The United States Air Force Academy

A Commitment to Excellence

L T. GEN. WIN FIE L D W. S *COT T,] R.*

"Were American Newcomen to do naught else, our work is well done if we succeed in sharing with America a strengthened inspiration to continue

the struggle towards a nobler Civilization- through wider knowledge and understanding of the hopes, ambitions, and deeds of leaders in the past who have upheld Civilization's material progress. As we look backward, let us look forward. "

-CHARLES PENROSE
(1886-1958)

Senior Vice-President for North America
The Neuicomen Society

for the study of the history of
£tlgineering and Technology
(19[2]3-[1]957)

Chairman for North America
(1958)

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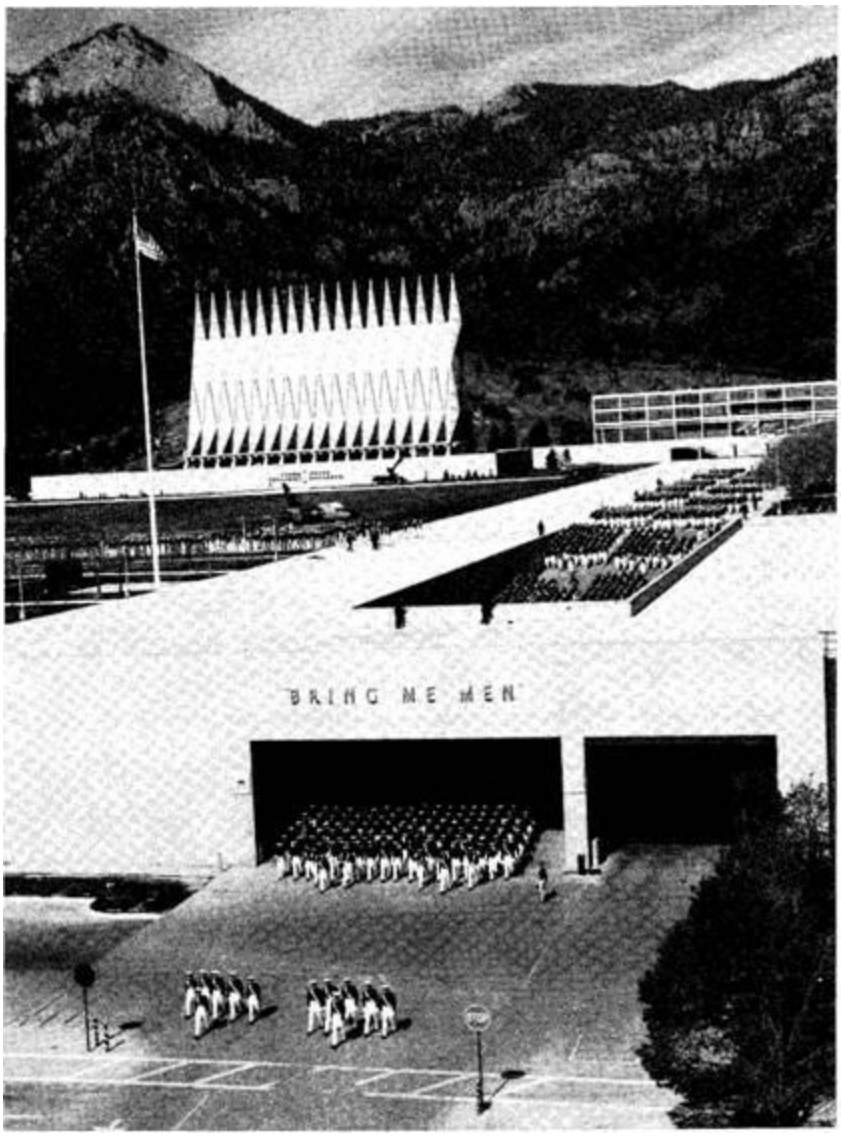
This statement, crystallizing a broad purpose of the Society, was first. read at the Newcomen Meeting at New York World's Fair 011 August 5, /939, *when American Newcomen were guests of The British Government.*

"Actorum Memores simul affectamus Agenda"

This address, dealing with the history of the USAF Academy, was delivered at a "I986 Colorado Meeting" of The Newcomen Society of the United States held in Colorado Springs, when

Lt. Gen. Winfield W. Scott, Jr., USAF, was the guest of honor and speaker on March I9th, I986.



MILITARY TRAINING IS ONE OF THE CORNERSTONES OF CADET DEVELOPMENT. CADET WING MARCHS DOWN THE "BRING ME MEN" RAMP TO PARADE FIELD

The United States

Air Force Academy

A Commitment to Excellence

LT. GEN. WIN FIE L D W. S *COT T,] R.*

MEMBER OF THE NEWCOMEN SOCIETY
USAF ACADEMY

COLORADO SPRINGS, COLORADO

THE NEWCOMEN SOCIETY OF THE UNITED STATES

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INTRODUCTION OF GENERAL SCOTT IN COLORADO SPRINGS ON MARCH 19TH, 1986, BY MR. WM. THAYER TUTT, CHAIRMAN OF THE BOARD, UNITED STATES AIR FORCE ACADEMY FOUNDATION; HONORARY CHAIRMAN OF THE BOARD, THE EL POMAR FOUNDATION, COLORADO SPRINGS; AND VICE CHAIRMAN, COLORADO COMMITTEE, THE NEWCOMEN SOCIETY

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ONIGHT The Newcomen Society meets to honor the United States Air Force Academy and its tenth superintendent, Lt. General Winfield W. Scott, Jr.

Skip Scott was born in Honolulu in 1927; attended high school in Lewisburg, West Virginia; and in 1946, entered the United States Military Academy at West Point. Four years later he graduated with a bachelor's degree in military science and received his second lieutenant's bars. The following year he completed pilot training at Craig Air Force Base in Alabama. Today he is a command pilot with over 5,3[00] flying hours in more than 25 different aircraft. He is also a military parachutist, having earned his jump rating during his tenure as superintendent at the Air Force Academy.

General Scott's military assignments-as a line officer, staff officer, commander-have literally taken him around this globe to England, South Korea, Japan, Vietnam, where he flew ra8 combat missions, and all over the United States including Alaska. Yet he found time to advance his education with a master of arts degree in international law and relations at Catholic University, Washington, D.C., before completing both the Armed Forces Staff College and the Naval War College.

Prior to his appointment in 1983 as superintendent at the Academy, General Scott was assigned to Seoul, South Korea, as a deputy commander, U.S. Forces Korea; deputy commander in chief, United Nations Command Korea; chief of staff; Republic of Korea-U.S. Combined Forces Command; and commander of the Combined Forces Air Component Command.

Skip Scott's honors are too numerous to recite in full, but they include the Defense Distinguished Service Medal, Legion of Merit,

Distinguished Flying Cross with two oak leaf clusters, Bronze Star with "V" device, and Air Medal with eight oak leaf clusters. And that is only the top of the list!

General Scott is married to the former Sally Ann Walker of Dayton , Ohio. They have six children: Winfield W. III who is assigned to the Pentagon and is a C-141 instructor pilot; Michael W., an AT-38 pilot and a 1976 graduate of the Air Force Academy; David, who is an F-5 aggressor pilot at Clark Air Base, P. I. and a 1978 Air Force Academy graduate; Mark, a civil engineer; John, a student pilot and a 1985 Air Force Academy graduate; and Kathryn, a university student. In addition to being a military officer and a family man, General Scott is a very active sportsman pursuing golf, tennis, fishing and jogging regularly. He is also deeply committed to the Catholic Church's Cursillo program.

It gives me a great deal of pleasure to present to you the superintendent of the United States Air Force Academy, LIEUTENANT GENERAL WINFIELD W. SCOTT, JR.

"Education at the Air Force Academy is not an end, but a means through which we prepare ourselves to meet responsibilities for the employment of airpower ... "

-LT. GEN. WINFIELD W. SCOTT, JR.

Fellow members of Newcomen and guests:

'M PLEASED to be invited by The Newcomen Society to address this distinguished audience tonight on the subject of the Air Force Academy, past, present and future. For many of the academy's long time friends in the audience, my remarks will probably strike a familiar theme. For those less familiar with the academy, I want to acquaint you with an institution I believe to be outstanding by any

measure. For all of us, I hope this occasion will serve as a reminder of the contributions made by the men and women of the United States Air Force-and the United States Air Force Academy-to the security of this nation.

The Air Force Academy is an educational institution-and I use the word "educational" in the broadest sense because our focus is on leadership. At the academy our goal is to provide essential training, motivation and knowledge through interaction among cadets, faculty and academy staff, and to foster a shared and deepened sense of integrity and commitment to excellence. Education at the Air Force Academy is not an end, but a means through which we prepare ourselves to meet responsibilities for the employment of airpower-in concert with land and sea power-for the defense of the nation.

Early air pioneers struggled with the idea of how to use airpower effectively in a wartime environment. Past experience was nonexistent, and under the supervision of the Army Signal Corps, there were constraints working against innovation. The army naturally viewed the airplane as a limited and subordinate tool to aid its ground operations. Reconnaissance, and the prevention of the enemy's airborne reconnaissance, was seen as the airplane's main contribution to land-based warfare. Limited by the primitive level of aviation technology, the air arm was not a decisive factor during World War 1. Instead, its application to warfare went through a series of trial and error efforts-reconnaissance, air superiority, support of ground troops, and bombing of enemy targets behind the line. When the war concluded, the air arm held some promise for ground commanders, but only as a support branch to land armies.

Some military leaders were more visionary about airpower's future.

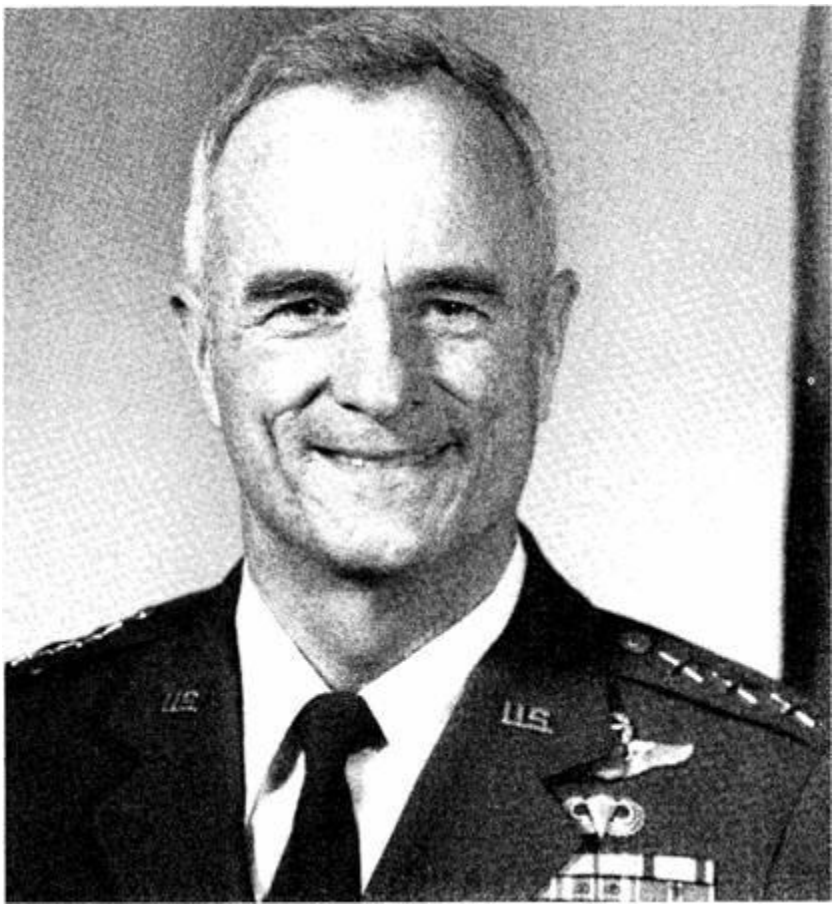
General Guilio Douhet in Italy, Air Chief Marshal Sir Hugh Tren-

chard in England, and later, General William "Billy" Mitchell in the United States, came to believe that airpower could be decisive, by itself, in warfare. They deemed the airplane an offensive weapon that, coupled with new advances in aviation design, could negate the natural defenses of land and sea. Moreover, the airplane could deliver great destructive power behind enemy lines, and nothing could defend against a well-planned and executed air attack. For these men in their respective countries, the appropriate use of airpower in war took on the features of a crusade, and for Billy Mitchell, it ultimately meant a much publicized court martial in 1926 and his resignation from the Army Air Corps.

Mitchell had blamed slow progress in developing an air arm on the unimaginative thinking of infantry officers who commanded the Army Air Corps. Only when freed from their leadership, Mitchell argued, could proper doctrine and the maximum use of airpower ever be achieved. Until that time, the air weapon would remain merely a support tool for the infantry and would never reach its full potential.

With Mitchell's departure from the Air Corps, his disciples continued the fight, making important progress. During the economically troubled 1930s, the Army Air Corps established an Air Corps Tactical School at Maxwell Field in Montgomery, Alabama. In quiet defiance of army doctrine, men like Generals Robert Olds, Kenneth N. Walker and Harold L. George wrestled with the problems of proper airpower applications and designed the concept of precision, daylight, strategic bombing, which would later be applied during World War II. **In** 1935, top air commanders convinced the army to grant them greater independence by creating General Headquarters Air Force, permitting the Army Air Corps more latitude in supplying and training its airmen.

World War II became the proving ground for all the ideas and concepts developed in the preceding two decades. The army granted the air generals more autonomy in 1941 by creating the Army Air Forces, headed by General Henry "Hap" Arnold. Airpower was used in numerous ways and important lessons were learned. In North Africa, the value of close air support became more appreciated, and the need to have more centralized control of all air assets under a theater commander became evident. **In** Europe, strategic bombing experience taught fliers that fighter escorts were a necessity, and that selecting



LIEUTENANT GENERAL WINFIELD W. SCOTT, JR., SUPERINTENDENT OF THE UNITED STATES AIR FORCE ACADEMY

strategic targets, vital to the enemies' war effort, was a most difficult task. **In** the Pacific, airpower demonstrated all its strength and versatility-transport, reconnaissance, close air support and strategic bombing.

Airpower did not win World War II for the Allies, but according to the Strategic Bombing Survey, commissioned by President Franklin Roosevelt toward the end of the war, air power (strategic bombing in this case), while perhaps not used as wisely as possible, was a decisive factor in the Allied victory over the Axis powers.

To air leaders, the war vindicated the hard work and theory developed in the difficult thirties, and finally justified beyond doubt the necessity of establishing an independent air force on an equal footing with the army and navy. General Dwight D. Eisenhower, who wit-

nessed airpower's role in the Allied victory in Europe, became a strong postwar supporter of an independent air arm. What remained, however, was the need for executive leadershi p and congressional approval.

Even before the movement to create a separate Air Force proved successful, leaders like Generals Arnold, Carl "Tooey" Spaatz and Hoyt S. Vandenberg concerned themselves with the question of educating the future Air Force officer. During the war, West Point had continued to train both prospective Army and Army Air Forces officers, but the situation had been complicated by the fact that West Point's program had been shortened to three years. Cadets taking flying training at Stewart Field, near West Point, experienced even more severe cuts in their educational training than did those planning to enter the ground combat forces, for they added almost 400 hours of flying training to their already crowded schedules. A training program that systematically balanced education and flying training was needed.

West Poi nt's experience during the war also underlined the fact that by splitting the educational program between future pilots and ground combat officers, two distinct cadet subcultures developed, sometimes causing minor clashes. This polarity suggested the need to institutionalize separately the two educational experiences, even as it also illustrated a great lesson of the war, the need for better interservice cooperation and understanding.

Arnold, Spaatz, and Vandenberg brought back other educational observations from their wartime experience. The Air Force needed to stress science and technology; these disciplines had been crucial in winning the war, as the military leaders knew from first hand experience. Equally important, however, were behavioral sciences and psychology, necessary in learning to lead men. The need to work efficiently in other countries' cultures had also left the military leaders with a healthy appreciation for the liberal arts, history and international relations. Consequently, as discussions developed regarding the educational needs of America's future airmen, a good deal of creative thinking took place.

PRESIDENT EISENHOWER (SEATED) SHAKES HANDS WITH THE SECRETARY OF THE AIR FORCE HAROLD E. TALBOTT AFTER SIGNING THE AIR FORCE ACADEMY ACT CREATING THE AIR FORCE ACADEMY ON APRIL I, 1954. LOOKING ON ARE, FROM LEFT, REP. CARL VINSON (GA); GENERAL NATHAN F. TWINING, AIR FORCE CHIEF OF STAFF; REP. DEWEY SHORT (MO); UNDER SECRETARY OF THE AIR FORCE JAMES H. DOUGLAS; AND LT GENERAL HUBERT HARMON, WHO LATER BECAME THE FIRST SUPERINTENDENT OF THE AIR FORCE ACADEMY

General Arnold held one of the most unorthodox ideas. Stressing the need for a broadly-based education and interservice cooperation, Arnold proposed that a combined services academy educate cadets for the first two years, with the final two years spent at a separate Army, Navy or Air Force Academy. Needless to say, the idea did not gain favor with either West Point or Annapolis. Another scheme proposed a five-year program, with three years being spent at a civilian university acquiring a general education, and two years being trained at a military academy. This idea was abandoned as impossible to finance.

As these educational philosophies and possibilities were discussed, the United States Air Force emerged as a separate service in September

I947. Now the Air Force could consider the education of its officers on a new basis as it sought to mold the identity and character of the new service branch. A major concern of the air leaders was the embarrassing educational statistics for the Air Force. **In** I 947, only 4 I

percent of Air Force officers held college degrees, as opposed to 75 percent in the Navy and 72 percent in the Army. Only IO percent of the college-educated Air Force officers had graduated from a service academy. Among the many educational proposals being considered, therefore, the idea of a separate Air Force Academy, geared to *Air Force* leadership goals, gained preeminence. A I949 board headed by University of Colorado President **Dr.** Robert Stearns and General Eisenhower studied the existing service academies and made a strong case for a separate Air Force Academy. The same year, Lt. General Hubert R. Harmon became special assistant to the Chief of Staff on Air Force Academy matters, and a Site Selection Board, under General Spaatz, was formed. From I949 to I 954, Harmon, Spaatz and others continued to study education and location alternatives for the future academy. During the period, however, budget priorities, politics and the Korean War intervened to delay final legislation establishing an academy.

On April I, I954, after years of deferred hopes, President Eisenhower, who had recommended a separate Air Force Academy five years before, signed into law H. R. 5337, creating a four-year Air Force Academy, with the location to be chosen by the secretary of the Air Force from recommendations by a newly-revived Site Selection Commission.

The Site Selection Commission was an impressive group of men, chosen by the secretary of the Air Force. **Dr.** Virgil Hancher, president of the University of Iowa, headed the group, which included General Charles Lindbergh, Merrill Meigs, vice president of the Hearst Corporation, and Generals Harmon and Spaatz, both of whom had been devoting their efforts to the dream of an Air Force Academy for years. The commission inherited the findings of the earlier Site Selection Board, as well as a quickly growing pile of new proposals. The job they faced was stupendous.

Between April and June I954 when Colorado Springs was chosen, the Site Selection Commission considered 582 possibilities, made six

THE UNITED STATES AIR FORCE ACADEMY SITE SELECTION COMMISSION. FROM LEFT, DR. VIRGIL M. HANCHER, LT GENERAL HUBERT R. HARMON, BRIG GENERAL CHARLES A. LINDBERGH, MR. MERRILL C. MEIGS AND GENERAL CARL SPAATZ WITH GENERAL CURTIS LEMAY OF THE STRATEGIC AIR COMMAND

cross-country trips to examine possible locations, and logged over 2 I ,000 air miles. Some sites were examined several times.

What did the Air Force Academy require? Many factors were considered. The site needed an adequate and perpetual water source, enough to support an academy population of IO,OOO. Equally necessary was enough acreage to include a flying field, training grounds and a small firing range; it was thought that at least I 5 ,000 acres were needed. The commission also looked for a moderate climate that could support year-round military and flying training, and a location with ample supplies of power and fuel, near a metropolitan area, with a civilian population enthusiastic about locating the academy in its midst.

Colorado Springs had been among the original sites considered in the days when the reality of an academy had seemed so distant. At that time, in I 95 I, there appeared to be two possible Colorado Springs

locations, one near where we now sit in the Bro-dmoor area, and another further north, near what actually became the academy site. As the original site selection board remarked on the beauty of a spot that included acreage reaching the foothills of the Front Range, they found support in the Colorado Springs Chamber of Commerce, support that made all the difference in the eventual choice of Colorado Springs as the home of our academy.

Today we must recognize the vision and hard work of the Colorado Springs Chamber of Commerce. Some of its 1954 members are here tonight. These men knew what this lovely area offered the Air Force, and worked for years to make a dream happen. The sponsorship of the Chamber of Commerce assured the Site Selection Commission that Colorado Springs, if chosen, would not only be an excellent location for an academy, but also a home where the young institution could grow and flourish. General Lindbergh said it in his usual low-key way when he remarked that the commission had looked for a place

> ... adequate for the creation of an Air Force Academy tradition just as West Point has served in that respect for the army, and Annapolis for the navy. I think all members of the commission were anxious to find a site which would be in accordance with the Air Force character and tradition. The Colorado Springs site . . . filled that requirement very well.

In the early days of site selection, leaders assumed that no flying training would take place there. **In** 1950, however, Secretary of the Air Force Stuart Symington advised General Spaatz that after deep consideration, flying training would indeed take place at the new academy. General Spaatz agreed emphatically, as he recalled later:

> We believed that a graduate of the Air Academy should be an airman, and be able to take an airplane off the ground and fly it around. It didn't have to be a jet, or a fighter type, but a light plane, and that the training would have to include instruction on the major phases of Air Force operations, flying in bombers and other types of airplanes.

Symington's wise decision, therefore, made it crucial that the commission chose a place where flying training could be supported easily and safely.

CHARACTER DEVELOPMENT IS IMPORTANT TO THE FUTURE AIR FORCE OFFICER. THE CADET CHAPEL PROVIDES SERVICES FOR PROTESTANT, CATHOLIC AND JEWISH CADETS UNDER ONE ROOF

By the late spring of 1954, the choice was narrowed down to three locations-Alton, Illinois; Lake Geneva, Wisconsin; and Colorado Springs. Colorado Springs had the distinct advantage of its spectacular setting and the equally important support of the community.

Almost convinced of the superiority of Colorado Springs, two of the Site Selection Commission's members asked General Lindbergh to accompany them on a last inspection of the area. Both men were concerned about the suitability of the high mountain environment for flying training, and wanted Lindbergh's opinion. Arriving at the Pine Valley Airport, a small, privately-run operation located at our present airfield, Lindbergh tried to rent a small plane to take his colleagues on an area flight. The airport manager asked Lindbergh if he could

FLYING TRAINING AT THE AIR FORCE ACADEMY MOTIVATES AND SCREENS CADETS FOR FUTURE AIR FORCE FLYING. THE AIRCRAFT SHOWN IS THE T-41C, A MILITARY VERSION OF THE CESSNA J 72

fly. Though Lindbergh replied that he could, the manager remained skeptical of his business-suited visitors and asked to see a pilot's license. Dropping pilot's licenses from a dozen foreign countries on the desk, Lindbergh waited with amusement as disbelief, followed by complete embarrassment, washed over the airport manager's face.

Lindbergh completed a last aerial check with the commission members. He believed, having flown the area and having questioned local fliers, that the thinner air and the mountains presented no real handicap to safe flying for cadets, as has indeed turned out to be the case.

In June 1 9 54, Secretary of the Air Force Harold Talbott announced the choice of Colorado Springs as the academy's future location. Soon after, Lowry Air Force Base in Denver became the academy's interim

location while construction began at the permanent site. Lt. General Hubert Harmon was named the academy's first superintendent. Over the next two years, the Colorado Land Acquisition Commission purchased the academy's 17,800 acres in 160 land parcels. During the last week of August 1958, cadets who had begun their training at Lowry arrived at the permanent academy site, and in June 1959, the academy graduated its first class. Since then we've continued to mature and grow, to examine our purpose and test our goals.

Just what do we hope to accomplish at the academy? Our aim is a simple one-we try to produce the finest Air Force officer possible, and to do that we seek to develop young men and women as leaders in four separate areas of growth. First, we seek to build their character and to give them a spiritual foundation upon which to base their lives and their service to their country. We develop their abilities both to lead and to follow; we instill in them the discipline they will need as Air Force officers. We seek to develop their physical potential, to teach them that through training and effort they can push their physical capabilities to new levels. We also educate them intellectually, cultivating their abilities to reason and evaluate even as we add to the fields of knowledge under their command. As we look to the traditions that produced this four-sided approach-spiritual, military, athletic and intellectual-we look back toward the debt we owe to this country's first institution of military training, West Point. West Point was founded on the premise that in the best military officer, a healthy balance between the physical and the spiritual must be maintained. We took that West Point heritage, and in a changed world used those old values to build new leaders. Because of these ideals that seek to build character and develop leadership, we are far more than an academic institution.

Without depth of character, without spiritual maturity, leadership becomes an amoral force. We therefore are constantly concerned with helping cadets to realize all that is best within themselves, to learn how to develop and depend upon the sense of integrity and proportion that a strong religious faith will bring. Our cadets are encouraged and helped to develop their spiritual character, to examine their own beliefs

CADETS PARTICIPATE IN AN EXTENSIVE INTERCOLLEGIATE AND INTRAMURAL ATHLETIC PROGRAM. THESE ACTIVITIES ARE A VITAL PART OF CADET LIFE

and to grow in their faith. Such faith is a weapon of survival far more powerful than arms.

Young men and women arrive every July as doolies to begin thei r four years of military training. We base our programs on positive motivation, and we use this approach throughout the four year program. Short haircuts and regimentation are basic to the process, but we explain to the cadets the purposes of their training. Upper classmen conduct doolie training, make the appropriate corrections, and give rewards and feedback to motivate the new cadets to improve. I'm pleased to say this approach has raised retention and improved morale for the entire wing. When morale is high, achievement in all other areas mcreases.

Following summer training, our new cadets join the Cadet Wing,

comprised of 40 squadrons of just over roo cadets each. Commanded by a captain or major, squadrons are led by cadets and are the labo-

ratories of our leadership training. Within each squadron, there are numerous leadership positions and throughout their four years here, cadets hold many positions. They learn to lead and to follow with equal emphasis.

Within each squadron, cadets mature and develop into second lieutenants. At the heart of this development rests the Cadet Honor Code. From the very first days at the academy, instruction in the honor code and professional ethics becomes an ongoing feature of our training. Our code derives from the standard of behavior common to officer corps in the western world over the past four hundred years, and simply states that, "We will not lie, steal or cheat, nor tolerate among us anyone who does."

Our cadets come from a wide variety of backgrounds, and naturally their values vary considerably. The honor code sets before them the simple but fundamental rules by which every officer lives and works. For many, adopting the honor code as a standard of behavior represents a new experience and brings new problems. While we acknowledge this reality of adapting to the code with more patience than in past years, those who cannot abide by its philosophy, in spirit or in practice, must soon depart the academy, for the code is a standard within the officer corps that cannot be compromised.

Flying training and airmanship programs make up key parts of our military training. Since more than 70 percent of each entering class is pilot- or navigator-qualified, we have adopted a number of programs designed to motivate them toward an aviation career. Those who are pilot-qualified complete fourteen flights and solo in a' single engine light aircraft. Those not pilot-qualified complete one of several air navigation classes involving flights in a multiengine jet. In addition, every cadet completes a soaring program in a glider and a powered glider, and those who wish can earn their jump wings within our own parachuting program. In fact, the best among them make up our competition jump team, the Wings of Blue, which has won the intercollegiate jump competition nineteen of the last twenty-one years.

Cadets also develop leadership and personal growth within more than roo special interest clubs, ranging from mountain climbing to wargaming to choirs. During the summer following their first year, cadets complete various programs such as survival training and Operation Air Force, where they visit different air force bases, live and

work with junior airmen, and come to appreciate how an operational air force unit functions.

Our military training, then, brings cadets into close contact with other cadets, and they learn to work and live together under a code of conduct which must underlie every effective officer corps. Under our program, we take young eighteen-year-old graduating high school seniors and, over four years, develop them into junior officers with great leadership potential.

Fundamental to a healthy, energetic officer is a program of physical education and training, and our academy's third side to officer training ranks with equal importance. The Duke of Wellington once explained that the wars of the British Empire were won on the playing fields of Eton. Competition in athletics on our acres of playing fields and courts is equally important today for the mind and spirit we want in every officer. While we have enjoyed national attention with our 12-1 football team last year and have gained from our membership in the Western Athletic Conference, intercollegiate athletics are possible for only 20 percent of our students. An extensive intramural program runs through each school term where squadrons compete in twenty-two different sports. Every cadet not playing intercollegiate sports participates in intramurals.

In addition to intramurals, all cadets take a variety of physical education courses ranging from unarmed combat to golf or tennis. We expect each cadet to maintain a high level of physical fitness and weight control, and we test them on a regular basis to ensure that high standards are maintained. After four years of intense physical activity, our officers continue the habits of physical exercise developed at the academy, and we believe their performance and health are better because of the competition and training they have experienced.

Finally, we train our future officers intellectually, preparing them to use that training in their careers, and to build upon that education throughout their lives. Much thought went into the planning of the academy curriculum, and the result was a plan of education based on tradition, yet flexible enough to meet changing needs. Again, Air Force leaders studied institutions with records of excellence, both civilian

and military. We settled, finally, on a broad curriculum of core courses that would provide the balanced education our officers need: a solid background of science and engineering complemented by the social sciences and humanities. This core curriculum has remained the bed-

CADETS CAN CHOOSE FROM ANY OF TWENTY-FOUR MAJORS. SMALL CLASS SIZES (15-20) PERMIT EFFECTIVE INTERACTION BETWEEN CADETS AND INSTRUCTORS

rock of an academy education, and time has shown that our early planners were correct to insist on a firm grounding in basic courses.

Apart from the curriculum, the other major concern of Air Force leaders addressed the question of our academic faculty. West Point's model offered a completely military faculty; Annapolis used a mix of civilian and military instructors. The Air Force decided, after much consideration, to adopt an all- mili tary faculty, based on our determination to provide the cadets with the best leadership examples. We believed a military faculty would best demonstrate the qualities of leadership, character and discipline that we wanted to teach our cadets.

The academy became an accredited institution of higher learning even before the first class graduated, illustrating its impressive educational program. We have never stopped reevaluating our curriculum, and it has changed significantly over the years. We had not been in business long before we developed an enrichment program to permit cadets to advance beyond the core curriculum in specialty areas. **In** 1964, this enrichment program evolved into one that permitted cadets to declare a major and to do substantive advanced work in their major.

As we continued to look for ways to improve the educational opportunities for our cadets, a plan to offer a master's program was rejected

as unfeasible. Instead, for a time, we adopted a plan whereby gifted students completed several graduate courses here and went onto cooperative master's programs with other universities. Today, a significant number of our top cadets enter civilian graduate schools immediately after commissioning and complete master's degrees in all disci plines.

We have now graduated over I 8,500 cadets in twenty-seven classes, and the statistics that accompany those classes make all of us very proud. Since I 9 80, our graduates have included outstanding young female officers now building impressive careers. We have received many years of loyalty and service from our graduates-about 70 percent of the academy graduates commissioned in the Air Force are still on active duty.

Our graduates have been successful: forty-seven graduates have been selected for the rank of general officer; two graduates are combat aces; fifteen are in the astronaut program . We claim twenty-six Rhodes scholars, seventy-one Guggenheim fellows, fifty-seven National Science Foundation fellows, and twenty-five Fullbright fellows.

Our graduates have also been heroic. We are proud of our Medal of Honor winner, Captain Lance Sijan, as well as our fifteen Air Force Cross recipients, and our I99 graduates who have received Silver Stars. We mourn our IS I graduates who died in Southeast Asia; we have welcomed home thirty-one who were prisoners of war in that grim conflict.

A strong preparation for the future rests on the foundations of the past and the present. Even as we take pride in the traditions and past achievements of the academy, succeeding administrations have been vigilant in examining our program and our heritage. I have already mentioned some of our curriculum changes over the last thirty-two years, the developments in our flying program, and the modifications in our military training program. We continue to mold our institution, and the ability to self-examine and to change is one of our greatest strengths.

I'm particularly proud of the recent reexamination of the academy's honor code. We have always realized that the viability of our honor code is based on its ability to deal with the developing maturity of the cadets in a realistic way. Our restructuring of honor code administration, which occurred in I984, has enabled us to strengthen and

rededicate our principles of integrity. We recognize that a 4th class cadet should not be judged in the same manner as a r st class cadet, who has had three more years to develop. Our honor code still teaches the same values, but tempers sanctions with compassion. Our cadets participated in this process at each stage, and after changes in the code's administration were thoroughly thought out, they were presented to the entire Cadet Wing and fully accepted. Our honor code continues to be guarded and defended by the Wing, and has sustained the challenges of changing mores and generations.

In I976, the Air Force Academy, along with West Point and Annapolis, admitted women into its incoming class for the first time. Obviously, for the women to adjust to a previously all-male institution and for the institution to adjust to its new female cadets, many physical and philosophical changes had to take place. We chose competent and courageous females, able to compete and to forge a place for themselves as cadets within our academy community. Because of the outstanding quality of our women, and because of continued efforts by all of those associated with the academy, the integration of women into the Wing has been successful.

Nonetheless, we are looking for better ways to incorporate women into academy life and to correct any deficiencies that may still exist. Last year, we conducted a lengthy survey to achieve an honest measurement of how far we have come and how far we need to go to fully integrate our female cadets into the Wing. We discovered some of our weaknesses and we reassured ourselves of our many strengths. And we developed, through our own evaluation, ways to proceed into the future to ensure that our women develop their skills and talents in the best possible manner. Without these honest appraisals, we would stagnate; with them, we continue to grow as an institution.

Continued success at the academy will rest on the quality of our current planning efforts and the quality of officers and staff we attract. In recent years, we have given great attention to upgrading our physical plant, now over thirty years old. Within the next five to six years, we plan to add space to our dining hall, expand our aeronautics laboratory, and break ground for a major addition to our academic building, Fairchild Hall. Much of the new space will go toward upgrading and expanding our laboratory facilities. With private funding support, we are nearing completion of a Visitor Center to accommodate the over one million visitors who tour the academy every year.

Active planning reaches into our mission elements as well. I've already noted the positive motivation programs implemented throughout our military training activities and our entry into the Western Athletic Conference, where we have competed with a high degree of success. Our most complex innovation is the microcomputer in the dorm program, where each cadet will have a microcomputer with access to the academy's main frame computer. We are exploring the many ways we can make our cadets computer-literate and ready for the twenty-first century. The dean of the faculty has undertaken a major revision of the curriculum. Cadets will complete approximately the same number of courses built around a broad core curriculum, but they will have the opportunity of tailoring their academic programs to better match their interests while still completing the requirements for one of twenty-three majors offered by the academy. Cooperation between our major mission elements has reached a new high as we constantly review our activities, the balance within our programs, and the time demands made on our cadets.

Our cadets are also learning the important value of military-community relations. They see our officers involved with many community service groups and activities, ranging from coaching Little League athletics to serving on school board advisory committees. The academy itself has hosted two National Sports Festivals in conjunction with the U.S. Olympic Committee and this fall we will host the World Cycling Championship on the academy grounds. Every May, our cadets host a Special Olympics for the handicapped youth of Colorado. I can think of no other activity where all who participate gain so much.

The academy, now beginning its fourth decade, has succeeded in the charge given it by President Eisenhower, and in the process, has contributed to a richer Air Force heritage by the actions and accomplishments of its graduates. That heritage will give guidance to the new cadets who join us every summer. With God's blessing, we can continue our contribution of service to the nation and defense of our citizens through the preparation of outstanding young officers.

THE END

"Actorum Memores Simul Affectamus Agenda!"

IN APRIL 1923, *the late L. F. Loree (1858-1940) of New York, then dean of American railroad presidents, established a group now known as "American Newcomen" and interested in Business History, as distinguished from political history. Its objectives center in the beginnings, growth, development, contributions, and influence of Industry, Transportation, Communication, the Utilities, Mining, Agriculture, Banking, Finance, Economics, Insurance, Education, Invention, and the Law---these and correlated historical fields. In short, the background of those factors which have contributed or are contributing to the progress of Mankind.*

The Newcomen Society of the United States is a nonprofit membership corporation chartered in 1961 under the Charitable Law of the State of Maine, with headquarters at 412 Newcomen Road, Exton, Pennsylvania 19341, some five miles east of Downingtown, Pennsylvania, and 32 miles west of the City of Philadelphia. Here also is located The Thomas Newcomen Memorial Library and Museum in Steam Technology and Industrial History, a reference collection, including microfilm, open to the public for research and dealing with the subjects to which the Society devotes attention.

Meetings are held throughout the United States of America and across Canada at which Newcomen Addresses are presented by leaders in their respective fields.

The approach in most cases has been a life-story of corporate organizations, interpreted through the ambitions, the successes and failures, and the ultimate achievements of those pioneers whose efforts laid the foundations of the particular enterprise.

The Society's name perpetuates the life and work of Thomas Newcomen (1663-1729), the British pioneer, whose valuable contributions in improvements to the newly invented Steam Engine brought him lasting fame in the field of the Mechanic Arts. The Newcomen Engines, whose period of use was from 1712 to 1775, paved a way for the Industrial Revolution, Newcomen's inventive genius preceded by more than 50 years the brilliant work in Steam by the world-famous James Watt.

The Newcomen Society of the United States is affiliated with The Newcomen Society for the Study of the History of Engineering and Technology, with offices at The Science Museum, South Kensington, London, S. W. 7, England. The Society is also associated in union with the Royal Society for the Encouragement of Arts, Manufactures and Commerce, whose offices are at 6 John Adam Street, London, W.C. 2, England.

Members of American Newcomen, when in Europe, are invited to visit the home of Thomas Newcomen at Dartmouth in South Devonshire, England, and to see the Dartmouth Newcomen Engine working.

"The roads you travel so briskly

lead out of dim antiquity,

and you study the past chiefly because

of its bearing on the living present

and its promise for the future. "

-LIEUTENANT GENERAL JAMES G. HARBORD,
K.C.M.G., D.S.M., LL.D., U.S. ARMY (RET.)
(1866-1947)

Late American Member of Council at London
The Newcomen Sociay

for the siudy of the history of
Engineering and Technology