over one million. This number had declined to 17 just prior to the Korean conflict; however, during this period of hostilities, the number increased to 43. Since then the number has gradually declined to the present 14 bases.

Air Training Command headquarters has been located at a number of installations. Originally located at Forth Worth, Texas, the command moved to Barksdale AFB, Louisiana, in the mid-1940s, to Scott AFB, Illinois, in 1949, and to its present location in 1957.[32]

U. S. Air Force Recruiting Service

Recruiting has always been an important function of the armed services, and ATC operates a school to train its recruiters at Lackland

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[31] ATC Fact Sheet, July 1976. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1976), p. 1.

[32] Ibid., pp. 1-2.

AFB, Texas. After graduation, recruiters are assigned to one of the more than 900 offices that are scattered throughout the United States.

The mission of the Recruiting Service is to recruit dedicated, committed, and highly qualified men and women to meet the needs of the Air Force. Recruiters have been highly successful in their efforts, and during fiscal year 1976 they recruited approximately 76,000 people. More than 9,000 of the recruits were women. While most of those recruited are enlisted personnel, there is a continuing need for officers, especially in the medical and health professions.[33]

Basic Military Training

Basic military training for enlisted personnel begins immediately after enlistment. The program provides training for personnel in the basic skills they will need to make the transition from civilian to military life. These skills include physical conditioning, marksmanship, drill and ceremonies, Air Force history, personal finances, human relations, and social actions. The length of the course is six weeks. At the beginning of their training, recruits are administered a battery of tests to determine their aptitudes and their general intelligence quotient. Usually these tests have proven very reliable tools in matching the individual to a suitable career field. By the fourth week of basic training, the results of the tests are tabulated and a personnel technician calls each trainee in for a personal interview. The technician explains to the students what options he has based on his test scores, previous employment history, and other pertinent data. For example, a

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[33]Ibid., p. 2.

high mechanical aptitude might indicate the individual would do well as an aircraft engine mechanic, while a high electrical aptitude score might suggest that the individual should consider a career in electronics. Usually, each individual has a sufficient number of options open to him so that he can find a career field that matches his aptitudes and also is in accord with his personal desires.[34]

Officer Training School

In addition to the Air Force Academy and the Reserve Officers Training Corps (ROTC) units, the Air Force utilizes its Officer Training School (OTS) as an initial source for officers. It is the most flexible source of newly commissioned officers, and the quotas can be adjusted to Air Force needs. All applicants must be college graduates, meet certain physical and mental requirements, and be within the minimum and maximum age requirements. The length of the school is three months. The school has the same honor code as the Air Force Academy; however, students do not receive the same type of rigorous basic training meted out to academy cadets. During the period of training, the candidates must demonstrate proficiency in the basic military skills and study a variety of managerial and leadership techniques. Upon graduation, trainees must enter a career field and begin developmental training. This may be an assignment to a technical training center or entry into the Undergraduate Pilot Training Program. It may also mean direct assignment to a selected base while awaiting appointment to the Institute for Professional Development. In

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[34]ATC Data Sheet, August, 1977. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1977), pp. 1-6.

any event, the OTS graduate will most likely receive some type of additional training prior to his initial job assignment.[35]

Technical Training Programs

After graduating from basic military training, 90 percent of the trainees must report to technical training centers to attend specialized courses relating to their career fields. (See Appendix E for a list of technical training centers and the general areas of specialization.) The vast majority of these jobs have direct civilian counterparts, and when airmen trained in these skills leave the Air Force, they are qualified to enter the nation's labor force as highly skilled craftsmen.

The remaining 10 percent of trainees report directly to an apprentice level job on a selected base. These persons are usually in career fields which do not require a formal technical training course, and they must start their training on the job as an apprentice level worker. This aspect of the trainees career will be discussed further in Chapter 7.

The technical training centers provide technical training for students, but they also serve as institutions providing continued basic training. The typical day would include physical conditioning, drill and ceremonies, and other related skill training plus the eight hours of technical training. The five centers offer over 1700 resident courses, and more than 236,000 students graduate from them annually.

After completing formal technical training, the trainee is

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[35] ATC Data Sheet, January 1977. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1977), pp. 1-6.

awarded a semi-skilled rating and is assigned to a selected base for further developmental training within his speciality. Career development training is conducted on the job and through courses offered by the Extension Course Institute, a correspondence institution operating under Air University. Skill level progression and other aspects of on-the-job training will be discussed more fully in Chapter 7.

Featuring the latest instructional concepts and equipment, ATC technical training does not follow traditional academic methods. The specific requirements for each Air Force job is collected and tabulated by computer, and these requirements become the basis or foundation for all training. Each student is measured against the standards required by the job rather than comparing him with his peers. Student-teacher ratios at the centers vary from 10 to 1 for academic classroom instruction to 2 to 1 in more critical areas of the curriculum. Close liaison is maintained with civilian leaders in the fields of education and training, and the centers are always responsive to changing requirements.[36]

The Utah Project

In 1967 educators in Utah expressed an interest in adapting Air Force technical training courses and materials to meet some of the vocational training needs of the state. The U. S. Office of Education funded a study and as a result, it was found that Utah's greatest vocational training needs were in three job specialities: medical technician, electronics, and aircraft maintenance.

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[36] ATC Data Sheet, January 1977. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1977), pp. 1-5.

Having determined their needs, Utah officials worked closely with the U. S. Office of Education in establishing three experimental courses to determine the validity of Air Force technical training programs when adapted to civilian requirements. One course was composed of civilians trained by civilian instructors, techniques and equipment. Another course was composed of a mixed group of civilian and military students, and the training was conducted by a mixture of civilian and military instructors using military equipment and techniques. The third course was composed of military students trained by military instructors using military techniques and equipment. Called the Utah Project, this study proved that Air Force concepts, techniques, and material were adaptable to civilian educational institutions. In comparing the three experimental courses, the educators found that Air Force schools met or exceeded the requirements of civilian institutions and that training aids or other educational material were often superior to the civilian equipment.[37]

Flying Training

Air Training Command is also responsible for training pilots and navigators for the Air Force. This training is given after the officers have completed their basic military training and includes candidates from the Air Force Academy, Officer Training School, Air Force Reserve Officers Training Corps units, Air National Guardsmen, Reservists and foreign students.

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[37]"Utah Project: Air Force Training Goes Civilian," Air Force Magazine (March 1972), pp. 69-71.

Undergraduate Pilot Training

The Undergraduate Pilot Training (UPT) program is a 49-week course and is the initial flight training for officers who wish to be pilots. The training is conducted at eight ATC bases and involves over 1500 jet aircraft. Over 2200 pilots are graduated annually from these bases and the estimated cost per pilot was $176,000 in fiscal year 1975. This course provides trainees with basic instruction in the principles of flight and involves practical application of these skills under the direction of qualified instructor pilots. The students spend approximately 262 hours in 16 academic subjects and will log about 210 hours of flight in the Cesna T-37 and the Northrup T-38. Large blocks of flight instruction previously accomplished in flight are now conducted in simulators. These simulators can duplicate nearly every sensation of flight and the use of these has resulted in tremendous savings for the U. S. Air Force.

The initial two weeks of UPT are spent in physiological training where the students learn about the effects of flight on the body. Trainees must also become familiar with instruments and equipment, and aircraft systems that they will be using. Many additional hours of associated ground training are provided in such subjects as applied aerodynamics, navigation, weather, engineering, and physical training.

Upon graduation, new pilots are presented silver wings and are assigned to another major Air Force command for specialized training in a particular aircraft such as the F-4, F-15, or the C-5. About 20 percent of all UPT graduates are selected for three months of pilot instructor

training. They then return to their former UPT bases as instructor pilots.[38]

Undergraduate Navigator Training

The initial course for Air Force navigators is the Undergraduate Navigator Training (UNT) program conducted at Mather Air Force Base near Sacramento, California. A 33-week course, the UNT prepares officers for duty as navigators in a wide range of operational Air Force aircraft.

Each block of instruction given to the trainees is initially taught in the classroom and reinforced at individual training consoles in the simulator complex. Simulator training is used extensively at Mather, and students can navigate the entire continent of North America without leaving the ground. After his training in simulators, the trainee applies his knowledge during training flights aboard the T-43 jet navigator trainer. The T-43 is a medium-range military version of the Boeing 737 and can duplicate missions flown by almost any Air Force aircraft. The T-43 is equipped with 12 individual training consoles that permit the navigators to practice their training missions individually.

Many of the graduates of UNT are selected to attend one of the two advanced navigator training courses at Mather. The Navigator-Bombardier courses can be either 11 or 14 weeks and provides instruction in radar bombing and air-to-ground missle operation for strategic and tactical aircraft. The Electronic Warfare Officer training course is a 21-week program that teaches the navigator how to detect, intercept and counter an enemy's electronic systems before they can be used to destroy

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[38] ATC Data Sheet, August 1977. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1977), pp. 1-4.

our aircraft. About 800 navigators graduate each year from the UNT program.[39]

Survival Training

Survival training is another important responsibility of Air Training Command. Aircrew members are often forced down in enemy territory during wartime and are sometimes required to make forced landings or to exit aircraft due to mechanical malfunctions in peacetime. In many cases, the landings or exits are made in hostile or inhospitable environments such as deserts, arctic regions, over water, or in enemy-held territory. Being trained in survival skills is therefore important to all flying personnel. In addition to the Basic Survival Course which teaches evasion tactics, how to live off the land, and other survival techniques, ATC provides training in arctic survival, water survival, desert survival, and search and rescue training for personnel who will be looking for downed crewmembers.[40]

The School of Health Care Sciences:

Located at Sheppard Air Force Base, Texas, the School of Health Care Sciences conducts almost all of the medical services training for the Air Force. The school has departments of dentistry, medicine, nursing, biomedical science and health services administration, and in fiscal year 1976 graduated 7,760 students from 68 courses. In addition to

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[39] ATC Data Sheet, August 1977. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1977), pp. 1-4.

[40] ATC Fact Sheet, July 1976. (Randolph AFB, Texas: Headquarters, Air Training Command, Office of Information, 1976), pp. 3-4.

providing training for medical technicians, the schools provide all newly commissioned medical officers with a ten-day orientation course. The school pioneered several new concepts in health care by developing the physician assistant, dental assistant, and nurse practitioner courses.[41]

The Social Actions Training Branch

Located at Lackland Air Force Base, Texas, this school provides instructors for the social actions and human relations programs conducted at all Air Force bases. The school provides resident training in drug and alcohol abuse control, race relations, and equal opportunity and treatment. As of July 1976, more than 5,300 students had received training in these courses.[42]

Correction and Rehabilitation

A Correction and Rehabilitation Center is operated at Lackland Air Force Base, Texas, for Air Force personnel who have had difficulty adjusting to military life or who have been convicted of serious infractions of the law. Instead of being involuntarily discharged from the service, the individual may request entry into the program. The program is designed to change attitudes or behavior patterns and the discharge is held in abeyance during the three to four months the individual is at the center. The center also accepts personnel who are serving sentences from courts-martial, and who have less than one year remaining on their

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[41] Ibid., p. 5.

[42] Ibid., p. 6.

sentences. The center has a trained staff of professionals who are experts in the fields of psychology, medicine, and the social sciences, and they have been quite successful in their efforts. Many airmen who would have otherwise received dishonorable or bad-conduct discharges have turned their lives around and have gone on to pursue successful and rewarding careers. Some remain in the Air Force and are among the most committed and dedicated professionals the Air Force has produced. Others complete their term of service and return to the civilian community as responsible and productive citizens.[43]

Other Programs

In addition to the courses described above, Air Training Command has other specialized training that provides services to selected individuals. Programs for foreign students from 50-60 countries are offered at training locations throughout the United States. Continuing training is offered by field training detachments at 65 Air Force bases worldwide. This training is usually refresher training to acquaint personnel with the latest developments within their career fields, or is a means of conducting initial training in a new model of an existing system. Often other training courses in areas such as management, typing, and related activities are presented. In all cases, the training is considered as a type that is best presented in the local setting due to availability of personnel, cost of presenting the courses, and other considerations.

The Community College of the Air Force is another facility under the direction of Air Training Command. Fully accredited by the Southern

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[43]Ibid.

Association of Colleges and Schools, the college was granted authority to grant associate degrees in April 1977. This institution will be discussed more fully in Chapter 7.

All technical training conducted by the command has been fully accredited by the regional accrediting associations. The five technical centers and the general area of training offered by each are described in Appendix E.

Conclusions

Air Training Command provides the initial training that is necessary for the great mass of airmen who are entering the Air Force. While the command is training a less select group of personnel that the Air Force Academy, the importance of the mission is as great or perhaps greater. Individuals from every strata of our society are represented, and they must somehow be recruited, trained, and assimilated into the Air Force family. This is no easy task for the individuals are as diverse in their educational backgrounds as they are in cultural and social mores.

Important as this initial training is, the Air Force recognizes that it is limited in scope and must be augmented from time to time if the true potential of the individual is to be realized. Air Training Command provides some of this continuing training through its management programs, survival courses, and refresher classes. However, most of the continuing training comes from other sources.

Air University provides professional military training, technological education, managerial courses, and scientific programs; other major commands provide continuing training in various aircraft systems and

upgrade training; and nearly every base has training programs that update skills and provide individuals with opportunities to grow and develop. Thus lifelong and continuing learning is a way of life for the Air Force member who wishes to increase his chances for advancement and to improve his lot in life.

While many of the programs offered by Air Training Command are military in nature and therefore not readily adaptable to the civilian situation, the underlying principles upon which the programs are based do have broad implications.

For example, the careful and exacting testing procedures the individual undergoes when first entering the service are coupled with various personal data about the person involved with a counseling session conducted to assist the individual in making a wise decision about his future career. Very few civilian institutions offer their employees such comprehensive guidance and individual attention at a critical point in their career.

The technical training provided by Air Training Command has been proven to be adaptable to civilian needs by the Utah Project, and the U. S. Office of Education has stated emphatically that Air Force instructional concepts and equipment are often superior to the traditional academic methods. Each year, many technicians trained by the Air Force complete their terms of service and return to civilian occupations with usable and saleable skills. One has only to read a current issue of the Air Force Times to find numerous advertisements that are directed to personnel who are completing their service commitments or are retiring. These people who advertise for Air Force personnel are well aware of the

value of Air Force technical training and depend on this method for obtaining well trained and skilled employees.

The School of Health Care Sciences has pioneered several new concepts in health care, and these programs are being alowly adopted by civilian institutions. The Air Force has also recognized the importance of social and human relation programs. Such problems as drug and alcohol abuse, race relations, and equal opportunity and treatment are being dealt with by intensive and comprehensive educational programs.

Although primarily concerned with providing the individual with the initial training he will need to function as a productive member of the Air Force, Air Training Command is also concerned with continuing training and is therefore fully committed to the concept of lifelong learning. Leaders realize that the most sophisticated equipment, and the most advanced technological hardware will be of little value if the personnel who operate the systems are inadequately or improperly trained or are not fully committed and dedicated to the overall mission. They therefore stress continuing training and the constant updating of skills so that Air Force personnel will be more than a match for the duties and responsibilities they will face.

Chapter 5

AIR UNIVERSITY

Introduction

A major command of the United States Air Force, Air University (AU) is responsible for developing and conducting professional educational courses that will prepare officers and senior noncommissioned officers (NCOs) for command and staff duties in Air Force organizations and joint and unified commands (i. e. organizations with personnel from other branches of the U. S. Defense Department or from other countries). AU also provides education to meet Air Force requirements in managerial, technological, and scientific areas, and contributes to the development of Air Force doctrine, concepts, and strategy by helping to prepare studies and proposals in these fields. The university conducts precommission programs at civilian educational institutions and is reponsible for research in designated fields.

Encompassing a series of postgraduate professional schools, Air University produces commanders and staff officers in much the same way as other universities produce doctors and lawyers. The principal educational objective of the university is to provide the officer or NCO with an opportunity to broaden his professional background at selected intervals during his Air Force career. The courses offered vary in depth and content and are tailored to meet the particular needs of the students at a given time in their professional careers.

All newly commissioned officers are required to have a college degree and are therefore considered to have a basic knowledge of the humanities and the social, physical, and biological sciences. Particular emphasis is placed on economic, geopolitics, history, psychology, and international relations. Without this type of background, it would be difficult, if not impossible, for the officer to progress through the various professional programs offered by AU. The average officer will usually have obtained such educational experiences at the Air Force Academy or through Air Force Reserve Officers Training Corps (AFROTC) units at selected civilian universities. Officers obtained through the Officer Training School (OTS) are carefully screened to insure that they possess such a background.[44]

Noncommissioned officers who attend the Senior Noncommissioned Officer Academy are not required to have such an extensive background; however, some who attend have college degrees, and many have one or two years of college credits.

In planning its educational programs, Air University is guided by the following philosophy and objectives:[45]

1. An understanding of the powers and limitations of a nation and the necessary integration of all elements of a nation's power in a unified strategy in support of its policy.

2. A realization of the role played by military forces in a national strategy.

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[44] Fifty Years of Aviation History at Maxwell Air Force Base 1910-1960 (Maxwell AFB, Alabama: The Air University, Office of Information, 1960), p. 11.

[45] Ibid., p. 12.

3. An adequate doctrine for the employment of air forces as a military weapon.

4. A knowledge and development of the administration and operation of military air forces.

5. An appreciation of the dangers of traditionalism and rigidity of thought.

6. The development in officers of the powers of thought and expression, meanwhile providing them with the tools of their profession.

7. The development in officers of facility in oral and written expression.

A Brief History of Air University

Prior to World War II, the only school primarily concerned with the organization and employment of airpower was the Air Corps Tactical School at Langley Field, Virginia. The fact that the United States entered World War II with a generally accepted and definite airpower doctrine can be accredited to the efforts of the highly-motivated personnel who operated this institution. This school was deactivated shortly after World War II began. In 1943, another school was established for the purpose of keeping abreast of scientific advancements in aerial warfare. Called the Army Air Forces School, this institution was located in Orlando, Florida. The school was later moved to Maxwell Air Force Base, Alabama, and was redesignated Air University on March 12, 1946.[46]

Developing Major Educational Policies

Major educational policies of Air University are determined by the Air University Council. This council, consisting of the Commander, Vice-Commander, and Chief of Staff of Air University, is also composed of

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[46]Ibid., p. 2.

the commandants of the schools and colleges of AU and of directors and commanders of the major subordinate organizations.

To insure that policies and procedures are in accordance with sound educational theories and practices, and are comparable to those of outstanding civilian colleges and universities, the Secretary of the Air Force invites a "Board of Visitors" to come to the university each year. Composed of 15 outstanding civilian educators and business leaders, the board examines the curriculum, methods and techniques, and related procedures and reports its findings to the Commander and the Air Force Chief of Staff. This has enabled the leaders at Air University to draw upon a great fund of knowledge and experience in education and industry, and to continually update their programs and procedures.[47]

The Major Colleges, Schools, and Institutes

Air University is truly a modern military educational system which utilizes the latest educational devices and teaching techniques. The curricula are fluid and change frequently. They are reviewed periodically by the Air University staff and by the major air commands. The faculty rotates every three or four years. Professional educators are carefully recruited to assist military personnel in presenting effective and comprehensive programs of studies. Some of the top staff and teaching positions are filled by civilian educators, and civilians are used extensively as advisors. A description of the major programs is presented below:[48]

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[47]Ibid., pp. 3-4.

[48]Air Force Fact Sheet 77-23. (Washington, D. C.; Secretary of the Air Force, Office of Information, June 1977), pp. 1-5.

The Air War College

The senior professional military education school of the Air Force is the Air War College (AWC). This institutions prepares senior officers for high command and staff positions, and the curriculum focuses on problems of leadership and command. These include factors affecting national security, military strategy and capabilities, and employment of forces. Special emphasis is placed on applying aerospace power in a wartime situation.

AWC uses a variety of instructional methods to motivate and challenge the student. Lectures, seminars, workshops, and other devices are used, and the particular method depends on the subject and may vary from class to class. The resident program is 10 months in duration and is normally attended by approximately 264 officers of the Air Force, Air National Guard, Air Force Reserve, other U. S. services, foreign forces, and selected U. S. government civilians. For those who cannot attend the resident course, the AWC Associate Programs offer both seminar and correspondence programs. These programs closely parallel the resident course. The seminars, which usually have from 15 to 20 members, are conducted at several military installations.

Colonels, lieutenant colonels, lieutenant colonel selectees, and GS-13 civilian employees and above are eligible for both programs. However, most of the students are Air Force lieutenant colonels with 15 to 22 years' commissioned service.[49]

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[49]See Appendix A for a breakdown of Air Force grade structure.

The Air Command and Staff College

The intermediate professional military educational institution for Air Force officers is the Air Command and Staff College. Designed primarily for officers in the grade of major or major selectee, the course curriculum concentrates on command and staff functions, employment of military forces in support of national security, and the problems encountered in developing programs and policies that will counter threats to our national goals. The course is 40 weeks in duration and enrolls approximately 500 officers. While the students are primarily active duty Air Force officers, selected members from other U. S. military services, the Air National Guard, and the Air Force Reserve are also permitted to attend. In addition, Department of the Air Force civilians and selected foreign officers are provided limited quotas.

Students attending the resident course may also participate on a voluntary basis in the master's degree programs offered by Auburn University or Troy State University. Both institutions are located in Alabama.

Instructional methods are similar to those utilized by the Air War College, and students are given the opportunity to participate in leadership exercises and independent study. Seminar and correspondence programs are available to those who cannot attend the resident course.

The Squadron Officer School

The Air Force career officer's first step in his professional education is attendance at the Squadron Officer School (SOS). While providing a foundation for further professional development, the school prepares Air Force junior officers for command and staff functions they

will be required to perform at that particular stage of their career. The curriculum consists of four major areas: leadership, management, communications skills, and force deployment. The method of instruction consists of lectures, seminars, leadership exercises, and independent study. The value of teamwork is emphasized, and students are taught the importance of being flexible in new or difficult situations. Each of the classes is composed of lieutenants and captains with two through seven years of commissioned service. In addition to Air Force active duty officers, certain officers from the Air National Guard, Air Force Reserve, and foreign nations are permitted to attend. A SOS correspondence course is also offered through base education offices. Four classes are conducted annually.

The Air Force Senior NCO Academy

The Air Force Senior Noncommissioned Officer Academy (AFSNCOA) is the highest level of a five-phased noncommissioned officer professional military education program. These consist of: Phase I, NCO Orientation Course; Phase II, USAF Supervisor's Course; Phase III, NCO Leadership School; Phase IV, NCO Academy; and Phase V, USAF Senior NCO Academy. With the exception of the AFSNCOA, the programs are under the direction of the major commands and are located at various Air Force bases in the United States and overseas. At present, there are 13 NCO Academies which are operated at the major air command level, and 45 command leadership schools which are operated at the base level. The Senior NCO Academy is located at Gunther Air Force Station near Montgomery, Alabama, and is just across town from the Air University which is located at Maxwell AFB. The academy prepares senior NCOs (chief master sergeants, senior master

sergeants, and senior master sergeant selectees) for duties requiring advanced leadership and management responsibilities. The curriculum includes courses on Air Force perspective, management techniques, and leadership capabilities. Special emphasis is placed on understanding, communicating with, and managing junior NCOs and airmen. The course is nine weeks in duration and is presented through lectures, small group work, seminars, and independent study.

Academic Instructor and Foreign Officer School

As the name implies, the Academic Instructor and Foreign Officer School (AIFOS) has a dual mission.

The Academic Instructor School is the Air Force's "teacher college." Designed to provide the Air Force with qualified instructors, the school trains prospective instructors in the principles of learning, the methods of curriculum and program development, and the teaching techniques and communicative skills that they will need in the classroom setting.

The Foreign Officer School is designed primarily to offer foreign officers a series of familiarization courses. These courses include English, U. S. Air Force organization, and the customs, traditions, institutions, and ideals of the American society. The officers may later attend one of the professional schools such as the Air War College or Squadron Officer School, or they may elect to attend the Academic Instructor School.

The Leadership and Management Development Center

The focal point for the development and coordination of leadership and management education for the Air Force, the Leadership and

Management Development Center (LMDC) has a number of responsibilities. First, the LDMC conducts basic and applied leadership and management research. Secondly, the center develops and evaluates Air Force wide leadership and management curricula. Thirdly, it provides management consulting services, conducts specialized resident professional courses, and develops Air Force leadership and management concepts and doctrines.

Management consulting teams may visit bases that are experiencing management problems and assist the local commander in resolving them. These teams also conduct seminars and make specialized presentations. The focus of these seminars is on increasing production by improving the leadership and management skills of commanders and supervisors. The team also teaches resident leadership and management courses that prepare and certify NCO professional military education instructors to teach the NCO Orientation Course and the Air Force Supervisor's Course.

The center also has resident schools that prepare and orient certain Air Force officers in the intricacies of a particular profession. These include Professional Personnel Management Course, the Professional Military Comptroller Course, the Air Force Judge Advocate General School, the Air Force Chaplain School, the Commander's Seminar, the Base Commanders' Management Course, and the Unit Historian Development Course.

The Air Force Logistics Management Center

The objective of this center is to develop logistics concepts and procedures to improve Air Force logistics systems. It employs the talents of government, industry, the academic community, and the Air Force in a comprehensive and coordinated research, studies, and analysis

program. The governing principle of the institution is to find better and less costly ways of doing business.

The Air Force Institute of Technology

The United States Air Force's university-level education program is directed by Air University through the Air Force Institute of Technology. Providing education and training in scientific, engineering, technological, managerial, medical, and other areas, the institution is fully accredited and offers resident degree programs through the doctorate. Due to its wide range of responsibilities and activities, this institute will be described more fully in the next chapter.

The Extension Course Institute

Extension Course Institute (ECI) is the agency that conducts correspondence courses for Air University. ECI offers 381 courses and normally has 30,000 enrollments annually. Courses are of three types: professional military education, career development, and specialized courses. Professional military education courses are provided so that individuals who were unable to attend the resident courses at Air University or one of the bases may meet minimum requirements through a correspondence course.

Career Development courses are the means by which enlisted personnel progress within their respective career fields. Specialized courses provide information that is primarily in officer occupational areas; however, enlisted personnel may enroll in many of them. The Extension Course Institute and its connection with career development will be discussed more fully in Chapter 7.

The Air University Library

The Air University Library has one of the largest collections of military data in the world. The facility houses over 650,000 military documents, over 250,000 books, over 70,000 bound periodicals, and over 400,000 maps. The library also subscribes to 2,100 periodicals. While the library contains a well-balanced collection of resources, the facility is especially strong in the fields of aeronautics, international relations, military science, and management. In addition to serving the command headquarters, schools, colleges, and institutes, the library also serves students, staff, research personnel, and organizations and activities, both civilian and military, outside the command.[50]

The Air Force Reserve Officers Training Corps (AFROTC)

Air University is also responsible for supervising the activities of the Reserve Officers Training Corps. This includes developing the curriculum, procurement of qualified instructors, conducting the training, evaluating graduates, and inspection activities. AFROTC training is conducted at 150 colleges and universities, and for the academic year 1975-76 there were approximately 17,000 cadets enrolled. Of that number, approximately 6,000 were attending under scholarships awarded by the Air Force. About 3,000 cadets are graduated annually from the AFROTC program. AFROTC selects and prepares college students to become commissioned officers in the Air Force. Students may enter either a two- or four-year program and are taught by officers who possess at least a master's degree. Established at both private and public institutions,

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[50]Air Force Fact Sheet 77-23, (Washington, D. C.: Secretary of the Air Force, Office of Information, June 1977), p. 3.

AFROTC programs are the major source of commissioned officers for the U. S. Air Force.[51]

The Civil Air Patrol

A private organization made up of civilian volunteers, the Civil Air Patrol (CAP) is an official auxiliary of the Air Force. Its executive director is a senior Air Force officer who is assisted in his job by 115 personnel assigned to Air University. The CAP has made many outstanding contributions to our nation, especially in search and rescue missions and in furtherance of aerospace education. The major services the institution provides to the Air Force are: emergency services, including communications, aerospace education and training, and a youth motivation and leadership training program.

The Civil Air Patrol is organized similar to the Air Force. It has a national headquarters, 8 regions, and 52 wings. The wings are subdivided into groups, squadrons, and flights. CAP members include more than 64,000 men, women, boys and girls. All are volunteers. They fly approximately 5,000 privately owned and 700 CAP owned aircraft and perform 80 percent of all flying hours authorized by Military Airlift Command's Rescue and Recovery Service. The CAP also operates trucks, jeeps, ambulances and other vehicles, and maintains a national communications network consisting of 19,000 radio stations.[52]

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[51] Ibid., p. 4, and Raymond B. Furlong, "Air Force Professional Education: Air University," Education (Summer, 1976), p. 333

[52] Air Force Fact Sheet 77-23. (Washington, D. C.: Secretary of the Air Force, Office of Information, June 1977), p. 5.

Conclusions

That Air University exists as an institution is a direct reflection of the concern Air Force officials have regarding the concept of continuing education. This institution, more than any other Air Force educational facility, is devoted to providing selected individuals with the continuing training that they will need as they progress in their career patterns. The programs are developed so that individuals may attend selected courses at definite intervals in their careers and that they may blend these educational experiences with practical, on-the-job training. As they move to positions of increased responsibility, Air University has a program that will make this transition less difficult and less perplexing.

Since the courses are updated continually to incorporate the latest concepts, ideas, and techniques, the individual is assured that courses will prepare him for the demanding duties that he is expected to assume. He is thus able to enter his new position with confidence and to accept the responsibilities of his job without delay. As a result of these programs, the Air Force knows that the individuals are competent in their speciality, capable in their management, and professional in their leadership.

So the concept of continuing education is especially relevant when applied to Air University programs. As individual Air Force members aspire for increased responsibilities and more demanding roles, the mission of the university is to prepare them for the occasion. Continuing education is the vehicle used to accomplish this purpose.

Leaders in educational institutions and business and industrial

organizations would be well advised to examine the professional educational programs developed by the Air Force. These programs were adopted after careful research and with the cooperation and assistance of many university and business leaders. While they were tailored to meet specific military needs, many of the principles involved would apply equally well to civilian institutions. For example, managerial and leadership abilities are required in all human endeavors, and the development of these qualities is certainly no secret; however, many institutions have no systematic method of providing individuals with such training at a given point in their careers. In-service training for teachers is a haphazard effort in many school districts, and teachers are generally unhappy and disillusioned with current programs. Managers and production foremen in industrial organizations are provided with some management training; however, these programs are not always designed to broaden the individual's career at specified intervals, or to prepare him for more challenging and responsible roles in the future. It is recognized that some Air Force programs in professional development cannot be applied to the civilian situation; but some can, and an attempt should be made to study these programs in detail. If promising aspects of the programs do appear logical, and a trial period proves them feasible, institutions may wish to adapt them as a permanent part of their programs. In a real sense, these institutions would not be copying from the military but simply utilizing principles that are common to all professional organizations.

Chapter 6

AIR FORCE INSTITUTE OF TECHNOLOGY

Introduction

As a major subordinate organization of Air University, the Air Force Institute of Technology (AFIT), directs the Air Force's university-level educational programs. The institutions's stated 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 field...in response to United States Air Force (USAF) and Department of Defense (DOD) requirements."[53]

To accomplish its mission, the institute performs two related but essentially different services for the Air Force. The first service is to conduct resident degree-level courses so that selected officers and civilians in the employ of the Air Force will be able to obtain the broad educational background they need to perform a variety of technological and scientific tasks. The second service involves continuing education and training that prepare individuals to perform special duties, or permits them to update their skills so they will be more productive members of the Air Force team.

Both of these services are provided by two organizations. The facilities of Air Force Institute of Technology and the extensive

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[53]Air Force Institute of Technology Catalog, 1976-78. (Wright-Patterson AFB, Ohio: Air Force Institute of Technology, 1976), p. 2.

experimental and research laboratories of the Air Force Systems Command are located at Wright-Patterson Air Force Base, Dayton, Ohio. Both services are also provided through courses taken at accredited and approved civilian colleges and universities throughout the nation. These courses are closely monitored by Air Force Institute of Technology, and entry into such programs is based on at least three factors: the changing needs of the Air Force, the lack of an appropriate course at a military installation, and the feasibility of utilizing available civilian programs rather than developing additional military courses.

The institute is well aware of the importance of diversified programs, and the need to keep a balance between the programs offered at Air Force Institute of Technology and those offered by civilian educational institutions. The use of civilian institutions of higher learning provides the Air Force with greater flexibility in meeting its educational requirements and enables Air Force educators to expand their efforts by using the most advanced techniques and methods from the civilian college community. In pursuing their goals and evaluating their programs, the educators at the institute are devoted to developing the best possible articulations "between academic means and anticipated applications..."[54]

A Brief History of the Institute

The early leaders in aviation were quick to realize that special education would be required if aviation technology were to grow and flourish. The early aviators were educated at the Massachusetts

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[54]Ibid.

Institute of Technology, and for a time this arrangement was satisfactory. However, it was soon determined that military aviation needed a special institute to study the many applications that were unique in the field of military aviation. So in 1919, the Army Air School of Application was established at McCook Field in Dayton, Ohio; this marked the beginning of what was later to be the Air Force Institute of Technology.

In 1926, the Army Air Corps was created, and the Army Air School of Application was renamed the Air Corps Engineering School and moved to Wright Field, Dayton, Ohio, the following year. The school continued to function during the 1930s; but, at the beginning of World War II, classes were suspended and were not resumed until emergency requirements forced the institution to reopen in 1944.

After World War II, the Army Air Force Institute of Technology was opened in 1946 at Wright-Patterson AFB, Dayton, Ohio. It has remained at that location since that date. Assigned to the Air Material Command, the Institute was composed of two colleges: Engineering and Maintenance and Logists and Procurement. When the Air Force was made a separate service in 1947, the Institute was renamed the Air Force Institute of Technology, and a Civil Engineering School was added. In 1950, command jurisdiction was shifted from Air Material Command to the Air University.

The schools and colleges of the Institute were known by several names during the following years, and it was not until 1963 that the institution was organized into its present configuration. In 1954, Congress authorized the Commander, Air University, to confer degrees upon persons in the resident colleges who met the requirements and were recommended by the faculty.

In 1967, Air Force Institute of Technology became a member of the Dayton-Miami Valley Consortium, an association of colleges, universities, and industrial organizations which were united to promote educational development. Active in the consortium and other community and interinstitutional programs, Air Force Institute of Technology remains a highly influential institution within its local community and the nation.

Air Force Institute of Technology degree programs have produced more than 42,000 graduates over the past 57 years, and included among them were 21 United States astronauts. Many of the graduates are still contributing to the welfare of the nation and are returning periodically for additional training that will enhance their value to their units and enable them to be more productive members of our society.[55]

Accreditation

Fully accredited to grant degrees through the doctorate, the Air Force Institute of Technology has a faculty of 192, 75 percent of whom have earned doctorates. The institute is accredited by the Engineer's Council for Professional Development and the North Central Association of Colleges and Secondary Schools.[56]

Curricula and Facilities

In developing the curricula for its various academic programs, Air Force Institute of Technology emphasizes the necessity of keeping education current with the rapid expansion of scientific, engineering,

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[55]Ibid., p. 4.

[56]Furlong, p. 330-332.

and logistical knowledge. The institute also stresses the following:

1. The need to anticipate future requirements in newly developing areas of technology.

2. The need and willingness to experiment with educational methods.

3. The need for diversified academic programs and flexibility in educational thought.

In addition to the above, Air Force Institute of Technology has a subcommittee to the Air University "Board of Visitors" that is comprised of a select group of highly eminent educators from prominent U. S. colleges and universities. Serving in an advisory capacity, the subcommittee meets annually, usually in October, and reviews and evaluates Air Force Institute of Technology policies relating to accreditation, admission requirements, curricula, instructional methods, facilities,, management and related areas. The subcommittee presents its findings and recommendations to the Air Force Institute of Technology commandant, and the report is reviewed by Air University and Headquarters, United States Air Force.

In addition to its own research and experimental laboratories, Air Force Institute of Technology has been granted full use of the extensive research and experimental laboratories of the Air Force Systems Command. These facilities are unique - developed for military purposes - and cannot be duplicated at any civilian university. All of these laboratories are located within the Wright-Patterson Air Force Base complex, and such an environment is of immeasurable value in the development of a curriculum designed to meet Air Force requirements. The congenial atmosphere provides a balance between the theoretical and the practical and enables both the faculty and the students to be in constant

association with engineers, scientists, and administrators who are engaged in research and development and management activities.[57]

The School of Engineering

Air Force Institute of Technology's School of Engineering is organized in much the same way as a civilian engineering school. Directed by a Dean, the school has the following academic departments: Aero-Mechanical Engineering, Electrical Engineering, Humanities, Mathematics, Mechanics, Physics, Systems Management, and Aerospace Design. Each department has a department head, and the faculty members hold academic ranks ranging from instructor to full professor. The school has a faculty of 118, and of this number 87 have earned doctorates. A majority of the faculty are civilian. The faculty is organized into an advisory council which assists the administrators in matters of academic policy.

While most of the school's programs of instruction are at the graduate level, there are two continuing education programs for engineers and scientists who are stationed at Wright-Patterson Air Force Base. One of the continuing education programs permits qualified personnel to audit or take for credit selected courses in the degree program. Admission to the course is on a space-available basis, and the student must have the permission of the instructor and the student's supervisor. The other continuing education program offers a number of non-credit short courses throughout the year. Each of these courses is designed to meet a specific need of the engineering and scientific community at Wright-Patterson

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[57] Air Force Institute of Technology Catalog, 1976-78, p. 2-12.

Air Force Base. (A list of noncredit short courses that have been offered in the past is presented in Appendix F.)

Graduate programs leading to the master's degree are available in the fields of aeronautical engineering, astronautical engineering, civil engineering, electrical engineering, engineering physics, nuclear effects, systems analysis, systems engineering, and systems management. The doctor of philosophy degree is available in the field of engineering.

The School of Engineering has a large number of special laboratories for the use of the students and the faculty. While these facilities are too numerous to be listed in this study, a list of the more important ones is provided in Appendix G. In addition, the excellent facilities of the Air Force Systems Command research laboratories have been made available to Air Force Institute of Technology students. Other facilities in close proximity of the institute are the Air Force Wright Aeronautical Laboratories, the Human Research Laboratory, and the Aerospace Medical Research Laboratories.

Research is an essential ancillary function at all Air Force Institute Technology schools, and both students and faculty are encouraged to devote a large amount of their time in such activity. The student is permitted considerable freedom in conducting his research, and the results of his work are often published in scientific and technical journals. The school has also adopted the policy of permitting each faculty member to have one academic quarter per year free for research or other scholarly activity. In some cases, the normal teaching load is reduced so that individuals may spend more time in research activities.

Other academic policies such as requirements for admission, scholarship standards, grading systems, and related procedures closely parallel the policies of prominent civilian educational institutions.[58]

School of Systems and Logistics

The School of Systems and Logistics is organized along the same lines as the School of Engineering; however, the programs offered by the school are not as extensive as those of the School of Engineering. Headed by a dean who reports directly to the Air Force Institute of Technology Commandant, the school has two educational divisions that are organized as follows:

Graduate Education Division	Continuing Education Division
Department of Quantitative Management	Department of Logistics/ Systems Integration
Department of Functional Management	Department of Maintenance and Supply
Department of Research and Administrative Management	Department of Procurement and Production
	Department of Special Management Techniques
	Department of Associate Programs

The school conducts the following major programs:

1. The Graduate Logistics Management Program. This program is designed to develop logisticians who will eventually fill key positions throughout the military departments. Graduates are awarded the degree of Master of Science in Logistics Management with a major in either logistics management or procurement management.

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[58]Ibid., pp. 15-42.

2. The Graduate Facilities Management Program. This program is designed to develop civil engineers who will eventually be assigned key positions in all branches of armed services. Graduates are awarded the degree of Master of Science in Facilities Management.

3. Continuing Education Program. This program consists of approximately 34 courses of short duration--one to seven weeks. The courses may be offered one or more times per year. The courses are designed to provide the highest quality of education for managers in the functional areas of maintenance, procurement, and supply. In addition to Air Force officers, many senior executives from the Department of Defense attend these courses. The classes are purposely kept small so that the students may participate in a seminar-type environment. Many of these courses may be taken for either undergraduate or graduate credit. (A full list of these courses is provided in Appendix H.)

4, Correspondence Course Programs. These are programs developed by the school and forwarded to Air University for inclusion in the correspondence programs offered by the Extension Course Institute.

5. Research. The School of Systems and Logistics' conducts institutional studies, applied research designed to promote curriculum development, and institutional research in support of accreditation requirements for the Graduate Logistics Program. Research is also conducted to support thesis requirements and to support the special studies directed by the Air Force or the United States Department of Defense.

The objectives of all graduate management programs are to enable the graduates of the programs to move into middle and upper level management positions with the knowledge, skills, and capabilities they will

need in conducting their day-to-day activities. Emphasis is placed upon the human behavioral and problem-solving aspects of management, and the students are given the opportunity to demonstrate practical applications of these principles in a classroom setting.[59]

The academic policies of the School of Systems and Logistics are similar to the policies of the School of Engineering and are comparable to those found in other nationally recognized and accredited civilian colleges and universities.

The Civil Engineering School

The third of the three major schools operating under the direction of the Air Force Institute of Technology is the Civil Engineering School which provides the Air Force with qualified civil engineers. The principal objective of the school is to help the student achieve a higher level of performance when he returns to the field. Instructional methods include lectures, seminars, computer simulation exercises, individual exercises, homework assignments, and provide the opportunity for student-to-student interchange of ideas.

In promoting professional education and development of civil engineers, the school has established several integrated programs. These include a resident continuing education program, a nonresident program that includes on-site seminars and lectures via telephone, a consultation service, and the publication of a professional journal for the civil engineering career field.

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[59]Ibid., pp. 100-116.

Headed by a dean, the school has two teaching departments and two support departments. The teaching departments are the Management Applications Department and the Department of Engineering Technology. The Management Application Department offers entry, middle, and top management courses for officers and equivalent grade civilians employed by the military establishment. The Department of Engineering Technology develops and conducts continuing education courses which are directed to the practicing engineer and architect. The faculty is largely comprised of Air Force officers with recent field experiences. The military faculty is complemented by eminently qualified civilian instructors who are experts in their particular field or management area. Prominent guest lectures are also used periodically to enrich the programs.

The Department of Educational Evaluation and Research conducts studies and evaluates the effectiveness of the school's programs. This includes providing computer support operations and closely supporting the teaching departments in the application and use of computer simulation in course presentations. The Department of Student Programs is responsible for distributing school quotas to the major commands and for enrolling students in the courses. The department also provides the school with administrative support in such areas as student transportation, billeting, academic support, reproduction, and military pay.[60]

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[60]Ibid., pp. 139-140.

The Civilian Institutions Directorate

The Air Force makes wide use of civilian educational programs to meet requirements that are not provided by military schools. These programs are in areas where the civilian institution is better equipped to provide the educational service, or it is more feasible to utilize the services of an existing institution. To monitor these programs, Air Force Institute of Technology has established the Civilian Institutions Directorate. The programs are generally oriented to the regular university or college curricula, but in some cases special courses of study have been designed to meet Air Force requirements.

Most of the programs of study are fully funded by the Air Force, and personnel attending civilian institutions are provided special allowances to meet the additional expenses they incur. The Air Force pays all applicable tuition and fees, the cost of books, supplies, as well as expenses for thesis preparation. To manage the various programs, the directorate has program managers who direct a variety of students within a major academic discipline. These officers usually hold advanced degrees in the particular academic discipline they are assigned to manage and are well qualified to select a school which will provide the student with optimum educational opportunities. The manager works closely with the faculty advisors that the university academic departments assign to each student. This insures that all Air Force requirements are met and that the student is progressing in his studies.

Officer degree programs are established to enable selected Air Force officers to raise their professional competence and educational level, and to qualify them to meet the demands of a particular career

field. While such programs are primarily oriented toward the engineering and management areas, they do encompass almost the entire spectrum of the academic disciplines. Since all officers must have a bachelor's degree when commissioned, most of the programs they pursue at civilian institutions are at the graduate level. The Air Force expects the student to complete his program of studies in the minimum amount of time, and his course load at the graduate level is usually from 12-16 hours per semester.

In a fiscal year, the Air Force will be providing academic programs for over 6,000 student--military and civilian--and at over 300 locations throughout the United States.

In addition to the officer degree program described above, the directorate develops and manages the Air Force Health Professions Scholarship Programs, the Airman Education and Commissioning Program, the Educational Delay Program, the Education with Industry Program, the Operation Bootstrap Program, and the Air Forces Special Short Course Program.

The Air Force Health Profession Scholarship Program (AFHPSP) awards full tuition and related fee scholarships plus a monthly stipend to selected students matriculating at civilian universities in medical, osteopathic, dental, veterinary, optometry, and podiatry schools, and to clinical psychologists at the PhD level. Upon completion of their academic programs, these students are commissioned second lieutenants in the Air Force Medical Service.

The Airman Education and Commissioning Program provides for undergraduate education at civilian educational institutions for certain career-minded enlisted men and women. Major academic fields of study are

the physical sciences, computer technology, and engineering. After completing their education, students are sent to Officer Training School and subsequently commissioned. Programs are sometimes as long as three years.

The Educational Delay Program allows Air Force Reserve Officer Training Corps graduates to complete graduate work prior to reporting for their first duty assignment. Students must complete such programs at their own expense.

The Education with Industry Program is jointly sponsored by the Air Force and industrial and government agencies. Selected officers are assigned to industrial and consulting firms which represent a cross-section of the nation's industries that serve the Air Force in aerospace capacities. This program provides Air Force officers with an understanding of the organizational structure and management techniques utilized by these firms in the production of Air Force hardware. Such training is invaluable to officers who must perform as procurement officials and in other operational roles.

Operation Bootstrap enables active duty personnel to attend civilian colleges and universities for periods of up to one year to complete degree requirements. Students may choose the institution they want to attend, and they must pay all tuition costs and other expenses. The individual is placed on temporary duty at the college or university and draws full pay and allowances during the period. Of course, the approval of the application is dependent on the ability of the individual's organization to release him from his normal duties for the requested period of time.

The Air Force Special Short Course Program provides continuing education for officers and civilian personnel in equivalent grades. The courses are taken at civilian educational institutions and range from five days to 14 weeks in duration. Major areas of emphasis are police administration, safety, chaplain programs, executive management, and transportation.[61]

Air Force personnel may join that branch of the armed forces to fulfill a patriotic responsibility they feel they owe to the nation only to discover that an untold number of opportunities await them. At the same time they are aware of the need to enroll in a program of education that will bring their goals into clearer focus and transform their ambition from dreams to reality. The abiding principle of this and other educational establishments of the Air Force is availability. Lifelong learning is truly within the grasp of those who are motivated and determined to improve their lot.

Conclusions

All civilian educational and industrial institutions have recognized the need for continuing education, and many already have extensive programs in operation to supplement the preparation of their managers and executives. This is especially true of industrial organizations where competition among the various companies exacts a heavy toll on those who do not utilize the latest managerial techniques or who fail to keep current with the latest technological changes.

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[61] Ibid., pp. 148-152

While many of these institutions would not wish to develop programs that are as extensive as those offered by the Air Force Institute of Technology, and in many cases such programs would not be feasible, the principles and methods employed by the institute could well be adapted to their needs. For example, the broadening of an individual manager's educational or training background is of such importance that it should not be left to the whims of a particular executive or a haphazard selection process. It should be a well-designed program that provides educational or training opportunities to individuals at various stages of their careers.

Especially important is the concept of continuing education in the form of short courses taken at frequent intervals. These could be provided by civilian educational institutions, by industrial organizations as a form of inservice training, or through the joint efforts of an industry-wide association. It would be well to utilize all three sources in order to provide the individual with a wide range of opportunities and a diversified program.

Chapter 7

CONTINUING EDUCATION AND TRAINING

Introduction

The U. S. Air Force considers education and training as a continuing process, one that never ends until an individual is separated from the service or retires. To implement this philosophy, Air Force officials have developed a number of programs that will insure the systematic and continued growth of each individual in the service. Many of the programs are mandatory in nature if the individual wishes to progress within his chosen field, and progress he must if he wishes to remain in the Air Force. Those who fail to progress will either be given early discharges or denied reenlistment at the end of their current commitment.

While the programs are demanding and the standards are high, the Air Force provides individuals with every opportunity to develop their talents and to increase their skills. If necessary, individual instruction is available and guidance and counseling are provided as part of the total program. In nearly all cases, the individuals who fail are either temperamentally unsuited for military life or are unwilling to exert the necessary effort to meet the requirements.

Many other programs are voluntary in nature, and individuals must decide for themselves as to whether or not they will pursue them. For example, raising one's educational level through off-duty educational courses is a decision each individual must make for himself. It is not

an official requirement, and the individual will not be under any pressure to participate in such activities. However, the Air Force does encourage off-duty courses and provides tuition assistance and other support to individuals who are attempting to raise their educational level.

So the Air Force provides its members with the opportunity for career-long learning; however, it is the primary responsibility of each individual person to decide on the courses he will take. Failure to complete prescribed courses may impede his progress or, in some cases, lead to his separation from the service. On the other hand, completion of any courses that will improve his technical knowledge or raise his educational level will be a positive factor in his career progression and his promotional opportunities.[62]

Schools Conducted by the Major Commands

Aerospace Defense Command, Military Airlift Command, Strategic Air Command, Tactical Air Command, and other major air commands have a variety of training programs tailored to meet particular needs of military and civilian personnel. Much of this is continuous type training that is never fully completed. A particular phase of a training program may be completed, but nearly always there are new and more highly advanced levels that are available and can be pursued. Examples of such training include training maneuvers for flying personnel, normal upgrade training for pilots, navigators, and other flight related skills,

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[62]Air Force Regulation 213-1, Operation and Administration of the Air Force Education Services Program, (Washington, D.C.: U. S. Department of the Air Force, June 7, 1976), pp 1-1 to 1-2.

special training for security personnel, on-the-job training for support personnel, and other training that prepares the trainee for a particular assignment or for service in a particular area.

Major air commands are charged with the responsibility of providing professional military training for junior and middle level noncommissioned officers (E-4 through E-7). (See Appendix A for a description of the Air Force grade structure.) At present, the Air Force has a five-phase system of professional military education for noncommissioned officers. Four phases are conducted at the command level and are described below.

Phase 1, the NCO Orientation Course, is an 18-clock-hour course designed to orient newly promoted Senior Airmen (E-4) with the duties and responsibilities of noncommissioned officers. It is a mandatory training course and must be taken as soon as possible after promotion to E-4.

Phase II, USAF Supervisors' Course, is a mandatory training course for all E-4 noncommissioned officers that are entering career status. It is a 53-clock-hour course devoted to management techniques and the problems of the supervisor.

Phase III, the NCO Leadership School, provides training for junior NCOs who are just assuming supervisor duties.

Phase IV, the NCO Academy, prepares a more selective group of middle level NCOs for advanced leadership and management responsibilities. The curricula for the two schools cover the same basic subjects; however, the courses differ in scope and depth of subject matter, levels of learning, and behavioral objectives. Each course is designed to match the

learning outcomes with the level of supervisory and leadership responsibilities. Both schools offer five major blocks of instruction. These are described in Appendix I.[63]

Phase V, the Senior Noncommissioned Officer Academy, is conducted by Air University and is described in Chapter 5.

Other training operations conducted by major air commands include courses in effective writing, management, race relations, social actions, and related areas. The major commands also supervise the operations of base libraries, film repositories, and off-duty educational programs. Some examples of the specialized training conducted by major commands are described below:[64]

Aerospace Defense Command

- Training pilots, navigators, and other crew members for duty in following aircraft: F-4, F-106, F-101, and T-33A
- Weapons Instructor Course
- Pararescue Recovery Specialist Course

Military Airlift Command

- Training pilots, navigators, and other crew members for duty in following aircraft: C-5, C-9, HC-130, C-141, H-1F and HIN Helicopters.
- Flight Simulator-Refresher

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[63] Air Force Regulation 50-39, Noncommissioned Officer Professional Military Education. (Washington, D.C.: U. S. Department of the Air Force, October 4, 1974), pp. 1-6.

[64] Air Force Manual 50-5, USAF Formal Schools Catalog. (Washington, D.C.: U. S. Department of the Air Force, September 1, 1976), Chapter 7-10, Vol. II.

Strategic Air Command

- Division and Wing Commander Courses
- B-52 Combat Crew Training
- Central Flight Instructors
- Missile Staff Officer
- Nuclear Safety Course

Tactical Air Command

- Training pilots, navigators, and other crew members for duty in following aircraft: A-7, A-10, C-130, F-4, F-5, F-111, and OV-10.
- Psychological Operations Course
- Unconventional Warfare Course
- Cross-Culture Communications Course
- Dynamics of International Terrorism Course
- Crisis Response Management Course

Other Armed Services Schools

According to Department of Defense instructions, "Each service will consider the capabilities of the other services in development of effective training resources." For example, the U. S. Army operates a Language School that is utilized by other branches of the armed services. The Army and the Navy utilize Air Force schools in such areas as psychological operations, unconventional warfare, and cross-culture communications. The Army and Air Force send their personnel to the Navy or Coast Guard for training in nautical procedures. The underlying principle in utilizing the facilities of other branches of the armed services is to avoid duplication of effort and to insure that the military establishments get top value for each training dollar.

Another procedure used by the armed services to develop better training programs and to encourage the greater interchange of ideas is the agreement for each service to provide quotas to its sister services in the area of professional education courses. In this way, the latest techniques developed by one service are quickly integrated into the programs of the other services. This also helps to elminate interservice rivalry and leads to more amicable relations among the personnel involved.[65]

The Extension Course Institute and On-the-Job Training

The Extension Course Institute (ECI) is a subordinate organization of Air University that was briefly discussed in Chapter 5. The institute's main function is to provide career development courses for personnel who are performing on-the-job training, and it is in the area of continuing training that Extension Course Institute is most prominent.

Extension Course Institute is a correspondence institution and normally has 30,000 enrollments annually. Offerings are career development courses and are the means by which enlisted personnel progress within their respective career fields. For example, a graduate of an Air Force technical school is awarded a semi-skilled level within his speciality. From this point on, the individual must take on-the-job training and career development courses to progress to the skilled, supervisor or technician, or the superintendent level. The academic part of his training (including periodic tests) is provided by ECI while

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[65] Air Force Regulation 50-18, Interservice Training. (Washington, D.C.: U. S. Department of the Air Force, December 16, 1975), p. 3.

the practical part of his training is provided on the job by his supervisor or trainer. (See Appendix J for a description of enlisted skill levels and how they relate to grade level.)

A limited number of career fields do not require a formal technical training course, and military personnel entering these fields must start their training on the job as apprentice level workers. These persons are enrolled in career development courses for training at the semi-skilled level.

Skill level progression is tied directly to grade levels, and promotion to a higher grade is dependent upon the individual acquiring the appropriate skill level. For example, promotion to technical sergeant requires a supervisory skill level. A staff sergeant aspiring for promotion to technical sergeant has to progress from a skilled to a supervisor level before he is eligible for promotion. No skill level change is required for promotion from technical sergeant to master sergeant. Both grades require a supervisory skill level.[66]

General Military Training

General military training is the training that is common to all career fields and in many instances is required for officer and enlisted personnel. It is usually conducted on an annual basis. Included in this category are such training courses as first aid, marksmanship, security training, drug abuse, race relations, and chemical-biological-radiological warfare. Such courses are usually mandatory and are normally conducted

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[66] Air Force Fact Sheet 77-23. (Washington, D.C.: Secretary of the Air Force, Office of Information, June 1977), p. 3, and Air Force Manual 50-23, On-the-Job Training. (Washington, D.C.: U. S. Department of the Air Force, August 15, 1974), pp. 2-4.

by unit training officers or other qualified local personnel. They are considered to be integral components of the individual's basic responsibilities to the Air Force.

The Commander's Call Program

The Commander's Call Program is a monthly meeting conducted by local commanders and first sergeants and is usually from one to two hours in duration. The purpose of the program is to provide personnel with up-to-date information, and regular training programs are not permitted to be held in conjunction with such sessions. However, the program does provide an educational service by keeping personnel informed about Air Force activities. The meeting is a mandatory instructional session or briefing, and a mandatory film entitled AIR FORCE NOW is shown at each session. Other topics are chosen by the commanders and include such things as unit accomplishments, Air Force wide problems and issues, policies on working hours, leaves and passes, local educational programs, local recreational programs, changes in mission, and recognition of individuals with awards and decorations.[67]

The Community College of the Air Force

The Community College of the Air Force (CCAF) was established at Randolph Air Force Base, Texas, in April 1972, and was later moved to Lackland AFB, Texas. The college was accredited by the Southern Association of Colleges and Schools in December 1973; and in December 1975, it received a five-year reaffirmation of accreditation. Community College of

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[67] Air Force Pamphlet 190-3, Commander's Call. (Washington, D.C.: U. S. Department of the Air Force, 1976), pp. 2-3.

the Air Force administers a unique academic program that serves all Air Force enlisted personnel on a worldwide campus. This is accomplished through the 200 education services centers situated at air bases around the world.

The college has no classrooms, employs no faculty, and has no specific campus. It is simply composed of a group of Air Force educators who evaluate military technical and professional courses and converts them into equivalent college courses with names, numbers, and semester hour ratings that will have meaning for civilian educators. Credit from various military sources is combined with courses the individual has taken at accredited civilian institutions, and when he has completed the necessary requirements, the student is awarded an associate degree.

Modeled on the associate degree programs of two-year, occupationally oriented colleges, the CCAF program consists of 64 semester hours. The program is divided into the following units: (1) a minimum of 24 semester hours of technical education, (2) a minimum of 25 semester hours of related general education, and (3) a minimum of 6 semester hours of management and military science. The remaining hours are electives.

Community College of the Air Force students may seek a major in eight areas depending upon their particular career specialities: (1) administration and management, (2) aircraft and missle maintenance, (3) communications, (4) crafts and trades, (5) distribution services, (6) electromechanical, (7) health care sciences, and (8) public services. The Commander, Air Training Command, has been authorized by Congress to award the associate degree to those individuals who have been certified by CCAF as completing the necessary requirements. In January 1977, the

total enrollment in Community College of the Air Force exceeded 48,000, and the college has the unique distinction of being the only military institution to offer college credentials to an enlisted person.[68]

In the past, civilian educational institutions have had difficulty in identifying the scope and level of military training. There were no common course titles or descriptions, and each institution had to examine each course individually to determine if the training merited academic credit. In most cases this was such an involved process that the institution would not attempt to evaluate the training. Consequently no college credit was awarded. The Community College of the Air Force has solved this problem. With the assistance of the United States Office of Education and the American Council on Education, Community College of the Air Force assessed the amount of academic credit that should be granted for the various technical training courses. This information was published in a catalog and distributed to all Air Force education offices, to high school counselors, and to college and university registrars throughout the United States. This publication outlines the more than 80 areas of study in which airmen can earn an associate degree.

The college also provides a centralized transcript service to all individuals who participate in the program. All technical training is automatically reported to Community College of the Air Force through the airman's base education office. The base education office is required to report all off-duty educational courses taken at civilian schools. By

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[68]William A. Wojciechowski, "Community College of The Air Force: Education Innovation," Education (Summer, 1976), pp. 344-348, and "CCAF Can Grant Associate Degrees." Air Force Times, (January 31, 1977).

these means, the airman is assured that all his education and training activities are properly recorded and evaluated. The student may receive a copy of his transcript or have it forwarded to colleges and universities. This service is free and may be provided even after he leaves the Air Force.[69]

Operation Bootstrap and Off-Duty Educational Programs

The Air Force encourages its members to participate in off-duty educational courses and to improve their educational level. This is not a recent development, but one that has evolved over a number of years--especially since World War II. The basic philosophy behind this movement is that any improvement in an individual's educational level will increase his worth to the Air Force.

To implement this policy and to provide personnel with the opportunity to pursue career-long learning, the Air Force has established an education service program called "Operation Bootstrap." Operation Bootstrap provides the individual student with financial assistance so that he may, during off-duty periods, attend courses at nearby civilian educational institutions. The Air Force will pay up to three-fourths of tuition costs as long as the student maintains at least a "C" average in the last 12 semester hours of his college work. In addition, when the student progresses to a level that will allow him to complete degree requirements within a one-year period, he may apply for permissive temporary duty to attend the college of his choice. The individual's

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[69] ATC Data Sheet, Community College of the Air Force. (Randolph AFB, Texas: U. S. Department of the Air Force Headquarters Air Training Command, Office of Information, January 1, 1977), pp. 1-4.

immediate supervisor and his unit commander must agree to release the individual for the requested period of time. Almost always, the release is granted.

During this period of temporary duty, the student is not required to perform any military duties but is expected to devote all of his time to his studies. He is also entitled to full pay and allowances during the period.

Operation Bootstrap also permits students to request a period of temporary duty even though they will not complete the requirements for a degree during the period. If the student needs courses that are not available through the local, part-time, off-duty programs, he may request temporary duty for a period that will not exceed 15 weeks (or a total not to exceed 19 weeks if he uses leave in conjunction with the temporary duty). The student may start and end only one such program in an eleven-month period. Again, his request for temporary duty to attend school must be approved by his immediate supervisor and unit commander.

To support its off-duty educational programs, the Air Force operates a full-time office of education on most of its bases. This office provides guidance to students on educational matters, coordinates educational programs with local colleges and universities, works closely with the Community College of the Air Force, and advises the commander on all educational activities.[70]

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[70]Air Force Regulation 213-1, Operation and Administration of the Air Force Education Services Program. (Washington, D.C.: U. S. Department of the Air Force, June 7, 1976), pp. 1-1 through 4-8.

Conclusions

For the most part, civilian educators and industrial leaders are convinced of the value of continuing training. Changes in science and technology are occurring too fast for them to ignore the consequences of neglecting such activities. The question is: What programs or policies will best insure that this need is met? A study of Air Force programs may provide some enlightenment or perhaps suggest some principles that may be adapted to the civilian scene.

One concept, the inestimable worth of the individual, has often been overlooked or at least sadly neglected by industrial leaders. With the onset of big business and the accompanying bureaucracy, the individual worker is too often treated as a number instead of a warm-blooded person with aspirations, desires, and a variety of needs. The time has come for industrial leaders to recognize that their most valuable resource is people and that, no matter how sophisticated their tools of production are or how modern their methods may be, the work will not be successfully accomplished unless the individual worker properly performs the tasks assigned to him. He must be made to feel that his work is vitally important and that he is a valuable member of the organization. A program stressing these principles should include:

1. Providing the individual with meaningful work and constantly reminding him that his contributions are important.

2. Providing the individual with the means of voicing his grievances and insuring that all valid complaints are handled fairly and promptly.

3. Intensifying inservice training programs that deal with human relation problems and the need for cooperation and mutual assistance.

Another concept, the continued and systematic growth of each individual, has long been a goal of the Air Force. It presupposes a systematic program that provides the employee with training at periodic intervals throughout his career and enables him to be prepared to assume greater responsibilities as he grows in knowledge and understanding. This concept applies equally well to civilian institutions, and they should be ever alert to ways of implementing this idea. Such a program includes, but is not necessarily limited to, the following:

1. Providing incentives for individuals who wish to improve their job knowledge or raise their educational level.

2. Developing a viable information program that will keep employees informed about company policies and objectives. This should be done in small groups and at the company's expense.

3. Combining with other companies within the industry to develop programs that will be mutually beneficial and will meet common human or organizational objectives.

4. Developing training programs that are continually updated and kept current with the most advanced techniques.

The Air Force programs are based on lessons learned through long years of experience. Air Force leaders have learned that providing their personnel with incentives to improve themselves pays rich dividends. As individual airmen acquire additional knowledge and understanding, their worth to the Air Force increases; and if they are informed and

knowledgeable about Air Force policies, they are more likely to respond with enthusiasm toward achieving common objectives.

In addition, officials have learned that cooperating with other services and the civilian educational community will insure that Air Force programs are continually updated and kept current with the most advanced techniques. Add to this a systematic and continuing program of education, and the possibilities for growth are practically unlimited. This is the Air Force system, and it is working with considerable success. Leaders of civilian institutions would be well advised to examine these programs for possible implementation in their areas of responsibilities.

The above approaches are examples of what can be done to improve the quality of work through training and education. The underlying principle is that such training and education should be continuous and ever-changing and that the individual should always be in a state of becoming. Only in this way can society be prepared for the growth in technology and the challenges that will come as a result of that growth.

Chapter 8

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The review of the literature indicated that most educators are convinced that learning is a process that begins at birth and continues throughout an individual's life span. It is an ongoing process and one that will not entirely end until the individual ceases to be or is no longer mentally alert.

Educators have indicated that, due to the technological revolution and the rapid increase in knowledge, man can no longer complete his education in his youth and expect such learning to remain valid for the rest of his life. He must continue his education throughout life or face obsolescence in the skills needed to compete in society.

It was the purpose of this study to examine the programs of lifelong learning that have been developed by the United States Air Force and to determine if these programs have implications for civilian educators and/or industrial leaders.

The study revealed several areas in which the military and civilian communities have converging interests. Documentation revealed that many of the Air Force programs have theories and principles that may be equally relevant for civilian institutions. For example, through highly competitive examinations the Air Force Academy recruits young men and women who are among the most highly gifted individuals in the United

States. These individuals are then exposed to four years of rigorous training that taxes their intellectual, physical, and psychological abilities to a very high degree. The cadets are tested and tried under very demanding conditions. The Air Force wants to determine if they can measure up to the stress and strain that accompany high levels of responsibility and leadership. This initial leadership training is tailored to produce well-rounded individuals who are highly qualified in their professions and who are dedicated, trustworthy, and dependable. Upon graduation, they are ready to begin careers that will emphasize continuous and systematic growth. They understand what is expected of them, and a very high percentage of them (85 percent) make the Air Force their career.

The programs developed by Air Training Command have many implications for career planners. First, the individual is given extensive guidance and counseling in choosing a career. Secondly, he is fully informed regarding the mission of the Air Force and the role he is expected to play as an individual. Thirdly, he is thoroughly trained in his speciality and is able to function as a productive team member upon graduation. Fourthly, he is thoroughly aware of the importance of his job and the need to continue his education once he is on the job. This initial training provided by the Air Training Command is of great importance because it provides the individual with many of the tools he will need for future advancement. Through continuing training he may build on this base and eventually realize his true potential.

Air University provides for the professional development of Air Force members. Individuals have the opportunity to progress as far as

their abilities will take them. They may pursue advanced degrees at the Air Force Institute of Technology or continually update their knowledge or skills through a number of short courses. They also have the opportunity to pursue advanced degrees and special courses at civilian universities and colleges. Individuals are also provided managerial and leadership courses at regular intervals throughout their careers. These courses enable them to assume increasingly responsible positions as their careers progress.

The Air Force provides continuing training for individuals throughout their careers. This may be normal upgrade training within a specified field, specialized training within a particular area, annual training in general military subjects, retraining if their specialities are no longer needed, and education during off-duty periods that will improve their general educational development.

All the programs are designed to provide the individual members with education and training that they need at particular stages of their careers, and they enable them to grow in knowledge and understanding. It is a continuous process and one that never ends until the individual is separated from the service or retires.

The Air Force concept of operation is based on recruiting selected personnel, training them for a particular career, providing them with opportunities for professional development, encouraging them in their efforts toward self-improvement, and assisting them to seek the upper limits of their abilities. This mode of operation is not significantly different from that of most civilian institutions; therefore, the

civilian community should not be hesitant in examining Air Force methods or be fearful that the principles cannot be adapted to their institutions.

Conclusions

As a result of this study, the following conclusions are made in regard to lifelong learning and Air Force educational programs:

1. Lifelong learning is no longer a belief or a theory, but a fact to be reckoned with. Scientific and technological developments in the last two decades have made it imperative that individuals continue learning throughout their life span or face obsolescence in the skills needed to compete in society. This fact has been recognized by the United States Congress, by UNESCO, the educational arm of the United Nations, and by eminent educators and government officials around the world.

2. If educators, government officials, and industrial leaders are to provide individuals with opportunities to pursue lifelong learning, they should examine some of the ongoing programs that were developed by institutions which have pioneered in the field.

3. The United States Air Force was one of the pioneers in the development of lifelong learning programs. The Air Force programs were developed with the cooperation and assistance of prominent civilian educators, and they represent the best efforts of the military and civilian communities. The programs are continually updated to incorporate the latest concepts and ideas, and they are designed so that inputs can be made from many elements of our society. These safeguards enable the Air Force to avoid the dangers of excessive traditionalism and rigidity of thought and to develop truly innovative programs for its people.

4. Air Force programs have implications for civilian educators, government officials, and industrial leaders. While some of the programs are not feasible for civilian institutions in their present form, they could be adapted with relative ease. Managerial and leadership techniques are universal in nature, and while the application of the principles may differ, the underlying concepts and theories remain valid in almost all situations.

Recommendations

1. Leaders of civilian institutions should examine Air Force programs and determine if the various theories, principles, concepts, and techniques that have worked for the Air Force could be adapted to their own institutions.

2. After the study is completed, and if implications are found to exist, the civilian leaders should make every effort to develop the most comprehensive and meaningful programs and implement them with the least possible delay.

3. Military and civilian leaders should maintain close liaison with each other and cooperate fully in developing new programs that will promote lifelong learning and a better society. Special attention should be devoted to reducing and eliminating the bias that exists or may develop as each group studies the other's programs.

4. Military and civilian leaders should explore the possibility of establishing a joint educational commission to study the concept of lifelong and continuing education. This would enable military and civilian educators to periodically exchange ideas and to compare concepts, theories, and techniques. Such a commission should prove mutually beneficial and considerably enhance the image of adult education.

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APPENDICES

APPENDIX A

Appendix A

AIR FORCE GRADE STRUCTURE

OFFICERS	ENLISTED
O-10 - General*	E-9 - Chief Master Sergeant
O-9 - Lieutenant General	E-8 - Senior Master Sergeant
O-8 - Major General	E-7 - Master Sergeant
O-7 - Brigadier General	E-6 - Technical Sergeant
O-6 - Colonel	E-5 - Staff Sergeant
O-5 - Lieutenant Colonel	E-4 - Sergeant
O-4 - Major	E-4 - Senior Airman**
O-3 - Captain	E-3 - Airman First Class
O-2 - 1st Lieutenant	E-2 - Airman
O-1 - 2nd Lieutenant	E-1 - Basic Airman

*In addition to the officer grades listed above, there is a wartime rank of General of the Air Force. This is a rank above general and entitles the officer to wear five stars instead of the usual four.

**When an Airman First Class is initially promoted to E-4, he is given the title Senior Airman which is not an NCO grade. In order to advance to Sergeant (E-4), he must have completed the NCO Orientation Course, have one year in grade as an E-4, and be recommended by his supervisor and commander for NCO status.

In Air Force terminology, lieutenants and captains are known as junior officers, majors and above as field grade officers, and lieutenant colonels and colonels as senior officers.

In a like manner, sergeants and staff sergeants are known as junior NCOs, technical sergeants and master sergeants as advanced level NCOs, and senior master sergeants and chief master sergeants as senior NCOs.

WARRANT OFFICERS***

W-4 - Chief Warrant Officer
W-3 - Chief Warrant Officer
W-2 - Chief Warrant Officer
W-1 - Warrant Officer

***Warrant officers are currently being phased out of the Air Force as they separate or retire. Presently, less than 100 are on active duty, and all of these are in grade W-4. Positions previously held by warrant officers are now being filled by senior and chief master sergeants (E-8s and E-9s)

Extracted from Air Force Regulation 35-54, Rank Precedent and Command (November 22, 1976).

APPENDIX B

Appendix B

EXTRACT FROM P. L. 94-482, OCTOBER 12, 1976

"SEC. 131. The Congress finds that--

"(1) accelerating social and technological change have had impact on the duration and quality of life;

"(2) the American people need lifelong learning to enable them to adjust to social, technological, political and economic changes;

"(3) lifelong learning has a role in developing the potential of all persons including improvement of their personal well-being, upgrading their workplace skills, and preparing them to participate in the civic, cultural, and political life of the nation;

"(4) lifelong learning is important in meeting the needs of the growing number of older and retired persons;

"(5) learning takes place through formal and informal instruction, through educational programs conducted by public and private educational and other institutions and organizations, through independent study, and through the efforts of business, industry, and labor;

"(6) planning is necessary at the national, state, and local levels to assure effective use of existing resources in the light of changing characteristics and learning needs of the population;

"(7) more effective use should be made of the resources of the nation's educational institutions in order to assist the people of the United States in the solution of community problems in areas such as housing, poverty, government, recreation, employment, youth opportunities, transportation, health, and land use; and

"(8) American society should have as a goal the availability of appropriate opportunities for lifelong learning for all its citizens without regard to restrictions of previous education or training, sex, age, handicapping condition, social or ethnic background, or economic circumstance.

"SEC. 132. Lifelong learning includes, but is not limited to, adult basic education, continuing education, independent study, agricultural education, business education and labor education, occupational education and job training programs, parent education, postsecondary education, preretirement and education for older and retired people, remedial education, special educational programs for groups or for individuals with special needs, and also educational activities designed to upgrade

occupational and professional skills, to assist business, public agencies, and other organizations in the use or innovation and research results, and to serve family need and personal development."

The above information extracted from National Advisory Council of Extension and Continuing Education. Proceedings of the Invitation Conference on Continuing Education, Manpower Policy and Lifelong Learning (Leesburg, Va.: Xerox International Center for Training and Management, January 10-11, 1977), p. 60.

APPENDIX C

Appendix C

THE CUERNEVACA MANIFESTO*

Twenty-five persons from fourteen countries met at the Centro Intercultural de Documentacion in Cuernavacas, Mexico, in August, 1973, to discuss trends in lifelong education. It was suggested by those present that adult education today may be taking the wrong approach in attempting to extend education beyond the formal school years. The participants finally agreed to issue the following manifesto:

1. It is more important to make existing knowledge available to all than to accumulate expert knowledge.

2. Experts, such as teachers, doctors, lawyers, engineers, scientists, and architects have the obligation to share their skills, expertise, and knowledge and thereby give up their professional monopoly.

3. Time should be made available at work in which workers may begin work-related research and learning, to enable them to continually reshape the working process and environment to meet their self-defined needs.

4. Grades, certificates, and examinations should be abolished. It should be against the law to require scholastic credentials or tests as a condition of having any job. A person's ability to perform a job should be decided by his or her co-workers.

5. Anyone, regardless of training or credentials, should have the right to share his experience, knowledge or skills, and thus the professionalization of adult educators is unnecessary.

*Extracted from Glenn Jensen, "Accent on Social Philosophy: Concerns at Cuernevaca," Adult Leadership (December, 1974), p. 166.

APPENDIX D

Appendix D

THE AIR FORCE ACADEMY CURRICULUM

4th Class - Freshman

Summer

Mil. Tng. 100	5
Phy. Ed. 100	2
	7

Fall and Spring

Chem. 101-102	5 1/2
English 111-112	5 1/2
Geog. 120	2 1/2 or 3
For. Lang. 101-102	5 1/2
Life Sci. 210	2 1/2 or 3
Math. 121-122-123-124	11
Mil. Stud. 121-122	2
Phy. Ed. 105-106	2
Phy. Ed. 120	1
Inst. Tech. 101-102	0
Armnshp.	0
	38

3rd Class Sophomore

Summer

Mil. Tng. 200	2 1/2
Mil. Tng. 210	3
	5 1/2

Fall and Spring

Comp. Sci. 200	2 1/2 or 3
Econ. 211-212	5 1/2
History 200-201-202	5 1/2
Math. 221-222	5 1/2
Mech. 120	2 1/2 or 3
Physics 211-212	5 1/2
Pol. Sci. 211-212	5 1/2
Core Option	2 1/2
Elective	3
Mil. Stu. 221-222	2
Phy. Ed. 205-206	2
Phy. Ed. 220	1
	43 1/2

2nd Class - Junior

Summer

Mil. Tng. 300	5

Fall and Spring

Aero 331-332	5 1/2
Beh. Sci. 211	2 1/2
Beh. Sci. 302	3
El. Engr. 331-332	5 1/2
History 300 or	
Pol. Sci. 412	2 1/2 or 3
Law 210	1 1/2 or 2
Phil. 210	1
Electives	16 1/2
Mil. Stu. 321-322	2
Phy. Ed. 305-306	2
Phy. Ed. 320	1
	43 1/2

1st Class - Senior

Summer

Mil. Tng. 400	5

Fall and Spring

Astro 332	2 1/2 or 3
Eng. 430 or 450	2 1/2 or 3
Eng. 406 or	
Phil. 440	2 1/2 or 3
Law 400	2 1/2 or 3
Electives	24 1/2
Mil. Stu. 420	1/2
Phy. Ed. 405-406	2
Phy. Ed. 420	1
	39

All courses listed above are in semester hours. Total Curriculum: 186 1/2 semester hours. Average cadet graduates with 200 hours.

Adapted from the U. S. Air Force Academy Catalog, 1976-1977.

APPENDIX E

Appendix E

AIR FORCE TECHNICAL TRAINING CENTERS

Technical Training for the Air Force is provided at the following technical training centers:

1. Chanute Air Force Base, Illinois: Accredited by the North Central Association of Colleges and Secondary Schools, the Chanute Center provides training in four general areas: aircraft maintenance, aircraft specialist, missiles and weather, and weapon systems support. There are approximately 270 resident courses, and the center graduates approximately 26,000 students annually.

2. Keesler Air Force Base, Mississippi: Accredited by the Southern Association of Colleges and Schools, the Keesler Center provides training in five general areas: avionics, computers, radar systems, radio systems, and personnel and administration. There are approximately 250 resident courses, and the center graduates about 20,000 students annually.

3. Lackland Air Force Base, Texas: Accredited by the Southern Association of Colleges and Schools, the Lackland Center provides training in five general areas: cryptographics, security police and law enforcement, social actions, marksmanship, and recruiting. There are approximately 75 resident courses, and the center graduates about 17,000 students annually. Lackland Air Force Base is also the home of the Air Force Basic Training Center, and during a typical year about 100,000 new recruits are graduated.

4. Lowry Air Force Base, Colorado: Accredited by the North Central Association of Colleges and Secondary Schools, the Lowry Center provides training in seven general areas: munitions, audiovisual, avionics, intelligence, logistics, special instruments, and defense support programs. There are approximately 250 resident courses, and the center graduates about 22,000 students annually.

5. Sheppard Air Force Base, Texas: Accredited by the Southern Association of Colleges and Schools, the Sheppard Center provides training in seven general areas: aircraft maintenance, civil engineering, comptroller, communications, missiles, transportation, and field training. On an annual basis, approximately 25,000 students graduate from the resident courses, 40,000 from the nonresident courses, and another 135,000 from field training detachments throughout the world. The total number of courses offered exceed 930, and the number of students graduating annually is about 200,000.

Also located at Sheppard Air Force Base is the United States Air Force School of Health Care Sciences. This school provides training in six general areas: biomedical science, dentistry, health service administration, medicine, nursing, and veterinary medicine. There are approximately 56 resident and 166 nonresident courses, and the total number of students graduating in fiscal year 1976 was about 9,600. The school pioneered several new concepts in health care by developing the physician assistant, dental assistant, and nurse practitioner courses.

The above information extracted from Air Training Command Fact Sheets (April-September, 1977) (Randolph AFB, Texas: Air Training Command, Office of Information).

APPENDIX F

Appendix F

LIST OF SHORT COURSES
AFIT SCHOOL OF ENGINEERING

The following is a list of no-credit short courses that have been offered in the past to engineers and scientists by the Continuing Education Division of AFIT's School of Engineering.

Aircraft Engine & the Environment
Applied Optimal Estimation: Kalman Filter Design & Implementation
Avionics Power Conditioners
Avionics Systems Engineering
Avionics System Software
Chemical Laser Fundamentals
Computer Capability & Utilization
Decision Risk Analysis Overview
Digital Techniques
Dynamics Systems Analysis
Engineering Acoustics & Noise Control
Essentials of Fluid Mechanics
Fundamentals of Heat Transfer
Fundamentals of Infrared Technology
Computational Methods of Optimization & Optimal Control
Fundamentals of Laser/Optics
High Energy Lasers & Their Application
Information Displays
Intermediate FORTRAN Extended
Minicomputers & Applications
Minicomputers, Microprocessors, & Applications
Nondestructive Testing & Fracture Mechanics
Nonnuclear Vulnerability & Survivability of Aircraft
Nuclear Weapen Effects
Nuclear Weapon Effects & Survivability of Aerospace Systems
Numerical Methods Useful in Aeronautics
Overview of Control Theory
Programming Minicomputers & Microprocessors
Real Time Digital Control Systems
Reliability & Maintainability Engineering
Review of Fundamentals of Engineering
Review of Principles & Practice of Electrical Engineering
Review of Principles & Practice of Mechanical Engineering
SCOPE for the CDC 6600/CYBER 75 Computers
Standards & Specifications: Their Engineering, Application, & Effective Use
Statistical Analysis Using the Computer
Structural Durability & Damage Tolerance
Subsystem/Equipment Integration
Technical Communication
Weapon Delivery & Guidance Concept Evaluation
High Power Lasers

These courses are conducted in half-day sessions extending for approximately two weeks. New courses are introduced into the program by recommendation of a training and education committee.

This list adapted from the Air Force Institute of Technology Catalog, 1976-78. (Wright-Patterson AFB, Ohio: Air Force Institute of Technology, 1976), p. 42.

APPENDIX G

Appendix G

LIST OF LABORATORIES
AFIT SCHOOL OF ENGINEERING

Department of
Aero-Mechanical Engineering

Heat Transfer Laboratory
Combustion Laboratory
Fluid Flow Laboratory
Propulsion Laboratory
Rocket Engines Laboratory

Department of Mathematics

The Computation Laboratory

Department of Mechanics

Experimental Mechanics Laboratory
Metallurgy Laboratory

Department of
Electrical Engineering

Electronics Laboratory
Digital Systems Laboratory
Microwaves Laboratory
Energy Conversion Laboratory
Feedback Systems Laboratory
Automatic Control Laboratory
Molecular Electronics Laboratory
Bio-Engineering Laboratory

Department of Physics

Engineering Physics Laboratory
Nucleonics Instrumentation
Laboratory
Nuclear Engineering Laboratory
Optics Laboratory

Other Laboratories

Electric Materials and Processes
Laboratory
Aerospace Medical Research Laboratories
Aerospace Design Center Laboratories

This list adapted from the Air Force Institute of Technology Catalog, 1976-78. (Wright-Patterson AFB, Ohio: Air Force Institute of Technology, 1976), pp. 23-26.

APPENDIX H

Appendix H

LIST OF SHORT COURSES
AFIT SCHOOL OF SYSTEMS AND LOGISTICS

The following is a list of short courses offered by AFIT's School of Systems and Logistics. Courses have been approved for credit by the North Central Association of Colleges and Schools.

COURSE NO.	COURSE TITLE	QUARTER CREDIT HOURS
LOG 131	Industrial Maintenance Management	4
PPM 151	Industrial Property Administration	3
PPM 153	Production Management I	5
QMT 170	Defense Cost and Price Analysis	2
LOG 220	AFLC Materiel Management	4
LOG 221	Logistics Managers and Computer Simulation	2
SYS 223	System Program Management	5
LOG 224	Logistics Management	5
SYS 227	Financial Management for Systems Acquisition	4
LOG 260	Initial Provisioning	3
LOG 261	Maintenance Management and Information Systems	3
LOG 262	Applied Maintenance Management Concepts	3
PPM 302	Contract Law	2
PPM 305	Production Management II	3
QMT 345	Introduction Quantitative Analysis	5
SYS 360	Evaluation of Performance Measurement Systems	4
SYS 361	Surveillance of Performance Measurement Systems	3
QMT 372	Reliability	4
SYS 420	Lab Management of R & D	3*
QMT 550	Advanced Quantitative Methods	3*
AMT 551	Advanced Cost and Economic Analysis	3*

*Graduate Credit

NOTE: The Continuing Education Program consists of approximately 34 courses of short duration--one to seven weeks. Only the courses listed above may be taken for credit.

This list adapted from Air Force Institute of Technology Catalog, 1976-78. (Wright-Patterson AFB, Ohio: Air Force Institute of Technology, 1976), p. 116.

APPENDIX I

Appendix I

NCO ACADEMIES AND
LEADERSHIP SCHOOLS CURRICULUM

Blocks of Instruction	Total Hours NCO Academy	Total Hours Leadership Schools
Commandant's Time Introduction & Orientation Explanation of Course Objectives, Policies, Procedures, and Student Standards Counseling & Guidance Evaluation Guest Speakers	40	20
Military Studies and Activities Air Force History Air Force Organization and Mission Military Law Customs, Courtesies, Honors, and Ceremonies Physical Conditioning	50	40
World Affairs Ideology and Government Fundamentals of World Politics National Objectives Alliances, Agreements, etc. United Nations International Positions Military Conflict	25	15
Communicative Skills Effective Expression Conducting a Training Program Evaluation of Training	50	25
Leadership and Management Duties and Responsibilities of the NCO Management Theories, Techniques Functions of the Manager Effective Use of Personnel Human Relations Problem Solving Techniques	60	36
	225	136

Adapted from AFR 50-39, Noncommissioned Officer Professional Military Education, October 4, 1974.

APPENDIX J

Appendix J

COMPARISON OF ENLISTED SKILL AND GRADE LEVELS

SKILL LEVEL	GRADE LEVEL
Apprentice*	E-1s and E-2s
Semi-Skilled**	E-2s and E-3s
Skilled***	E-3s thru E-5s
Supervisor or Technician	E-5s thru E-7s
Superintendent	E-7s thru E-9s

*On initial entry into the Air Force, individuals are given the designation of basic trainee. After scores on his aptitude and intelligence tests are known (usually about his fourth week of training), the individual is interviewed by a personnel technician and a career field is chosen. At this point he is awarded an apprentice level rating in his speciality. If he is not selected to attend a technical school, the individual reports to an Air Force base where he immediately begins training for his semi-skilled level. He is enrolled in the appropriate course with the Extension Course Institute (ECI) and on-the-job training begins.

**All trainees must complete six weeks of basic training. Following basic training, those individuals selected for technical training are assigned to one of the five technical training centers operated by the Air Force (see Appendix E). After completing technical training which may last for a few weeks to nearly a year, the individual is awarded a semi-skilled rating and is assigned to an Air Force base. He immediately begins training for his skilled level, and he is enrolled in the appropriate course with ECI. Graduates of technical schools are usually automatically promoted to E-2 and honor graduates are promoted to E-3.

***Trainees must satisfactorily complete each level of training before beginning training at the next level. At each level, the individual's trainer and supervisor must attest to the fact that the individual has met all requirements and is indeed qualified to be rated at the new level. Individuals may complete the academic portion of their training at their own rate, but there is usually a one-year limit for completion. Under certain circumstances this limit may be extended, but usually the individual completes his training within the specified time. Practical training must continue for the full period of training, which in most cases is one year.

Professional military training programs must also be taken at specified periods in an individual's career. While these courses are not mandatory, failure to complete them may retard the individual's chances for promotion. Under certain circumstances these courses may be taken by correspondence through ECI.

Adapted from AFM 50-23, On-the-Job Training, August 15, 1974, and the Extension Course Institute Catalog, 1976.