

D 305.2; Ac 1

UNIVERSITY OF NEBRASKA
LIBRARY
DEC 18 1958
DOCUMENTS
ROOM



U.S.
AIR FORCE
ACADEMY

MC 959/5/ Item 5560

FOREWORD

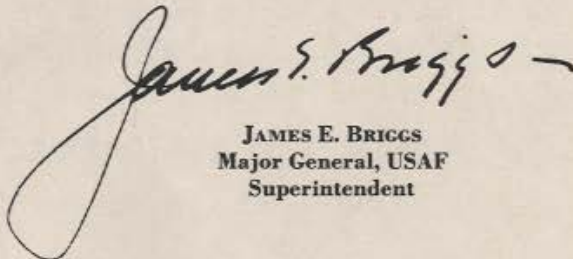
Since the autumn of 1954, when competition for appointment to the first class of cadets at the Air Force Academy began, thousands of young men have expressed interest in this new institution. These young men have asked many questions about the Academy:

What subjects are included in the academic curriculum? Is credit given for previous college work? Do all cadets follow an identical course of studies? Is the faculty well-qualified? How good are the laboratory facilities? Is there an opportunity for graduate education after completion of the Academy course?

The purpose of this booklet is to answer some of the most-frequently-asked questions about the educational program of the Air Force Academy.

The men who have been responsible for planning, organizing, and operating the Air Force Academy have shared one conviction: that the United States must provide the best possible institution for the education and training of future Air Force leaders. While recognizing the importance of military tradition, the founders of the Academy have subscribed unanimously to the proposition that there is no place for rigidity, dogmatism, or inflexibility in the education of Air Force officers.

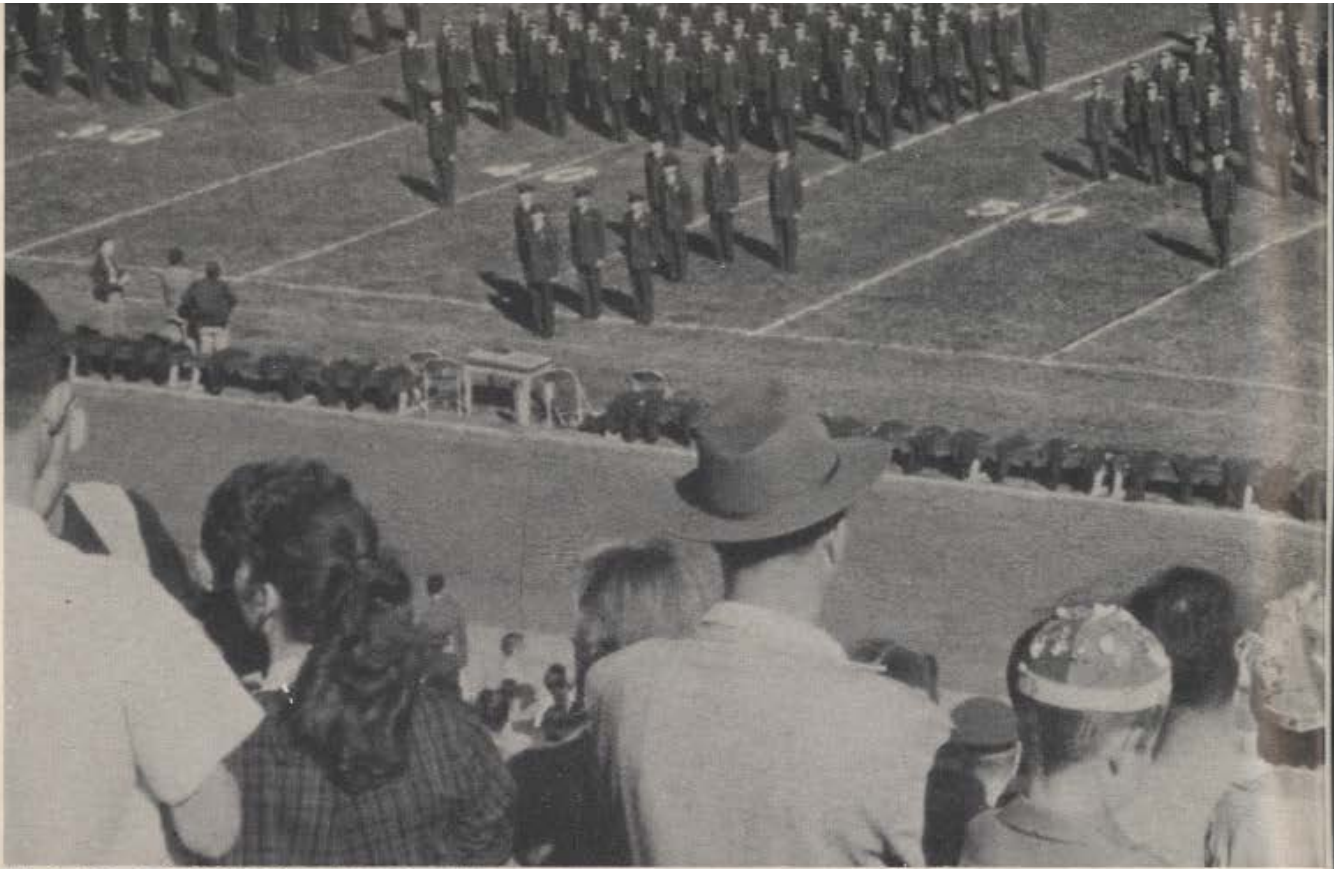
You will find that philosophy reflected in the following pages.



JAMES E. BRIGGS
Major General, USAF
Superintendent

**A PROGRAM
OF
EDUCATION
FOR
FUTURE
AIR FORCE
OFFICERS**





INTRODUCTION

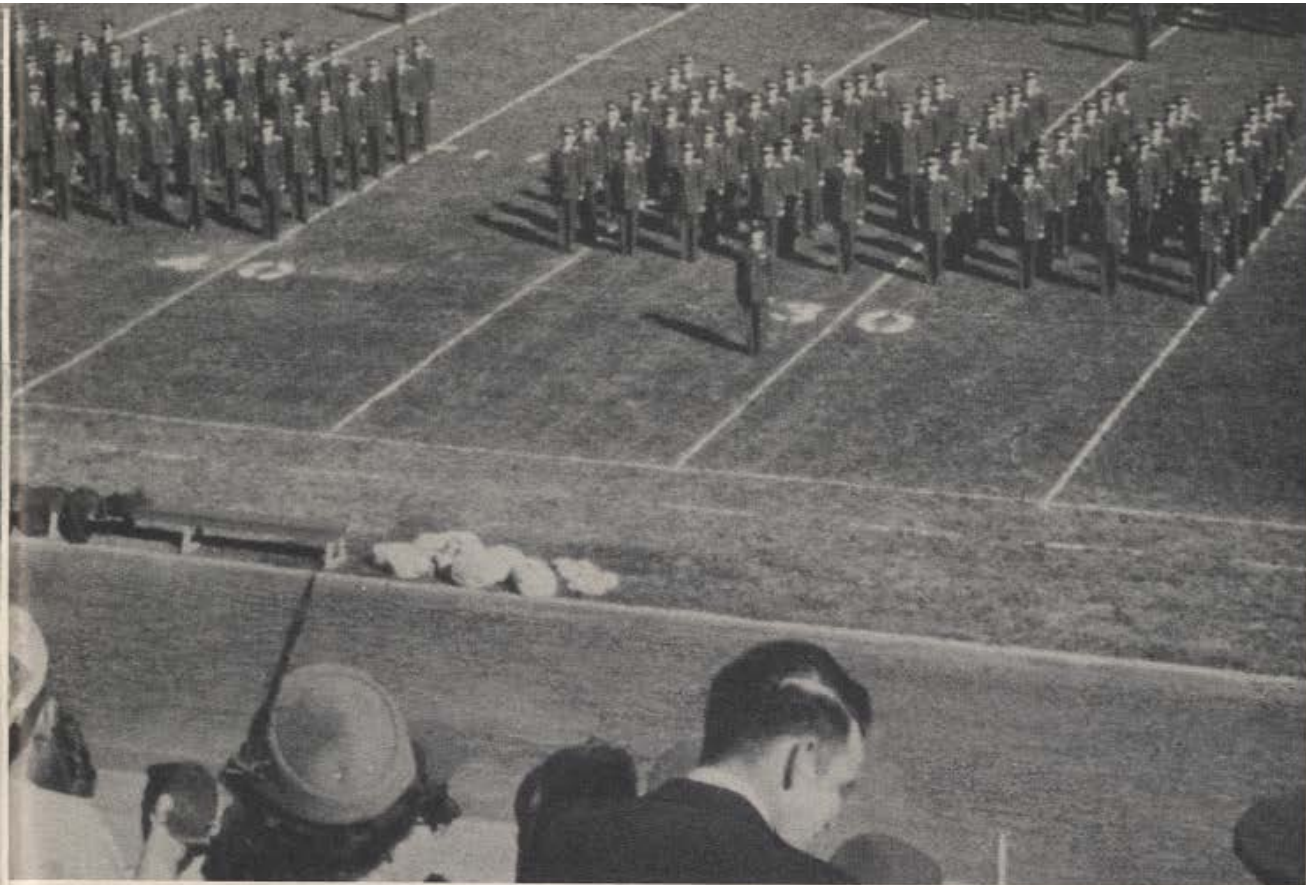
For the first time in our history, the United States is confronted by an enemy whose avowed goal is the destruction of our way of life. Every home and factory in this country is a potential target for the weapons of that enemy.

For the first time in our history, the freedom of each citizen of this nation is challenged.

Today we are training military leaders not alone for the defense of the United States but for national survival, and for survival of the civilization of which America is a part.

This is the Air Age—an era in which oceans and mountains and deserts have lost almost all meaning as defensive barriers. No points on the face of the globe are separated by more than a few hours. No longer is it necessary to invade a country to destroy it. One aircraft with one thermonuclear device can unleash a greater destructive force than that of all explosives set off by man prior to the development of nuclear weapons.

Today, the most effective defenses against enemy attack are our wide network of warning devices and fighter aircraft, and the ability of our long-range bombers to

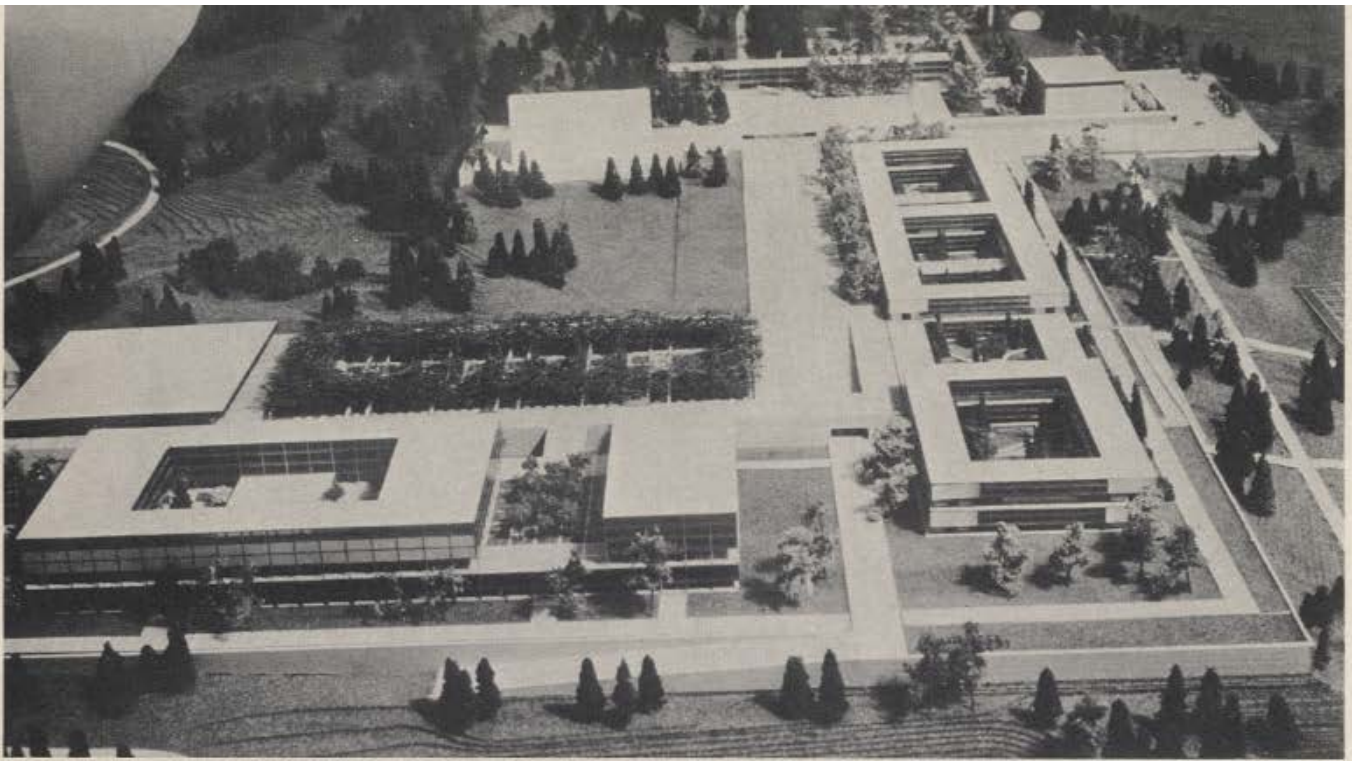


strike instantly and with devastating force any foreign power which might launch an assault upon the United States. The security—the survival—of all that we hold dear lies to a very large degree in the hands of our airmen.

Where will the leaders of our Air Force come from? From the farms, the villages, the great cities of every state in the Union; from the rich and the poor; from families whose roots go back to colonial days, and from families who crossed the oceans to America less than a generation ago.

What will our Air Force leaders be like? They must be not mere technicians but broadly educated men whose characters are formed by the military virtues of duty, honor, and devotion to country and whose minds are adaptable to the rapid pace of scientific and political change which is a mark of our time. They must be the best that a free democratic society has to offer. Training, educating and motivating such officers for life-time careers in the Air Force is the business of the United States Air Force Academy.

Future air leaders will continue to come also from the Reserve Officer Training Corps and from other sources. Experience has shown, however, that the number from these sources who elect to remain in the Air Force as career officers is not sufficient to meet all Air Force needs. It is the Academy's task to insure a nucleus of career leaders.



DEVELOPMENT OF THE AIR FORCE ACADEMY

What does an Air Force officer need to know in an age of supersonic jets, long-range guided missiles and nuclear weapons; in an era when man stands at the threshold of space; in a period of rapid social change and of great political decisions? This is the question which members of the Air Force Academy Planning Board asked when that body was established in 1948 to lay plans for the new United States Air Force Academy. Opinions were solicited from a large group of eminent civilian educators, from senior officers of the three services, and from the faculties of the Military and Naval Academies.

It was agreed that the Air Force Academy should not be an institution devoted to training junior officers, but rather should provide the broad educational background required by senior air officers of a nation which had assumed leadership of the non-communist world. Clearly, Academy planners and advisors could not define



with precision the problems which air leaders will face twenty years hence. It was equally obvious that traditional concepts of officer education could not be followed blindly. The academic curriculum which emerged after many months of study and consultation combined civilian and military educational thought, and was based upon a foundation of past experience, existing problems, and estimates of the future.

The curriculum drawn up by the Academy Planning Board and its consultants aimed at producing officers with a sound background in the physical sciences and a knowledge of aeronautical engineering. The planners recognized, however, that men are still the basic ingredient of any military force and hence that a competent officer must be skilled in human relations. Planning Board members agreed that the responsibilities of military leaders had been broadened many fold in the preceding decade and that problems of national security would be paramount in the years ahead. The role of air power was destined to be decisive in the future of the world and hence Air Force leaders must be aware of the major problems, both domestic and international, of the nation they serve. The breadth of intellectual horizon required of future air leaders called for academic training in the humanities, social sciences, physical sciences, and engineering.

Between 1948, when the first curriculum plans evolved and 1954 when President Eisenhower signed a bill authorizing establishment of the Air Force Academy, educational plans were subjected to review and refinement. This process has continued as plans have been translated into an operating program at the Air Force Academy's temporary location, Lowry Air Force Base, Denver, Colorado. The Academy will move to its permanent location eight miles north of Colorado Springs in 1958.

The Academy, which opened its doors to the first class of cadets on July 11, 1955, is neither an engineering nor a liberal arts college, but combines certain elements of both. It may be accurately described as a school of general education for professional Air Force officers—a school which endeavors to give each cadet “the knowledge and qualities of leadership required of an officer in the United States Air Force, and a basis for continued development throughout a lifetime of service to his country, leading to readiness for responsibilities as a future air commander.”*

A cadet who completes the four year course at the Academy will graduate with a Bachelor of Science degree, the aeronautical rating of navigator, and a commission as second lieutenant in the Regular Air Force.

*From the official statement of the mission of the Air Force Academy.



THE ACADEMIC CURRICULUM



The curriculum of the Air Force Academy is, in many ways, unique among undergraduate institutions of the United States. While individual courses are, in many instances, similar to their counterparts offered by civilian colleges, the combination of courses required for graduation is not paralleled in any other collegiate institution. The Air Force Academy does not offer a major field of study, but rather seeks to give its graduates the broadest possible educational experience in preparation for a career which embraces the leadership of men, close association with the

people of other countries, the development and operation of vastly complex machines, the management of an organization which counts its men by the hundreds of thousands and its capital investment in the billions, an active participation in the formulation of national policy, and the planning—if necessary, the execution of military strategy and tactics.

The program of academic studies is outlined in Chart II†. Within each major area of learning—the humanities, the social sciences, and the physical sciences—courses have been arranged to form a continuous learning process and at the same time to relate to the other major areas to the greatest extent possible. All courses have been planned with close interdepartmental and interdivisional cooperation. Coordination of course planning has made it possible to reduce the time devoted to the introductory phases of many courses.

Advanced, Accelerated, and Special Courses

The majority of cadets will follow the curriculum outlined in Chart II†. About one-third of the cadets admitted to the Air Force Academy have had one or more years of college work before their selection as cadets, however. Opportunity has been provided for these cadets, and for unusually talented cadets who have not previously attended college, to take advanced and special courses. Two methods of curriculum enrichment are used. First, cadets who have satisfactorily completed college courses similar to those included in the Academy curriculum, or who show superior aptitude in a subject, may elect to substitute *advanced or accelerated* courses for some courses in the regular curriculum work. Thus, those cadets who have satisfactorily completed a course comparable to Fourth Class* mathematics, or who show great aptitude in mathematics, are encouraged to take an accelerated mathematics course in which the material of the regular course is reviewed rapidly, followed by an introduction to statistics and probability, and vector algebra. While cadets in the regular Fourth Class mathematics course complete 10 semester hours work, those in the accelerated course earn from 12 to 14 semester hours credit. Similarly, cadets who can demonstrate satisfactory knowledge of the history of Western Civilization may study, in lieu of that course, the history of Russia or history of the Middle East.

†See page 40.

*Classes at the Air Force Academy are designated: Fourth Class (Freshman), Third Class (Sophomore), Second Class (Junior), and First Class (Senior).



The second method of providing for superior students is the *special course program*. Cadets admitted to this program are allowed to carry one course per semester in addition to regular and advanced or accelerated courses. These cadets are encouraged to develop their special course plans in either the scientific area or the social science-humanities area. Admission to the special course program is based on the cadet's high school and previous college work, and the quality of his academic work at the Air Force Academy. The content of a cadet's special course program depends upon his individual academic background and his desires; hence it is not possible to outline a "standard" special course. A cadet granted permission to follow a special course in the social science-humanities area might enrich his educational plan by studying courses in anthropology, sociology or social psychology, philosophy, political theory, fine arts, creative writing, and great issues. The sum total of the regular and special courses in the social science-humanities area might, in some cases, approach a major in humanities or social sciences.

The objective of the special course program in scientific and engineering studies is to provide additional instruction which will enable a cadet to complete all or most of the usual requirements for a bachelor's degree in engineering. The engineering special course program of qualified cadets will include most of the

following courses: properties of engineering materials, physical chemistry, advanced mathematics, advanced engineering drawing, modern physics, nuclear engineering, aircraft structures, servomechanisms, heat transfer, stability and control, and flight testing.

The regular, advanced, and accelerated courses offered by each academic department are described briefly in the following sections. Under the special course program, the faculty will, within limits of competence and laboratory facilities, teach any course for which there is a demonstrated need.

Description of Courses

The Air Force Academy faculty is organized in sixteen departments which are grouped into four academic divisions as shown in Chart I[†], with the entire academic program under the supervision of the Dean of Faculty.

The *Division of Humanities* includes the Departments of English, Law and Logic, and Foreign Languages. Collectively, these departments present a total of 31½ semester hours of instruction, of which 16 semester hours are in the field of English.

The *Department of English* is concerned with teaching cadets to write, read, speak, and listen effectively and to understand and enjoy literature as a study contributing to the development of mature character. These two threads—instruction in communications skills and a study of literature—run through the entire three year sequence of instruction.

The *Fourth Class English* course is devoted largely to instruction in communications skills. Each cadet writes some 20 short themes and three longer research papers. As a background for his writing, the cadet reads a number of expository essays which serve also as a means of improving reading speed and comprehension. The best of cadet writing in this course is published in a small magazine, *Chandelles*. Instruction in speech includes an introduction to semantics, public speaking, and the planning and conduct of conferences.

The study of literature in the Fourth Class year introduces the cadet to the literary forms with which he will be concerned during his next two English courses. In this block of instruction, a short novel, two dramas, several short stories, and a sampling of poetic forms are read and analyzed.

[†]See page 39.

Third Class English is largely a study of some masterworks of Western literature from the time of Homer to the 18th Century. The cadets read all, or at least substantial parts, of selected works rather than fragments from the works of a large number of great literary figures. The authors studied include Homer, Aeschylus, Sophocles, Euripides, Chaucer, Shakespeare, Milton, Moliere, and the English Renaissance poets. There is a continued but greatly reduced emphasis on communications skills.



Second Class English is a continuation of the Third Class Course. In this course, attention is centered on important European and American literary works from the middle of the 18th Century to the present. Wherever possible, courses in English literature and history have been coordinated so that a cadet studies concurrently the history and literature of a country and period.

The Department of English offers an *accelerated program* to cadets who have completed a freshman English course at another institution or who show exceptional ability in English composition and speech. These cadets are excused from Fourth Class English and in their Fourth Class year take a special course which is much the same as the Third Class literature program with additional writing and speech exercises. As Third Classmen, this group takes the Second Class English program,

and as Second Classmen they may take a special course in contemporary literature, literary criticism, and creative writing.

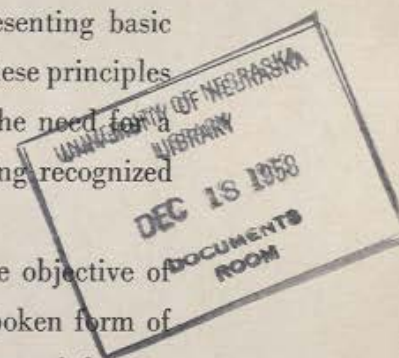
Instruction given by the *Department of Law and Logic* includes a one semester course in Logic during the Fourth Class year and a one semester course in Law during the First Class year. The *Logic* course embraces a study of propaganda and fallacies, semantics, syllogistic reasoning, and the scientific method. The cadet is taught to see logic not as propaganda or a game, but rather as a discipline with techniques and principles which can help him to organize and direct his own thinking and to test propositions which he, as an officer, will have to evaluate.

The course in *Law* is both a survey of the theory of law and a study of law as a social institution. It is a course of fundamental cultural value, presenting basic principles of property, civil and criminal law, and the application of these principles to actual cases. This course is to some extent a pioneering effort. The need for a non-specialized course in law at the undergraduate level is now being recognized in American undergraduate institutions.

Foreign Languages are to be taught in the First Class year. The objective of foreign language instruction is to give cadets a competence in the spoken form of one foreign language and an increased appreciation of the culture of foreign nations. Classes will meet five days a week throughout the First Class year. Initially French and Spanish will be taught; other languages will be added as cadet enrollment increases.

The *Division of Social Sciences* includes the Departments of History, Political Science, Economics, Military History and Geography, and Psychology. Instruction in the social science area, which totals 33½ semester hours, is aimed at developing in cadets a deeper understanding of human society.

Regular courses offered by the *Department of History* are History of World Civilization in the Third Class year and United States History for Second Classmen. The first 64 lessons of *World Civilization* are devoted to Western Civilization and the last 36 to Oriental Civilizations. In both of these areas there is much emphasis on the cultural elements of civilization, including science, philosophy, and the fine arts. Primary and secondary source materials are used extensively to supplement the text. In *United States History* emphasis is placed on the period since 1763; a major objective of the course is to acquaint cadets with the role and responsibilities of



United States leadership in the Twentieth Century. The study of political, social, economic, military, and diplomatic trends and movements which have influenced our society is based to a large extent on a collateral reading program. Cadets who are qualified in the History of Western Civilization or in United States History may elect to substitute for those courses *History of the Middle East*, and *History of Russia*; *United States Diplomatic History*, and *Latin American History*.

The *Department of Economics* teaches *Principles of Economics* and *Comparative Economic Systems* in the Second Class year. These courses introduce cadets to some of the fundamental concepts of economic organization in a modern, interdependent society. Among the topics discussed are national wealth, national income, monetary and fiscal policies, and economic problems of capitalism and other economic systems. Throughout the course, techniques of modern income and monetary analysis are used to help cadets develop an appreciation of economic factors and how they affect national security. The final economics course, *Economics of National Security*, is taught in the First Class year. It deals with national economic objectives, mobilization programs, economic stabilization, systems analysis, and economic warfare. In all economics courses, the case study approach is used extensively. Advanced courses in *Contemporary Economic Thought*, *International Economics*, and *History of Economic Thought* are available for qualified cadets.

The *Department of Political Science* at the Air Force Academy, as in many other schools, embraces two fields of instruction: government and international relations. *American National Government* is taught in the Second Class year, paralleling the United States History course. This course is concerned equally with the institutions of government and with giving the cadet an understanding of the body of fundamental ideas on which our system of government is built. Advanced courses in *American Political Thought* or *American Political Parties* are open to cadets who qualify for exemption from the course in American National Government. In the First Class year, cadets study *Contemporary Foreign Governments*. This course treats both the structure and operation of major foreign governments and problems of political behavior. Some problems considered in the government courses are: the dilemmas of democracy, the problem of concentration of power vs. decentralization, relations between government and the economic order, and conflicts between ideologies. The final political science course, *International Relations*, is taught during the second semester of the First Class year so that cadets may bring to the course a background in geography, history, government, and economics. In this course,



cadets study the nature of international relations, the bases of national power, and the formulation and implementation of foreign policy in the United States and other great powers. A behavioral rather than an historical or descriptive approach is used, with emphasis on analysis of the complex forces which influence world politics.

The *Department of Military History and Geography* teaches a one semester course in physical and cultural geography in the Fourth Class year and a one semester course in *Military History* in the First Class year. The *Geography* course is aimed at developing in cadets an ability to evaluate the influence of geography on national security and the employment of air power. Qualified cadets may substitute *Political Geography* for the basic course. The general objectives of the *Military History* course are to develop a broad, balanced understanding of the scope and complexity of war through a study of military history, military affairs, and military problems, and to provide a basis for continuing professional study in these subjects. Emphasis is placed on the period from World War I to the present. About one third of the course is devoted to a study of air warfare; the remainder covers ground and naval warfare, military theory and organization, strategy and tactics, civil-military relations, and military leaders. This course is closely coordinated with instruction given in the military training phase of the Airmanship program* by the Division of Military Training.

One of the principal objectives of the *Department of Psychology* is to help cadets build a solid foundation for the understanding of the human problems of military training, leadership, and morale in the Air Force. The Third Class course in *Psychology* is divided between *Principles of Psychology* in the first semester, and *Psychology in the Air Force* which is taught the second semester. The second semester draws on actual Air Force case studies in the areas of personnel adjustment, engineering psychology, leadership, and morale. This study of applied psychology is coordinated with leadership training presented in the Airmanship program. A number of advanced courses such as *Social Psychology*, *Personnel Psychology*, and *Psychology Through Literature* are offered for cadets with a background in psychology.

The *Division of Basic Sciences* includes the Departments of Mathematics, Chemistry, Physics, and Graphics. Many of the subjects taught by these departments are a part of any program of general education. No one, regardless of profession, can well understand the modern world without some knowledge of mathe-

*The Airmanship program, which is supervised by the Commandant of Cadets, is described on page 28.



matics, chemistry, and physics. Instruction in these areas and in engineering drawing, totaling 35 semester hours, also provides indispensable background for the engineering courses offered by the Division of Applied Sciences.

The *Department of Mathematics* teaches courses in the Fourth and Third Class years. *Fourth Class Mathematics* includes college algebra and plane trigonometry in the first semester. Wherever possible, applications in all mathematics courses are drawn from navigation problems and other uses characteristic of Air Force operations. The second semester is devoted to spherical trigonometry, a subject used in navigation training, and to plane and solid analytics. Calculus lessons cover the differentiation and integration of polynomials. *Third Class Mathematics* deals with differentiation and integration of more complicated functions and their application to area, volume, centroids, moments, series, and other physical applications. The last twenty lessons are devoted to an introduction to differential equations. *Accelerated courses* are offered for qualified cadets in both the Fourth and Third Class years. In the accelerated courses, the material of the regular courses is covered at a rapid pace, followed by probability and statistics, and vector algebra in the Fourth Class year and differential equations in the Third Class year.

The *Fourth Class Chemistry* course does not differ materially from a freshman general chemistry course taught at a civilian institution, except that application to Air Force problems is stressed where appropriate. The Department of Chemistry conducts *advanced courses* for cadets who have special preparation or unusually high aptitude. The advanced courses are in qualitative and quantitative analysis. In both chemistry and physics, combination lecture-laboratory rooms are used.

The *Department of Physics* offers a nine semester-hour course in the Third Class year. The course is divided into six subcourses: mechanics, heat, light, sound, electricity and magnetism, and modern physics. Classroom periods are of 75 minutes duration and are augmented by laboratory periods which are interspersed throughout the course to provide an opportunity for the cadets to verify the physical laws studied. Fundamental physical principles are related to practical Air Force problems. The course provides a firm scientific foundation for future work under the Division of Applied Sciences.

The *Department of Graphics* teaches two courses, *Charts and Maps*, and *Engineering Drawing* as a Fourth Class program. Instruction in charts and maps is designed to support the flying training phase of the Airmanship program. The objective of the course in engineering drawing is to develop spatial visualization, an



understanding of drafting methods, and skill in reading engineering drawings rather than to train finished draftsmen. The department offers *Advanced Engineering Drawing* for cadets who have an adequate knowledge of the material covered in the regular course.

The *Division of Applied Sciences* includes the Departments of Mechanics, Electrical Engineering, Thermodynamics, and Aerodynamics. Instruction presented by these departments totals 29 semester hours. All of the subjects in this area are peculiarly adapted to Air Force use. They provide a general background for all officers and a foundation for graduate study for those who will later specialize in engineering.

The *Department of Mechanics* presents its course during the Second Class year. Approximately thirty lessons are spent on statics, followed by thirty lessons on dynamics, then forty lessons on strength of materials and strength of materials laboratory. Instruction is oriented toward an understanding of mechanical and structural principles as they apply to aircraft and missiles. The accompanying laboratory course deals with techniques used to test engineering materials and to verify the theories of mechanics of materials. In addition, an advanced course in *Properties of Engineering Materials* as applied to modern aircraft is offered to selected students with high academic averages. This course runs approximately thirty hours.



Electrical Engineering, taught by the Department of Electrical Engineering in the Second Class year, covers the fundamental laws governing electricity and electronics and presents a brief survey of nuclear physics. All instruction in electricity and magnetism required for the aerial navigation program is given in this course. Classroom periods are of 75 minutes duration and are supported by some twenty laboratory periods.

The course in *Aerodynamics* is taught in the First Class year. The first two parts of the course in aerodynamics are designed to give the cadet a thorough understanding of the fundamentals of fluid flow and incompressible aerodynamics. The third portion will present an introduction to transonic and supersonic flow, followed by a discussion of the effects of compressibility on aircraft performance, stability, and control. The laboratory program is coordinated with classroom work throughout

the year to give the cadet a physical appreciation of the material presented in the classroom. Aerodynamics laboratory equipment will include a transonic-supersonic wind tunnel with a one foot square test section and a Mach number range of .5 to 4.5, a subsonic wind tunnel with a 2½ by 3½ foot test section, a smoke tunnel, and liquid flow apparatus.

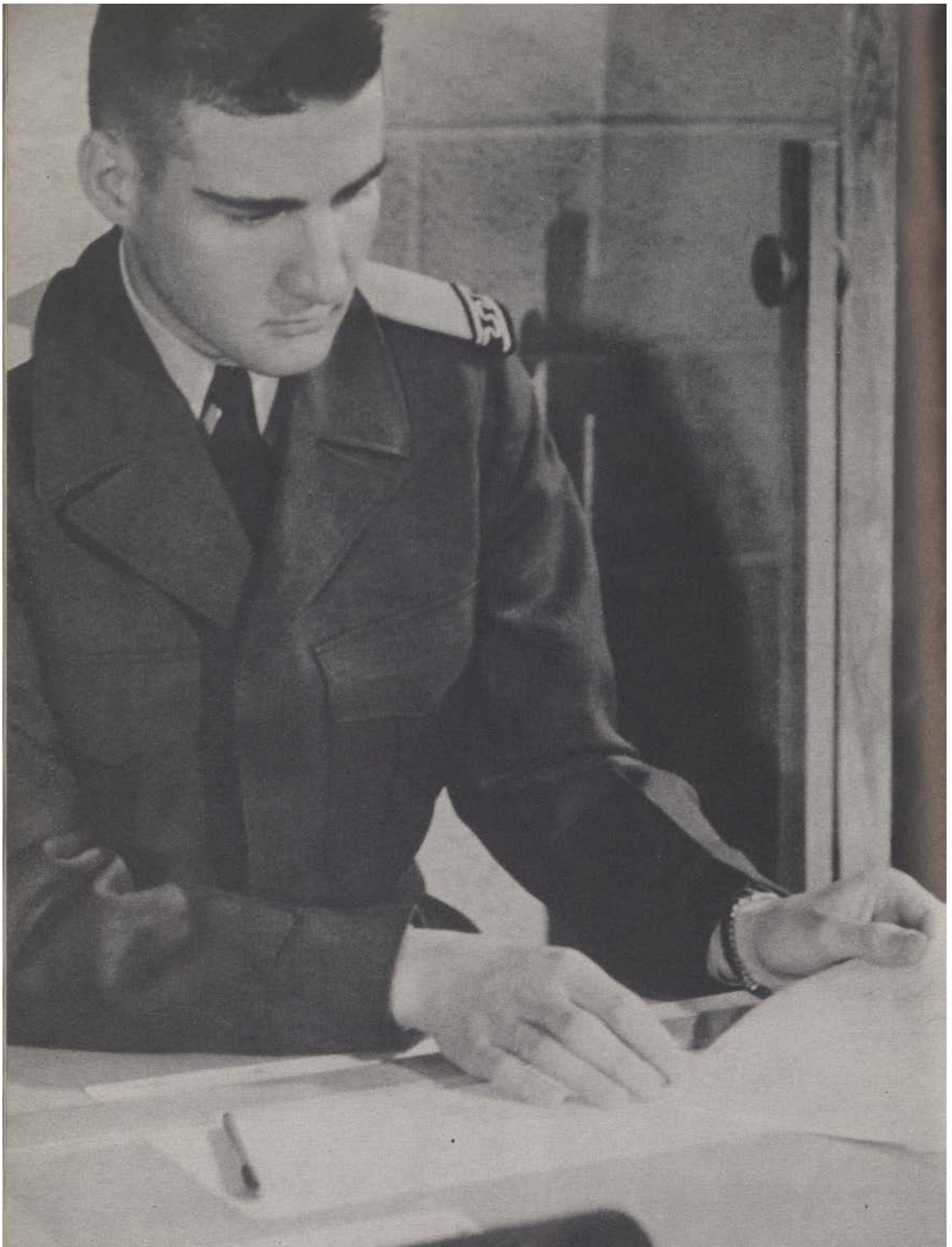
Thermodynamics, taught in the First Class year, deals with the transformation of heat into useful power, with particular reference to the various types of engines and thermodynamic systems used by the Air Force. Applications studied include gas turbines, reciprocating engines, turbojets, ramjets, rockets, air conditioning, refrigeration, and steam power plants. The thermodynamics laboratory will be equipped with all types of aircraft power plants, including rocket engines, and will have test cells for engines up to 3,000 pounds thrust. Laboratory equipment will also include the principal types of refrigeration equipment and equipment for testing fuels, and lubricants. Two small steam power plants will be used to acquaint cadets with the probable methods of converting nuclear energy into mechanical energy.

The Department of Thermodynamics will also teach *Design Appreciation* in the First Class year. This course consists of presentations by military and civilian research and development specialists, lectures, and group problems. Its objective is to give the cadet an understanding of the successive stages in the development of a weapon system and its components, and an appreciation of the compromises that must be made among conflicting engineering requirements and between engineering possibilities and operational requirements.

Summer Travel

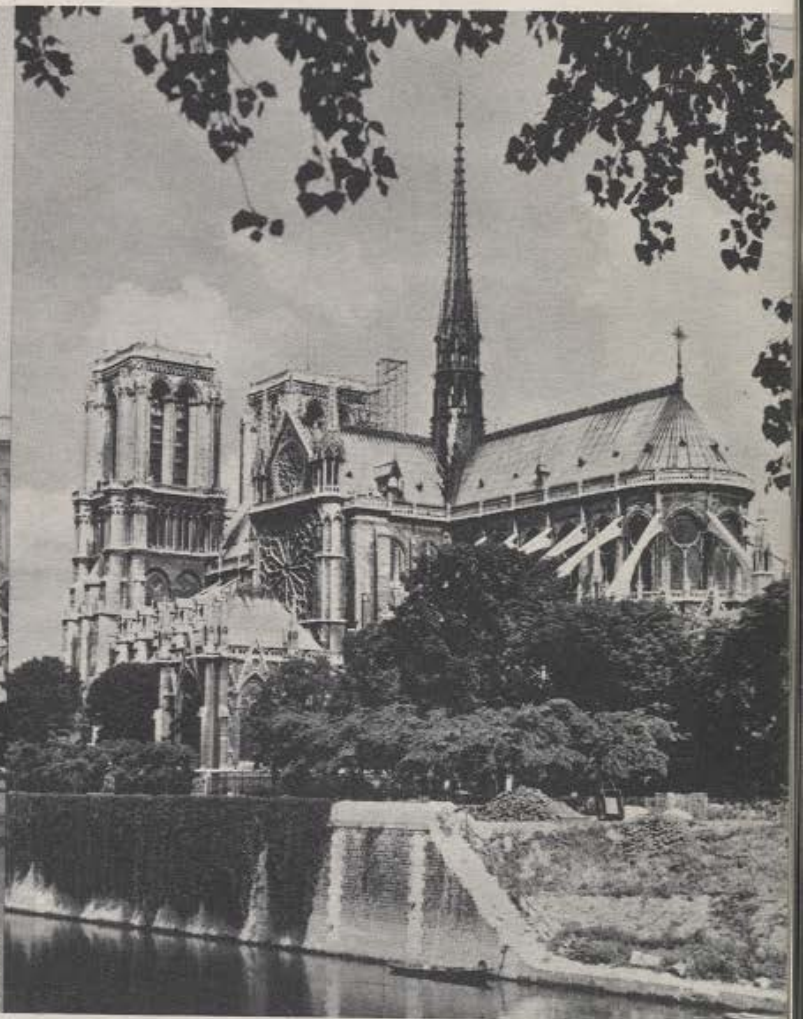
Although not an integral part of the Air Force Academy academic curriculum, summer travel must be considered an important element of each cadet's educational experience. During the summer following the cadet's Fourth, Third, and Second Class years, he will visit Air Force, Army, and Navy installations throughout the country. Cadets are given opportunities to visit places of historical and cultural interest near each installation.

During the summer following their Third Class year, cadets are allowed to use their leave to travel abroad, accompanied by officers of the staff and faculty. Arrangements were made for the first group of cadets to visit United States military installations in England, France, Germany and Spain during the summer of 1957.



Their itinerary was arranged to allow free time in London, Paris and Madrid—time which could be used to enhance their knowledge of the political, economic, social, and cultural life of the nations with which they will be closely associated as Air Force officers.

The group received briefings on military problems at our own bases and at the various headquarters of the NATO military commands. These were supplemented by political and economic briefings delivered by personnel of United States Embassies abroad.





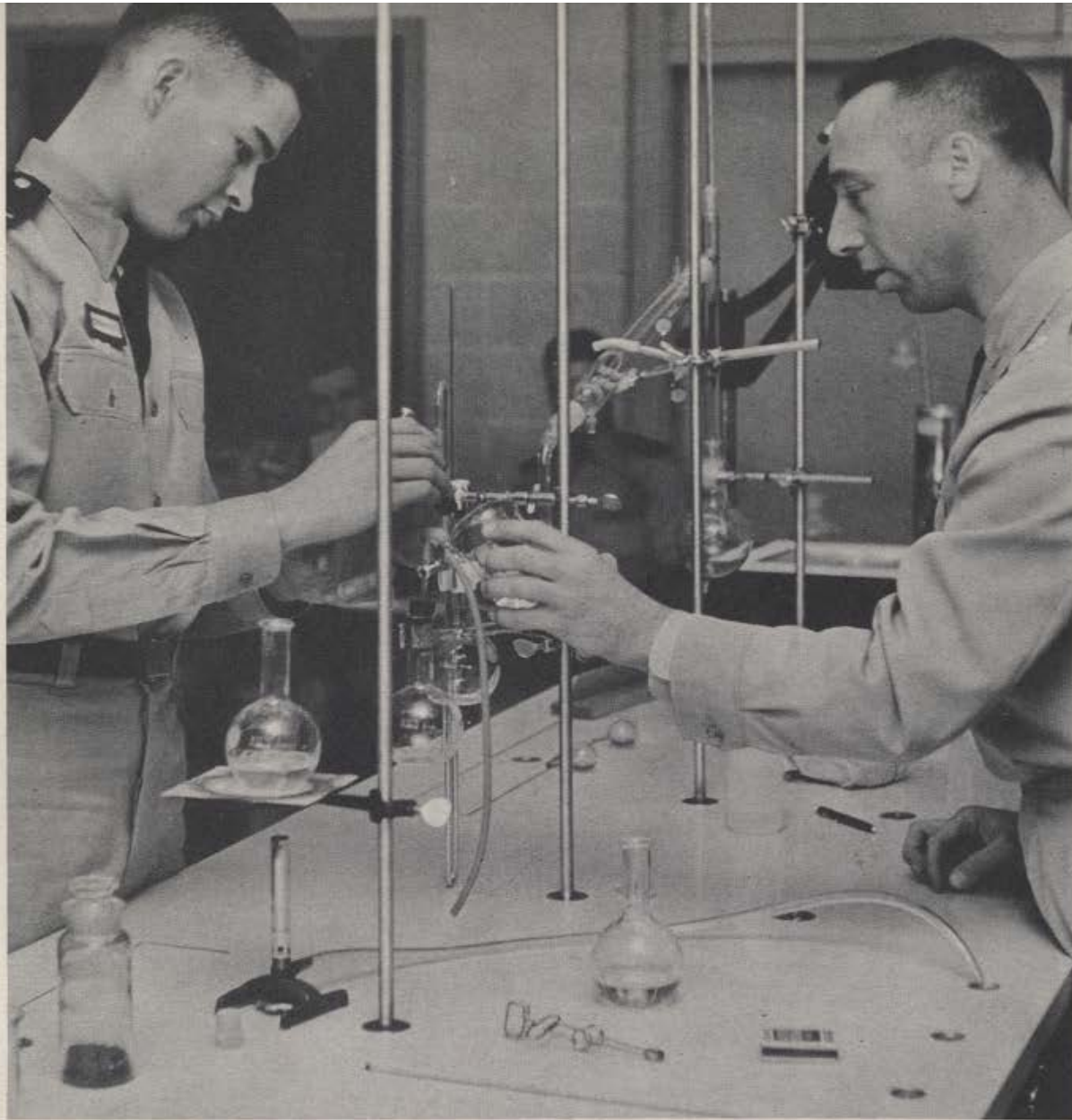
THE AIR FORCE ACADEMY LIBRARY

When the Library opened its doors on 15 August 1955, the collection numbered less than 500 volumes. On 31 October 1956, there were more than 26,000 volumes in the book collection and some 600 periodicals on the shelves. Ultimately, the Library at its permanent site in Colorado Springs will house a general book collection of 200,000 volumes and an aeronautical research collection of 50,000 volumes.

Making books accessible to users is the guiding principle of the Library. An open stack system is used, giving readers direct access to the book collections. This system transforms the book collections, containing the thought and achievements of the best scholars and scientists through the ages, into active instructional tools for both the faculty and the cadets.

The Academy Library possesses one of the best newspaper collections in the western part of the United States. The Library subscribes to 70 daily newspapers which include the leading journals from every part of the United States, and outstanding foreign newspapers such as *The London Times* and *Manchester Guardian*. Its collection includes a complete file of the *New York Times* since 1913 on microfilm. The Library is also a depository for Government documents.

The Academy Library holds a membership in the Bibliographical Center for Research. Through this service, the Library is able to arrange loans of books and periodicals from library resources throughout the United States and Canada.



INSTRUCTIONAL METHODS

One of the objectives of the Air Force Academy is to develop in its cadets the highest form of discipline—that self-discipline which enables a man to see his responsibilities and to carry them out without compulsion. This is especially important in modern aerial warfare which may require single aircraft to operate independently, vast distances from home base, and out of contact with higher authority. Such discipline is not the product of stereotyped minds which have been trained to accept without question. One of the fundamental tenets of Air Force Academy educational philosophy is that cadets shall be encouraged to question constructively everything that

they read and hear. This philosophy cannot exist in a rigid, formalized atmosphere. Visitors to the Academy are often surprised at the relaxed classroom atmosphere and by the give-and-take which goes on among the cadets and between cadets and instructors.

Cadets attend classes in sections of approximately twelve men. This small group teaching situation allows instructors to know their students and to devote attention to the learning problems of each cadet. Teaching techniques vary with subject matter, but in all cases are calculated to derive maximum benefit from small sections. In the humanities-social science area, the discussion and seminar methods are used extensively. Interdepartmental seminars are especially productive in the social science field. These methods are supplemented by lectures to an entire class. Many of the lectures are delivered by guest speakers who are distinguished in their fields. Recitation, instructor demonstration, and student performance are frequently-used techniques in the scientific area.

Although cadets are tested more frequently than is customary in civilian institutions, there is no standard testing pattern. In the basic science courses, a quiz or graded blackboard work is given at more than half the daily attendances. Testing is less frequent in the humanities-social science area where cadets may be given a short objective quiz or an essay test about once each week. Preparation of lessons is considered a military duty; each cadet is expected to have studied his lesson prior to class. Homework assignments are based on approximately two hours of outside preparation for each hour of classroom attendance. Generally, classroom periods are of 55 minutes' duration, although 75-minute periods are used in some of the scientific and engineering subjects. Laboratory periods are 110 minutes in length.

Audio-visual aids are used extensively where appropriate. Each academic department has available slide, moving picture, and opaque projectors. Audio-Visual Services, an activity under the jurisdiction of the Dean of Faculty, maintains a large library of films, transparencies, and recordings, and is equipped to produce other types of instructional aids.

Each department conducts extra instruction periods after regular classroom hours for cadets who need additional instruction on a particular lesson. Cadets are encouraged to consult with their instructors outside the classroom as frequently as they wish. Extra instruction and individual conferences are conducted on an informal basis, usually in the instructor's office.



THE FACULTY

Faculty members have been selected from among Regular and Reserve Air Force Officers on active duty. Selection is based on academic preparation, teaching experience or potential, and performance as an officer. Approximately one-third of the faculty are graduates of the United States Military or Naval Academies. The universities at which the instructional staff have done graduate work include Harvard, Yale, Princeton, California Institute of Technology, Massachusetts Institute of Technology, Georgetown University, and the Universities of Pennsylvania, Denver, Chicago, California, Missouri, North Carolina, Colorado and Texas. The faculty averages five years' college level teaching experience at civilian institutions or at the United States Military and Naval Academies.

Almost without exception, members of the Academy faculty have lived and traveled abroad. Often, their duties prior to joining the faculty have been directly related to the subjects which they teach. In the scientific area, for example, many instructors have served with the Air Research and Development Command, the Atomic Energy Commission, or the Air Materiel Command. About half of the faculty are pilots or navigators who have served with operational units.

In addition to their primary function of academic instruction, all members of the Air Force Academy faculty are responsible for participating in the development of the cadet's character and leadership ability, and for motivating each cadet to devote his life to the service of his country.

By law, the Air Force Academy is authorized twenty-one permanent professors. Other faculty members usually serve at the Academy for a period of four years, though a few may remain for longer periods. Some instructors will return to the Academy for a second tour of instructional duty after having served an intervening tour in another type of Air Force activity.



THE AIRMANSHIP PROGRAM

The principal purpose of this brochure is to acquaint the reader with the academic plan of the Air Force Academy—with what is taught, how classes are conducted, and who does the teaching. An equally important part of the entire Academy plan of education and training is the airmanship program which is under supervision of the Commandant of Cadets.

The airmanship program includes military, flying, and physical training which total $38\frac{1}{2}$ semester hours over the cadet's four years at the Academy (Chart III[†]). Seventeen and one-half semester hours of airmanship training are given during the academic years (mid-September to early June); the remaining hours are taught in the summer months. During the summer, each cadet of the three upper classes is also granted leave.

The military training phase of the airmanship program includes those subjects which the cadet will need to know as a second lieutenant: squadron administration, air base functions, Air Force organization, weapons, functions of the major commands, leadership, instructor training, and drill. The cadet is also given a broad understanding of the organization and capabilities of other elements of the national defense structure including the problems of joint military operations. His classroom instruction is supplemented by summer field trips to Air Force, Army, and Navy installations.

Flying training is concentrated in the three upper class years. The program includes classroom work in navigation, and practical experience in aerial navigation aboard the Academy's flying classrooms, Convair T-29 navigation training aircraft.

[†]See page 40.

Each cadet also receives introductory pilot training during the summer following his Fourth Class year. An increase in the amount of pilot training is presently under study.

Physical training extends throughout the cadet's four years at the Academy and includes both physical conditioning and instruction in team and individual sports. Emphasis is on contact sports, such as boxing, judo, and football. An extensive intramural program is part of the physical training curriculum. Upper classmen serve as team coaches and as instructors. These duties are considered important elements of the cadet's training in leadership.

Cadet life outside the academic classroom is supervised by the Commandant of Cadets and his staff. The regimen under which cadets live is actually a four year laboratory exercise in command and leadership. First and Second Classmen are responsible for the day-to-day administration of the Wing of Cadets and for the operation of the system under which the two upper classes assist in the military training and discipline of new cadets.

At the Air Force Academy, each cadet develops a rigid adherence to truth which is essential to his performance as a career officer in the United States Air Force. The Honor Code, which pervades every action of the Air Force Cadet, is built around a basic and uncompromising premise: complete integrity.

During the initial phase of cadet training in his first summer at the Air Force Academy, the new cadet is given a course of instruction in ethics. In this series of lectures and discussions, the Honor Code is explained in detail, enabling him to understand fully the importance and benefits of his Honor Code. He learns that a cadet's word is never questioned; he is exposed to an atmosphere of complete trust among his fellow cadets and the officers of the Air Force Academy.

The Honor Code is administered by the cadets through a council of elected representatives who are responsible for maintaining the highest standards of honor in the Cadet Wing. Membership in this council is the highest office to which a cadet may be elected.



EXTRACURRICULAR ACTIVITIES

The cadet's heavy workload is balanced by an extensive and well-rounded program of extracurricular activities. Social activities are centered at Arnold Hall, where excellent facilities have been provided for dances, informal entertainment of guests, and for club meetings.

Extracurricular activities may be divided into three general categories: those of an educational nature, those which are primarily recreational, and the program of intercollegiate athletics.



Educational Activities

Extracurricular activities of an educational nature are generally supervised by members of the faculty. These activities include publication of the cadet yearbook; the cadet magazine, *Talon*; and *Contrails*, a booklet which contains a variety of information on cadet life and lore, Academy customs, and facts about the military services. The Cadet Forensic Association participates in intercollegiate debates and oratorical contests throughout the Rocky Mountain area. The Cadet Forum sponsors a series of informal Sunday afternoon meetings at which public affairs are discussed by guests who are authorities on various aspects of national and international policy. The Forum is also planning an annual intercollegiate conference on international affairs which will convene for the first time in 1958. Week-end and holiday trips to local areas of geographical interest are conducted by the Geography Club.



Recreational and Hobby Clubs

The cadets have organized Radio, Model Engineering, Photography, Judo, Skeet, and Chess clubs. For cadets who are interested in music, there are three cadet choirs which sing at weekly religious services. A cadet dance band plays for informal social activities. Some of the best skiing in the country is found within two hours' drive of the Academy. The Ski Club provides equipment and lessons for its members and sponsors regular Sunday and holiday trips to adjacent ski areas.

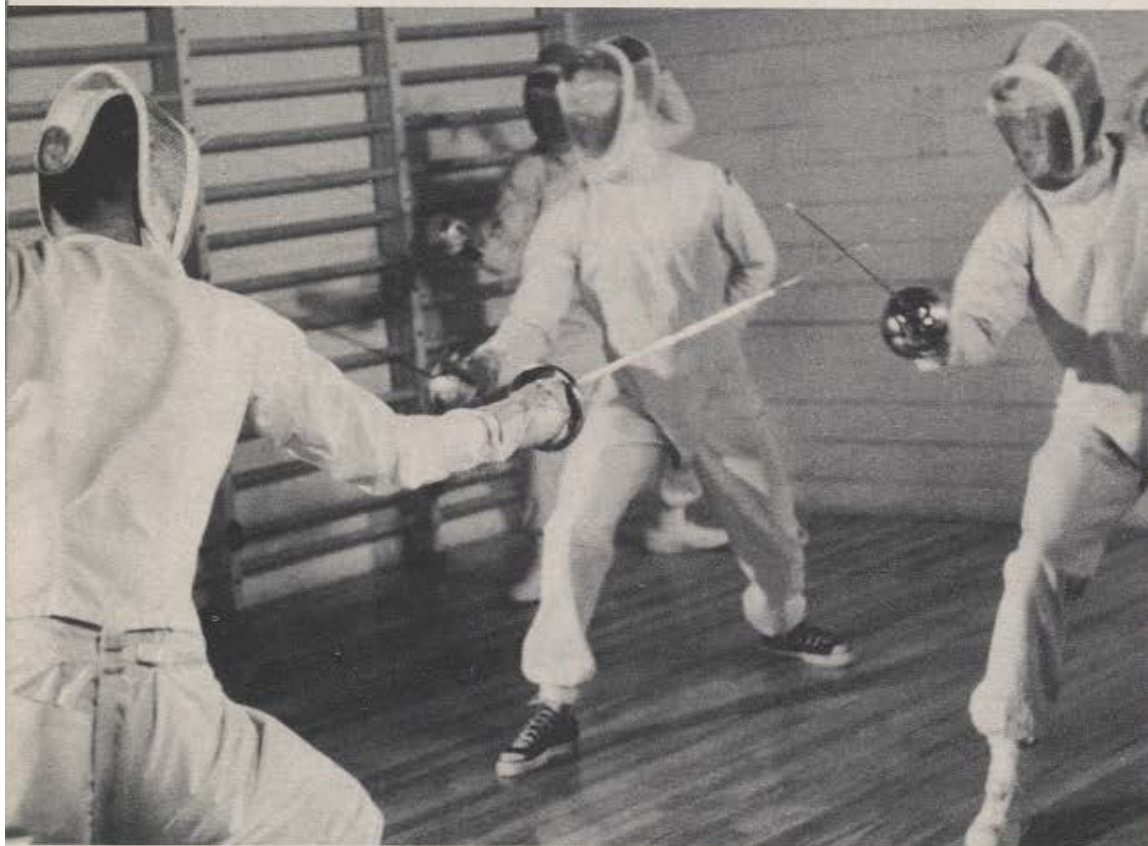
One of the most fascinating and unusual of Academy recreational activities is the Cadet Soaring Club. The Air Force Academy, standing at the foot of the Rampart Range, is in what is considered to be one of the world's best areas for soaring. The Club has both two-place training gliders and high performance sailplanes. It is possible for a cadet to progress through a carefully supervised program to the highest soaring ratings granted by the Civil Aeronautics Administration and the Soaring Society of America. The members not only fly, but also build some of their own sailplanes.

Intercollegiate Athletics

Blue-and-silver-clad teams of the Air Force Academy, known as the Falcons, are rapidly carving a name for the Academy in the world of intercollegiate athletics. The Academy fields intercollegiate teams in football, soccer, cross country, basketball, wrestling, gymnastics, swimming, fencing, skiing, baseball, track, golf, tennis, rifle and pistol. Lacrosse and hockey will be added to this array when the Academy moves to its permanent site in 1958.

During the first two years, Academy teams competed successfully with collegiate institutions in the Rocky Mountain area. In 1958, the Academy will schedule strong intersectional opposition in all varsity sports.

Intercollegiate athletics are open to any cadet who maintains a cumulative average of 70 per cent or higher in every subject. Those cadets who are not members of intercollegiate athletic squads participate in the Academy's extensive intramural athletic program.





SELECTION OF CADETS

The procedures for gaining admission to the Air Force Academy are described in detail in the Air Force Academy Catalogue. The majority of candidates are nominated by Congressmen to compete in state competitions. There are other competitions among nominees of the President and Vice President; competitions for residents of the District of Columbia, the Territories, and the Panama Canal Zone; competitions within the Regular and Reserve components of the Armed Forces; and a competition open to sons of deceased veterans. Selection within each competition is based upon the candidate's performance on College Entrance Examination Board Tests, Airmanship and Physical Aptitude Tests, and upon an evaluation of the candidate's high school record. Candidates are judged not only on their mental achievement and ability but also upon activities which indicate leadership potential.

The Air Force Academy is interested in young men who are outstanding both intellectually and physically, who have a wide range of interests, and who have demonstrated a capacity for leadership. The educational and training program and the demands of cadet life are exacting. Few men, no matter how talented they may be, will complete the Air Force Academy program unless they sincerely desire to serve their country as officers of the United States Air Force.

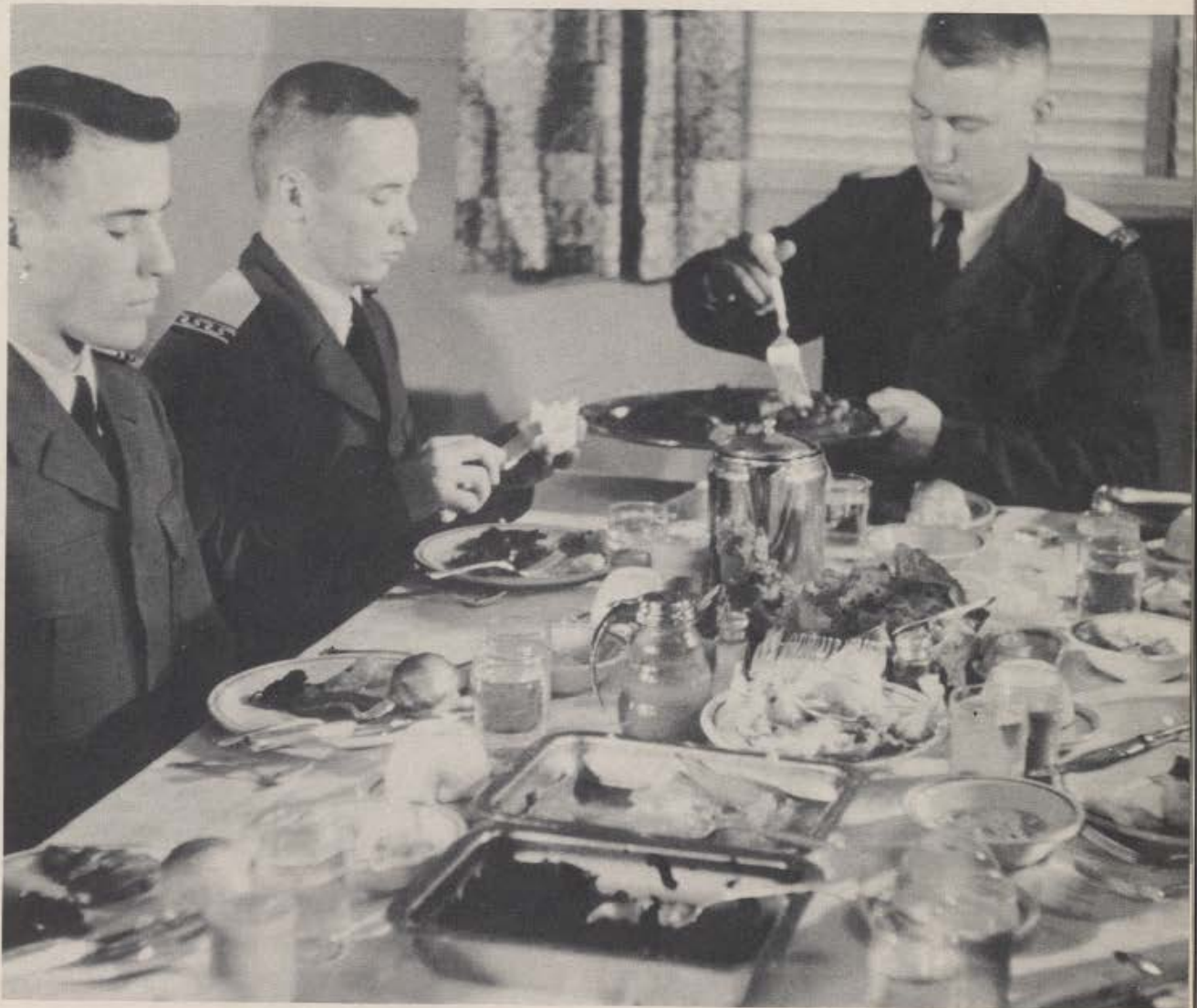
Although there are no specific minimums of secondary school courses or credits required of candidates, the Air Force Academy entrance examinations measure academic achievement that is expected of a secondary school graduate. The academic preparation which offers the best promise of success as a candidate and as a cadet includes the following minimum courses:

Elementary Algebra	1 yr.	Physics	1 yr.
Intermediate Algebra	1 yr.	Chemistry	1 yr.
Plane Geometry	1 yr.	English	4 yrs.
Solid Geometry	½ yr.	World History	1 yr.
Trigonometry	½ yr.	United States History	1 yr.

Cadets also find that additional social studies (government and economics, for instance) and a short course in typing are helpful.

The Air Force cadet's standing in his class depends on a measure of leadership ability as well as academic achievement. The best demonstration of leadership potential that a candidate can show is active participation in extracurricular activities, both athletic and non-athletic. Candidates who have had a successful record in the Boy Scouts, in the Civil Air Patrol, and in student government have had experiences that contribute to success as a cadet.

The academic workload of a cadet and the programs of military training, flying training, and physical training demand a high degree of physical fitness. Prospective candidates are advised to attend to physical development as well as mental development. "A sound mind in a sound body" is old advice, but every successful Air Force cadet knows its value.



AN AIR FORCE CAREER

When a cadet graduates from the Air Force Academy with his Bachelor of Science degree, aeronautical rating as navigator, and commission as second lieutenant, his education and training, far from being completed, have just begun. Immediately after graduation leave, the majority of graduates will go to pilot training. A smaller number will be given advanced training in navigation skills. All will then be assigned to operational units as air crew members in fighter, bomber, or transport aircraft. Generally, a part of the Academy graduate's first five years will be spent overseas in Europe, the Far East, North Africa, the Caribbean area, or at one of our northern defense bases.

After about five years' service, the young officer will attend the first of the Air University courses for officers, the Squadron Officers' Course. Some five years later, he will probably be assigned for ten months to the Air Command and Staff School. A few carefully selected officers who are destined for the highest levels of command and staff positions will ultimately attend the Air War College, the Industrial College of the Armed Forces or the National War College. These last two schools are joint institutions for officers of the Air Force, Army, and Navy, and personnel from the Department of State and other governmental agencies.

In his years between service schools, the typical officer will rotate between air crew duties, staff positions, and command duty with various Air Force commands, such as the Strategic Air Command, Tactical Air Command, Air Defense Command, Air Training Command, Air Research and Development Command, or Air Materiel Command. The officer's staff duties may be in personnel management, intelligence, operations, communications and electronics, training and education, research and development, meteorology, supply, or financial management. These are a few of the approximately 30 broad career fields open to Air Force officers. There are, of course, specialties within many of these fields.

A substantial number of Academy graduates will be sent to civilian universities or to the Air Force Institute of Technology for post-graduate work leading to a master's—and in some cases to a doctor's—degree. A few of the areas in which Air Force officers do graduate work are aeronautical, chemical, and electrical engineering, guided missiles, nuclear physics, mathematics, personnel management, business



administration, journalism, economics, languages, international relations, and education. The range of professional specialization within the Air Force is extremely wide. So diversified are Air Force activities that virtually every profession found in the civilian world may also be found within the Air Force.

In addition to its extensive program of graduate education in civilian universities and its own Air University school system, the Air Force operates many specialized schools in such fields as maintenance, engineering, armament, photography, nuclear weapons, and intelligence. The principal peace-time function of the Air Force is training to maintain a high level of combat readiness, for any full-scale war of the future probably would not permit a long period of mobilization and training.

Some of the Academy graduate's assignments will be in the United States and others overseas. In thirty years of service, an officer may anticipate spending eight or nine years abroad. Generally, he will be able to take his family with him as he travels to foreign countries. This opportunity to live and travel abroad is one of the greatest attractions of an Air Force career.

As an officer advances in rank, his responsibilities increase proportionately. The commander of a combat wing (normally a colonel) has under his supervision many millions of dollars' worth of weapons and equipment and several hundred officers and airmen. The commander of a numbered air force, such as the 8th Air Force which is part of Strategic Air Command, occupies a position of responsibility comparable to that of the president of a very large corporation. Such a commander is accountable for the lives of several thousand people and the wise employment of weapons of tremendous destructive capacity. Officers who hold key staff positions in the Air Force participate actively in the formulation of military and national policy. Theirs are among the most complex and engrossing jobs of our times.

Whatever may be the direction of the Academy graduate's career in the Air Force, he will stand always at the forefront of the Air Age. The breadth of vision which he acquired at the Air Force Academy will stand him in good stead through years of rapid change and unprecedented problems, and he will find deep satisfaction in a career of service to his country and his fellow men.

For further information, write to:

Director of Admissions
U. S. Air Force Academy
Denver 8, Colorado.

DEAN OF FACULTY

CHART I

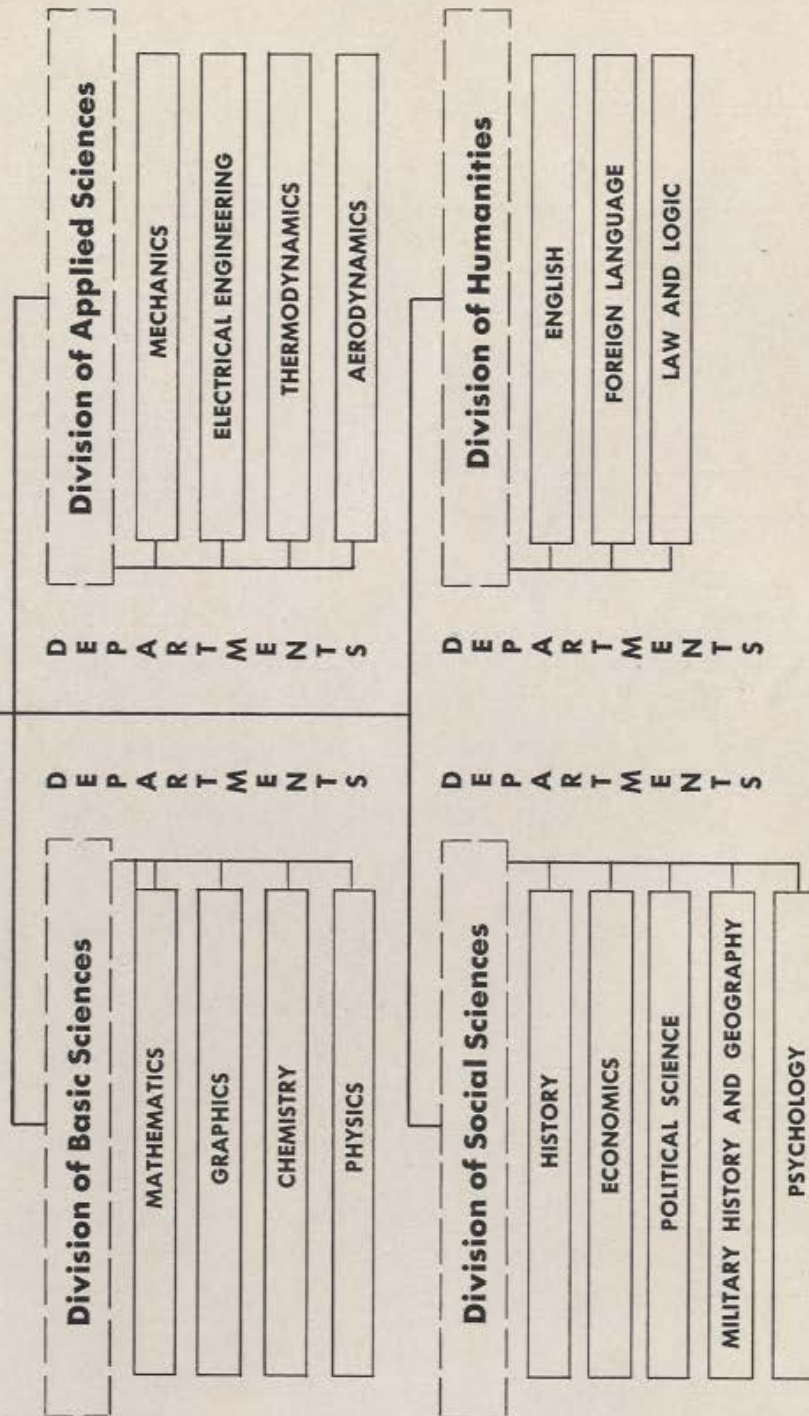


CHART II

UNITED STATES AIR FORCE ACADEMY

ACADEMIC CURRICULUM**

SCIENTIFIC STUDIES

Class Year	4	3	2	1	Sem. Hrs.
Mathematics	10*	6*			16
Charts and Maps, Engineering Drawing	4*				4
Chemistry	6*				6
Physics		9			9
Statics, Dynamics, Mechanics of Materials			6*		6
Electrical Engineering			9		9
Aerodynamics				6	6
Thermodynamics				6	6
Design Appreciation				2	2
TOTAL	20	15	15	14	64

*Advanced or accelerated courses are offered in these areas.

**All departments participate in special course programs for selected cadets. See pages 7-9 for discussion of advanced, accelerated, and special courses.

SOCIAL SCIENCES—HUMANITIES

Class Year	4	3	2	1	Sem. Hrs.
English	6*	5*	5*		16
Logic		2½			2½
Geography		2½*			2½
Psychology		5*			5
History of World Civilization		6*			6
United States History			5*		5
United States Government			2*		2
Principles of Economics, Comparative Economic Systems			4*		4
Economics of National Security				2	2
Foreign Governments and International Relations				4	4
Law				3	3
Military History				3	3
Foreign Language				10	10
TOTAL	11	16	16	22	65

SUMMARY TOTALS — 4 YEARS

Scientific Studies	64
Social Sciences—Humanities	65
Airmanship Studies	12
Total Semester Hours	141

CHART III

AIRMANSHIP CURRICULUM SUMMARY

CONTACT HOURS

Class Year	SUMMER PERIOD			
	4	3	2	1
Military Training	138	127	172	284
Flying Training		142	74	76
Physical Training	85	18	28	18
Intramural Athletics				

Class Year	ACADEMIC YEAR			
	4	3	2	1
Military Training	36	72	72	19
Flying Training	38	174	174	112
Physical Training	98	36	36	36
Intramural Athletics	57	57	57	57

TOTALS
920
790
355
228

2293

SEMESTER HOURS

Class Year	SUMMER PERIOD			
	4	3	2	1
Military Training	2½	2¼	3¼	5¼
Flying Training		2¾	1¼	1½
Physical Training	1½	¼	½	¼

Class Year	ACADEMIC YEAR			
	4	3	2	1
Military Training	¾	1½	1½	¼
Flying Training	¾	3¼	3¼	2
Physical Training	1¾	¾	¾	¾

TOTALS
17¼
14¾
6½

38½



1911 73-271

