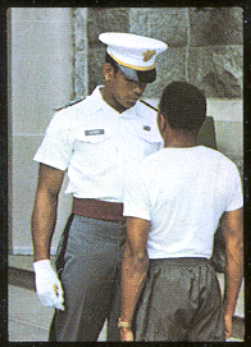
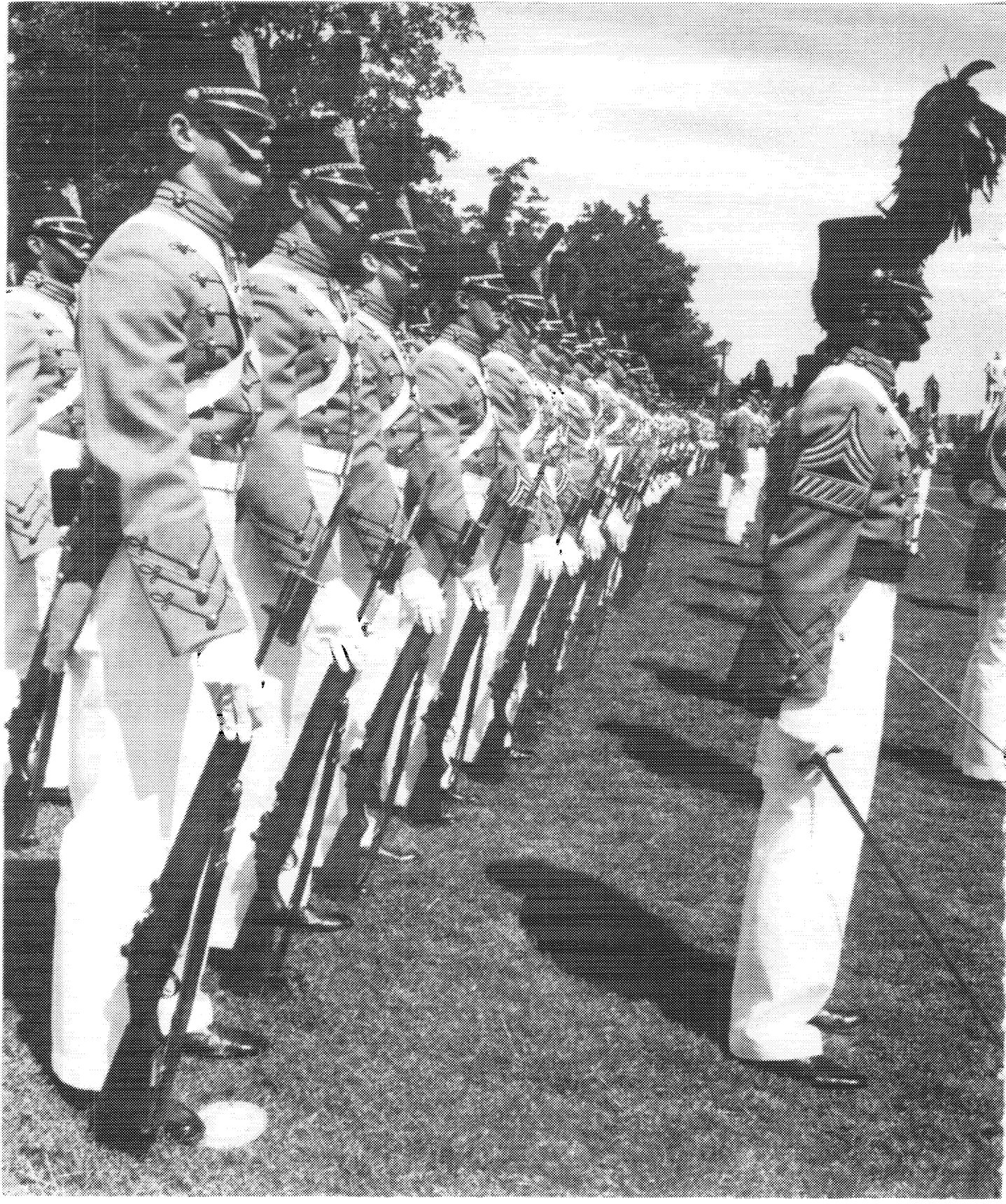


# West Point

# MISSION OF THE MILITARY ACADEMY

The mission of the United States Military Academy is to educate, train, and inspire the Corps of Cadets so that each graduate shall have the character, leadership, intellectual foundation and other attributes essential to progressive and continuing development throughout a career of exemplary service to the nation as an officer in the Regular Army.

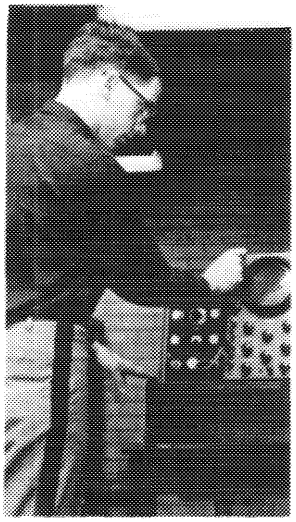


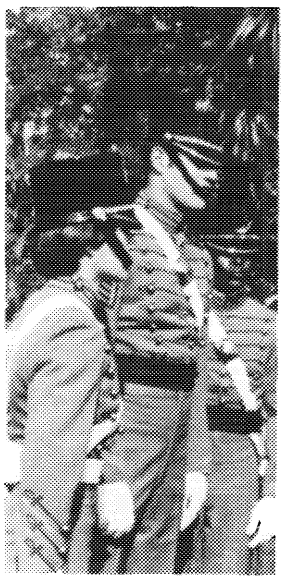
# West Point

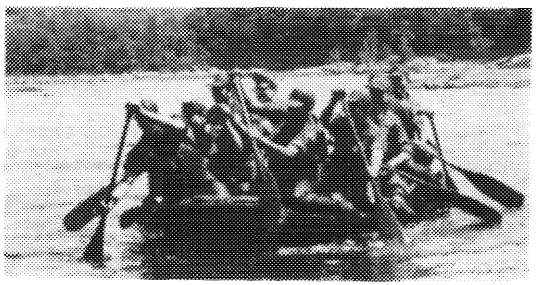
## UNITED STATES MILITARY ACADEMY

1978-79
CATALOG

One Hundred Seventy Seventh Year







# A SPECIAL PLACE

West Point is a special place.

During the American Revolution, George Washington found West Point a strategic location and made it a key fortress. Early in Thomas Jefferson's presidency, Congress established at West Point the United States Military Academy, the country's first and thus oldest service academy. Since 1802 West Point has given the country thousands of United States Army officers and public servants. Today the Military Academy continues as a vital part of our national defense and a major source of our nation's leadership.

West Point offers qualified young applicants a special opportunity—a top-quality college education leading to varied, significant service. The Military Academy encourages individuals to realize and develop their abilities in many areas. Cadets pursue a variety of studies and activities from biology to baseball, calculus to choir, history to hockey, literature to leadership, physics to parachuting. The West Point graduate is awarded a bachelor's degree and commissioned an officer in the United States Army.

The West Point experience is unique. The rewards after graduation are also unique. Officers in today's Army have unlimited opportunities for satisfying and diversified careers. You will find yourself sharing with other dedicated men and women the strong sense of purpose, pride, and personal satisfaction that comes from meaningful service to others and to your country.

West Point is indeed a special place. It may be for you.

A.J. GOODPASTER
Lieutenant General, U.S.Army
Superintendent

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# 1. Your Military Academy

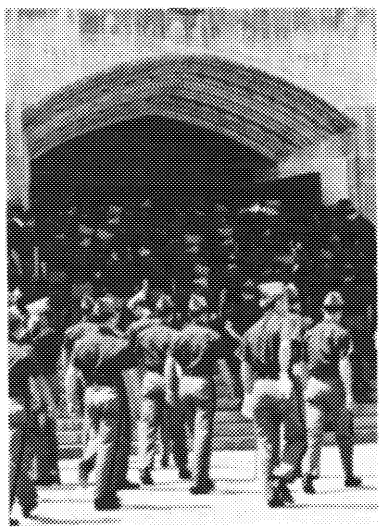
"Fairness, diligence, sound preparation, professional skill and loyalty are the marks of American military leadership."

GENERAL OMAR N. BRADLEY

You are a young man or woman interested in the possibility of a quality, fully-funded education leading to service to your country as a Regular Army officer. You probably suspect that the popular, late-movie view of West Point cadets in splendid uniforms, pivoting their way gracefully through dances by night and parades by day, is somewhat incomplete. Understandably, you want to know more about the United States Military Academy before making a decision about something as important as where to go to school. You are probably asking: What can I expect of West Point? What will West Point expect of me? What makes West Point unique?

## The Academy's Purpose

We will be frank. The nation has charged the Military Academy with educating and training young Americans to become professional officers for the Regular Army. This is exactly what we do. The Military Academy provides graduates with a sound basis for the intellectual growth essential to high-level responsibility.



## Service to Country

What does this mean for you? It means you should be interested in the opportunity to serve your country as an Army officer. While we do not expect you to come here completely committed to spending twenty or more years as an officer, the idea of service should be high among your priorities. Your experience here will not be a picnic in uniform. It will be tough. It has to be if Army officers are to be able to react to stress and are to earn the respect of the men and women they command and the country they serve. The personal sacrifices are many, as they always are when a worthwhile goal is sought. If you are to be prepared for the rigors of commissioned service, then you will have to expect a number of demands on your time, a degree of pressure and stress, and some limitation on your personal freedom. In turn, the Military Academy will help you develop academically, physically, and as an officer-leader.

## EDUCATION

The United States Military Academy advocates the "whole person" concept. Our objective is not to educate experts in the color vision of the tree frog. Instead, the Military Academy provides the broad college preparation demanded by the military profession.

The academic curriculum will challenge you intellectually. Accredited by the Middle States Association of Colleges and Secondary Schools, West Point will provide you with a collegiate education in the arts and sciences, a Bachelor of Science degree, and a sound basis for future intellectual growth. A wide variety of physical and athletic programs will build your strength, endurance, and confidence. Extensive military training and leadership experience within the Corps of Cadets will prepare you for the responsibilities of an Army officer. Finally, the high sense of discipline, integrity, and loyalty within the Corps of Cadets will encourage devotion to "Duty, Honor, Country." The personal traits and abilities you will have developed by the end of four years will open the door to a rich array of opportunities for service and the satisfaction that comes with it.

## ARMY OPPORTUNITIES

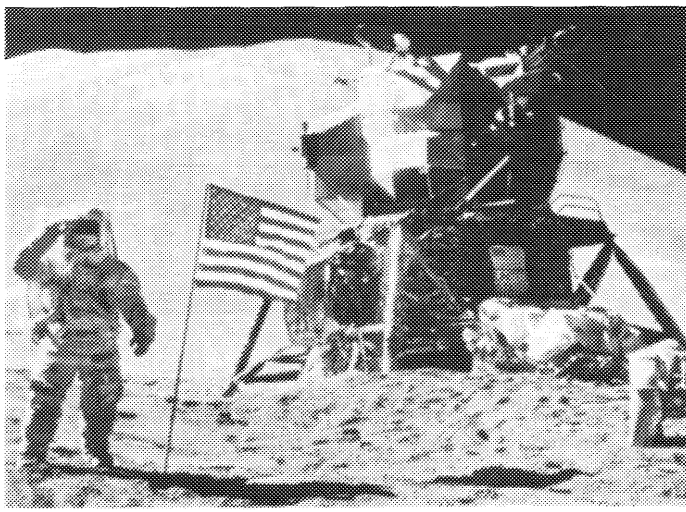
When you enter West Point you are also beginning a profession. Upon graduation you will be commissioned a second lieutenant in the Regular Army and will serve in the United States Army for at least five years. As many before you have discovered, two features which distinguish Army life from that of most professions are early responsibility and diversity. In your first duty assignment, you may find yourself responsible for more people, money, and sophisticated equipment than most other professional people oversee in a lifetime. Each new assignment brings added responsibility—and increased satisfaction. You will never be locked into any single position long enough to grow stale. You will develop a degree of specialization in your basic branch of the Army. Succeeding assignments will both draw upon and add to the knowledge of your basic Army specialty. Later assignments augment service in your basic branch, helping you to broaden your perspective of the Army and its responsibility to society. Moreover, service within the United States is interspersed with overseas assignments, allowing cross-cultural experiences. Service life demands versatility; variety of experience is the result. The Army is a place for a person of merit to make a significant contribution to fellow Americans.

## NON-MILITARY CONTRIBUTIONS

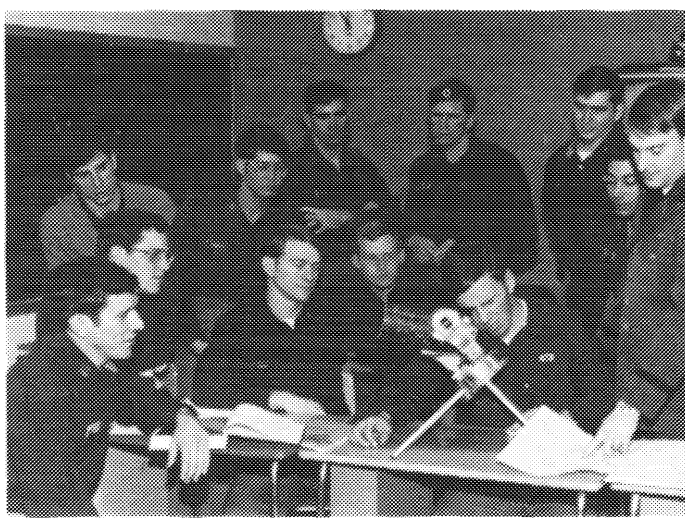
Clearly, military preparedness is the Army's main task. Yet Army officers have served in capacities as varied as a growing nation's needs. Because of the breadth of their education and leadership experience, West Point graduates have repeatedly been sought for high-level civilian leadership. Their numbers include two Presidents: Ulysses S. Grant and Dwight D. Eisenhower. Others have been ambassadors, state governors, legislators, judges, cabinet members, educators, and corporation executives.

Early West Pointers ventured into the American West, exploring and mapping vast unknown regions leading the way for the settlers who followed. Captain Bonneville explored the Great Salt Lake and the Green, Snake, Salmon, and Yellowstone Rivers. Major Long's party explored the Platte, Arkansas, and Canadian Rivers. Others surveyed the Great Lakes and explored the source of the Mississippi. More recently, six West Point graduates reached out into space; among them was Edwin (Buzz) Aldrin, the second human to walk on the moon.

The Military Academy was established in response to a need for qualified engineers which we sorely lacked during the American War for independence. The first civil engineering school in the country, it remained the leading center of civil engineering instruction for decades. As one cadet explained to a Military Academy visitor in 1854, "We must get up early, for we have a large territory; we have to cut down the forests, dig canals, and make railroads all over the country." Paving the way for early communication and commerce, West Point engineers designed and built hundreds of railroads, canals, roads, harbors, lighthouses, water systems, and other facilities. Construction remains an important Army function. Today, Army engineers can take credit for 20,000 miles of waterways, the Panama Canal, the Alaskan Highway, some fifty hydroelectric plants, and hundreds of important flood control projects.



The list of Army contributions to American society is long and by no means limited to the work of West Point graduates. It includes innovations in medicine and public health, aerotechnology and space flight, industry and technology, transportation, disaster relief, communication, and education. It includes planning and support of the Civilian Conservation Corps during the Great Depression. It includes racial integration of the Army in 1948 and subsequent equal opportunity hiring and affirmative action programs for minorities and women.



# History: Change Within Tradition

*Cavalry commanders, circa 1865*

When you step into the United States Military Academy you become part of a tradition as old as the United States itself. The first of the service academies, West Point has trained officer-leaders since its founding in 1802. Yet the Military Academy has continually changed in response to the needs of the nation.

West Point's role in the nation's history dates back to the Revolutionary War, when both sides realized the strategic significance of the Hudson River. To control the Hudson was to control an artery linking New England with the other colonies. The patriots gained that control in 1778 by occupying the high ground dominating the narrow "S" turn in the river at a place called West Point. George Washington had a hand in fortifying West Point in 1778, transferring his headquarters there in 1779. Continental soldiers built forts, batteries, redoubts, and extended a 150-ton iron chain across the river to control river traffic. Fortress West Point remained a place the British could not capture. Even their attempt to buy it—from the tragic Benedict Arnold—failed.

Seeking independence from wartime reliance on foreign engineers, artillerists, and drillmasters, several soldiers and legislators — including Washington, Knox, Pickering, Hamilton, and John Adams — urged the creation of an institution devoted to the arts and sciences of warfare. Washington stated that such a school "has ever been considered by me as an object of primary importance to this country." President Jefferson signed legislation in 1802 establishing the United States Military Academy at West Point, New York. The Military Academy opened on Independence Day of that year with ten cadets.

Colonel Sylvanus Thayer ("Father of the Military Academy") served as Superintendent from 1817-1833, establishing high academic standards. Mindful of the desperate need for engineers, Thayer made civil engineering the heart of the curriculum. He also emphasized small classes, regular study habits, and the requirement that every cadet must pass each course or make up his failure.

After gaining experience during the Mexican and Indian Wars, West Point graduates dominated the high commands of both sides during the Civil War. Among these leaders were Grant, Sherman, Sheridan, Meade, Lee, Jackson, Johnston, Bragg, Longstreet, and Jefferson Davis. Of

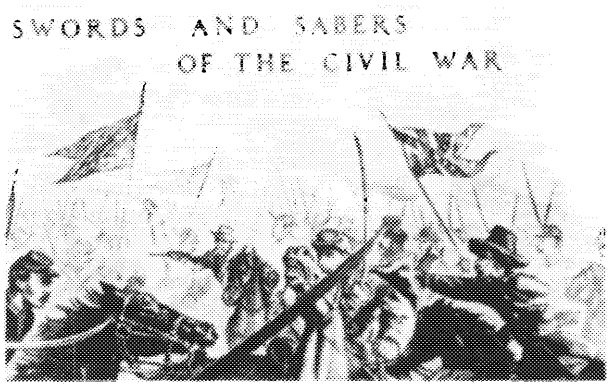
the war's 60 major battles, 55 saw West Pointers commanding both sides. In the other five, a graduate commanded one of the sides. The development of other technical schools allowed West Point to drop its strict civil engineering emphasis in the post Civil War period. With the creation of Army post-graduate command and staff schools, the Military Academy came to be viewed as the first step in a continuing Army education. After the Military Academy's Centennial in 1902 a gradual liberalization of the West Point curriculum began. Courses in English, foreign languages, history, and the social sciences were strengthened or added.

In World War I, Military Academy graduates again distinguished themselves on the battlefield. Thirty-four of the thirty-eight corps and division commanders in France at the end of the war were West Pointers, as was the commander of the American Expeditionary Forces, John J. Pershing. After the war, Superintendent Douglas MacArthur quickly reinstituted prewar academic standards. In recognition of the intense physical demands of modern warfare, MacArthur directed sweeping changes in the physical fitness and intramural athletic programs. "Every cadet an athlete" became the goal. Additionally, the administration of the Honor System by the cadets themselves, long an unofficial tradition, was formalized with the creation of the Cadet Honor Committee.

In 1964, President Johnson signed a bill increasing the strength of the Corps of Cadets from 2,529 to 4,417. A major expansion of facilities, to keep up with the growth of the Corps, began shortly thereafter.

July 1976 marked perhaps the most dramatic, certainly one of the most controversial changes in West Point's history: the entrance of women into the Corps of Cadets. On October 7, 1975, President Ford signed into law a bill authorizing women to compete for admission to the service academies beginning with the Class of 1980 which entered in July 1976.

Academic and military life at West Point has changed steadily over the years, along with the expansion of knowledge and the changing needs of the Army and the nation. Yet West Point remains linked to its illustrious past, true to the timeless Thayer philosophy — leadership with academic excellence and absolute personal integrity.



# Cadet Life

Daily life at West Point is guided by the following objectives which the Military Academy strives to develop in each cadet: a broad collegiate education in the arts and sciences upon which a Regular Army officer can base that continued intellectual development essential to a military career; physical attributes essential to a career as an officer of the Regular Army; a broad military education, rather than individual technical proficiency; and a high sense of duty and the attributes of character with emphasis on integrity, discipline, and motivation essential to the profession of arms.

## ACADEMIC

Requiring a minimum of 5 courses per semester, West Point's broad academic program is tough but certainly not impossible. Specific hours are set aside each day for study, tutoring, and counseling. Each cadet takes the core courses — 30 of them — and may develop an area of concentration by choosing from the more than 170 electives offered.

## PHYSICAL

Upon entering West Point you will suddenly find yourself an athlete — perhaps not an intercollegiate athlete, but certainly one to be reckoned with in some of the 33 intramural and club sports. The Military Academy takes pride in what many consider the best athletic program in the country. All cadets participate in four standard physical education courses as well as intramurals.

## MILITARY

Although military training gets strongest emphasis during the summer, it pervades the four year experience at West Point. Military science courses are required each academic years as are uniforms, salutes, shined shoes, and other military traditions. Summer training ranges from rifle marksmanship to parachuting; from Ranger to Aviation School; from arctic training in

## THE HONOR CODE

"A cadet will not lie, cheat, or steal nor tolerate those who do."

## THE HONOR SYSTEM

High ethical standards are the very soul of the Army Officer Corps and must be understood and adhered to by each officer as part of his way of life. At the United States Military Academy, acceptance by cadets of the spirit of the Honor Code as an unyielding part of their daily life is the principal method for developing personal integrity. All West Point graduates must have the strength of character to maintain these high standards of professional conduct.

The Code is not a regulation promulgated by the Military Academy authorities. Rather, it has its origin among the cadets themselves who initially adopted it to enhance the quality of cadet life. Today the Corps administers the system which supports the Code and continues to keep its spirit alive through the Cadet Honor Committee. The Code pertains to all aspects of a cadet's life — to small things as well as more important ones. Since strength of character is a valued tradition at West Point, anyone who compromises the Code is not acting in the manner expected by the Corps of Cadets. Therefore, the Corps does not tolerate violations of the Honor Code; in fact, any cadet who tolerates a violation is as guilty as the one who committed the violation.

Why is there an Honor Code at West Point? Today, the Honor Code is the principal method for developing habitual honesty and integrity not only in each cadet but more importantly in each Army officer graduate. The high ideals of the Cadet Honor Code are associated with each cadet and graduate of the Military Academy. It is a good feeling to know you can trust another because you know he does not lie, cheat, or steal. It is an even better feeling to know you are trusted by others because it is known that you do not lie, cheat, or steal. All cadets revere and defend the secure, comfortable, productive existence that naturally follows from the atmosphere of mutual trust that exists among honorable persons.

Alaska to Jungle School in Panama. Each cadet spends one summer month serving with an active Army unit in Germany, Alaska, Panama, Hawaii, or the continental United States.

## LEADERSHIP DEVELOPMENT

Every cadet is a leader. From selection based on demonstrated potential, through the four years as a cadet, leadership development is a total process preparing young people for their career roles as officer-leaders. There is probably more student leadership here than at any other college. The 4,000-strong West Point student body, the United State Corps of Cadets, forms a brigade of four regiments. A cadet regiment consists of three battalions, each with three companies, for a total of 36 companies in the brigade. Cadets fill all officer and non-commissioned officer positions in the Corps. Each cadet not only leads but receives counseling and guidance in the techniques of leading. In addition, each cadet is rated on leadership development through an assessment system. Cadets find themselves organizing everything from a Plebe (freshman) hop to a platoon of enlisted soldiers in the active Army.

## VACATIONS AND FREE TIME

The number of vacations ("leave") and the amount of free time a cadet has depends on seniority as well as military performance. A First Class Cadet (senior) gets about twice as many weekend leaves per semester as a Second Class Cadet (junior). On the other hand, a Plebe (freshman) leaves the Military only one weekend in addition to the Christmas holidays, and on authorized athletic, extracurricular activity, or cultural trips. All Cadets take Christmas and summer leaves; upperclass cadets also have a spring leave.

Progressively greater amounts of free time allow cadets to be part of the collegiate subculture at the Military Academy and to mix with students from nearby campuses. Cadets find time to do most of the things other college students do, from simply talking over a cup of coffee, to skiing, dancing, or participating in some of the many extracurricular activities discussed in Chapter 8.

### TYPICAL DAILY SCHEDULE

| | |
|---|---|
| **Morning:** | |
| 6:25 | Breakfast formation |
| 6:30 - 7:00 | Breakfast |
| 7:30 - 11:30 | Class or study |
| **Afternoon:** | |
| 11:55 - 12:25 | Lunch |
| 12:40 - 2:50 | Class or study |
| 3:10 - 6:00 | Free Time (Intramural/-intercollegiate athletics, study time, parades, or extracurricular activities) |
| **Evening:** | |
| 6:20 - 6:50 | Dinner |
| 8:00 - 11:00 | Study time |
| 11:00 | Taps |

This schedule typifies a cadet's life during the academic year, September through May. Free time gives a cadet a big choice: participation in some of the 79 extracurricular activities or 23 intercollegiate sports, study, or just plain relaxation (depending, of course, on the cadet's year and privileges). Worship services and other religious activities are also available to the cadet. During the summer months, cadets take vacations and participate in military training.

## PAY AND ALLOWANCES

In addition to room, board, tuition, and medical care, a cadet receives over $4,000 per year. The cadet must pay for his uniforms and textbooks from this amount. As part of the Regular Army, a cadet is entitled to a salary and Army benefits.

## COUNSELING AND HEALTH CARE

Academic military, financial, and other types of personal counseling are available

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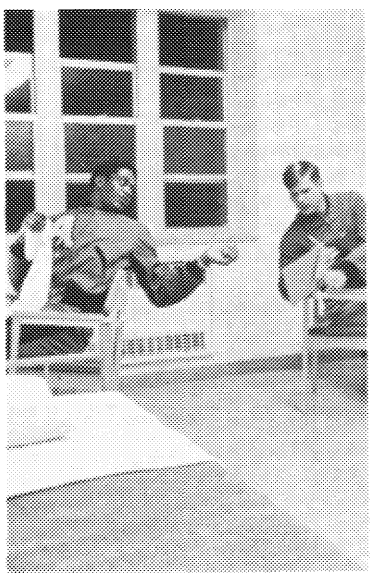
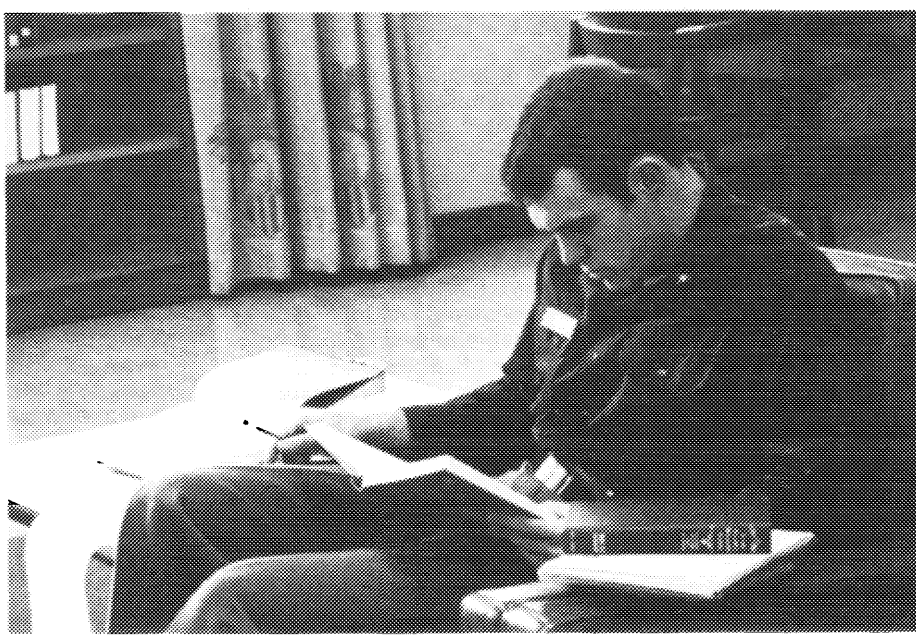
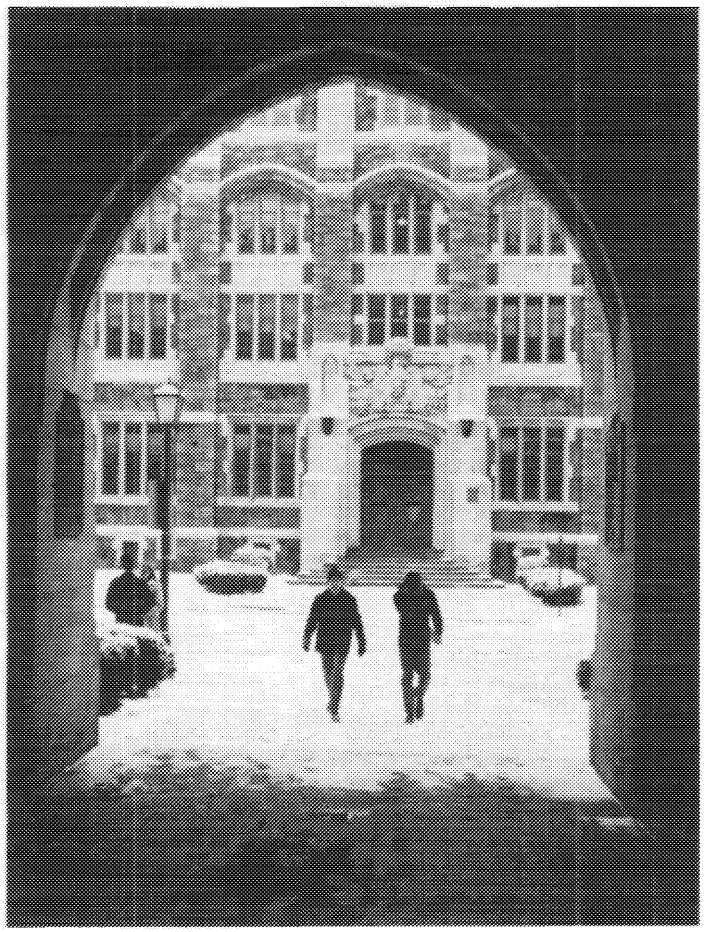






to cadets at all times. Apart from this professional counseling, cadets can always seek advice from their peers in the cadet chain of command.

Army lawyers are also available to provide professional legal advice and assistance.

Cadets receive complete medical and dental care. Frequent examinations insure continued excellent health. If hospitalization becomes necessary, cadets receive treatment in the well-equipped West Point Hospital or at such facilities as the renowned Walter Reed Army Hospital in Washington, D.C.

## FACILITIES

The Military Academy reservation covers approximately 16,000 acres of Orange County, New York, 50 miles north of New York City. Framed by the Hudson Highlands and poised above the Hudson River on its historic West Point, the massive Gothic structures of the campus blend with the rugged beauty of the surrounding hills.

The hub of the cadet area is Washington Hall, the dining hall and headquarters of the Corps of Cadets. In the immediate area surrounding Washington Hall are cadet barracks. Over half of the two-cadet, dormitory style rooms are only eight years old.

Some academic departments, classrooms, and laboratories are right in Washington Hall. Others are lcoated in Thayer, Bartlett, and Mahan Halls near the cadet barracks. A riding hall in early days, Thayer Hall today houses a computer center, television studio, two large auditoriums, and the Military Academy Museum, as well as 98 classrooms. Nine-story Mahan Hall was completed in 1972. Located within the academic area, the Cadet Library contains 400,000 volumes, reading rooms, seminar rooms, microfilm and audio-visual facilities, and rare book collections.

West Point's modern academic facilities are matched by its athletic facilities. The huge gymnasium building contains five gyms, three swimming pools including an Olympic-sized pool, and numerous other special purpose rooms for squash, handball, weight training, and combatives. Varsity and intramural athletes display their skills in a football stadium, hockey rink, field house, or indoor rifle and pistol ranges, or on a baseball diamond or a rubberized track. Also located within the immediate military reservation are a number of other athletic fields as well as a ski slope, golf course, tennis courts, and outdoor swimming pools.

Southwest of the campus the reservation's lake-dotted forest provides an extensive military training and recreational area. In the summer, Camp Buckner and Lake Frederick are focal points for field

exercises of all descriptions. Members of the West Point community hunt, fish, swim, and hike on the reservation. In addition, Army Reserve Components perform field exercises, Scouts and other civilian groups camp and hike, and local townspeople enjoy the recreational use of Long Pond.

Three separate chapels provide a variety of religious services: Protestant, Catholic, and Jewish. The Cadet Chapel houses the world's largest church organ.

A number of facilities exist just for fun. The Cadet Activities Center, Eisenhower Hall, contains a 4,500-seat auditorium, a 1,000-seat restaurant, a large ballroom overlooking the Hudson River, a games area, an art gallery, and a spacious reception foyer for cadets and guests. Grant Hall, Cullum Hall, and the First Class Club provide additional cadet snack and lounge facilities.

The Visitors Information Center and government-owned Hotel Thayer, both just inside the south gate, help to accommodate the hundreds of thousands of guests who visit West Point each year.

# 2. The Army as a Profession

"The long, gray line has never failed us. Were you to do so, a million ghosts in olive drab, in brown khaki, in blue and gray, would rise from their white crosses, thundering those magic words: Duty, honor, country."

GENERAL DOUGLAS MacARTHUR

Entering the Military Academy is but the first step in a demanding—exciting—and rewarding—profession as an officer in the United States Army.

The Army officer leads, teaches, guides, builds, counsels, learns—at home and overseas. An officer works with people and ideas. Responsibilities and satisfying experiences increase with each assignment. An officer must meet and understand the subtle challenge of motivating soldiers to do their best, the complexity of sophisticated weapons systems, and, with advances to higher levels of leadership, the international implications of some decisions. As an officer you will make use of abilities you didn't know you had.

The satisfactions of service are real. In America, the Army was one of the first professions to judge a person on abilities rather than by social class. A person with imagination and talent can still find success in the Army. Continuing military and civilian education alternate with on-the-job experience, insuring both educational and professional growth. Many new lieutenants are pleasantly surprised by the quick warmth and camaraderie of neighbors at the typical Army post; shared experiences forge strong personal bonds. Most importantly, a sense of pride comes with being part of the world's finest Army.

## After Graduation—What Then?

Upon graduation you normally will be commissioned a second lieutenant in the Regular Army and serve for at least five years as an Army officer. Your first duty assignment will test your leadership and managerial skills in small troop units. As a male officer, you may work as an artillery forward observer (spotting targets and guiding artillery fire); a tank platoon leader (responsible for five tanks and the men who work with them); as an infantry platoon leader (responsible for the training, health, welfare, safety, morale, and equipment of about forty soldiers); or as an engineer platoon leader (supervising small construction projects and the soldiers who accomplish them)—to mention only a very few of the specialty areas. As a female officer, you might be a platoon leader in a military police company (responsible for training, health, welfare, safety, morale, and equipment of a

(military police platoon); platoon leader in a transportation company (working with anything from boats to trucks to helicopters); or a signal officer (dealing with electronic communications systems) — again these are only a few of the specialty areas available to you.

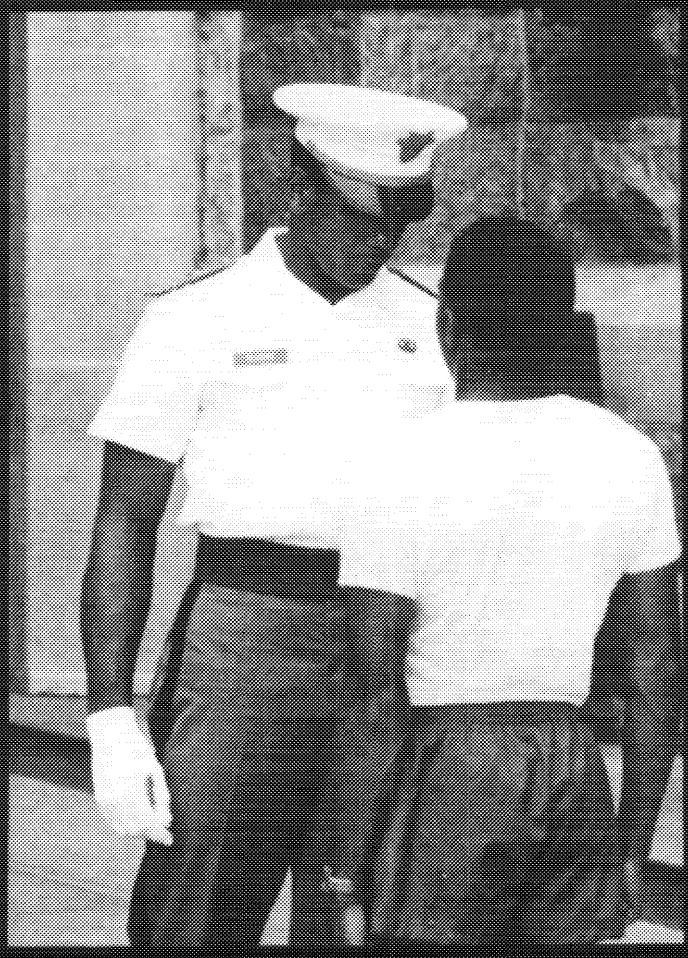
Your preferences, past performance, and the needs of the Army are carefully considered when determining the nature and locale of your assignments. For the requisite skills, tactics, and technological knowhow, you first attend a branch officer basic course for an introduction to your specialty. Throughout your first eight years, troop command, management positions, and instructorships may be interspersed with additional education and training, both civilian and military. All officers attend a branch advanced course to prepare for higher levels of responsibility, leadership, and specialization.

## ADVANCED PROFESSIONAL DEVELOPMENT

During the ninth to fifteenth years, your assignments will usually alternate between primary and secondary specialties, like communications-electronics engineering, atomic energy, or education. Professional patterns in the modern Army have increasingly come to demand academic specialization. Many Military Academy graduates who remain in the Army earn graduate degrees in their specialties from leading civilian universities. In addition, selected officers continue on to a Military Staff College where such subjects as high level management practices and international affairs are studied. Education and experience at this level prepare you for the highly rewarding later years which might find you working in the Pentagon, commanding a large troop unit, serving as military attache in Moscow or London, or in charge of a professional school training hundreds of junior officers. Outstanding officers attend one of the War Colleges or a foreign equivalent. Many make creative contributions to thought and research on the defense implications of their specialties. Officers of highest excellence are singled out for the rank of general officer. They make their greatest professional contributions commanding divisions or larger units encompassing thousands of men and women, or participating in the highest policy councils of the nation.

It is no small responsibility to lead soldiers in time of national emergency and to guard the nation's readiness in time of peace. Life as an Army officer is full of challenge, satisfaction, and service to country and fellow mankind.

# 3. Admissions

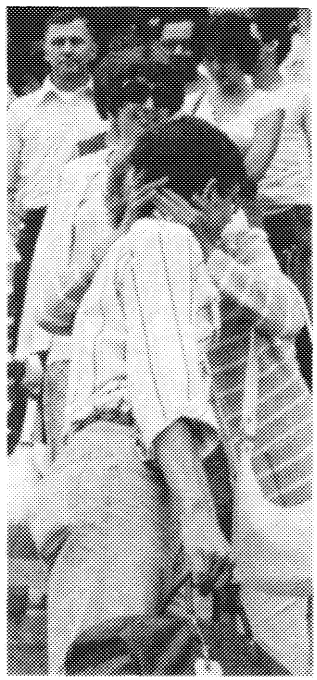


"From the east to the west blow the trumpet to arms!
Through the land let the sound of it flee;
Let the far and the near all unite, with a cheer,
In defense of our Liberty Tree."

THOMAS PAINE

Each year the United States Military Academy admits approximately 1,400 young men and women. These new members of the cadet corps come from all corners of the United States and represent nearly every race, religion, and culture in the country. Encouraged by West Point, this diversity of background helps each cadet gain a cultural as well as a rich educational experience.

To become a cadet you must meet the requirements specified by public law and must be qualified academically, physically, and medically. Each candidate must also obtain a nomination from a member of Congress or from the Department of the Army in one of the service-connected categories described later in this chapter.



## How To Apply For Admission

Applicants should accomplish all the steps outlined below. Each step listed is explained in the remainder of this chapter.

**Procedure Guide:**

1. Determine whether you meet the legal requirements and qualifications
2. Apply for a nomination
3. Start a file at West Point
4. Fill out USMA forms
5. Take ACT or SAT exam
6. Take Qualifying Medical Exam
7. Take Physical Aptitude Exam
8. Await evaluation and status of application
9. Prepare for entrance to USMA

**1. Determine whether you meet the legal requirements and qualifications**

**Legal Requirements**

*Each candidate must:*

- be 17 but not yet 22 years of age by July 1 of year admitted.
- be a U.S. citizen at time of enrollment (exception: foreign students nominated by agreement between U.S. and another country).
- be trustworthy, emotionally stable, and motivated.
- be unmarried.
- not be pregnant or have a legal obligation to support a child or children.

**Academic Qualifications**

*Each candidate should have:*

- an above-average high school or college academic record.
- strong performance on the American College Testing (ACT) Assessment Program exam or the College Board Admissions Testing Program Scholastic Aptitude Test (SAT).

West Point encourages a college preparatory academic background as a prerequisite for admission. Recommended areas of preparation are: four years of English —composition, grammar, literature, speech; four years of math—algebra, plane geometry, intermediate algebra, trigonometry; two or more years of a foreign language; two years of laboratory science—physics, chemistry, or biology; a standard American history course; additionally, you will find courses in geography, government, economics, and European history to be very helpful. College courses taken prior to entrance to West Point may be substituted for similar courses in the Military Academy curriculum (see "Validation" in Chapter 4).

**Medical Qualifications**

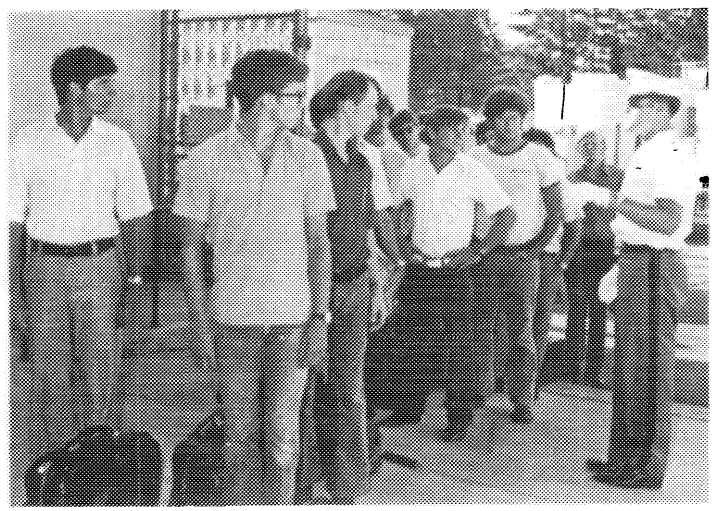
*Candidates must:*

- be in good physical and mental health.
- pass a Medical Exam (see Appendix B).

**Physical Qualifications**

*Each candidate should have:*

- above-average strength, endurance, and agility.
- adequate performance on USMA Physical Aptitude Exam (see Appendix C).



*This format is intended as a guide. A separate letter must be sent to each Senator and Representative to whom you apply.*

## FORMAT

### REQUEST FOR CONGRESSIONAL NOMINATION

Date.....

| | | |
|---|---|---|
| The Honorable ..... | | The Honorable ..... |
| United States Senate | OR | House of Representatives |
| Washington, D.C. 20510 | | Washington, D.C. 20515 |
| Dear Senator..... | | Dear Mr./Ms. ..... |

I desire to attend the United States Military Academy and to be commissioned in the Regular Army. I respectfully request that I be considered as one of your nominees for the class entering West Point in July 1979.

The following data are furnished for your information:

Name: .....

Permanent Address: .....

Telephone Number: .....

Temporary Address and telephone number (if different from preceding):

.....

.....

Date of Birth: .....

High School: .....

Social Security Number: .....

Names of Parents: .....

I have/have not requested that a precandidate file be initiated for me at the West Point Admissions Office.

Sincerely,

**2. Apply for a nomination**

In the spring of your junior year, you should apply for a nomination from one or more of the sources listed below. You must obtain a nomination in order to compete for admission to the Military Academy. Cadetships are allocated by law to the Vice President; members of Congress; Congressional delegates from Washington, D.C., Virgin Islands, and Guam; Governors of Puerto Rico, Canal Zone, and American Samoa; and to the Department of the Army. Nominating officials may select up to ten young people to compete for each cadetship vacancy they may have. Apply for a nomination from each source for which you are eligible.

**Congressional and Gubernatorial Cadetships (At any one time)**

| | |
|---|---|
| **Vice President** | **5** |
| **100 Senators (5 each)** | **500** |
| **435 Representatives (5 each)** | **2175** |
| **Delegates in Congress from:** | |
| **District of Columbia** | **5** |
| **Virgin Islands** | **1** |
| **Guam** | **1** |
| **Governor/Resident Commissioner of Puerto Rico** | **6** |
| **Governors of:** | |
| **Canal Zone** | **1** |
| **American Samoa** | **1** |
| **TOTAL** | **2695** |

The Vice President nominates from the United States at large. U.S. Senators and Representatives-at-Large nominate from their states at large. U.S. Representatives not elected at large nominate from their districts. The Washington, D.C. Congressional Delegate nominates from his district. Sons and daughters of citizens living in the Canal Zone and the Republic of Panama are nominated by the Governor of the Canal Zone. The Governor of Puerto Rico nominates a native-born Puerto Rican and the Puerto Rican Commissioner nominates five residents of Puerto Rico. Governors of Guam, the Virgin Islands, and American Samoa nominate sons and daughters of U.S. citizens or nationals living on their respective islands.

Congressional nominating authorities specify to the Department of the Army the method of selecting candidates to fill cadetships. The most common methods are:

*Congressional Competitor:* A slate of nominees is submitted by the nominating authority. The Military Academy evaluates all nominees and ranks them according to their qualifications. The best qualified nominee is selected.

*Principal with Competing Alternates:* The nominating authority designates a principal nominee; alternates compete as above for the cadetship only if the principal nominee is disqualified.

*Principal-Alternate:* If the selected principal nominee is not fully qualified, each alternate is evaluated in the order designated by the nominating authority until one is found fully qualified.

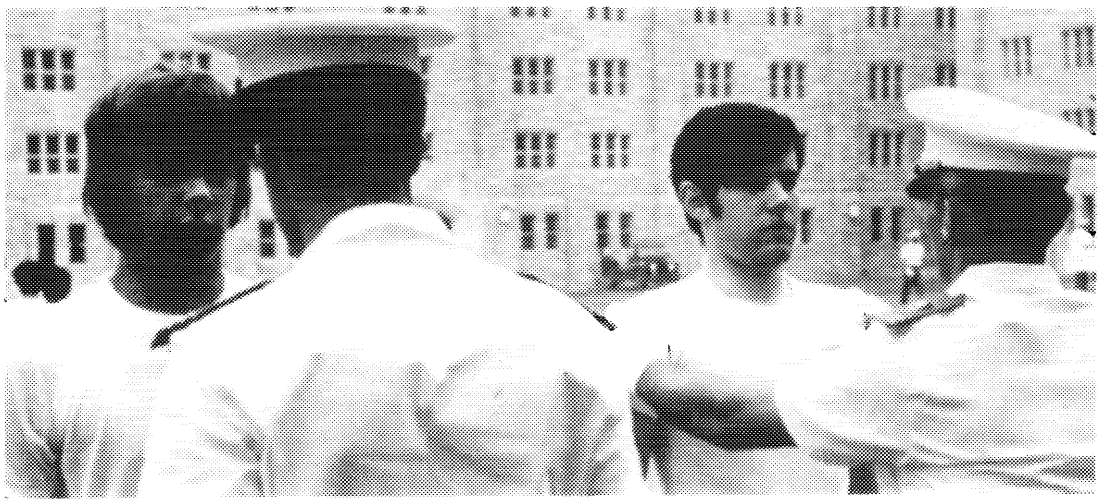
**Department of the Army Cadetships**

The Secretary of the Army is annually allocated cadetships in the following categories:

| | |
|---|---|
| **Presidential** | **100** |
| **Enlisted Members of the Regular Army** | **85** |
| **Enlisted Members of the Army Reserve/National Guard** | **85** |
| **Sons and Daughters of Deceased and Disabled Veterans (approx.)** | **10** |
| **Honor Military, Naval Schools, and ROTC** | **20** |
| **Sons and Daughters of Persons Awarded the Medal of Honor** | **Unlimited** |

Any number of applicants can meet the requirements for a *nomination* in these categories. *Appointments* (offers of admission), however, can only be made to the numbers of applicants shown above. These appointments to vacancies, therefore, are awarded to the best qualified candidates competing in each Army category. Following is a detailed description of the nomination categories and procedures.

*Presidential:* Sons and daughters of career military personnel of the Army, Navy, Air Force, Marine Corps, and Coast Guard—active, retired, or deceased—are nominated through this category. The term "career" includes members of the Reserve Components currently serving eight or more years of continuous active duty, and



*This format is intended as a guide.*

# FORMAT

**REQUEST FOR SERVICE-CONNECTED NOMINATION**
(MUST REACH WEST POINT BY DECEMBER 15, 1978.)

Date .....

Superintendent
United States Military Academy
ATTN: MAAR-R
West Point, New York, 10996

Dear Sir:

I request a nomination under the ..... category for the class entering the United States Military Academy in July 1979, and I submit the following data:

Name of Applicant: .....

Address: .....
Street City State Zip Code

Telephone Number (.....) .....

Date of Birth: .....

Social Security Number: .....

Names of Parents: .....

Military Rank and Serial Number of Parent: .....

Social Security Number of Parent: .....

Component and Branch of Service of Parent: .....

If parent is on active duty, you must furnish a statement of service signed by the unit adjutant.

If parent is retired or deceased, you must furnish date and copy of retirement order or casualty report.

(Include a brief statement concerning the date, place and cause of death or the details of disability together with the claim number assigned to the veteran parent's case by the Veterans Administration (if appropriate).)

(Include a brief statement of the date and circumstances of the award of the Medal of Honor (if appropriate).)

Sincerely,

(Enlisted applicants are referred to AR 351-12.)

Reserve retirees receiving either retired or retainer pay. Sons and daughters of Reservists retired while *not* on active duty are ineligible. Adopted sons or daughters are eligible if adopted prior to their fifteenth birthday. A certified copy of the court order decreeing adoption must accompany the application. Application for a nomination in this category should be made by writing to the Superintendent, U.S. Military Academy, at the address shown on sample letter on page 29. This application must arrive at West Point by December 15.

*Regular Army:* This category is for enlisted members of the active Army. Application for admission to the U.S. Military Academy Preparatory School (USMAPS) constitutes application for nomination under this category. Active enlisted personnel should apply to the Commandant, USMAPS, Fort Monmouth, NJ 07703, in accordance with Army Regulation 351-12.

*Reserve Components:* This category is for enlisted members of the Army Reserve and Army National Guard. Members not on active duty should apply to the Superintendent, U.S. Military Academy, at the address shown on the sample letter on page 29. This application must reach West Point by December 15.

*Sons and Daughters of Deceased and Disabled Veterans:* This category is for sons and daughters of deceased or 100% disabled Armed Forces Veterans whose death or disability was determined to be service-connected, and for sons and daughters of military personnel or federally employed civilians who are in a missing or captured status. Application should be made to the Superintendent, U.S. Military Academy, at the address shown on the sample letter. This application must reach West Point by December 15.

*Honor Military, Naval Schools, and ROTC:* Applicants enrolled in a junior or senior Army Reserve Officer Training Corps program are eligible for nomination in this category. Certain ROTC schools designated by Department of the Army as Honor Units with Distinction may recommend three of their "honor graduates" for nomination. The best qualified candidates, without regard to schools, are then selected for enrollment. Application should be made through the Professor of Military Science or the Senior Army Instructor at your school to the Superintendent, U.S. Military Academy. This application must reach West Point by December 15.

*Sons and Daughters of Persons Awarded the Medal of Honor:* All sons and daughters of persons awarded the Medal of Honor who seek admission and are fully qualified will be admitted. Apply to the Superintendent, U.S. Military Academy, using the format shown before December 15.

*Allied Countries:* Young people from the Republic of the Philippines and American republics may be selected by their governments for admission. Requirements for enrollment, advancement from class to class, and graduation are the same as for United States citizens. However, cadets from allied countries are not entitled to a commission in the U.S. Armed Forces upon graduation. The best qualified Philippine national will be selected for admission from among those nominated by the President of the Republic of the Philippines. Not more than 20 citizens of the American republics may be USMA cadets at one time. No country may have more than three cadets enrolled at the same time.

**3. Start a file at West Point.**

West Point will start a candidate file for you upon receipt of your completed Precandidate Questionnaire. You will receive this questionnaire as a result of your inquiry into various USMA programs or by sending one of the forms at Appendix D to Admissions, USMA, West Point, NY 10996. This should be done in the spring of your junior year or as soon thereafter as possible. After you complete the questionnaire, have your guidance counselor forward it to Admissions. (NOTE: You *must* have a social security number—SSN—to establish a file.) Your file will be reviewed and you will be notified if you lack the qualifications to compete for admission.

## ACT AND SAT TEST DATES

**ACT ASSESSMENT PROGRAM DATES 1978-1979**

| Test Date | Registration Opens | Registration Closes |
|---|---|---|
| October 21, 1978 | August 7, 1978 | September 12, 1978 |
| December 9, 1978 | October 9, 1978 | November 10, 1978 |
| February 10, 1979 | November 27, 1978 | January 12, 1979 |

**The FINAL DATE for taking the ACT exam for West Point is February 10, 1979**

**COLLEGE BOARD SCHOLASTIC APTITUDE TEST (SAT) 1978-1979**

| Test Date | Registration Closes | Late Registration Closes (Penalty) |
|---|---|---|
| October 14, 1978 (CA, FL, NY & TX only) | September 23, 1978 | September 23, 1978 |
| November 4, 1978 | September 30, 1978 | October 14, 1978 |
| December 2, 1978 | October 28, 1978 | November 11, 1978 |
| January 27, 1979 | December 23, 1978 | January 6, 1979 |

**The FINAL DATE for taking the SAT exam for West Point is January 27, 1979**

**Final admissions decisions will be made in April 1979 from the data then present.**

**4. Fill out USMA forms**

You will be required to complete or have completed by others many administrative forms as you progress through your application process. Promptly return all forms you receive from the Military Academy Admissions Office and the Department of Defense Medical Examination Review Board.

**5. Take ACT or SAT exam**

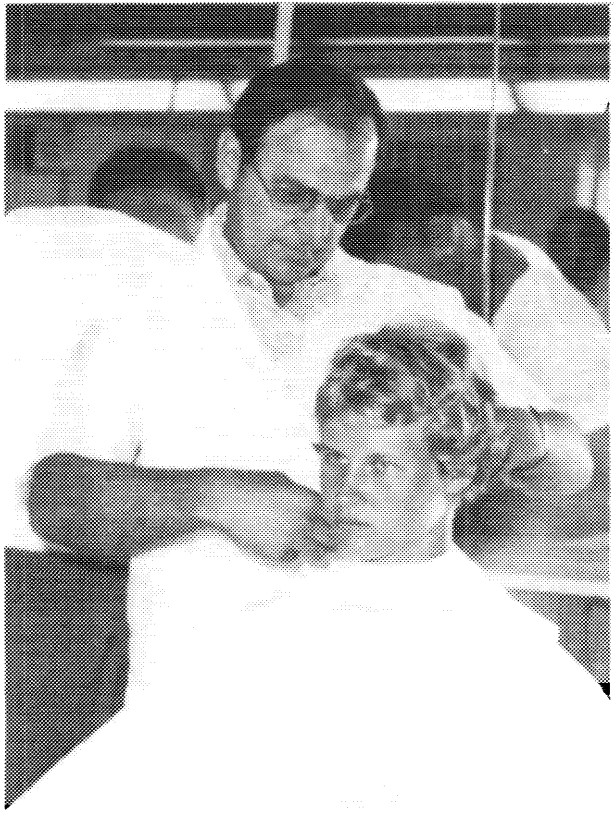
All candidates must take either the American College Testing (ACT) Assessment Program exam or the College Board Admissions Testing Program Scholastic Aptitude Test (SAT).

ACT

The ACT is given at test centers throughout the world. For information on ACT testing in your locale, consult any high school counselor or write directly to Registration Department, ACT Assessment Program, PO Box 414, Iowa City, IA 52240. To insure that West Point receives your test results, list the ACT college code number for USMA (2976) on your registration folder. If you are seeking a nomination by a member of Congress also record the special code number 7000 on your registration folder (once for each member of Congress). Each time you use the 7000 code number, you will receive a sealed copy of your ACT score report to be forwarded (or delivered) by you directly to the appropriate member of Congress. It is your responsibility to see that West Point *and* your Congressional representative receive your test results.

SAT

Candidates taking the College Board exam for admission are required to take the Scholastic Aptitude Test. To take the examination, apply to College Board Admissions Testing Program (CBATP), Box 592, Princeton, NJ 08540. For additional information, consult your guidance coun-



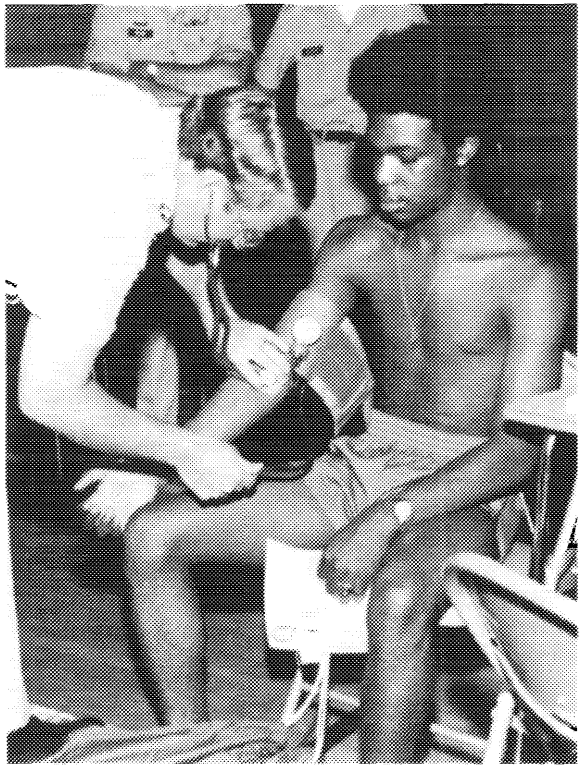
selor. To insure that West Point receives your test results, list the CBATP college code number for USMA (2924) on the registration form. To report your scores to your Congressional representatives, follow one of the procedures below: (1) Contact members of Congress from whom you are seeking nominations to obtain their CBATP code numbers. Record each of their numbers on the registration form. (2) If any of your Congressional representatives do not have a specific CBATP code number, record code number 1000 on the registration form (once for each member of Congress). CBATP will then forward your results to you in a sealed envelope. When you receive the results, you must then forward them, unopened, to your Congressional representative. You are responsible for insuring that the test results are forwarded to West Point *and* your Congressional representative.

**6. Take Qualifying Medical Exam**

All candidates desiring to enroll in July 1979 must take a Qualifying Medical Examination between June 1, 1978 and July 1, 1979. One Qualifying Medical Examination meets the application requirements of all service academies and all ROTC Scholarship nominations a candidate may receive. The Department of Defense Medical Examination Review Borad will schedules your exam and evaluate the results after you have started an admissions file. You will receive instructions for taking the Qualifying Medical Examination directly from the Medical Examination Review Board.

Minor disqualifying problems are automatically considered for waiver for the candidate who possesses outstanding overall qualifications. All inquiries about medical qualification should be addressed to Director, Department of Defense Medical Examination Review Board, U.S. Academy, CO 80840.

Detailed USMA medical requirements are covered in Appendix B.



**7. Take Physical Aptitude Exam**

Your strength, endurance, and agility are measured by the Physical Aptitude Examination (PAE). The four events of this examination are described in Appendix C. You will receive scheduling instructions for completing the exam from USMA Admissions.

Candidates are advised to prepare for this examination by engaging in vigorous activities such as running, general conditioning exercises, and competitive games as well as by practicing specific test items. The qualifying exam results may be used for any year you apply to West Point.

While the Air Force Academy Physical Aptitude Examination is an acceptable substitute for West Point's exam, the Naval Academy's is not. If you take the Air Force Academy exam, have the results sent to the Director of Admissions at West Point.

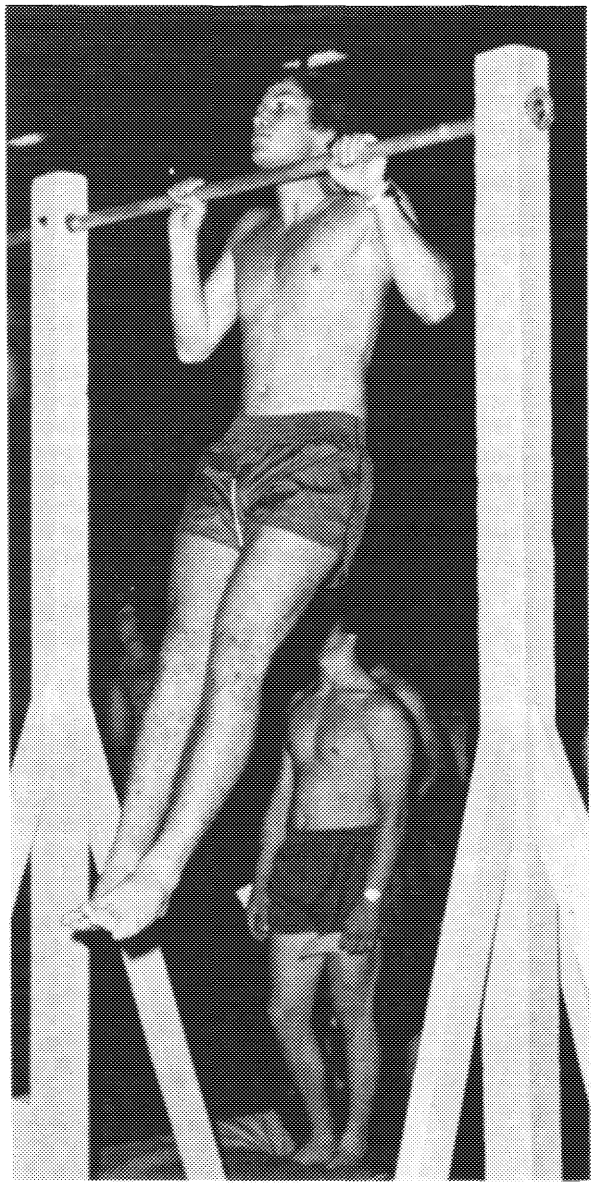
**8. Await evaluation and status of application**

Notification of acceptance is possible as early as November for fully qualified, outstanding candidates who have completed all admissions requirements *and* received a nomination.

Final admissions decisions will be made in April 1979 from the available data on each candidate. It is possible that a few candidates will not be notified of acceptance until shortly before entrance in July. Offers of admission are conditional from the time of offer to date of admission.

**9. Prepare for entrance to USMA**

Candidates should prepare for the academic, physical, and leadership demands a cadet faces at West Point. If you have met the academic qualifications for admission you will most likely be ready for the challenges of the West Point curriculum. Candidates are urged to become physically conditioned before entering the Military Academy. Vigorous conditioning exercises, cross-country running, and swimming are



recommended. It is especially important that a candidate train through a variety of strenuous activities.

Participation in school and community activities helps a future cadet prepare for leadership positions at West Point. Active members of youth clubs, school class activities, Scouts, civic programs, and athletic teams build leadership experience for themselves.

**USMA Preparatory School**

If you have any doubt about your chances for admission to West Point, or if you feel you might profit from an additional year of maturity before entering West Point, request admission to the U.S. Military Academy Preparatory School (USMAPS). This ten-month school prepares selected young men and women for entrance to the Military Academy. You should bear in mind, however, that each preparatory schools graduate must still compete with other candidates for admission to West Point and must secure a nomination.

USMAPS is open to enlisted members of the Army on active duty and to civilians who are authorized by the Army's Military Personnel Center to enlist in the Army for the purpose of attending the school.

Application procedures depend on a candidate's status—military or civilian— prior to entry. Active Army applicants must follow the steps outlined in Army Regulation 351-12. Army Reserve and National Guard personnel not on active duty should write to the Commandant, USMAPS, Ft. Monmouth, NJ. Civilian applicants who would like to be considered for USMAPS if not selected for West Point should indicate this on their application.

USMAPS candidates must meet the same general requirements as for admission to West Point. Prep school students undergo intensive academic, physical, and military training. The academic program, which includes English and Mathematics, is divided into two terms. The first term is a comprehensive review of high school English and mathematics, with emphasis on literature, grammar, algebra, geometry, and trigonometry. The second term is an introduction to college level composition, literature, solid geometry, spherical trigonometry, and calculus. Electives are available to those who qualify.

Rigorous physical training helps condition prep students for the athletic program at West Point. USMAPS currently competes in 12 varsity sports and offers a variety of intramural sports.

"Prepsters" get some formal military training, although most students have completed basic military training before entering USMAPS. Frequent counseling and an evaluation system which rates each student on military, academic, and leadership performance, prepare prep school students for life at West Point.

For further information on the USMA Preparatory School, write to Commandant, USMA Preparatory School, Ft. Monmouth, NJ 07703.

**USMA Field Representatives**

USMA Admissions enjoys the assistance nationwide of representatives who provide service to candidates. They include graduates of West Point both in and out of the Active Army, and US Army Reserve Liaison Officers who have been trained at West Point for this specific program. These volunteers are available to assist you in admissions processing and to answer your questions about West Point programs. Through them, we hope to maintain a flow of information about the West Point experience to increase your understanding and ease your pursuit of an appointment to the Military Academy. Write to USMA Admissions to find out who your area field representative is.

**Candidate visits to West Point**

For a first-hand view of cadet life, try to arrange for a visit to the Military Academy. During the Academic Year, visits (including talks with cadets) can be arranged if you contact the Admissions Office at least two weeks before your planned arrival (phone 914-938-2455). These visits are for those interested in admission who are at least high school sophomores. Tours start from the Admissions Office (Third Floor, Administration Building) at 10 a.m. Monday through Saturday. In addition, USMA Admissions sponsors cadet visits to many areas throughout the country during Christmas and spring vactions. Your area admissions representative can tell you if a cadet is scheduled to visit your area. For additional information on the cadet visit program, write to the Cadet Public Relations Council, Admissions, USMA, West Point, NY 10996.

# 4. Academic Program

"For most men, the matter of learning is one of personal preference. But for Army officers, the obligation to learn, to grow in their profession, is clearly a public duty."

GENERAL OMAR N. BRADLEY

Young people entering the United States Military Academy can expect to expand their stores of knowledge, to develop more fully the intellectual skills they need to assume responsibilities as junior officers, and to build strong foundations for assuming senior officer responsibilities. They will also acquire a sound basis for postgraduate specialization in one of a variety of academic disciplines.

## The Educational Philosophy

The Military Academy, as the only college specifically charged with preparing young men and women for service as officers in the United States Army, has a unique educational philosophy. Graduates must be enlightened military leaders of strong moral courage whose minds are creative, critical, and resourceful. The total academic and military training curriculum helps develop these qualities.

Standard academic courses provide an essential core of knowledge in the arts and sciences with emphasis on problem solving. Advanced and elective courses allow the individual cadet to concentrate in a specific area of interest.

Academic studies combined with physical development and leadership training, form the three major aspects of the West Point experience. And while the Military Academy continually adapts itself to the pace of professional, national, and international change, it remains true to the sense of duty, honor, and service to country which has traditionally distinguished its graduates.

**The Dean of the Academic Board**
Frederick A. Smith, Jr., BG; B.S., USMA; M.S.M.E., Johns Hopkins; M.B.A., George Washington; Ph.D., Illinois.

## The Academic Curriculum

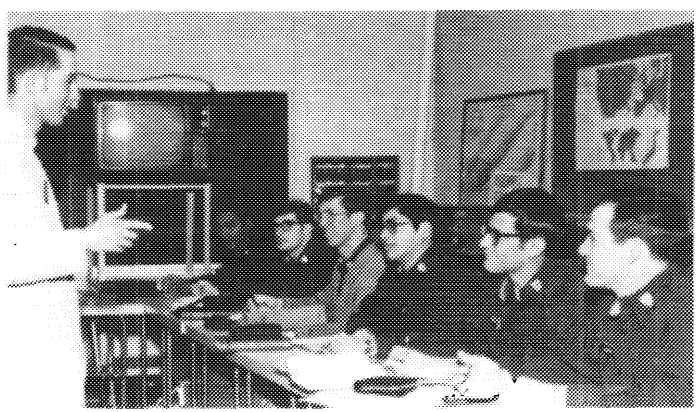
The present curriculum reflects 176 years of evolutionary change both in the military profession and in higher education. Today's balanced offering of courses in the arts and sciences leads to a Bachelor of Science degree and builds a foundation for continuing education and professional development.

The curriculum has recently undergone a revision placing increased emphasis on academic excellence while providing an improved foundation for continuing intellectual development. The minimum number of electives to be taken by each cadet was raised from six to ten while the total number of courses required for graduation was decreased from 48 to 40. The Class of 1982 is the first class to experience the total effect of the new curriculum. This new program offers a greater flexibility for tailoring cadet academic fields of study while integrating basic writing and mathematical skills throughout the four year program.

Many graduates who remain in the Army after the required five years go on to civilian graduate schools. One of the aims of the revised curriculum is to provide a basis for postgraduate work within one of the above four areas.

## METHODS OF INSTRUCTION

Here you will be far more than a mere face in the crowd. Small classes—usually of 12 to 16 cadets—assure discussion and individual attention. Grouping by ability, with periodic adjustments, allows concentration on the fundamentals if that is what you need, or an accelerated pace if you already have a firm grasp of the basics. You will be encouraged to participate daily and you will be evaluated frequently. If you are unsure of the material taught on any given day, or wish to move beyond it, extra one-on-one instruction is available. Many members of the academic community are served by the Dean's Reading Improvement Program and courses in special skills such as computer and media skills. Faculty technical assistance is also available in applying computers, television, and other educational media to the academic program.



## LECTURE SERIES

Academic departments and other groups sponsor a comprehensive lecture series which complements the Military Academy's course of instruction. Guest lecturers include recognized authorities in various academic disciplines, noted authors, playwrights, religious and civic leaders, businessmen, and military leaders. Among recent lecturers have been Paul Weaver, Fortune Magazine; Professor John Keegan, Royal Military College, Sandhurst, England; Professor Robert Scanlan, Princeton University; Alistair Horne, author and historian; Professor Norman Rasmussen, M.I.T.; Professor Edward Young, Republic of China Cultural Council; Colonel Edward Guthrie, Assistant Secretary of the Army; General Bernard Rogers, Army Chief of Staff; Doctor Aaron Wildavsky, Russell Sage Foundation; General Sir Edwin Bramall, CIC, United Kingdom Land Forces; Vernon E. Jordan, Jr., Director, National Urban League; Major General Wilton B. Persons, Judge Advocate General of the Army; Suzanne Masie, author; and Jill Volnar, General Counsel of the Army.

# The Core Academic Program

The 30 courses of the Core Academic Program provide a nucleus of knowledge in mathematics, science, engineering, the social sciences, and the humanities. Each course must be successfully completed. The accompanying table shows the core courses and the sequence in which they are normally taken. Variations may result from the selection of certain areas of concentration, performance in previous college-level courses, and enrollment in advanced or accerlated programs. Electives are listed to show where they are normally scheduled during the four-year program.

## THE USMA CURRICULUM*
### TYPICAL SEQUENCE OF COURSES

**FOURTH CLASS YEAR**

| First Term | Second Term |
|---|---|
| English | English |
| Foreign Language | Foreign Language |
| Mathematics | Computer Programming |
| History | Mathematics |
| Psychology | History |

**THIRD CLASS YEAR**

| First Term | Second Term |
|---|---|
| Foreign Language | Philosophy |
| Political Science | Economics |
| Chemistry | Mathematics |
| Mathematics | Physics |
| Physics | Elective |

**SECOND CLASS YEAR**

| First Term | Second Term |
|---|---|
| Thermo-Fluid Dynamics | Electrical Engineering |
| Engineering Mechanics | Military History |
| Law | International Relations |
| English | Elective |
| Elective | Elective |

**FIRST CLASS YEAR**

| First Term | Second Term |
|---|---|
| Engineering | Engineering |
| Leadership | American Institutions |
| Elective | Elective |
| Elective | Elective |
| Elective | Elective |

*See Chapter 6, "Courses of Instruction," for course descriptions, including required courses in military science and physical education. Advanced versions of these courses are offered to qualified individuals by the department concerned.

## COURSE DESIGNATION

First-year courses are numbered in the 100's, second-year in the 200's, third in the 300's, and fourth in the 400's. The second digit indicates the level of the course: 0 = standard, 4 or 5 = advanced, 7 or 8 = elective.

Courses may be offered in either or both terms as indicated in the course description. A credit hour represents one hour of classroom instruction and associated preparation each week for eighteen weeks (one term).

## VALIDATION AND ADVANCED PLACEMENT

You may be excused from (validate) certain core courses if you have sufficient knowledge of a subject to meet the appropriate department's standards. Credit earned in other colleges, scores on Advanced Placement Examinations, and tests administered at the Military Academy are considered in validation decisions. Validation of a core course does not lighten your academic load; rather, it allows you an additional elective in place of the validated course. If you show unusual ability, or have prior knowledge of a subject but cannot validate it, you may be enrolled in an advanced or accelerated program.

## HONORS COURSES AND INDIVIDUAL ADVANCED STUDY

If you are an exceptional student, you may enroll in an honors course or advanced individual study in any of the disciplines taught at the Military Academy. These programs emphasize independent or tutorial work and are excellent preparation for graduate study.

# The Elective Program

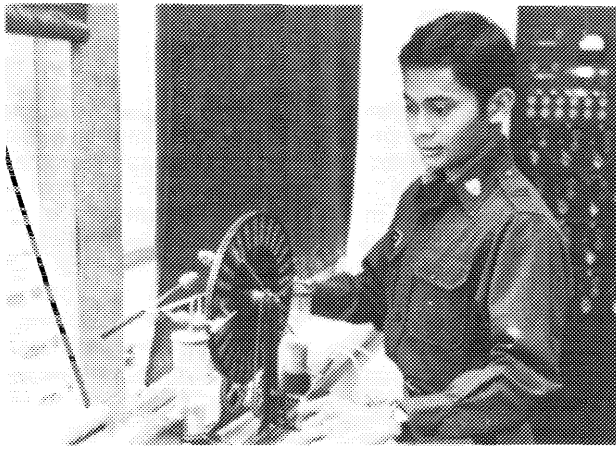
Each cadet takes a minimum of ten electives. This number may be increased depending on the number of core courses validated and enrollment in advanced or accelerated programs. With approval of the Dean, upperclass cadets may take overload electives. Careful choice of electives can weight an individual's program toward the humanities or social sciences, or reinforce scientific orientation. For course descriptions of electives, refer to Chapter 6, "Courses of Instruction."

## AREAS OF CONCENTRATION AND FIELDS OF STUDY*

To help cadets design their individual academic programs, electives have been grouped into 33 fields under four areas of concentration and an interdisciplinary field, Management. Cadets must choose an area of concentration or elective field in order to acquire a greater depth of knowledge in subjects of special interest or aptitude. The specific fields continue under review and may be revised. The current list is as follows:

| AREAS OF CONCENTRATION | FIELDS OF STUDY | |
|---|---|---|
| Applied Sciences and Engineering | Applied Sciences and Engineering Interdisciplinary<br>Aerospace Engineering<br>Civil Engineering<br>Computer Science | Electrical Engineering<br>Engineering Mechanics<br>Nuclear Engineering<br>Weapon Systems (Mechanical) Engineering |
| Basic Sciences | Basic Sciences Interdisciplinary<br>Chemistry | Mathematics<br>Physics |
| Humanities | Humanities Interdisciplinary<br>American Studies<br>Ethics and Military Profession<br>Foreign Area Studies<br>Foreign Languages<br>Arabic, Chinese, French, German, Portuguese, Russian, Spanish<br>Literature | |
| National Security and Public Affairs | National Security and Public Affairs Interdisciplinary<br>Behavioral Science<br>Economics<br>Geography | International Affairs<br>Military History<br>Military Studies<br>Modern History<br>Political Science |
| Interdisciplinary | Management | |

*Although the fields of study listed above have been proposed for the class entering the Military Academy in 1979, minor changes may occur.



# AREAS OF CONCENTRATION/FIELDS OF STUDY

## APPLIED SCIENCES AND ENGINEERING AREA

Applied Sciences and Engineering deal with the physical properties of matter, development of models for analysis of devices and mechanisms based on these properties, and employment of these tools to create and design structures, machines, or systems for specific useful tasks. This area of study appeals to those who have a practical and analytical interest in the physical world and who look forward not only to operating but also to participating in developing engineering systems.

## ASSOCIATED ELECTIVE FIELDS OF STUDY

**Applied Sciences and Engineering Interdisciplinary:** For the student with an interest in the applied sciences and engineering, but who desires breadth across the engineering disciplines, this interdisciplinary program builds on fundamental courses in the applied sciences to offer a choice of elective courses from several fields. This field provides a sound basis for further work in a number of engineering disciplines and is excellent preparation for the Army's technical branches and specialties.

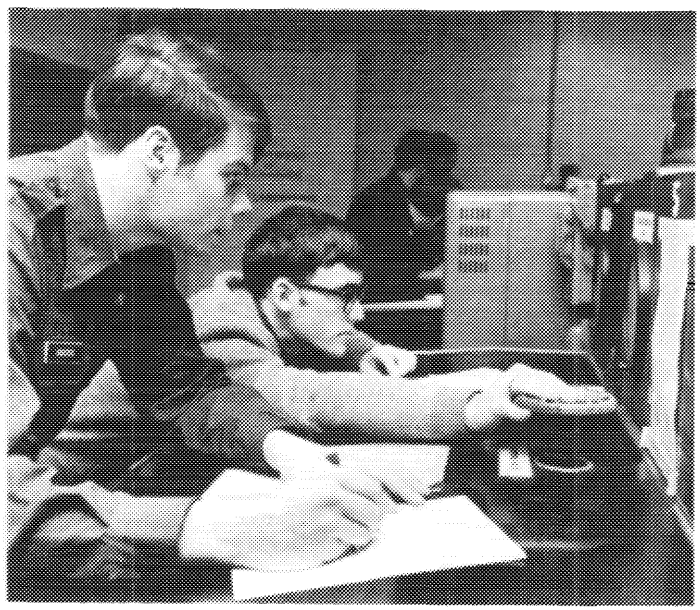
**Aerospace Engineering:** Aerospace Engineering deals with the application of engineering principles and methods to aircraft, missiles, and aerospace vehicles. The great variety and numbers of aerospace systems in use in the Army and the use of these systems as vehicles of instruction for the courses in this field make Aerospace Engineering an appropriate choice for cadets considering most branches of the Army as well as specialties such as aviation, research and development, project management, and logistics.

**Civil Engineering:** Builds upon earlier mathematics, science, and engineering courses to develop the logic of decision making using the study of structural analysis and design. Encompasses study of structures, soils, concrete, and environmental systems. Addresses the management and systems aspects of engineering through an introduction to optimization techniques, economic analysis, and system engineering.

**Computer Science:** This field deals with advanced concepts of digital computers, programming in several languages, and data base applications. Students study the organization, operation, and functioning of digital computer systems and learn effective procedures for processing data. Problem solving techniques using advanced computer technology will be emphasized. Students also pursue further study of microprocessing, systems programming, interactive computer graphics, simulation and gaming, data processing, computer engineering, and individual study.

**Electrical Engineering:** Electrical Engineering provides the opportunity to become involved in the study of a rapidly accelerating field that has transformed modern warfare and, indeed, our entire way of life. Communications, solid-state electronics, digital computers, automatic control systems, power systems, and advanced individual research are among the areas studied. Classwork and laboratory work emphasize the mastery of common fundamentals and lead to more specialized investigation of practical military and industrial problems.

**Engineering Mechanics:** Engineering Mechanics is an applied science which contributes to a number of engineering fields, especially Civil, Mechanical, Nuclear, and Aerospace. Practical problems involving the behavior of bodies and systems acted upon by external forces and energy transfers are approached from fundamental principles. This field should appeal to students who know they are interested in engineering, but who wish to preserve their options for later specialization.



**Nuclear Engineering:** Builds upon earlier mathematics, science, and engineering courses to develop the logic of decision making using the study of the design, construction, and operation of nuclear reactors with emphasis on nuclear power generation. Covers the reactor core, heat transfer, shielding, plant siting, safety, and environmental impact of plant operations. Addresses the management aspect of engineering through an introduction to systems engineering, economic analysis, and optimization techniques.

**Weapon Systems (Mechanical) Engineering:** Similar in content to Mechanical Engineering studies of other undergraduate programs building upon Mathematics, Basic Sciences, and Engineering core courses. Uses modern weapon systems as the vehicle of instruction. Students learn analysis, synthesis, and design of Mechanical Systems which are the weapons and tools of many branches of service within the Army (Armor, Artillery, Ordnance, etc.). Automotive and Helicopter Engineering, as well as other courses offering greater insight into Mechanical Systems, round out the field.

## BASIC SCIENCES AREA

This concentration offers an opportunity to acquire a comprehensive grasp of our physical environment and an understanding of thought in seeking out methods of increasing insight and knowledge. This area of inquiry develops the ability to analyze and understand such critical issues as the energy crisis, nuclear power, the space program, and weapon systems development. It provides a sound basis for further work in the basic sciences, applied sciences, engineering, and health science.

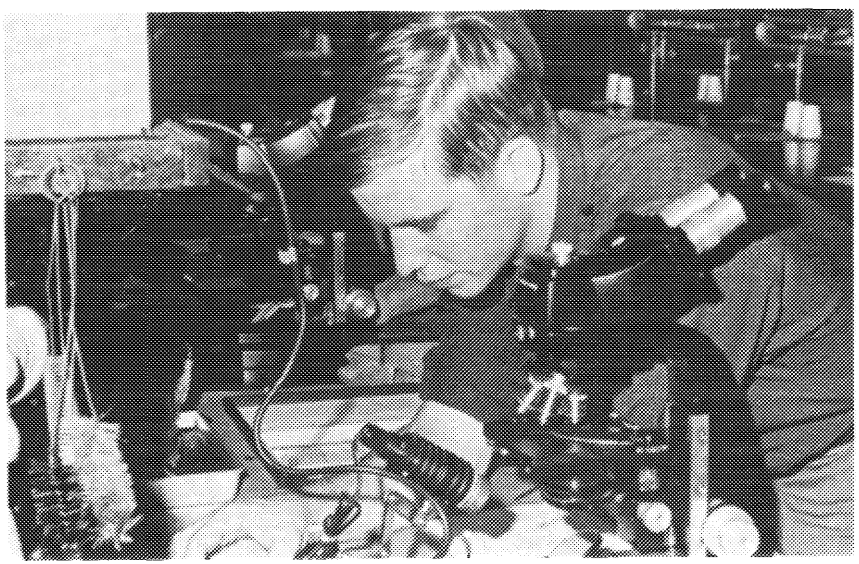
## ASSOCIATED ELECTIVE FIELDS OF STUDY

**Basic Sciences Interdisciplinary:** Study of selected courses in biology, chemistry, mathematics, and physics provides a comprehensive grasp of our physical environment and an understanding of methods of increasing insight and knowledge. It enables one to understand and critically evaluate developments in American society such as the energy crisis, nuclear power, and weapon systems. Further, it provides a sound basis for future study in basic sciences, applied sciences, and engineering, as well as preparing the graduate for entry into the Army's technical specialties.

**Chemistry:** This field involves the study of organic chemistry, physical chemistry, instrumental methods of analysis, and modern topics in chemistry, such as biochemistry and polymer chemistry. The opportunity to conduct advanced individual research in a selected area of chemistry or the life sciences will provide a sound foundation for future work in applied and theoretical science, for some fields of engineering, and for future study in any of the life sciences.

**Mathematics:** Mathematics deals with reasoning through the use of abstract symbols and a symbolic language. It is a foundation for other scientific disciplines and indispensable to the study of engineering. Courses are offered in both applied and pure mathematics. Applied mathematics, covering topics such as statistics and differential equations, is related to the study of the physical, biological, and sociological sciences. Pure mathematics is more theoretical and covers topics such as number theory, algebra, and geometry.

**Physics:** This field offers two routes. The first includes the study of basic topics such as mechanics, electricity and magnetism, quantum mechanics, and nuclear physics; thus it supports future work in physics and nuclear engineering. The alternate route includes topics such as lasers, modern optics, and nuclear reactor theory along with some basic courses. Both programs support future work in applied science and various engineering disciplines and should be attractive to technically oriented students who are still developing specific goals.



## HUMANITIES AREA

The course and fields offered in the Humanities Area include studies in English and American literature and in the language and literature of seven foreign languages (Arabic, Mandarin Chinese, French, German, Portuguese, Russian, and Spanish). Certain courses in history may also be taken in the Humanities Area, even though specific fields of study in history are covered under the area of National Security and Public Affairs. It is possible in the Humanities Area to concentrate studies in a

single discipline or choose an interdisciplinary program that addresses several Humanities disciplines. In literature one may study British and American literature, or in American Studies, a combination of American literature, history, and culture. In the foreign language field, one may concentrate on the language and its literature or on the language and the history, geography, and culture of the country or area where the language is spoken. In addition to the knowledge and understanding of people and their cultures that can be derived from study in the Humanities Area, such study lends itself directly to a development of skills of enduring importance to the Army officer: the ability to read, evaluate, and appreciate literary and cultural materials and to engage in logical discussions of these subjects; the ability to write clearly and imaginatively; and in the case of foreign language study, the ability to communicate with and understand native speakers of the language. In all of these areas, continuing study will broaden students' horizons and increase their understanding of their fellow man.

## ASSOCIATED ELECTIVE FIELDS OF STUDY

**Humanities Interdisciplinary:** As distinguished from the sciences, which are concerned with nature and the physical world, the humanities are concerned with human thought and human relations. The Humanities Interdisciplinary concentration is designed for those students who do not want to focus on a particular humanities field. This interdisciplinary concentration permits students to fashion an interesting and worthwhile combination of literature, history, foreign language, and philosophy electives.

**American Studies:** American Studies, a relatively new field, examines the American experience from such diverse perspectives as literature, art, history, sociology, geography, and law—all joined to produce a richer, truer, and more coherent picture of American culture and civilization. Electives from five other academic departments are blended with those of English in the design of the American Studies program, which addresses the great issues of America's past and present.

*Dr. Edward M. Coffman, one of an increasing number of visiting professors on West Point's faculty.*

**Ethics and Military Profession:** This new field of study invites students to engage in scholarly endeavors that deepen their intellectual understanding of the military profession and its moral dimensions. Interdisciplinary in nature, this field features courses in philosophy, psychology, government, history, literature, law, and sociology that call for a detailed and searching examination of professional and moral issues raised in core courses.

**Foreign Area Studies:** This field provides an enriching interdisciplinary experience which focuses on a national/cultural area of interest. With language skill as the unifying component, the program provides the opportunity to examine the selected area from the perspective of several disciplines—history, literature, politics, economics, and law—resulting in sophisticated understanding of the complexities of a segment of modern society other than the American. This field is both personally challenging and professionally relevant.

**Foreign Languages:** Seven languages are presently offered in the Language Field of the Humanities Area of Concentration: Arabic, Mandarin Chinese, French, German, Portuguese, Russian, and Spanish. Students can develop sound foundations in the language they choose. Language study is supplemented by electives in literature, culture, and military readings. Additional electives are available on the geography, history, and politics of the country and area.

**Literature:** This field is concerned with language and its crowning achievement, literature. A concentration in literature permits reading of the world's enduring authors—Homer, Shakespeare, and Melville, to name but a few. Such reading fosters that broad understanding of human nature necessary in a leader. Additionally, a concentration in literature emphasizes the communication arts of English, rhetoric, and logic—all essential for success in the military profession and contemporary society.

## NATIONAL SECURITY AND PUBLIC AFFAIRS AREA

The National Security and Public Affairs Area provides an opportunity to study the nature of national and international affairs in the contemporary world, seeking ultimately to understand why individuals and nations behave as they do. This area comprises the fields of economics, geography, modern and military history, international affairs, military studies, political science, behavioral science, and management. Each of these fields prepares the graduate to deal with questions of public policy and national strategy. There are a variety of approaches available. Students may choose an historical approach to illuminate the development of society's attitudes, institutions, and traditions. Study may include the effects of geography on the development of nations and the economic and strategic consequences of natural and cultural elements of the environment. Study into contemporary social organizations, political practices, and economic structures of the United States and other countries is also possible. The area includes examination of individual and organizational aspects of the leadership process from the behavioral science point of view. And finally, students may look at the dynamics of international relations and international law and examine how nations have waged war and will organize for war in the future. Students may concentrate their efforts on

specific geographical areas, in disciplinary fields, or study more broadly the interrelationship of these forces in the National Security and Public Affairs Interdisciplinary Field.

## ASSOCIATED ELECTIVE FIELDS OF STUDY

**National Security and Public Affairs Interdisciplinary:** Concentration in this field will provide the opportunity to study in four of the related disciplines of political science, history, law, international affairs, geography, and behavioral science and further deepen understanding of one or two of them by greater study in depth. The distribution across the disciplines is designed to provide an understanding and appreciation of the close relationships existing between these disciplines in developing understanding of individual and national behavior. The studies in greater depth are focused on both the broader problem of national behavior and the more specific aspect of the way a particular discipline contributes to that understanding.

**Behavioral Science:** The Behavioral Science field is designed to enhance students' understanding of social, psychological, and organizational factors that impinge on human behavior. Particular emphasis in this field is directed toward enhancing understanding of the leadership process and improving students' ability to describe, explain, predict, and influence human behavior in large complex organizations.

**Economics:** The Economics field includes the study of how an economic system determines what will be produced, how it will be produced, and how the output will be distributed to different individuals. It covers the decisions made by consumers and producers, and it also examines national problems such as inflation, unemployment, and the economic role of government.

**Geography:** The Geography field is designed to provide fundamental knowledge of our physical and cultural environments. Individual interests may be pursued along several lines of study: the structures and processes of the physical landscape; the geographic character and diversity of major world cultural regions; and the analytical tools and techniques of the modern geographer. Geography field studies are supportive of both graduate-level work in geography and the social sciences, and continued professional military development.

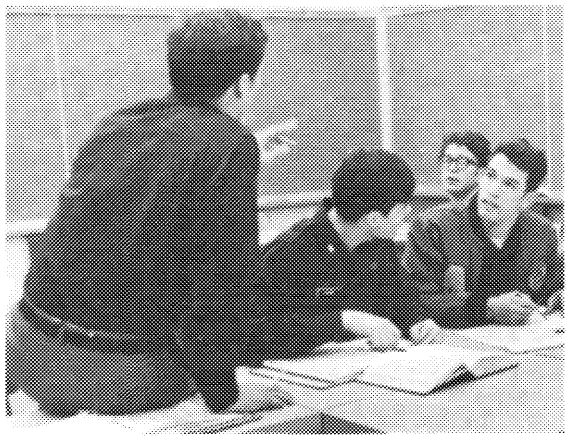
**International Affairs:** The International Affairs field explores the theoretical concepts and realities of international politics and economics. Students will explore the structure and functioning of the international political system, analyze our nation's foreign policy objectives, and gain a knowledge of the instruments (diplomatic, economic, military, legal, ideological, etc.) of foreign policy that nations employ. In order to gain perspective, students study some post-World War II foreign policy issues.

**Military History:** The Military History field uses an historical framework to look at the changing nature of warfare. A firm base is built by inquiring into the evolution of warfare from the ancient Greeks to the recent Arab-Israeli wars. More chances are then offered to examine closely the historical use of violence, the changes in the art of war, the nature of the profession of arms, and the place of military institutions in society.

**Military Studies:** In the Military Studies field, many branches of learning are employed to study how nations used armed force to deal with each other. History, political science, economics, sociology, and law provide insights into the trends that affect modern military affairs. The theory and policy that guides the use of military power and all forms of warfare—from general to revolutionary—are studied in detail.

**Modern History:** The Modern History field looks at the changes in societies, institutions, and ideologies that have shaped events in the modern world. The Department of History offers opportunities to study military history, intellectual history, and regional histories. Modern Europe, the Soviet Union, the Middle East, the Far East, Latin America, and the United States can be studied in greater detail. The student gains an historical and analytical framework for work in related fields and a career in public service.

**Political Science:** In the Political Science field the student utilizes theoretical concepts and tools to gain an understanding of the public policy process in our country as well as others. Courses taken in the field address the structure and functioning of political systems with a focus on power, political culture, political participation, political development, and how political systems attempt to resolve the conflict associated with scarcity and ideological differences.



## INTERDISCIPLINARY AREA

**Management Field:** The responsibilities of an Army officer require constant employment of the principles and concepts of management. This is necessary in order to plan, organize, direct, and control the utilization of such resources as personnel, equipment, money, and time to achieve desired or prescribed objectives in spite of substantial constraints. The curriculum includes subjects related to three aspects of management: behavioral, quantitative, and administrative. After an introduction to these disciplinary perspectives, the student may choose from electives allowing a deeper exploration of each of these aspects before demonstrating the ability to integrate the concepts in an interdisciplinary capstone course.

# Academic Support

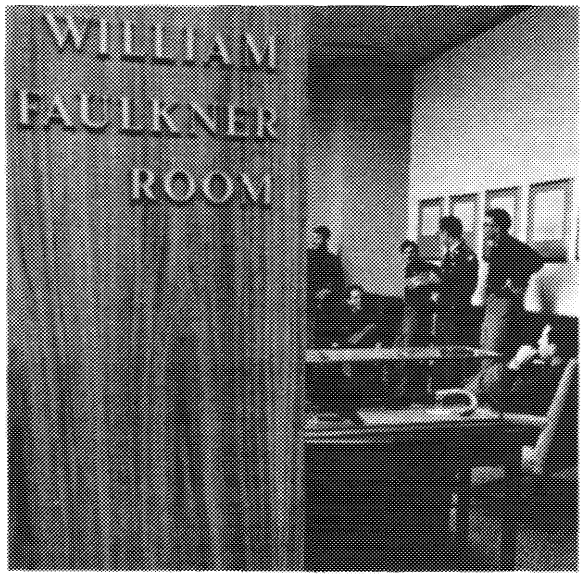
## USMA LIBRARY

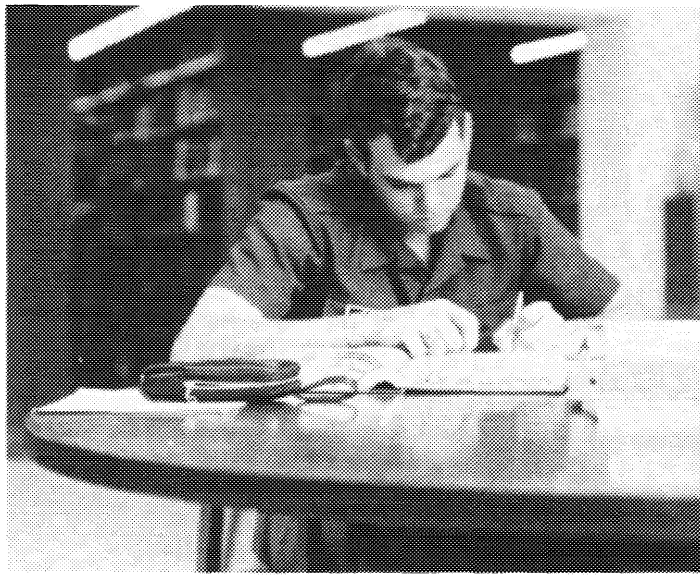
Cadets rely on the USMA Library for both academic research and recreational reading. Cadets, faculty, and other *bona fide* researchers have access to the library's 400,000 volumes and to the 1,600 periodicals and 55 newspapers, domestic and foreign, currently received. A library orientation starts the Plebe on the way as an independent researcher; expert librarians and written instructions sharpen the ability to wend through catalogs, bibliographies, and other research tools.

Present library resources are similar to those of a liberal arts college but also reflect considerable strength in mathematics, scientific, and technical fields. Extensive holdings in military subjects have established the library's reputation as a research library of international importance. Special collections include substantial numbers of manuscripts and rare books, many of which concern the history of the Army, the Military Academy, and military leaders. The personal papers of General of the Army Omar N. Bradley, and the first editions of William Faulkner's works are among these collections.

The library has room for a half-million volumes and reading areas for more than 800 individuals. Audio resources include approximately 8,600 records, TV cassettes, and tapes of language materials, literature, and both classical and popular music. Booths are equipped for stereo listening and recording. Prints, slides, drawings, and mounted pictures provide food for the eye and the mind. Microfilm readers and printers aid effective use of expanding microfilm holdings. As a partial depository for United States government publications, the library also houses many official documents and studies. United Nations, NATO, and regional publications are also collected.

While the library continues to expand its resources through information networks and remote data banks, its history actually predates that of the Military Academy. The book collection on which the library was based represents the first federal library. The first substantial acquisitions were

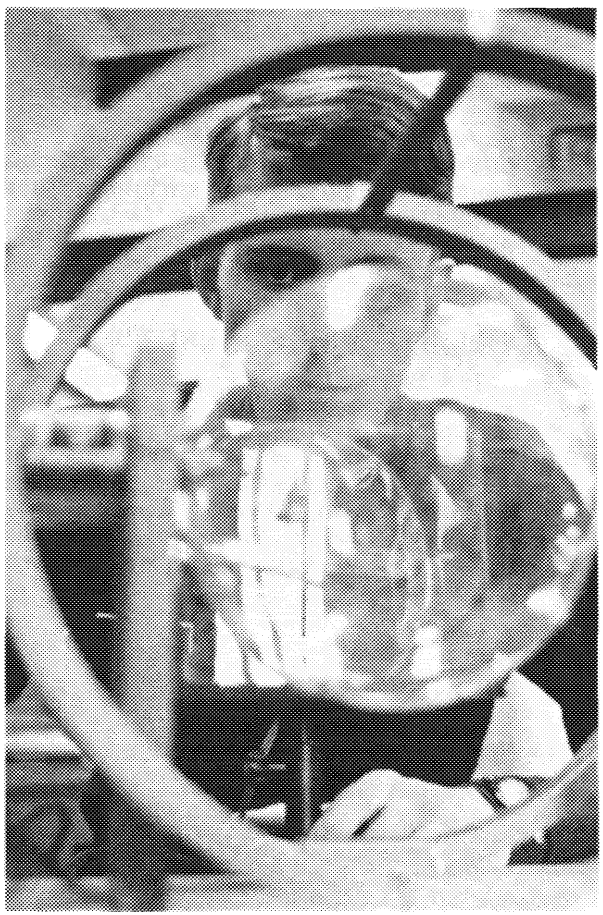


made by Sylvanus Thayer in Europe during the two years before he became Superintendent in 1817. With the blessings of then Secretary of War James Monroe, Thayer purchased about 1,000 books which formed the basis for early engineering education in the United States.

## SCIENCE RESEARCH LABORATORY

First and Second Class cadets and Military Academy faculty conduct original research in the Science Research Laboratory. Ongoing research includes such exotic studies as the molecular orbital calculation of defects in solids, electron spin resonance and optical absorption measurements of defects in solids, computer studies of the molecular structure of liquids, and analyses of the pollutants in rainwater and streams and lakes on the USMA reservation. These projects are supported by grants from the Environmental Protection Agency, the U.S. Army Research Office, and the U.S. Air Force Geophysics Laboratory.



# Graduate Civil Schooling

The growing complexity of technology, international diplomacy, and world commitments of the Army have increasingly come to demand that Army officers attend civilian graduate institutions. Currently many Military Academy graduates who remain in the military more than the required five years attend graduate school through the Army Civil Schooling Program or on a scholarship or fellowship.

## ARMY CIVIL SCHOOLING PROGRAM

Qualified graduates are normally selected for fully-funded master's programs at civilian graduate schools between their fourth and tenth years of active military service.

## RHODES SCHOLARSHIPS

Fifty-seven Military Academy graduates since 1923 have been awarded Rhodes Scholarships to attend Oxford while on active duty, making West Point the nation's fourth-ranking source of Rhodes Scholars.

Selection is based on four groups of qualities specified in Cecil Rhodes' will: (1) intellectual excellence and attainment, (2) strength of character, (3) demonstrated leadership ability, and (4) athletic success. Emphasis falls on the first two. Rhodes hoped that scholars would "esteem the performance of public duties as their highest aim."

## OLMSTED SCHOLARSHIPS

The George Olmsted Foundation annually awards two scholarships to Military Academy graduates for two years of study at a foreign university where a language other than English is spoken. Under this program graduates have attended universities in Geneva, Grenoble, Heidelberg, Brussels, Tokyo, Freiburg, Paris, Lyons, Madrid, Bonn, and Sao Paulo.

The Foundation considers officers for scholarships after a minimum of three years of active service. Individuals are selected from those recommended to the Department of the Army by the USMA Academic Board. Scholastic ability, character, and leadership at the Military Academy and in the Army figure into the Foundation's scholarship decisions.

## NATIONAL SCIENCE FOUNDATION FELLOWSHIPS

Twenty-seven cadets have been awarded National Science Foundation Graduate Fellowships since 1961; another 112 have received honorable mention. Outstanding cadets complete annually for the one- or two-year fellowships, which enable them to pursue graduate study at the university of their choice.

## HERTZ FOUNDATION FELLOWSHIPS

Since 1973, nine cadets have won three-year Hertz Foundation Fellowships leading to doctorates in Applied Physical Science disciplines. Academic performance, recommendations, and personal interviews are factors considered by the Foundation.

## DAEDALIAN SCHOLARSHIPS

The Order of Daedalians awards one scholarship every four years to a graduate of the Military Academy (alternating with the other three service academies). The scholarship provides $2500 for advanced study in a field related to aerospace engineering. Since the start of this program, Military Academy graduates have received two scholarships.

# 5. Military Program

"A soldier cannot be created by a formula of speech nor by the vanity of valor. It takes not less than a dozen men six-and-thirty long months to hammer and temper him into the image of his maker and fit him for the performance of his duties."

HOMER LEA

Each year during July, a new class, designated Fourth Class cadets, enters the United States Military Academy. In succeeding years, they become members of the Third Class, Second Class, and finally—in their senior year—First Class.

The United States Military Academy's mission is to educate, train, and inspire these select young men and women for exemplary service as commissioned officers in the Regular Army of the United States. The first step in this training is discipline. The daily regimen of cadet life is designed to develop an appreciation for discipline and the need to maintain professional standards of the highest order. Self-discipline, sensitivity to the needs and feelings of others, and unselfish, thoughtful service to the nation are among the characteristics most highly prized within the cadet corps.

Cadets discover that at West Point they must draw upon something extra within themselves, budget their time wisely, and establish a clear sense of priorities. In the tradition of West Point, cadets become aware of and learn to fulfill their responsibilities to the soldiers they will eventually lead. The military training program is dedicated to strengthening the cadets' respect for the human dignity and rights of others.

**Commandant of Cadets**
John C. Bard, BG; B.S., USMA; B.A., M.A., Oxford; M.S.E., Michigan.

## Organization

The Office of the Commandant, United States Corps of Cadets, provides military education and training in both the classroom and the field. A large part of this instruction is conducted by the Department of Military Instruction and Physical Education.

The Commandant's four Regimental Tactical Officers and immediate staff of officers—each with a counterpart in the cadet command and staff—supervise the Corps of Cadets. A tactical officer acts as leader, supervisor, and counselor to the 110 or so cadets in each of 36 cadet companies. The cadet chain of command mirrors that of the Office of the Commandant so that a leader-counselor relationship exists between cadet leader and tactical officer.

## Professional Education and Training

Potential officer-leaders must master basic military concepts and skills, and know the role and employment of elements of the Army. They must understand and commit themselves to the demanding code of ethics of the American professional soldier.

Each cadet receives instruction in the fundamentals of small unit tactics and leadership through the study of military science and military leadership. Physical education and an extensive intramural program (discussed in Chapter 7) ready the cadet for the physical demands of service life and the combat environment. Three summers of field training give each cadet repeated opportunities for the practical application of principles learned, while sustaining the high level of fitness demanded of the Army officer.

Classroom instruction and practical experience in the field are combined to develop in each cadet the basic leadership expertise critical to the profession of arms. A strong sense of duty and responsibility is especially valued. In addition to self-discipline, each cadet learns to exercise good judgment even when thinking and reacting under mental and physical stress and the demands of time. The cadet's high standards, manner, bearing, and appearance are but the visible signs of a deep pride in the profession. Like the Long Gray Line of graduates before them, West Point cadets share a sense of dedication to "Duty, Honor, Country."

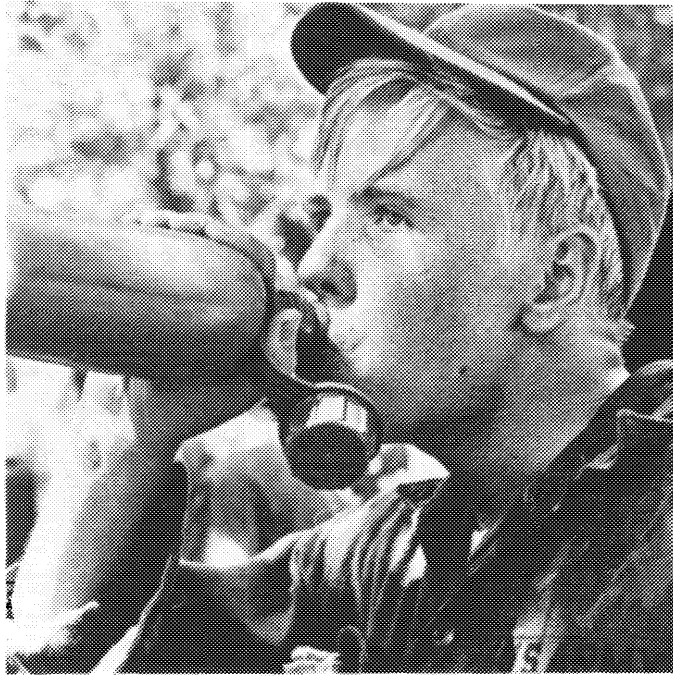
## Fourth Class Year

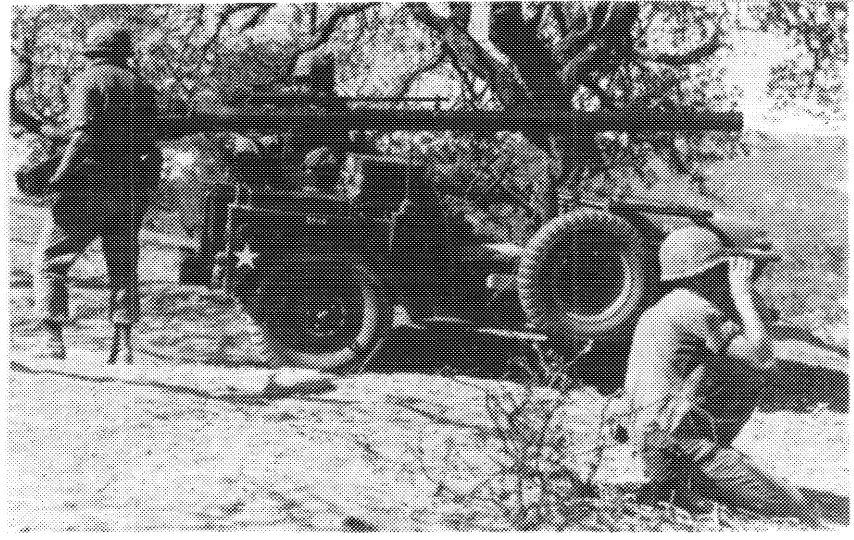
During their first day at West Point, the men and women of the incoming class make a rapid transition from civilians to cadets. They discover that they are expected to produce phenomenal results in a single afternoon, and they discover that they can do it. Beginning with this particularly challenging first day, new cadets start the intensely rigorous eight-week Cadet Basic Training program designed to teach them to be both soldiers and cadets. They learn to answer to "Mister" or "Miss" and to make every response with the traditional military courtesies. They learn to wear the cadet uniforms, to prepare their rooms for exacting inspections, and to participate in parades. Many hours of tough physical exercise prepare them for the long foot marches, land navigation exercises, rifle marksmanship, and tactical maneuvers that are part of

their field training in the basic skills of the soldier. Like all new soldiers everywhere, they learn to respond quickly and accurately to their commanders under conditions of mental and physical stress. The primary purpose of the new cadets' experiences during these eight weeks was expressed very well by a cadet who stated that the training was ". . .the most significant event in my life. It has provided for me exactly what I came here for: discipline, personal pride and confidence, and a high sense of duty." Another reason for this type of training is that officers can perform with greater perspective and understanding if they themselves have at one time experienced the life of the Army recruit. Equally important, new cadets sharing a rigorous experience form strong friendships and a team spirit that remain with them for the rest of their lives.

At the end of this initial training period, in late August, new cadets are formally accepted into the Corps. These new members of the United States Corps of Cadets have a well-deserved sense of confidence and pride which comes with the knowledge that they have successfully completed a long physically and emotionally demanding period of their lives. During the full dress parade acceptance ceremony, each new member of the Fourth Class—traditionally called a "Plebe"—is assigned to one of the 36 companies which make up the Corps.

Military instruction during the rest of the Fourth Class year focuses on military heritage, standards of professional behavior, small unit tactics, and physical education. June signals the end of Plebe year and recognition as upperclass cadets.





## Third Class Year

After June vacation, Third Class cadets report to West Point's Camp Buckner for eight weeks of military field training. Infantry patrolling, artillery firing, rifle marksmanship, rappelling, hand-to-hand combat, mine warfare, demolitions, field communications, and wilderness survival make up most of this training experience. One week is spent at Fort Knox, Kentucky, for familiarization with tank, cavalry, and air defense operations. Emphasis is on small unit ground combat operations which allow Third Class cadets to apply principles already learned in military instruction.

The training during these eight weeks is designed to be physically and mentally demanding and to simulate as nearly as possible actual combat conditions. The cadets are challenged to give everything they have and then challenged to give more.

Members of the Third Class emerge from the summer more self-confident, having experienced some of the environment, the skills, and the challenges of the small combat units around which the Army is built. There is also time for swimming, sailing, canoeing, and dating during the summer at Camp Buckner.

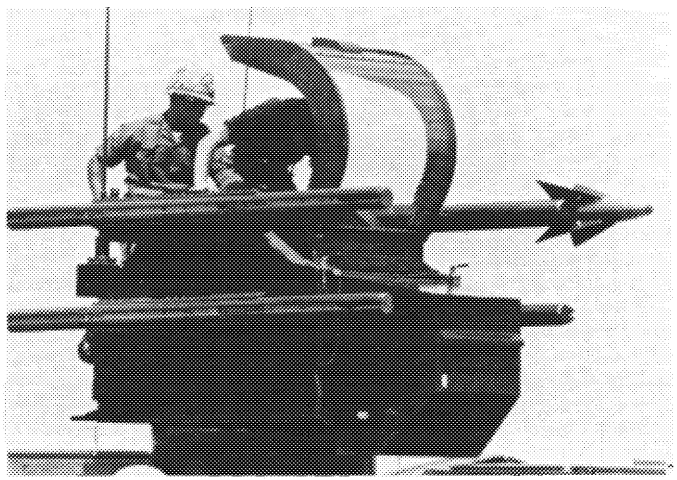
Along with more privileges and free time during the Third Class year come challenging courses in physical education and armor and mechanized infantry platoon combat operations.

## Second Class Year

Adventure training and troop leadership experience take up most of the Second Class summer. With June leave over, these cadets choose among fighting through jungles during training in Panama; cross-country snowshoeing and skiing in Alaskan northern warfare training; night patrolling and survival in Ranger School; parachuting during airborne training; handling a helicopter in pilot training; or practicing survival techniques at the Air Force Academy in Colorado. Duty with an actual platoon of United States Army soldiers

comes next in what is called Cadet Troop Leader Training. Members of the Second Class may find themselves in Germany, Alaska, Panama, Hawaii, or the continental United States serving with a regular Army unit to gain practical experiences as officers in the Regular Army. Many cadets find that this is their most valuable military experience.

The summer ends with many cadets feeling they are ready to take their places in the Regular Army. However, still more training is required before they are in fact prepared to assume the responsibilities of commissioned officers in the United States Army. Military instruction during the rest of the Second Class year includes courses in physical education, company combined arms (mechanized infantry/armor) operations, and added leadership responsibilities within the Corps of Cadets.

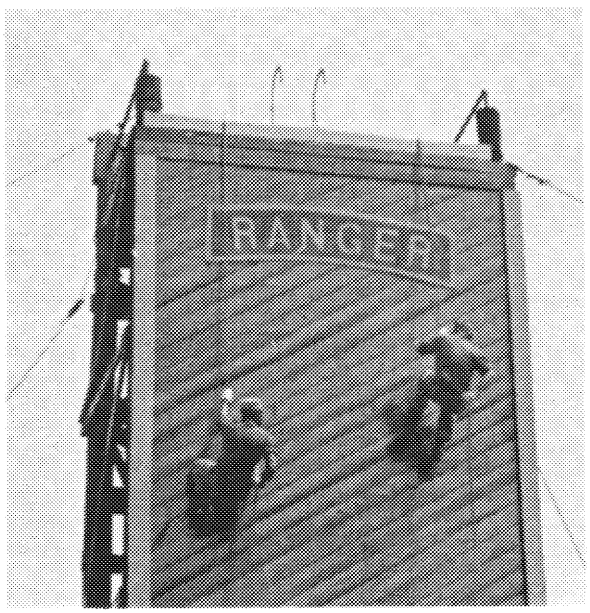


## First Class Year

With the long-awaited First Class year come more privileges and latitude, and much greater responsibility. During the summer before starting this final academic year, members of the First Class lead much of the training of the Third Class cadets at Camp Buckner and the new cadets during

Cadet Basic Training. With the start of academics, First Class cadets are selected to fill leadership positions from commander of the 4,000-member Corps to leaders of forty-member platoons, and staff positions that involve management of all the activities of the Corps of Cadets. The opportunities for planning, organizing, and leading are almost limitless.

Final preparation for the First Class graduation into the Regular Army includes courses in athletic coaching, the training of military units, practical concerns of service life, and advanced military leadership. June Week marks an end that is also a beginning. The white cadet dress cap is thrown to the winds, and the next hat worn is that of the second lieutenant in the United States Army.



# 6. Courses of Instruction*

"Professional attainment, based upon prolonged study, and collective study at colleges rank by rank, and age by age—these are the title deeds of the commanders of future armies, and the secret of future victories."

WINSTON CHURCHILL

# DEPARTMENT OF BEHAVIORAL SCIENCE AND LEADERSHIP

*Director*
Harry A. Buckley, COL; B.S., USMA; M.S., Ph.D., Purdue.

The Department of Behavioral Sciences and Leadership provides a program of instruction in the Behavioral Sciences and Personnel Management emphasizing the study of organizational leadership. Instruction is designed to assist the cadet in developing an understanding of human behavior which is essential to the military leader. A foundation course in individual human behavior (psychology) is given to all Third Class cadets. First Class cadets are enrolled in the Military Leadership course.

*NOTE: Course syllabi are subject to change as a result of curricular change or other unforeseen events.

## STANDARD AND ADVANCED COURSES

**PL 100 General Psychology**

*Both Terms—Prerequisite: None*

Provides a basic understanding of human development and individual difference through the study of perception, learning, motivation, personality and adjustment, and social relations.

*3.0 Credit Hours*

**PL 150 Advanced General Psychology**

*Both Terms—Prerequisite: Pre-tests*

Amplifies the basic content of PL 100, General Psychology, by presenting to selected cadets additional course material and scientific methodology used in the behavioral sciences.

*3.0 Credit Hours*

**PL 401 Military Leadership**

*Both Terms—Prerequisite: PL 100 or PL 150*

Contributes to the leadership development of cadets by applying the theories and models of the behavioral sciences and personnel management to leadership as it functions in a military environment.

*3.5 Credit Hours*

**PL 451 Advanced Seminar in Military Leadership**

*Both Terms—Prerequisite: Selection by Instructor*

Provides an opportunity for selected student to undertake in-depth analyses of the concepts of leadership in a military environment and their application to current military problems. Classes are conducted in seminar fashion with emphasis on experiential learning and student participation.

*3.5 Credit Hours*

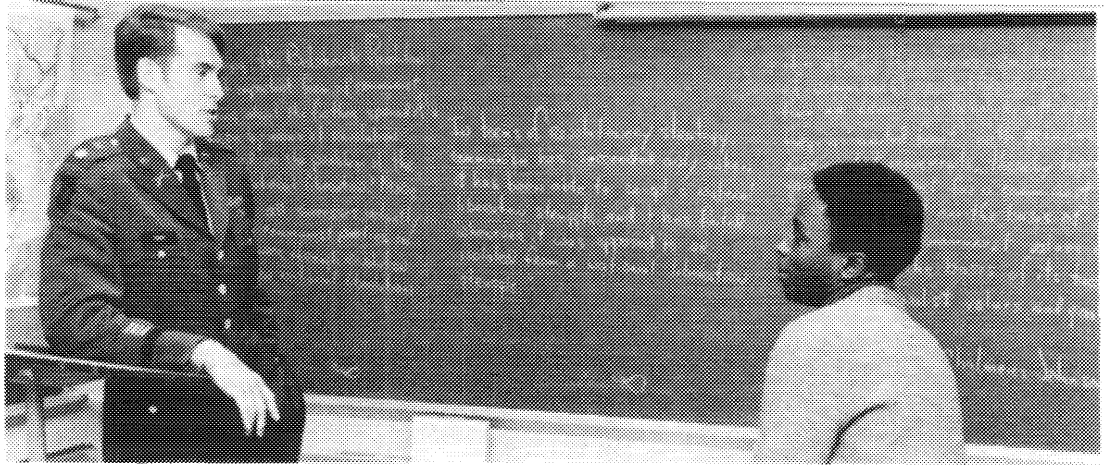
## ELECTIVE COURSES

**PL 371 Introduction to Sociology**

*Both Terms—Prerequisite: PL 100 or PL 150*

Designed to develop a sociological perspective for objective analysis of human behavior in complex social situations. After learning the basic concepts of sociology, the cadet learns to apply them to the study of major social institutions in the United States.

*3.0 Credit Hours*



**PL 375 Topics in Psychology**

*Terms as Listed—Prerequisite: PL 100 or PL 150*

**PL 375A The Life Cycle and Human Development**

*First Term*

Focuses on the scientific study of the progressive development of the selected physical, cognitive, emotional and social factors throughout the entire human life span. Cadets are better prepared to deal with the growth needs and development changes of individuals within their units and their own personal lives.

*3.0 Credit Hours*

**PL 375B Personality and Adjustment**

*Second Term*

Examines the various viewpoints of individual behavior in a theoretically rigorous framework. Discussion of alternative models of behavior disorder and comparison of methods of cure provide an excellent background or supplement to PL487, Theories of Counseling and Behavior Change.

*3.0 Credit Hours*

**PL 381 Personnel Management**

*Both Terms—Prerequisite: PL100 or PL150*

Provides a conceptual grasp of the application of psychology to the management of personnel as well as programs in management. An understanding of common behavior across organizations is developed.

*3.0 Credit Hours*

**PL 383 Social Psychology**

*Both Terms—Prerequisite: PL100 or PL150*

Promotes understanding of how individual behavior is influenced by interaction with other people. Topics include social perception, social motivation, power, and small group functioning.

*3.0 Credit Hours*

**PL 472 Topics in Sociology**

*Terms as Listed—Prerequisite: PL100 or PL150*

**PL 472B Minorities in the United States, A Sociological Perspective**

*First Term*

Designed to develop an understanding of the family structure, culture, migration, religion, and assimilation of selected minorities in American society including an appreciation for cultural pluralism and one's own role in relation to others in his society.

*3.0 Credit Hours*

**PL 472C Sociology of Military Institutions**

*First Term*

Provides an understanding of the military as an institution, analyzing selected groups within the military from sociological perspective. Contemporary social problems related to the military and civil-military relations are examined.

*3.0 Credit Hours*

**PL 472D Marriage and the Family**

*Second Term*

Provides the cadet a detailed examination of a major social institution, the family. Portions of the course are dedicated to the unique aspects of the military family in its own milieu.

*3.0 Credit Hours*

**PL 476 Theories of Learning and Educational Systems Management**

*Second Term—Prerequisite: PL 100 or PL 150*

Oriented toward the study of psychological theories of learning and application of these theories to design, implementation, and evaluation of adult educational and training experiences. Three major areas examined are: the adult learner, the learning process, and instructional systems.

*3.0 Credit Hours*

**PL 479 Organizational Development**

*Both Terms—Prerequisite: PL 100 or PL 150*

Designed to expose cadets to the research and literature supporting the field of organizational development with emphasis on organizational behavior. The major focus of the course is planned change within an organization.

*3.0 Credit Hours*

**PL 480 Managerial Psychology (Work and Motivation)**

*Second Term—Prerequisite: PL 100 or PL 150*

Designed to provide an in-depth analysis of the psychology of management as it pertains to the process of motivation and the design of work. The major focus is on a blend of theoretical formulations with practical applications.

*3.0 Credit Hours*

**PL 487 Theories of Counseling and Behavior Change**

*Both Terms—Prerequisite: PL 100 or PL 150*

Provides an operational framework essential to an understanding of individual behavior and fosters an appreciation of how individual adjustment can be facilitated through the study of selected adjustment techniques.

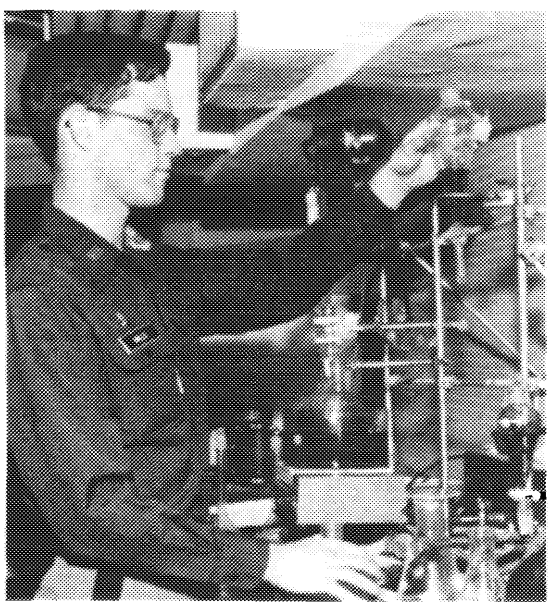
*3.0 Credit Hours*

**PL 489 Advanced Individual Study in the Behavioral Sciences**

*Both Terms—Prerequisite: Approval of the Professor*

Selected individuals conduct study or research in the behavioral sciences. Each cadet is assigned an individual instructor who has an advanced degree in the area the study or research involves.

*3.0 Credit Hours*



# DEPARTMENT OF CHEMISTRY

*Professor and Acting Head of Department*

Wilford J. Hoff, Jr., COL; B.S., The Citadel; M.S., Ph.D., Princeton.

## STANDARD COURSES

**CH 200 General Chemistry**

*Prerequisite: None*

A general chemistry course that emphasizes the fundamental concepts, principles, theories, and laws of chemistry. Includes an introduction to organic chemistry and an integrated laboratory program.

*4.5 Credit Hours*

**CH 274 General Chemistry II**

*Prerequisite: CH 200 or validation thereof*

A continuation of CH 200. Ionic equilibria, chemical thermodynamics, organic chemistry, metallurgy, and nuclear chemistry will be emphasized. An integrated laboratory program includes quantitative and qualitative analysis techniques.

*3.0 Credit Hours*

## ELECTIVE COURSES

**CH 383-384 Organic Chemistry**

*Prerequisite: CH 274*

A comprehensive study of the nature, preparation, and reactions of carbon compounds. Stresses the relationship of structure to chemical reactivity. The laboratory program includes synthesis, qualitative analysis, and instrumental analysis.

*3.5 Credit Hours/Semester*

**CH 481-482 Physical Chemistry**

*Prerequisite: CH 274*

This course covers the standard topics in classical physical chemistry as well as an introduction to quantum chemistry and spectroscopy. Laboratory experiments illustrate fundamental topics and include an independent project.

*3.5 Credit Hours/Semester*

**CH 485-486 Human Biology**

*Prerequisite: CH 274*

Develops the fundamental principles of human structure and functions to include elements of cell morphology and functions, human anatomy, and physiology. A small number of laboratory exercises are included.

*3.0 Credit Hours/Semester*

**CH 489 Advanced Individual Study in Chemistry**

*Offered Both Terms—Prerequisite: Approval of Head of Department*

Individual supervised research in a selected problem area approved by the department. The cadet must outline his approach, determine equipment, and develop procedures. Requires the submission of a research paper.

*3.0 Credit Hours/Semester*

# DEPARTMENT OF EARTH, SPACE AND GRAPHIC SCIENCES

*Professor and Head of Department*

Gilbert W. Kirby, Jr., COL; B.S., USMA; M.S., Cal. Tech; Ed.D., Columbia.

## STANDARD COURSE

**EF 105 Introduction to Computers and FORTRAN Programming**

*First and Second Terms—Prerequisite: None*

Provides an introduction to the use, function, and operation of digital computers. Standard programming techniques and the FORTRAN IV language are studied. Use of time-share is emphasized.

*2.0 Credit Hours*

## ADVANCED COURSE

**EF 156 Interactive Computer Programming**

*First and Second Terms—Prerequisite: Demonstrated Ability on Placement Examination*

The time-share system is used for FORTRAN IV programming, word processing with TEXT EDITOR, and the execution of a large-scale wargame. The study of computer graphics is included.

*2.0 Credit Hours*

## ELECTIVE COURSES

**EF 380 Computer Organization**

*First and Second Terms—Prerequisite: EF 105 or EF 156*

The structure of computer systems and computer control is examined. Processors, interrupts, memory storage, and storage allocation are included. A term project which requires programming an interpreter is required.

*2.5 Credit Hours*

**EF 382 Computer Applications with FORTRAN**

*First and Second Terms—Prerequisite: EF 105, EF 156 or validation examination*

Advanced FORTRAN applications develop experiments in using computers as aids to decision making and to solving engineering problems. Emphasis is on programming. A consideration of graphical output is included.

*2.5 Credit Hours*

**EF 383 Data Processing with COBOL**

*First and Second Terms—Prerequisite: EF 105 or EF 156*

A comprehensive introduction to the COBOL programming language and its application to large-scale data processing techniques. Data management, file structure, data control, and information retrieval are emphasized.

*2.5 Credit Hours*

**EF 384 Principles of Surveying**

*Second Term—Prerequisite: None*

The course provides a foundation in the principles of surveying for application to topographic mapping, construction, artillery, and route surveys. Instruments and methods used in modern surveying are studied.

*2.5 Credit Hours*

**EF 385 Data Structures**

*First and Second Terms—Prerequisite: EF 105 or EF 156*

This course examines logical data structures and their machine representation. Data structures studied extend from linear lists through searching and sorting and trees. Laboratory sessions require the development of algorithms.

*2.5 Credit Hours*

**EF 485 Visiting Professor's Course**

*First and Second Terms—Prerequisite: Permission of the Visiting Professor*

Course content will be dependent on the disciplinary focus of the Visiting Professor.

*2.5 Credit Hours*

**EF 488 Advanced Computer Programming**

*First and Second Terms—Prerequisite: EF 382 or EF 383*

A representative assembly language for a large scale computer is studied. Important course topics include machine code, data movement instructions, Boolean operations, symbolic addressing, and software operations.

*2.5 Credit Hours*

**EF 489A Advanced Individual Study in Computer Science**

*First and Second Terms—Prerequisite: Permission of Department Head*

The course permits advanced or specialized study of problem areas in which the electronic digital computer can be effectively utilized for solution through advanced programming techniques.

*2.5 Credit Hours*

**EF 489B Advanced Individual Study in Geodetic Science**

*First and Second Terms—Prerequisite: Permission of Department Head*

The course permits advanced or specialized study of significant problems related to the numerous aspects of earth measurement and representation.

*2.5 Credit Hours*

**EV 383 Astronomy**

*Second Term—Prerequisite: None*

A study of the principles of tools of astronomy through detailed examination of planetary motions, stellar evolution and structure, galaxies, the solar system and cosmological models. Celestial telescopic observation is included.

*2.5 Credit Hours*

**EV 384 Regional Geography of the United States**

*First Term—Prerequisite: None*

Study of the significant geographical aspects of the historic settlement process, contemporary population movements, agricultural and urban-industrial patterns which illuminate regional cultural variations and interdependence.

*2.5 Credit Hours*

**EV 385 Issues Confronting Man and His Environment**

*First and Second Terms—Prerequisite: None*

A study of the man-environment ecosystem emphasizing technological man's continuing use and misuse of his physical and biotic resources and corresponding concern for environmental quality.

*2.5 Credit Hours*

**EV 386 Regional Studies in Geography**

*Either Term—Prerequisite: None*

In-depth study of selected world culture regions from a geographic perspective. Regions customarily offered are: (A)—USSR; (B)—People's Republic of China; (C)—Africa and the Middle East; (D)—Latin America; (F)—Europe.

*2.5 Credit Hours*

**EV 387 Cartography**

*Second Term—Prerequisite: EF 105 or EF 156*

Study of the principles of methodologies employed in modern cartographic techniques to include air photo interpretation and computer graphics, with focus on planning for, gathering, analysis, design, and presentation of data in visual form.

*2.5 Credit Hours*

**EV 388 Physical Geology**

*Second Term—Prerequisite: None*

A systematic treatment of principles and methods of physical geology with emphasis on plate dynamics, earth materials, the Earth's primary features and the processes which produce and modify them. Laboratory periods and field trips are included.

*2.5 Credit Hours*

**EV 389 Topics in Geography**

*Either Term—Prerequisite: None*

In-depth study of selected geographic topics focusing on natural processes and spatial aspects of man's physical and cultural environment. Topics offered are: (A)—Remote Sensing of the Environment; (B)—Applied Climatology; (C)—Geomorphology; (D)—Military Geography; (F)—Water Resource Management.

*2.5 Credit Hours*

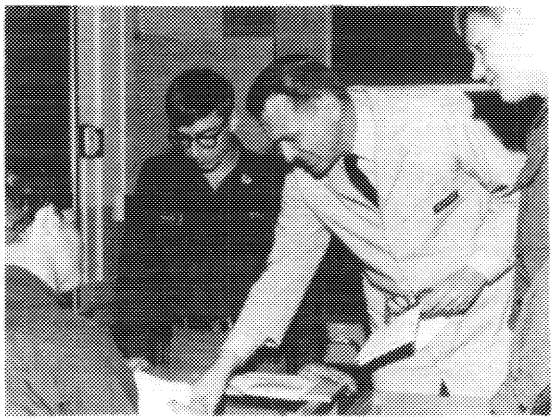
**EV 489 Advanced Individual Study in Environment**

*Either Term—Prerequisite: Permission of Department Head*

Advanced study in the fields of geography and geology; topic selected by the cadet and approved by the faculty advisor. The study program culminates in a substantive research paper and oral defense.

*2.5 Credit Hours*

# DEPARTMENT OF ELECTRICAL ENGINEERING



*Professor and Acting Head of Department*

Stanley E. Reinhart, Jr., COL; B.S., USMA; M.S.E.E., Ph.D., Georgia Tech.

## STANDARD COURSES

**EE 300 Basic Electrical Engineering**

*Prerequisites: Core Mathematics and Physics Courses*

An introduction to circuit theory, power and electrical machinery, basic electronic devices, communications, control systems, analog and digital electronics applications. Laboratory work reinforces key concepts.

*4.5 Credit Hours*

**EE 302 Introduction to Electrical Engineering I**

*Prerequisites: Core Mathematics and Physics Courses*

The first course in the EE 302/EE 372 sequence which provides solid background in electrical and electronics techniques. Coverage includes circuit theory; RC, RL, and RLC circuit analysis; steady-state AC analysis; power circuits; semiconductor and transistor analysis. Laboratory work included.

*3.5 Credit Hours*

**EE 372 Introduction to Electrical Engineering II**

*Prerequisites: EE 302 or EE 300 and consent of Department Head*

Solid state amplifier design; systems engineering techniques; RC-coupled amplifiers; operational amplifiers; digital devices and logic circuits; electrical-mechanical energy conversion; and an introduction to automatic control systems. Laboratory work.

*3.5 Credit Hours*

**EE 405-6 Electronic Engineering**

*Prerequisite: EE 300*

Two course sequence on semiconductor theory, transistor fundamentals, integrated circuits, digital and analog electronics, and introduction of communication system applications. Sequence is laboratory oriented emphasizing design, construction, and testing of practical circuits.

*7.0 Credit Hours*

## ELECTIVE COURSES

**EE 375 Digital Computer Logic**

*Prerequisites: 4th Class Mathematics and Computer Programming*

An introduction to digital systems. Coverage includes logic algebra, gates, logic networks, memory devices, basic computer building blocks. Laboratory work uses computer modules and integrated circuits.

*3.0 Credit Hours*

**EE 381 Signals and Systems**

*Prerequisite: EE 300 or EE 302*

In-depth study of linear systems theory of continuous and discrete signals to include state space representation; convolution; and Laplace, Fourier, and Z transform techniques.

*3.0 Credit Hours*

**EE 382 Electromechanical Energy Conversion**

*Prerequisite: EE 300 or EE 302*

Covers relationships between current, magnetic fields, force and voltage. DC motors and generators, AC induction motors, and AC synchronous motors and generators form the framework of study. Laboratories throughout.

*3.5 Credit Hours*

**EE 383 Electromagnetic Fields**

*Prerequisites: Core Mathematics and Physics Courses*

In-depth study of static and time-varying electromagnetic fields. Applications include transmission lines, waveguides, antennas, and wave propagation in various media. Principles are emphasized through laboratory exercises using microwave equipment.

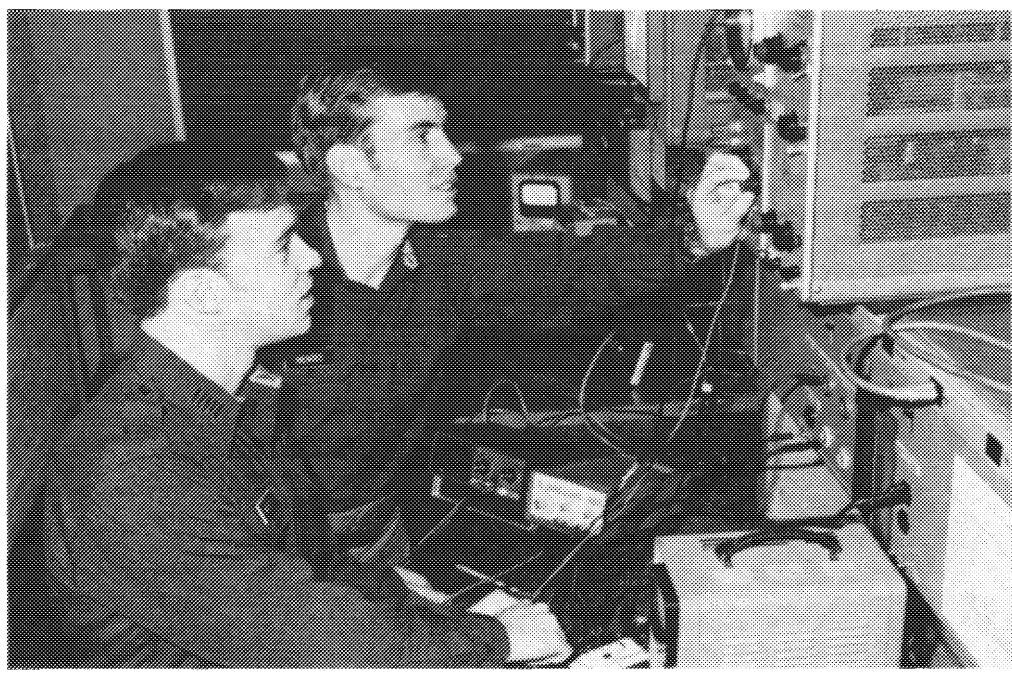
*3.5 Credit Hours*

**EE 471 Automatic Control Systems**

*Prerequisites: EE 300 or EE 302 and EE 381 or equivalent*

Analysis and design of linear feedback systems using root locus, Bode Diagram, and Nyquist plots. Stability and system performance are investigated in the laboratory using analog computers and electromechanical servotrainers.

*3.0 Credit Hours*



**EE 475 Digital Computer Engineering**

*Prerequisite: EE 375 or Permission*

Covers the most important concepts, functions, and major components of computer systems architecture, with microprocessors as the laboratory vehicle to reinforce the architectural principles. Applications include control systems, instrumentation, and communications techniques.

*3.0 Credit Hours*

**EE 477 Communication Systems**

*Prerequisites: EE 372, EE 381, and MA 207 or equivalent*

Analysis of analog and discrete communication systems techniques, to include random signal analysis, transmission of information, modulation, multiplexing, and noise. Emphasis on general systems approach in specifying and analyzing communication problems.

*3.0 Credit Hours*

**EE 482 Power System Analysis**

*Prerequisite: EE 300 or EE 302*

Includes the calculation of transmission line parameters; current-voltage relationships on high-energy transmission lines; modeling power networks under steady-state conditions; load flow analysis; and symmetrical and asymmetrical fault conditions.

*3.0 Credit Hours*

**EE 486 Solid State Electronics**

*Prerequisite: EE 300*

Includes crystalline properties, elementary quantum models for solids, semiconductor models, and p-n junctions. Theory is applied to analyze diodes, transistors, and other electronic devices. Laboratories study basic semiconductor properties.

*3.0 Credit Hours*

**EE 489 Advanced Individual Study in Electrical Engineering**

*Prerequisites: EE 372 and permission*

Designed to provide qualified cadets with an opportunity to pursue Electrical Engineering studies at level beyond standard and regular elective courses. Laboratory work and projects included where appropriate.

*3.0 Credit Hours*

# DEPARTMENT OF ENGINEERING

*Professor and Head of Department*

Charles H. Schilling, COL; B.S., USMA; M.S., California; Ph.D., R.P.I.

## STANDARD COURSES

**CE 401 Structural Analysis**

*First Term—Prerequisites: ME 303, ME 304, ME 384*

Analysis of stresses and deflections; determinations of reactions, shear, and moment. Virtual work, moment area theorems, slope deflection, and moment distribution; use of influence lines. Role of analysis in design (engineering decision-making).

*3.5 Credit Hours*

**CE 402 Structural Design**

*Second Term—Prerequisite: CE 401*

Determination of structural form and proportions emphasizing systems engineering concepts including modeling and optimization; design of tension members, columns, and beams; a comprehensive design problem requiring applications of the principles of analysis, synthesis, and design.

*3.5 Credit Hours*

**ER 401 General Engineering (Mechanical Systems)**

*Either Term—Prerequisites: ME 303, ME 304*

Principles of engineering design. Interior, exterior, and terminal ballistics; vehicle performance; propulsion, recoil, and control mechanisms of weapon systems, modeling, and analog techniques.

*3.5 Credit Hours*

**ER 402 General Engineering (Structural Systems)**

*Second Term—Prerequisites: MA 207, ME 303*

Determination of structural form and proportions emphasizing systems engineering concepts including modeling and optimization; design of steel tension members, columns, and beams; a comprehensive design problem requiring applications of the principles of analysis, synthesis, and design.

*3.5 Credit Hours*

**ER 403 General Engineering (Engineering Decision Methods)**

*Either Term—Prerequisite: MA 207*

Decision analysis, optimization techniques, probabilistic models, reliability, and other decision making techniques; emphasis on placing students in realistic situations which require quantitative analytical methods of solution.

*3.5 Credit Hours*

**OE 401 Weapon Systems Engineering**

*First Term—Prerequisites: ME 301, ME 303, ME 382*

Mathematical and analog techniques; principles of material science; fundamentals of synthesis, analysis, and the decision making process combined with other engineering tools in the design of weapon system components.

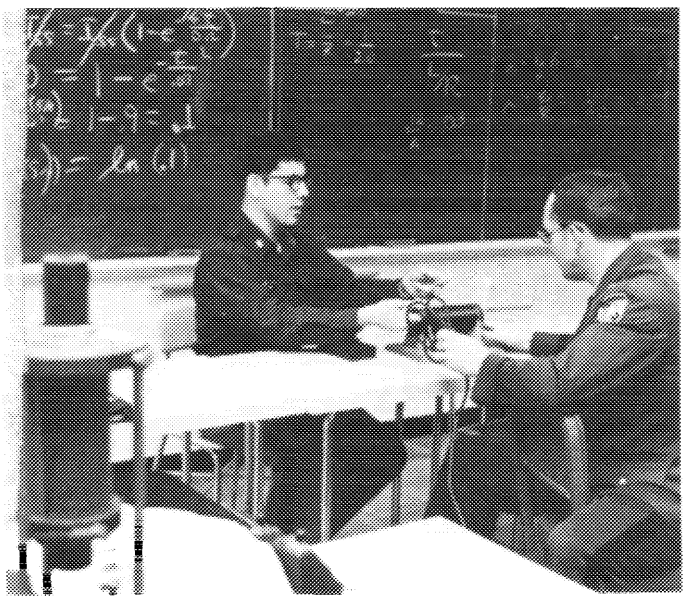
*3.5 Credit Hours*

**OE 402 Weapon Systems Engineering**

*Second Term—Prerequisite: OE 401*

Weapon systems design and analysis with emphasis on land mobility, internal combustion engines, vehicular power trains, solid propellant rockets, and guidance systems; comprehensive design project.

*3.5 Credit Hours*



## ADVANCED COURSES

**CE 451 Honors Course in Structural Analysis**

*First Term—Prerequisites: ME 303, ME 304, ME 384, standing in top 100 of class; permission of Head of Department*

Individual tutorial study at an accelerated pace of material included in CE 401. Advanced work in options which include numerical analysis, Castigliano's Theorem, matrix methods, conjugate beam theory, and application of computer techniques to structural analysis.

*3.5 Credit Hours*

**CE 452 Honors Course in Structural Design**

*Second Term—Prerequisite: CE 451*

Topics cited in CE 402 are covered at an accelerated pace with emphasis on tutorial instruction and individual study. Time gained is used to pursue an advanced analytic and/or laboratory project selected by each cadet.

*3.5 Credit Hours*

**CE 453 Introduction to Nuclear Engineering**

*First Term—Prerequisites: ME 301, ME 303, ME 382, PH 303, PH 487 (may be taken concurrently)*

Reactor systems engineering and optimization, power plant thermodynamics, heat transfer by conduction, convection, and boiling; imcompressible fluid flow, and steady-state homogeneous analysis.

*3.5 Credit Hours*

**CE 454 Introduction to Nuclear Engineering**

*Second Term—Prerequisite: CE 453*

Time-dependent reactor analysis; biological effects of radiation; radiation shielding design; engineering economics; reactor safety and licensing; design project.

*3.5 Credit Hours*

**OE 451 Honors Course in Weapon Systems Engineering**

*First Term—Prerequisites: ME 301, ME 303, ME 382; standing in top 100 of class; permission of Head of Department*

Topics cited in OE 401 are covered at an accelerated pace using teaching techniques emphasizing individual tutorial study. Time gained is used to pursue advanced design projects involving weapon system components.

*3.5 Credit Hours*

**OE 452 Honors Course in Weapon Systems Engineering**

*Second Term—Prerequisite: OE 451*

Teaching techniques normally used in graduate studies are employed to cover OE 402 at an accelerated pace. Time gained is used to pursue an individual weapon system design project which incorporates the full range of OE 451 and OE 452 material.

*3.5 Credit Hours*

**OE 453 Advanced Weapon Systems Engineering**

*First Term—Prerequisites: ME 301, ME 303, ME 382 and demonstrated superior performance in mathematics, science, and mechanics courses.*

Topics cited in OE 401 are covered in greater depth with emphasis on individual research, preparation, and study. Application of theory and techniques to the mechanical engineering aspects of weapon systems design and development.

*3.5 Credit Hours*

**OE 454 Advanced Weapon Systems Engineering**

*Second Term—Prerequisite: OE 453 or demonstrated superior performance in OE 401*

Topics cited in OE 402 are covered in greater depth with emphasis on individual research, preparation, and study. Application of theory and techniques to the mechanical engineering aspects of weapon systems design and development.

*3.5 Credit Hours*

## ELECTIVE COURSES

**CE 381 Soil Mechanics**

*Either Term—Prerequisite: ME 303 or ME 353 (may be taken concurrently).*

Soil is studied as an engineering material. Soil properties—permeability, compressibility, and strength are combined with basic principles of mechanics and hydraulics to solve problems of settlement, seepage flow, earth forces, and slope stability.

*3.0 Credit Hours*

**CE 382 Environmental Systems Engineering**

*Either Term—Prerequisite: None (EV 385 is suggested but not required).*

Environmental systems analyzed from the engineering, management, and planning viewpoints. Solution techniques for environmental problems stress the systems engineering approach/decision making process. Topics: water-quality engineering and management, air-quality engineering, land-use planning, water quantity, noise pollution.

*3.0 Credit Hours*

**CE 481 Design of Concrete Structures**

*Either Term—Prerequisites: ME 303 or ME 353; CE 401 or CE 451 (May be taken concurrently); (ME 384 is recommended).*

Study of the ultimate strength theory of reinforced concrete; analysis and design of beams, one-way slabs, columns, footings, and retaining walls. Culminates in a comprehensive design problem requiring application of course theory and the design process.

*3.0 Credit Hours*

**CE 482 Advanced Structural Analysis**

*Second Term—Prerequisite: CE 401 or CE 451 or Permission of Head of Department; (ME 384 is recommended).*

Extension of CE 401. Introduces advanced techniques such as finite differences, displacement and direct element matrix methods, and plastic analysis as applied to indeterminate structures. Independent analysis and design problems emphasize practical applications of the concepts studied.

*3.0 Credit Hours*

**ER 489 Advanced Individual Study in Engineering**

*Either Term—Prerequisite: Permission of Head of Department*

Designed to permit the cadet to concentrate in an area of individual interest dealing with an advanced topic in Civil, Weapon Systems, Automotive, Materials, Nuclear, Decision Making, or Management Engineering. The cadet is required to define and analyze a problem, organize his approach, and achieve a solution.

*3.0 Credit Hours*

**ER 381 Foundations of Management**

*Either Term—Prerequisite: None*

An interdisciplinary presentation of the processes and issues of management, unifying the management-related topics presented in the total academic program. A pragmatic approach is emphasized; examples are drawn from industry and the military.

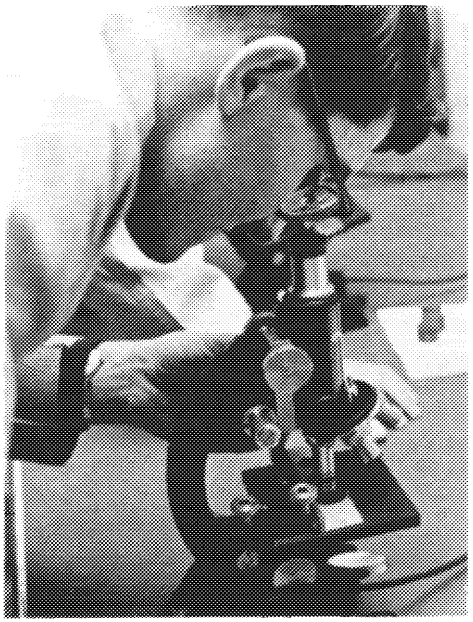
*3.0 Credit Hours*

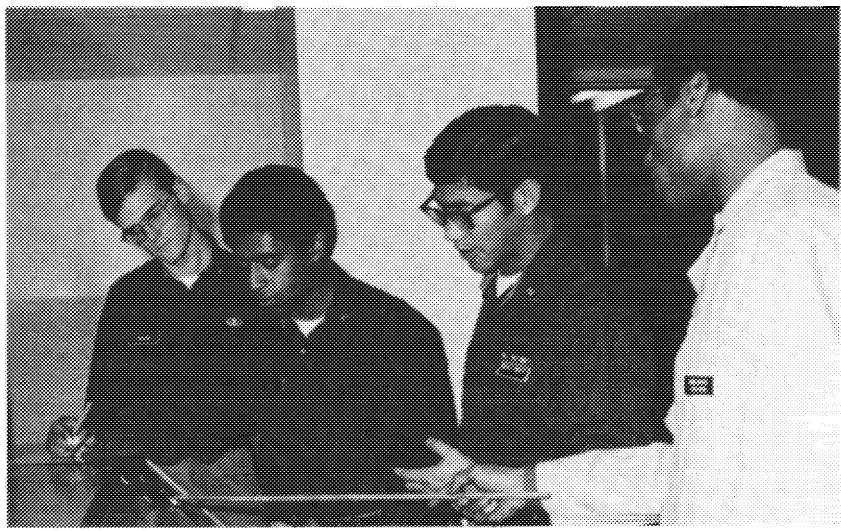
**ER 383 Quantitative Methods for Decision Making**

*Either Term—Prerequisites: MA 207, PH 201*

Familiarization with the systems approach to problem solving. Methodology of solving problems and of decision making related to engineering design and management is considered; optimization and modeling techniques are studied.

*3.0 Credit Hours*





**OE 383 Engineering Materials**

*Either Term—Prerequisites: CH 200, PH 202, MA 207*

Physical and mechanical properties of metals and plastics. Crystal and molecular structures, elastic and plastic behavior, failure, microscopic analysis of materials. Laboratory experiments to determine engineering characteristics of materials.

*3.0 Credit Hours*

**ER 385 Quantitative Methods for Operations Management**

*Either Term—Prerequisite: MA 207*

Quantitative methods of management that aid decision making and improve managerial abilities; deterministic and statistical techniques, to include cost analysis, forecasting, quality control, analysis of variance, and linear programming.

*3.0 Credit Hours*

**OE 481 Automotive Engineering**

*Either Term—Prerequisites: ME 301, 303 (ME 303 may be taken concurrently)*

Analysis and design of automotive internal combustion engines, power trains, suspension systems, and running gear in the context of total vehicle performance. Laboratory experiments on engine and chassis performance.

*3.0 Credit Hours*

**OE 483 Helicopter Engineering**

*Second Term—Prerequisites: ME 301, ME 303, ME 382 (ME 388 is recommended)*

Analysis and design of the helicopter as an integrated system of components to include air frame, rotors, power production, and transmission elements, flight controls, avionics, and crew support subsystems. Operating characteristics associated with these components are determined such that overall system performance is optimized.

*3.0 Credit Hours*

**ER 487 Operations Research**

*Either Term—Prerequisite: MA 207*

Quantitative methods used to analyze engineering decision making and managerial problems; Dynamic Programming, Probability Theory, Ethics of Operations Research, Waiting-Line Analysis, Models of Combat, and Markovian Models.

*3.0 Credit Hours*

# DEPARTMENT OF ENGLISH

*Professor and Head of Department*

Jack L. Capps, COL; B.S., USMA; M.A., Ph.D., Pennsylvania.

## STANDARD COURSES

**EN 101 Communication Skills; Logic and English Exposition**

*First Term—Prerequisite: None*

Designed to develop clear, forceful, and logical expression in a cadet's oral and written discourse. Instruction in logic, rhetoric, and the process of research. Cadets write an average of 700 words per week, including a library-based research paper.

*3.0 Credit Hours*

**EN 102 Communication Skills; Research and Introduction to Literature**

*Second Term—Prerequisite: EN 101 or EN 151*

Designed to teach cadets to refine their writing ability, to exercise the principles of effective speaking, and to be familiar with the major forms of imaginative literature. Cadets write an average of 700 words per week.

*3.0 Credit Hours*

**PY 201 Philosophy**

*Either Term—Prerequisite: EN 102 or EN 152*

Seeks to develop clear, critical thinking through examination of alternative viewpoints on major philosophic issues, with special emphasis on the language, arguments, and methods of moral discourse.

*3.0 Credit Hours*

**EN 301 Comparative Literature**

*Second Term—Prerequisite: EN 102 or EN 152*

Introduces major literary figures of Western civilization to provide awareness of enduring imaginative literature. Writing skills and effective speaking emphasized. Among authors considered are Homer, Dante, Shakespeare, Chaucer, and Ibsen.

*3.0 Credit Hours*

## ADVANCED COURSES

**EN 151 Advanced Composition: Survey of American Literature to 1900**

*First Term—Prerequisite: Selection by Department*

Survey of American literature dating from the colonial period through 1900. Course stresses reading, research, oral expression, and writing skills.

*3.0 Credit Hours*

**EN 152 Advanced Composition: Survey of American and British Literature From 1900 to the Present**

*Second Term—Prerequisite: EN 151 or EN 101 with Department approval*

Through close reading of various genres, lays basis for apprehending American and British literary genius. Requires analysis and criticism of fiction, poetry, and drama through class discussions and essays.

*3.0 Credit Hours*

## ELECTIVE COURSES

**EN 371 British Literature to 1660**

*First Term—Prerequisite: EN 301 (completed or concurrent)*

Surveys genesis and development of prose, poetry, and drama in English to 1660.

*3.0 Credit Hours*

**EN 372 British Literature, 1660-1900**

*Second Term—Prerequisite: EN 301 (completed or concurrent)*

A companion course to EN 371. Examines British prose, poetry, and drama from 1660-1900.

*3.0 Credit Hours*

**EN 373 American Literature, Beginnings to 1900**

*First Term—Prerequisite: EN 301 (completed or concurrent)*

Provides an overview of 17th, 18th, and 19th century American literature and culture through the study of selected works by Bradstreet, Franklin, Freneau, Emerson, Thoreau, Hawthorne, Melville, Whitman, Twain, and Dickinson.

*3.0 Credit Hours*

**EN 374 British and American Literature, 1900-Present**

*Second Term—Prerequisite: EN 301 (completed or concurrent)*

Devoted to the major writers of British and American literature of the first half of the 20th century.

*3.0 Credit Hours*

**EN 376 The Novel**

*First Term—Prerequisite: EN 301 (completed or concurrent)*

Treats the development of the novel as a genre from the early narrative forms to modern age. In AY 1978-1979, the novels of Fitzgerald, Steinbeck, and Hemingway will receive special emphasis.

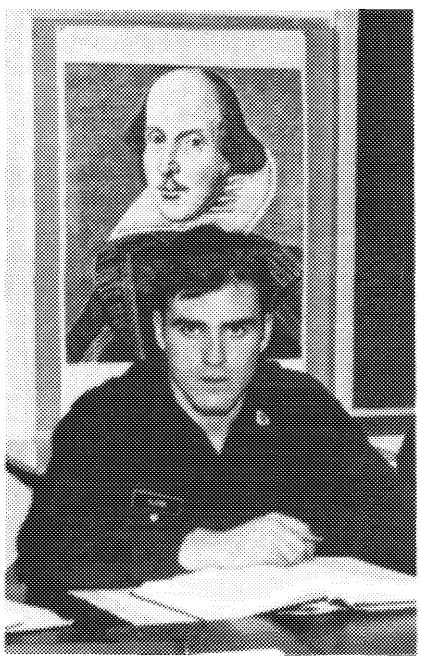
*3.0 Credit Hours*

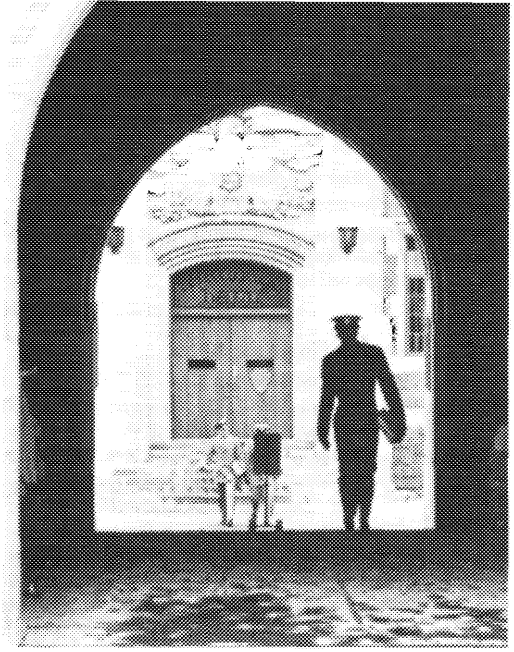
**EN 377 Shakespeare Survey**

*Second Term—Prerequisite: EN 301 (completed or concurrent)*

Provides opportunity for concentrated study of Shakespeare's works. Emphasis on appreciation and critical understanding.

*3.0 Credit Hours*





**EN 378 English Expression Workshop**

*Both Terms—Prerequisite: None*

Provides remedial and reconstructive work in the basics of English expression. Analyzes each student's need and provides a special program for that student.

*3.0 Credit Hours*

**EN 379F The Bible as Literature**

*Second Term—Prerequisite: EN 301 (completed or concurrent)*

Considers outstanding biblical examples of literary genres and traces the influence of the Bible upon Western literature.

*3.0 Credit Hours*

**EN 389 Visiting Professor's Course**

*Both Terms—Prerequisite: As prescribed by Visiting Professor*

Provides an opportunity for cadets to study literature or philosophy under a distinguished scholar from the civilian academic community.

*3.0 Credit Hours*

**EN 392 Introduction to Music**

*First Term—Overload Elective; Prerequisite: Approval by Office of the Dean*

Discusses tone, instruments, and concepts of rhythm, melody, polyphony, harmony, and form. Discussions correlated with historical development and repertory of music to provide broad musical orientation.

*2.5 Credit Hours*

**EN 475C Seminar in Chaucer**

*First Term—Prerequisite: EN 371*

Organized around a close reading of the *Canterbury Tales*. Chaucer's unique genius as a humorist and satirist is dissected in detail.

*3.0 Credit Hours*

**EN 476B Seminar in Faulkner**

*Second Term—Prerequisites: EN 373, EN 374, EN 376*

Offers a close reading of six Faulkner novels, emphasizing Faulkner's mythical world of Yoknapatawpha County and his roles as literary artist and southerner.

*3.0 Credit Hours*

**EN 476N Seminar in Whitman**

*First Term—Prerequisite: EN 371, EN 372, or EN 373*

Focuses on the major verse and prose of Walt Whitman, emphasizing his nationalism and the context of his war poetry.

*3.0 Credit Hours*

**EN 483B Response of the American Imagination to War**

*Second Term—Prerequisite: Permission of Instructor*

Deals with responses by American artists in imaginative literature, journals, essays, and the visual arts to war, especially wars in which Americans have fought.

*3.0 Credit Hours*

**EN 483D The Minority Experience in America—Black Literature**

*First Term—Prerequisite: EN 301 (completed or concurrent)*

Traces the progress of the Black American from his slave beginnings to the present. Among authors considered are: Toomer, Ellison, Brown, Wright, Baldwin, Hughes, and Giovanni.

*3.0 Credit Hours*

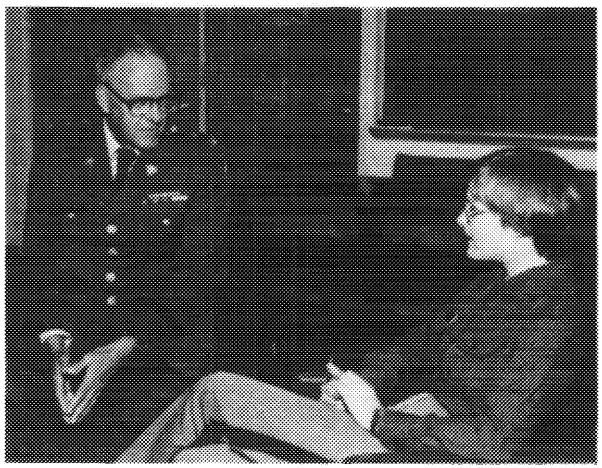
**EN 489 Advanced Individual Study in English**

*Both Terms—Prerequisite: Selection by Department*

Permits student of superior ability and extensive background to develop original project through independent study. Student develops prospectus, conducts extensive research, and presents findings in monograph form.

*3.0 Credit Hours*

# DEPARTMENT OF FOREIGN LANGUAGES



*Professor and Acting Head of Department*

Sumner Willard, COL; B.A., M.A., Ph.D., Harvard.

The foreign language requirement for graduation from the U.S. Military Academy is satisfied by successful completion of the three-semester standard course during the second year of study.

In French, German, Russian, and Spanish, two levels of courses are offered: standard (beginning) and advanced. Assignment to the advanced course is based on placement tests administered at West Point and is equivalent to one semester of validation credit. The courses constituting the Standard and Advanced Programs are summarized below.

In addition, full validation of the language requirement is possible for cadets with a particularly strong language background. Any validation credit received makes time available for additional elective study either in foreign language courses or other areas of interest to the cadet.

**ADVANCED PROGRAM**

First Year, **LX 151-152**

## STANDARD COURSES

**LA 101-102—Arabic; LC 101-102—Chinese;**
**LF 101-102—French; LG 101-102—German;**
**LP 101-102—Portuguese; LR 101-102—Russian;**
**LS 101-102—Spanish**

*Prerequisite: None*

These are basic courses in the language indicated. In keeping with the primary objectives of speaking and understanding, oral work is stressed. Audio-lingual skills are developed by reading aloud, repetition drills, question and answer exercises, prepared and extemporaneous dialogues, individual short talks, and frequent use of the language laboratory. After the first month of the course, classroom work is normally in the foreign language.

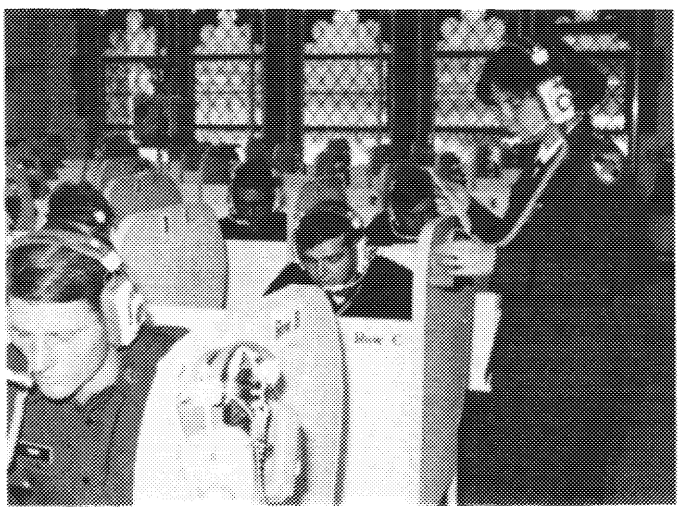
*7 Credit Hours (3.5 each term)*

**LA 201—Arabic; LC 201—Chinese;**
**LF 201—French; LG 201—German;**
**LP 201—Portuguese; LR 201—Russian;**
**LS 201—Spanish**

*Prerequisites: The 101-102 course in the appropriate language*

This course is a continuation of the 101-102 courses, with increased emphasis on applied grammar and oral fluency through discussions, dialogues, individual talks, and frequent aural comprehension exercises. Periodic themes are used in conjunction with reading and discussion of several literary works and of historical, geographical, and military material of current interest. Lectures are included on the history and civilization of the people whose language is being studied. All work is conducted in the foreign language.

*3.5 Credit Hours*



## ADVANCED COURSES

**LF 151-152—French; LG 151-152—German;**
**LR 151-152—Russian; LS 151-152—Spanish**

*Prerequisites: Two or more years of previous study of the language, and demonstrated proficiency based on oral and written tests administered prior to the beginning of Fourth Class year.*

These are upper intermediate courses, with intensive grammar review and aural-oral emphasis. Extensive use is made of pattern drills, question and answer exercises, dialogues, individual talks, and periodic themes. Reading and discussion of several works of drama and fiction by prominent writers are included. All classroom work is in the foreign language.

*7 Credit Hours (3.5 each term)*

## ELECTIVE COURSES

**LA 272 Intermediate Conversational Arabic;**
**LC 272 Intermediate Conversational Chinese;**
**LF 272 Intermediate Conversational French;**
**LG 272 Intermediate Conversational German;**
**LP 272 Intermediate Conversational Portuguese;**
**LR 272 Intermediate Conversational Russian;**
**LS 272 Intermediate Conversational Spanish**

*Prerequisite: The 201 Course in the Corresponding Language*

These courses are designed to enhance and further develop reading and writing skills in the language as well as conversational ability to prepare the student for higher level elective courses. The courses include a systematic grammar review, oral presentations, and written compositions.

*3 Credit Hours*

**LA 371-372 Advanced Modern Standard Arabic**

*Prerequisite: LA 272*

A continuation of LA 272, the course includes readings and discussions of progressively more advanced Modern Standard Arabic materials. Class discussions, oral and written reports are given in Arabic.

*6 Credit Hours (3 each term)*

**LF 371-372 French Language through Literature;**
**LG 371-372 German Language through Literature;**
**LP 371-372 Portuguese Language through Literature;**
**LS 371-372 Spanish Language through Literature**

*Prerequisite: The 152 or 272 course in the corresponding language or equivalent validation*

These courses include a continuing review of grammar, increased use of audio-lingual techniques, talks and debates. They include readings in a wider field of literature, and place greater emphasis upon the culture and history of the countries concerned. Class discussions and oral and written reports are conducted in the foreign language.

*6 Credit Hours (3 each term)*

**LR 371 Advanced Russian Language**

*First Term: Prerequisite: LR 272, LR 152 or validation*

A continuation of LR 272, this course places increased emphasis on the contemporary forms of spoken Russian and on the acquisition of a broad, general vocabulary.

*3 Credit Hours*

**LR 372 Russian Language through Literature**

*Second Term—Prerequisite: LR 371*

This course includes studies in Russian and Soviet Literature, class discussions, comparative studies, oral and written presentation of material, all in Russian.

*3 Credit Hours*

**LF 392 Military Reading in French;**
**LG 382 Military and Scientific Readings in German;**
**LP 382 Military Readings in Portuguese;**
**LR 382 Military and Scientific Russian;**
**LS 382 Military Readings in Spanish**

*Second Term—Prerequisite: The 272 or 152 course in the corresponding language or validation*

Concentrated study is conducted of selected military and scientific texts in the language. The courses include class discussion, oral and written reports, and translations into and from the foreign language.

*3 Credit Hours*

**LC 385 Chinese Literature and Culture I**

*First Term—Prerequisite: LC 272*

This course utilizes essays on China's culture and civilization and contemporary Chinese writings to increase the student's proficiency in the language. Increased stress is placed on individual talks, writing, group discussions, and the development of rapid character reading skill.

*3 Credit Hours*

**LC 386 Chinese Literature and Culture II**

*Second Term—Prerequisite: LC 385*

Continuation of LC 385.

*3 Credit Hours*

**LA 471 Readings in Contemporary Arabic**

*First Term—Prerequisite: LA 372*

This course is a continuation of LA 372. It concentrates upon progressive development of vocabulary through readings in modern Arabic prose. Newspapers, plays, and short stories are studied.

*3 Credit Hours*

**LA 472 The Arabic of Saudi Arabia**

*Second Term—Prerequisite: LA 372*

This course introduces the Hijazi Urban dialect, the principal dialect of the Kingdom of Saudi Arabia. Work in the course is completely oral. Military vocabulary is developed and extensive oral presentations are made.

*3 Credit Hours*

**LC 482 Military Readings in Chinese**

*Second Term—Prerequisite: LC 272*

Military readings are developed through class discussions, themes, translations into and from the foreign language, and interpreter exercises.

*3 Credit Hours*

**LF 483 History of French Civilization I**

*First Term—Prerequisite: LF 372 or validation*

This course comprises readings in a variety of fields—historical, sociological, cultural, and literary—with the objective of presenting a panorama of French culture in the framework of French history and literary achievement.

*3 Credit Hours*

**LF 484 History of French Civilization II**

*Second Term—Prerequisite: LF 372 or validation*

Continuation of LF 483.

*3 Credit Hours*

**LG 483 History of German Civilization**

*First Term—Prerequisite: LG 372 or validation*

This course, a comprehensive survey, is an integrated study of the geography, history, and culture of Germany, introducing the cadet to the most significant political, social, economic, and artistic events of each period in the country's growth and development. Emphasis is placed on the German contributions to Western Civilization. Classroom work is in German.

*3 Credit Hours*

**LG 484 Contemporary Germany**

*Second Term—Prerequisite: LG 372 or validation*

This course is a detailed study of contemporary Germany, introducing the cadet to the political, social, economic, and artistic events since the end of World War II. Emphasis is placed on Germany's national problems and on her contribution to the Western community of nations, to the Common Market, and to NATO. Classroom work is in German.

*3 Credit Hours*

**LR 483 Russian and Soviet Civilization**

*First Term—Prerequisite: LR 372 or validation*

A greater proficiency in the language is acquired through a survey of the historical and cultural elements that have developed the USSR and the Russian people. Classroom work is in Russian.

*3 Credit Hours*

**LF 485 Survey of French Literature I;**
**LG 485 Survey of German Literature I;**
**LP 485 Survey of Brazilian Literature;**
**LR 485 Soviet Russian Literature;**
**LS 485 Survey of Spanish Literature**

*First Term—Prerequisite: The appropriate 372 courses or validation*

These courses survey the literature of the country. Class discussions, themes, outside reading, reports are conducted in the appropriate language.

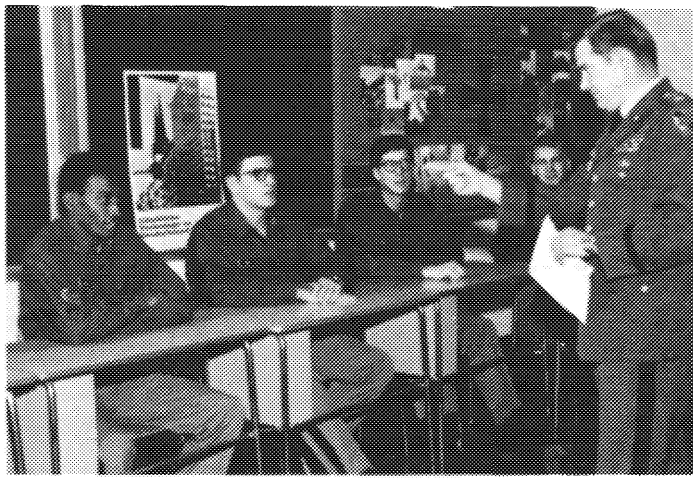
*3 Credit Hours*

**LF 486 Survey of French Literature II;**
**LG 486 Survey of German Literature II;**
**LP 486 Survey of Brazilian Literature;**
**LS 486 Survey of Spanish-American Literature**

*Second Term—Prerequisite: The appropriate 372 courses or validation*

These courses consist of advanced studies in the contemporary literature of France, Germany, Brazil, and Spanish America, with class discussions, themes, etc., in the appropriate foreign language.

*3 Credit Hours*



**LR 486 Soviet Expository Writing**

*Second Term—Prerequisite: LR 372*

Advanced studies based on readings from Soviet newspapers and periodicals. Class discussion, oral, and written reports are in Russian.

*3 Credit Hours*

**LC 487 Directed Studies in Chinese;**
**LF 487 Directed Studies in French;**
**LG 487 Directed Studies in German;**
**LP 487 Directed Studies in Portuguese;**
**LR 487 Directed Studies in Russian;**
**LS 487 Directed Studies in Spanish**

*First Term—Prerequisites: LC 485 or LF 485-486 or LG 485-486 or LP 485-486 or LR 485-486 or LS 485-486*

These courses are intended for those cadets who have demonstrated outstanding language ability and a strong personal desire to accomplish a more detailed study of a particular period of history or literature. All work will be done in the foreign language.

*3 Credit Hours*

**LC 488 Directed Studies in Chinese;**
**LF 488 Directed Studies in French;**
**LG 488 Directed Studies in German;**
**LP 488 Directed Studies in Portuguese;**
**LR 488 Directed Studies in Russian;**
**LS 488 Directed Studies in Spanish**

*Second Term—Prerequisites: LC 485 or LF 485-486 or LG 485-486 or LP 485-486 or LR 485-486 or LS 485-486*

Same academic level as LC 487, LF 487, LG 487, LP 487, LR 487, LS 487—Directed Studies in Chinese, French, German, Portuguese, Russian or Spanish.

*3 Credit Hours*

# DEPARTMENT OF HISTORY

*Professor and Head of Department*

Thomas E. Griess, COL; B.S., USMA; M.S., Illinois; Ph.D., Duke.

## STANDARD COURSES

**HI 101-102 History of Modern Europe**

*First Term—Prerequisite: None. Second Term—Prerequisite: HI 101 or equivalent*

This course is a topical survey of European history in modern times. It analyzes Western civilization in the light of broad historical trends from the Renaissance to the Cold War.

*6 Credit Hours*

**HI 103-104 History of the United States**

*First Term—Prerequisite: None. Second Term—Prerequisite: HI 103 or equivalent*

The central themes for this survey of American history are the diversity of the American experience, the growth of the national economy, the evolution of the central government and political system, and the U.S. rise to world power.

*6 Credit Hours*

**HI 105-106 History of Europe and the World**

*First Term—Prerequisite: None. Second Term—Prerequisite: HI 105 or equivalent*

This course is a topical survey, beginning with the great civilizations of the ancient world, progressing through the Middle Ages, and leading to the development of a distinct European culture. Central themes are the rise and decline of Western dominance and the growing interrelationship between Europe and the world after 1600.

*6 Credit Hours*

**HI 300 History of the Military Art**

*Prerequisites: Standard History sequence or its validation*

This course examines the evolution of the art of war in the modern period. The course concentrates on World War I, World War II, and selected Military experiences, the changing nature of warfare, and civil-military relations.

*4.5 Credit Hours*

## ADVANCED COURSES

**HI 154 Advanced History of the United States since 1877**

*Secodn Term—Prerequisites: HI 103 and approval of Associate Professor in American History.*

The course encompasses the same chronological period and thematic coverage as HI 104, but it does so with monographic literature and greater emphasis on classroom discussion. The course also stresses historical analysis and criticism. Consequently, the student acquires a broader understanding of American history and the historian's methods.

*3 Credit Hours*

**HI 350 Advanced History of the Military Art**

*Prerequisites: Standard History sequence or it validation*

This course encompasses the same periods and themes as HI 300, but does so in greater depth and breadth. The advanced course emphasizes historical analysis and critique, requiring more reading and student participation than HI 300.

*4.5 Credit Hours*

## ELECTIVE COURSES

**HI 371 European National Histories**

*Either Term—Prerequisites: Any standard history course sequence or its validation (may be taken concurrently in the second term).*

*3 Credit Hours*

**HI 371C The Military and Diplomatic Origins of the European Nation States**

*First Term—*

This course will concentrate upon the military and diplomatic origins of England, France, and Prussia. Political entrepreneurs who reshaped Europe such as Henry VIII and Frederick The Great will be analyzed in depth.

*3 Credit Hours*

**HI 371D Wilhelmine, Weimar, and Nazi Germany**

*Second Term—*

This course traces the path of Imperial Germany from the early euphoria after unification in 1871 to World War, defeat, the experiment in democracy, and the coming of the Nazis. Emphasis is placed upon both internal developments and the impact of Germany on Europe.

*3 Credit Hours*

**HI 372 History of United States Foreign Relations in the Twentieth Century**

*Either Term—Prerequisite: Standard History sequence or validation may be taken concurrently with second term)*

This course examines the wars and diplomacy of the United States from the Spanish-American War to the more recent involvement in Vietnam. In addition to an in-depth analysis of the American diplomatic role in the wars of this century, special attention is given to the themes, assumptions, and men who shaped American foreign policy.

*3 Credit Hours*

**HI 373 Topics in United States History**

*Either Term—Prerequisite: Standard History sequence or validation (may be taken concurrently)*

*3 Credit Hours*

**HI 373K History of the Cold War**

*First Term—*

This course traces the Cold War from its World War II origins through detente with emphasis on American perceptions of the postwar Communist threat, the attitudes and policies adopted to counter that threat, and the recent improvement in United States-Soviet relations.

*3 Credit Hours*

**HI 373L The History of Ideas in America: American Antimilitarism**

*Second Term—*

This course treats the sources, assumptions, and evolution of antimilitary thought in the United States from the colonial period through the protests of the Vietnam era. The influence of antimilitary groups upon US foreign and military policies provides a secondary focus for the course.

*3 Credit Hours*

**HI 374 Topics in European Political and Cultural History**

*Either Term—Prerequisite: Standard History sequence or validation (may be taken concurrently in the second term)*

*3 Credit Hours*

**HI 374K European Revolutions, 1789,1945**

*First Term—*

This course examines the major European revolutions since 1789, including the Industrial Revolution, the French Revolution, the upheavals of 1830 and 1848, and the Russian and Nazi revolutions of the twentieth century. The causes, results, and impact of these revolutions comprise the course's subject matter.

*3 Credit Hours*

**HI 374L European Statecraft in the Twentieth Century**

*Second Term—*

After a brief survey of the major diplomatic issues left unresolved by the First World War, the course provides an in-depth analysis of the problems of interwar diplomacy (1919-1939) in Eastern and Western Europe, the originas of the Second World War, and the diplomatic problems coalition warfare, and the successive crises of the Cold War era.

*3 Credit Hours*

**HI 375 History of the Far East**

*First Term—Prerequisite: Standard History sequence or validation*

Course traces the development of Chinese and Japanese civilization from traditional empires to modern states after the coming of Western influence. Emphasis is upon East Asia's distinctive cultural heritage and role in the perspective of world history.

*3 Credit Hours*

**HI 376 American Social History**

*Either Term—Prerequisite: Standard History sequence or validation (with departmental approval, may be taken concurrently)*

*3 Credit Hours*

**HI 376C Women in America**

*First Term—*

This course surveys the history of women in America with special emphasis on the changing role of women in society since the Civil War and the status of women in the armed services since World War I.

*3 Credit Hours*

**HI 376 B The Black in American History**

*Second Term—*

With special emphasis on the last century, this course traces the history of Blacks in this country from their arrival as slaves over three centuries ago to their arrival as full participants in American society within the past generation.

**3 Credit Hours**

**HI 377A History of Western Religious Thought**

*Second Term—Prerequisite: Standard History sequence or validation*

The course examines the history of the Judeao-Christian religious tradition. Beginning with the early history of Israel, the course develops chronologically through the prophetic tradition, the life and teaching of Christ, the role of religion in the Middle Ages, reformation and counter-reformation, and the development of religions in the Modern World.

*3 Credit Hours*

**HI 378 History of Western Ethics**

*First Term—Prerequisite: Standard History sequence or validation*

The course examines the historical development of major ethical viewpoints from the Western past. Classical ethical positions are used to focus on the tension which always exists between man's convictions about what is right, what ought to be done, and his reading of what he can actually do in real life situations.

*3 Credit Hours*

**HI 379 History of Latin America**

*First Term—Prerequisite: Standard History sequence or validation (with permission of Department, may be taken concurrently)*

Course covers the colonial, independence and modern periods of Latin American history, with particular attention to the constitutional, political, social, and economic developments. Both the relations of Latin America to the Western world and common traditions and patterns of development are emphasized.

*3 Credit Hours*

**HI 381 History of Revolutionary Warfare**

*Either Term—Prerequisite: Standard History sequence or validation*

The course traces the evolution of the theory and practice of revolutionary warfare from the era of the American and French Revolutions to the present, through the study of selected theories and recent revolutionary experiences.

*3 Credit Hours*

**HI 383 War in the Twentieth Century**

*Either Term—Prerequisite: Standard History sequence or validation*

This course covers the changing nature of war in the twentieth century from the pre-World War I era through the American experience in Vietnam. It emphasizes military theories and political, social, economic, and technological developments which have affected the conduct of war.

*3 Credit Hours*

**HI 384 Topics in Military History**

*Either Term—Prerequisites: Standard History sequence or validation*

*3 Credit Hours*

**HI 384B The Development of Sea Power**

*First Term—*

This course analyzes the influence of sea power upon history. It focuses upon Alfred Thayer Mahan's principal concepts, the historical events which led to the formulation of his theories, the reaction of maritime nations to his writings, and the applicability of his theories to modern warfare.

*3 Credit Hours*

**HI 384I Generalship in the Twentieth Century**

*Second Term—*

The course uses a biographical approach to study the careers of six military leaders who fought with and against each other in World War II: Marshall, MacArthur, Montgomery, Weygand, Zhukov, and Guderian. The course investigates how and why these men reached the pinnacle of their profession.

*3 Credit Hours*

**HI 385 War and Its Philosophers**

*First Term—Prerequisite: Standard History sequence or validation*

A study of the contributions of selected individuals (e.g., Clausewitz, Machiavelli, Mahan, Liddell Hart) who theorized about the nature of war, the manner of waging it, and its relationship to and impact upon societies.

*3 Credit Hours*

**HI 387-302 History of the Military Art**

*Prerequisite: Standard History sequence or validation*

These two courses trace the evolution of the art of warfare from ancient Greece to the present, by examining the development of generalship, strategy, tactics, theory, doctrine, professionalism, and logistics, and their interaction with social, political, economic, and technological factors. This sequence may be taken in lieu of HI 300.

*7 Credit Hours*

**HI 481 Seminar in History: The Age of Reform**

*Second Term—Prerequisites: Standard History sequence or validation and approval by the Head of the Department*

Cadets develop individual research projects on Populism, Progressivism, the New Deal, American military reform, industrialization, urbanization, immigration, or any similar reform-oriented topic from U.S. history, 1880-1939.

*3 Credit Hours*

**HI 482 Visiting Professor's Course: Alliances and War—The Second World War**

*Second Term—Prerequisite: Standard History sequence or validation*

Taught by Professor Norman Gibbs, Oxford University, the course traces the history of World War II alliances, both Allied and Axis. Includes introductory work on some relevant earlier alliances, particularly those of World War I.

*3 Credit Hours*

**HI 498 Colloquium in History**

*Either Term—Prerequisites: Standard History sequence or validation (may not be taken concurrently) and approval by Head of the Department*

The colloquium uses small-group discussions of important books, monographs, and articles to gain a deeper understanding of selected topics in American, European world, or military history.

*3 Credit Hours*

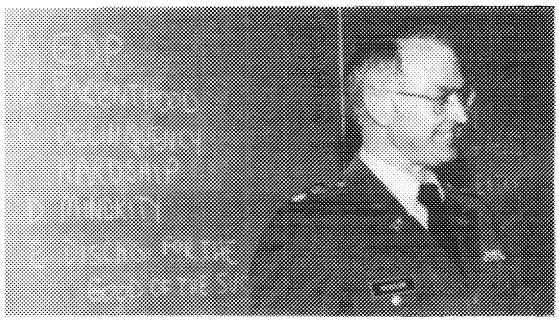
**HI 489 Advanced Individual Study in History**

*Either Term—Prerequisite: Limited to First Class cadets with approval of Head of the Department*

This course offers cadets having considerable background in history the opportunity to write a major research paper on a topic of their choice. A faculty advisor provides guidance and evaluation.

*3 Credit Hours*

# DEPARTMENT OF LAW



*Associate Professor and Acting Head of Department*

Hugh E. Henson, Jr., LTC; B.B.A., Baylor; LL.B., LL.M., J.S.D., Yale.

## STANDARD COURSE

**LW 300 Law**

*Either Term—Prerequisite: None*

This course examines: theories of law, legal reasoning, the function of the court system; constitutional law, including checks and balances, the federal system, the commerce clause, freedom of speech, and equal protection; criminal law, including criminal acts, procedures, evidence, judicial and nonjudicial punishment; administration law, dealing with the judicial review of delegations of legislative authority, separation from the service, injury to persons or property; and an introduction to international law.

*4.5 Credit Hours*

## ELECTIVE COURSES

**LW 481 International Law**

*Either Term—Prerequisite: LW 300*

By case method, students examine the nature, sources and applications of international law while discussing legal problems of recognition, jurisdiction, state responsibility, international agreements and use of force.

*2.5 Credit Hours*

**LW 482 Seminar in Military Aspects of International Law**

*Second Term—Prerequisites: LW 300, 481*

Participants, through research and discussion, analyze case studies of selected modern international law episodes and hypothetical international confrontations. Each cadet prepares a research paper on a current international problem.

*2.5 Credit Hours*

**LW 486 Visiting Professor's Course (AY 1978-79)**

*Second Term—Prerequisite: LW 300*

SCOPE: The Visiting Professor of Law will conduct a course in a subject to be announced.

*2.5 Credit Hours*

**LW 488 Business and Procurement Law**

*Second Term—Prerequisite: LW 300*

This course covers contracts, agency principles, government procurement and the law of property, using a problem-oriented method of instruction. An understanding of commercial and legal terms is emphasized.

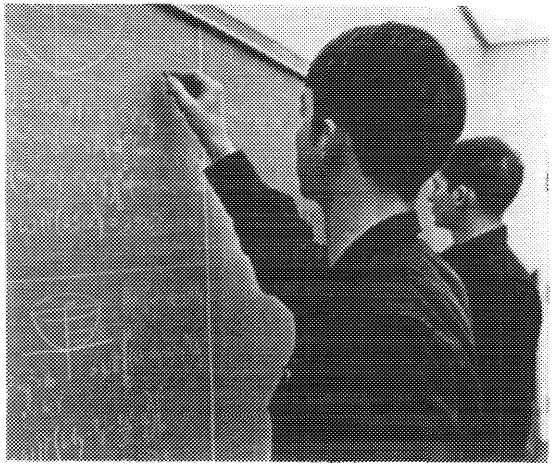
*2.5 Credit Hours*

# DEPARTMENT OF MATHEMATICS

*Professor and Head of Department*

Jack M. Pollin, COL; B.S., USMA; M.S. Penn; M.S., R.P.I.; M.A., George Washington; Ph.D., Arizona.

The general requirement in mathematics for graduation from the Military Academy is satisfied by successful completion of the Standard Program at the end of the second year of study or completion of one of the Advanced Programs. Advanced Programs are designed for cadets who, by virtue of outstanding performance demonstrated during the early months of first year mathematics, exceptional aptitude, or above standard preparation before entering West Point, are able to satisfy the Standard Program requirements in less than two years. Cadets meeting the foregoing selection criteria are permitted to volunteer for assignment to an Advanced Program. Correspondingly, if the pace proves too rapid, opportunity for transfer to a slower program without prejudice is provided. Successful completion of either Advanced Program II or III, in addition to providing coverage of enrichment topics, offers opportunity for additional elective courses. The courses constituting the Standard and Advanced programs are summarized below. Electives chosen by cadets in Advanced Programs during their second year need not be in mathematics, but if mathematics courses are chosen the recommended courses are those listed. Cadets with weak backgrounds in algebra and trigonometry will be required to com-



plete a course in precalculus mathematics prior to undertaking the Standard Program. This course will count as one of the ten electives generally available to all cadets.

## MATHEMATICS PROGRAMS

**STANDARD PROGRAM: MA 103-104; MA 203-204**
**ADVANCED PROGRAM II: MA 151-152; MA 204**
**ADVANCED PROGRAM III: MA 157-158**

**MA 100 Precalculus Mathematics**

*Prerequisite: None*

This course prepares cadets with demonstrated deficiencies in algebra and trigonometry for the study of calculus. Students who must begin their study of mathematics with MA 100 will give up one elective opportunity later in their studies.

*2.5 Credit Hours*

**MA 103-104 Calculus**

*Prerequisite: None*

A rigorous treatment of differential and integral calculus of single variable algebraic functions is coordinated with plane analytic geometry and applications. Included is the study of calculus of transcendental functions, polar coordinates, and plane vectors.

*9 Credit Hours*

**MA 203 Multivariable Calculus and Differential Equations**

*Prerequisite: MA 104*

This course covers the theory of infinite series and provides an introduction to partial differentiation, multiple integrals, and solutions of ordinary differential equations.

*3.5 Credit Hours*

**MA 204 Linear Algebra and Probability and Statistics**

*Prerequisite: MA 152 or MA 203*

This course provides an introduction to matrix algebra covering algebraic operations and solutions to systems of equations. Probability fundamentals are then followed by the study and applications of distributions, sampling, point and interval estimates, hypothesis testing and linear regression.

*3.5 Credit Hours*

## ADVANCED PROGRAM II COURSES

**MA 151-152 Advanced Placement Calculus, Multivariable Calculus, and Introduction to Linear Algebra and Differential Equations**

*Prerequisite: Selection by Head of Department*

An accelerated course covering the material in MA 103-104 and MA 203. Successful completion provides for one additional elective.

*9 Credit Hours*

## ADVANCED PROGRAM III COURSES

**MA 157-158 Advanced Placement Calculus, Multivariable Calculus, Introduction to Linear Algebra, Differential Equations, and Probability Theory and Statistical Inference**

*Prerequisite: Selection by Head of Department*

An accelerated course covering the material in MA 151-152 and MA 204. Successful completion provides for two additional electives.

*12 Credit Hours*

## ELECTIVE COURSES

**MA 471 Linear Algebra**

*Second Term—Prerequisite: Completion of The Mathematics Core Curriculum*

An extension of the linear algebra studied in the core curriculum, to include matrix operations, vector spaces, and characteristic values and vectors. Emphasis is on applications in science, engineering, management and economics.

*3 Credit Hours*

**MA 473 Intermediate Probability and Statistical Applications**

*Second Term—Prerequisite: Completion of the Mathematics Core Curriculum*

An extnesion of the probability and statistics studied in the core curriculum to include hypothesis testing, regression analysis, analysis of variance, and design of experiments. In addition, quality control, reliability, and an introduction to decision theory are included.

*3 Credit Hours*

**MA 481 Linear Programming**

*Either Term—Prerequisite: Completions of the Mathematics Core Curriculum*

A study of the theory and applications of linear programming techniques which includes the simplex method and post optimal analysis. Special topcis such as the transportation problem, game theory, network models, and integer programming are also introduced.

*3 Credit Hours*

**MA 482 Abstract Algebra**

*First Term—Prerequisites: Completion of the Mathematics Core Curriculum and permission of Head of Department*

An introductory modern algebra course for cadets planning graduate work in mathematics or theoretical work in science or engineering. Groups, rings, integral domains and fields are studied.

*3 Credit Hours*

**MA 483 Mathematics for Engineers and Scientists**

*Second Term—Prerequisite: Completion of the Mathematics Core Curriculum*

An extension of the study of ordinary linear differential equations studied in the core curriculum followed by vector analysis, line and surface integrals, and the study of Fourier Series and Integrals. Coverage includes partial differential equations emphasizing one and two dimensional wave equations, heat flow, and laplace's equation.

*3 Credit Hours*

**MA 484 Differential Equations (Intermediate)**

*Either Term—Prerequisite: Completion of the Mathematics Core Curriculum*

A broad spectrum of subjects is studied, to include existence and uniqueness of solutions, linear theory, systems of differential equations, non-linear equations, Fourier Series, and partial differential equations.

*3 Credit Hours*

**MA 485 Complex Analysis**

*Either Term—Prerequisite: Completion of the Mathematics Core Curriculum*

Development of the classical theory provides a basis for a study of applications including residue theory, contour integrals, conformal mapping, and the solution of the Dirichlet and Neumann problems.

*3 Credit Hours*

**MA 486 Numerical Analysis with Digital Computation**

*Second Term—Prerequisite: Completion of the Mathematics Core Curriculum*

Investigation of the methods of approximating the solutions of mathematical problems using the digital computer. Analysis of the significance and control of error is studied. Applicatory problems are emphasized.

*3 Credit Hours*

**MA 487 Real Variable Theory**

*Second Term—Prerequisite: Completion of the Mathematics Core Curriculum and Permission of Head of Department*

A rigorous approach to the foundations of analysis. Concepts of topology provide a basis for a formal discussion of differentiability, integrability, uniform convergence, bounded variation, monotone functions and Stieltjes integration.

*3 Credit Hours*

**MA 488 Visiting Professor's Course**

*Second Term—Prerequisite: To Be Announced*

The Visiting Professor of Mathematics will conduct a course on a topic to be announced.

*3 Credit Hours*

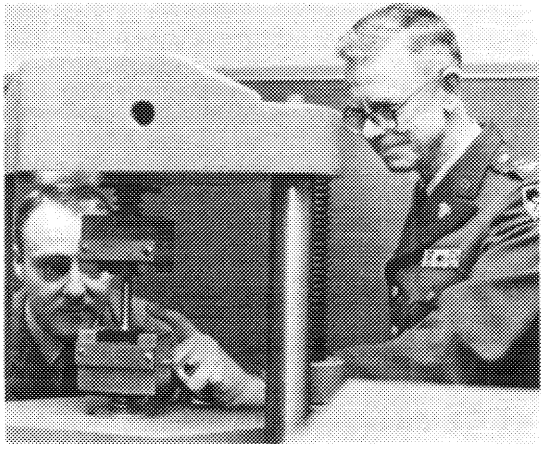
**MA 489 Advanced Individual Study in Mathematics**

*Either Term—Prerequisite: Permission of Head of Department*

An intensive tutorial course offered to a limited number of highly qualified cadets who have completed available mathematics elective courses. Course work is tailored to meet individual desires.

*3 Credit Hours*

# DEPARTMENT OF MECHANICS



*Professor and Head of Department*

Robert M. Wilson, COL; B.S., USMA; M.S., M.I.T.; M.S., Shippensburg State; Ph.D., Lehigh.

**ME 301 Thermodynamics**

*Either Term—Prerequisites: CH 200, PH 201, MA 201, or MA 154, or MA 156*

The study of energy, entropy, and energy transfers in actual and ideal processes to include factors affecting efficiency, performance, and pollution.

*3.5 Credit Hours*

**ME 303 Engineering Mechanics**

*Either Term—Prerequisites: Credit for PH 201 and MA 201, or MA 154, or MA 156*

A static and dynamic analysis of the effects of force systems on both particles and rigid bodies, including an introduction to strength of materials.

*3.5 Credit Hours*

**ME 304 Introduction to Thermofluid Dynamics**

*Either Term—Prerequisites: CH 200, PH 201, MA 201, or MA 154, or MA 156*

This course is an introductory treatment of selected elements of thermodynamics and fluid mechanics: the study of energy, entropy, and the behavior of liquids and gases in motion.

*3.5 Credit Hours*

**ME 353 Advanced Engineering Mechanics**

*Either Term—Prerequisites: PH 201 and MA 201, or MA 154, or MA 156. Demonstrated superior ability in Physics and Mathematics.*

Coverage of ME 303 is accelerated. Also included are 3-dimensional static analysis, virtual work, stability, gyroscopic motion, general space motion, and dynamics of vibrating systems.

*3.5 Credit Hours*

**ME 382 Fluid Mechanics**

*Either Term—Prerequisites: PH 201, CH 200, MA 201, or MA 154, MA 156*

A study of the laws of mechanics as they apply to liquids and gases. Course coverage includes fundamental laws and applications in civil engineering, modeling, and high and low speed aerodynamics.

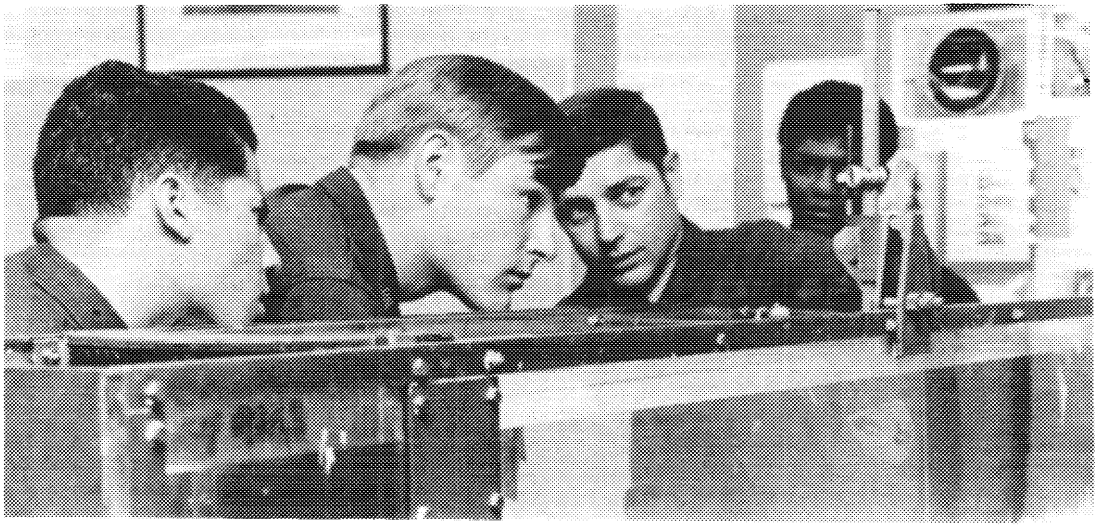
*3.5 Credit Hours*

**ME 384 Mechanics of Materials**

*Either Term—Prerequisite: ME 303 or ME 353*

Evaluation of the performance of structural elements subjected to axial, torsional, bending, and combined loads by determination of internal forces, stresses, and deformation. Laboratory exercises verify and apply theory.

*3.5 Credit Hours*



**ME 387 Introduction to Applied Aerodynamics**

*Either Term—Prerequisite: ME 382*

A study of aerodynamics of fixed-wing aircraft and modern aircraft design considerations. Coverage includes airfoil theory, wing theory, performance and compressibility effects. Supplemented by laboratory exercises and aerial flights.

*3.0 Credit Hours*

**ME 388 Aerodynamics of V/STOL Flight**

*First Term—Prerequisite: ME 382*

A study of aerodynamics of vertical and short takeoff and landing aircraft. Emphasis is on helicopters but coverage includes tilt-wing aircraft and ground effect machines.

*3.0 Credit Hours*

**ME 472 Direct Energy Conversion**

*Second Term—Prerequisites: EE 300 or EE 371, and ME 301*

This course examines various alternatives to fossil fuel combustion as energy sources. Such schemes as thermoelectric, photovoltaic, magnetohydrodynamic converters, fuel cells, geothermal, wind power, and solar heating and cooling are studied.

*3.0 Credit Hours*

**ME 474 Propulsion**

*Second Term—Prerequisites: ME 301, ME 382, (ME 475 is recommended)*

Basic thermodynamic and fluid mechanics concepts are applied to study the performance of gas turbines, jets, and rocket motors. Emphasis is on current technology and performance limitations.

*3.0 Credit Hours*

**ME 475 Gas Dynamics**

*First Term—Prerequisites: ME 382 and ME 301*

Basic thermodynamic and fluid mechanics concepts are applied to compressible flow. Coverage includes one-dimensional isentropic flow, shock and expansion waves, supersonic aerodynamics, and flow with friction or heat transfer.

*3.0 Credit Hours*

**ME 476 Experimental Stress Analysis**

*Either Term—Prerequisite: ME 384*

After an introduction to experiment planning and execution, each cadet performs several experiments using strain gages, brittle coatings, moire fringe analysis, and photoelasticity. Instruction on equipment and statistical analysis of data are integrated with laboratory work.

*3.0 Credit Hours*

**ME 477 Experimental Fluid Mechanics and Thermodynamics**

*Either Term—Prerequisites: ME 301 and ME 382*

A study of the science of experimentation to include modern instrumentation, measurement techniques, error analysis, and presentation of results. The student performs several comprehensive experiments, two of his own choosing.

*3.0 Credit Hours*

**ME 478 Analysis of Modern Lightweight Structures**

*Either Term—Prerequisite: ME 384 or permission of Head of Department*

A classical mechanics study of the bending and torsion of thin-walled, reinforced structures with applications in aerospace and ground transportation vehicles. Includes introduction to variational and energy methods.

*3.0 Credit Hours*

**ME 479 Air Pollution**

*Second Term—Prerequisites: ME 301 and ME 382*

The effects of air pollutants, sources, control of sources, and atmospheric dispersion of pollutants are studied. Course coverage includes elements of combustion theory and global effects of air pollutants.

*3.0 Credit Hours*

**ME 482 Heat Transfer**

*Either Term—Prerequisites: ME 382, ME 301 and MA 207, or MA 154, or MA 156*

Basic principles of conduction, convection, and radiation heat transfer are developed. Applications to current engineering and environmental problems are stressed. Similarity between mass, momentum, and heat transfer is discussed.

*3.0 Credit Hours*

**ME 386 Space Mechanics**

*Either Term—Prerequisites: PH 201 or PH 251 and MA 154 or MA 156*

A study of central force motion, dynamics of two body sonic orbits, ballistic missile trajectories, propulsion, principle coordinate systems, orbit determination, interplanetary trajectories, orbit transfer and rendezvous and re-entry mechanics.

*3.0 Credit Hours*

**ME 485 Continuum Mechanics**

*Second Term—Prerequisite: ME 384*

Boundary value problems for elastic materials are solved using Cartesian tensor calculus. Stress-strain relations, equilibrium, and compatibility conditions are examined. Indicial notation is introduced and employed throughout the course.

*3.0 Credit Hours*

**ME 486 Mechanical Vibrations**

*Either Term—Prerequisite: ME 303 or ME 353*

Course examines linear single degree of freedom systems in detail. Approximate, graphical, and matrix analyses of multi-degree of freedom systems are studied. Theory illustrated by frequent classroom demonstrations.

*3.0 Credit Hours*

**ME 488 Flight Mechanics**

*Second Term—Prerequisite: ME 387, (may be taken concurrently)*

A study of aircraft performance, static stability, and dynamic stability design consideration.

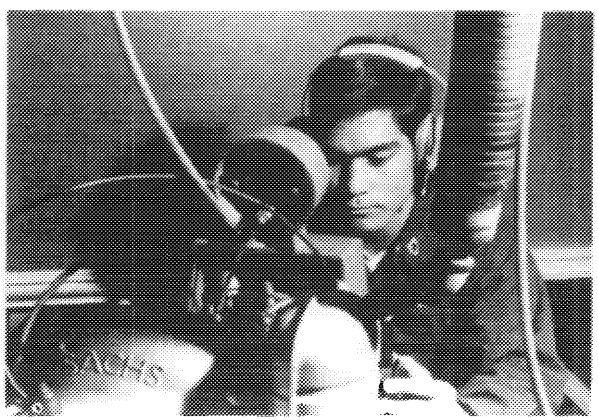
*3.0 Credit Hours*

**ME 489 Advanced Individual Study in Mechanics**

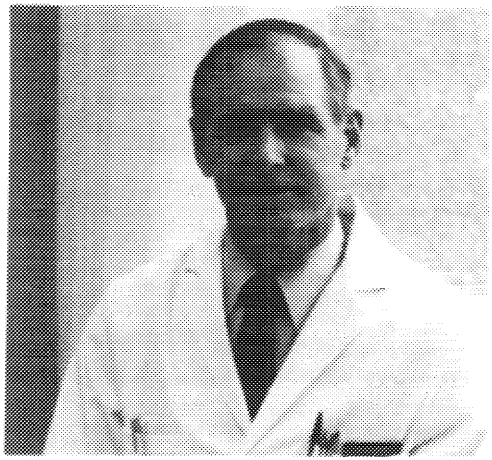
*Either Term—Prerequisites: ME 301, ME 382, ME 303 or ME 353, Permission of Head of Department*

The cadet can do advanced study or an undergraduate research project in Applied Mechanics. The cadet chooses a plan for his program and is individually supervised by a faculty advisor.

*3.0 Credit Hours*



# DEPARTMENT OF MILITARY HYGIENE



*Professor and Head of Department*

John A. Feagin, COL; B.S., USMA; M.D., Duke.

All cadets receive instruction from the Department of Military Hygiene.

Instruction given is primarily in the area of emergency medical care, to include cardiopulmonary resuscitation; control of bleeding and shock; bandaging, splinting, and the immediate treatment of fractures; treatment of snake bites and poisonous plants, heat injury treatment. Instruction is also given in hearing conservation; dental hygiene; eye protection; common skin disorders; field sanitation; and the effects of stress.

# DEPARTMENT OF MILITARY INSTRUCTION

*Director*
Thomas F. Cole, COL; B.S., USMA: M.S., Stanford.

The Director of Military Instruction is responsible to the Commandant of Cadets for the development of all military instruction and training.

## FOURTH CLASS MILITARY INSTRUCTION

**Cadet Basic Training**

*Summer*

A period of intensive fundamental military training designed to orient and indoctrinate the new cadet in basic soldier skills, the traditions of West Point, and the concepts of duty, honor, and service to country. At its conclusion, new cadets are ready to take their places in the Corps when it reassembles in late August.

*7 Weeks, Ungraded*

**Military Science I**

*Academic Year*

**MS 101 Military Heritage and Standards of Professional Behavior**

Instruction is designed to develop an appreciation of the historical evolution of the U.S. Army and to raise the awareness of the need for professional standards of behavior.

*2.0 Credit Hours*

**MS 102 Small Unit Tactics**

This course stresses practical exercises on basic map reading skills and provides a working knowledge of fundamentals and principles of combat operation as planned for and executed at light infantry squad and platoon level.

*2.0 Credit Hours*

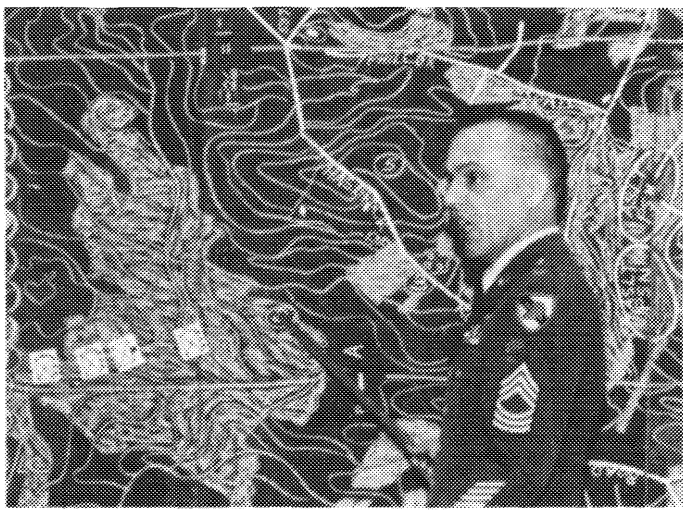
## THIRD CLASS MILITARY INSTRUCTION

**Third Class Cadet Field Training**

*Summer*

Training is designed to develop self-confidence through performance under conditions of mental and physical stress. Emphasis is placed on meeting high standards of physical fitness and discipline, instilling high esprit in each cadet. Training also provides leadership experience through troop leading in a simulated combat environment.

*8 Weeks, Ungraded*



*Part of the military instruction is conducted by experienced noncommissioned officers.*

**Military Science II**

*Academic Year*

**MS 200 Combined Arms Operations**

Instruction teaches the fundamentals of mounted combat operations using the mechanized infantry and tank platoon. The combined arms concept is introduced, using the combined arms company team as a teaching vehicle.

*1.5 Credit Hours*

## SECOND CLASS MILITARY INSTRUCTION

**Cadet Military Specialty Training**
**Cadet Troop Leader Training**
*Summer*
Cadet Military Specialty Training consists of six programs: Ranger, Airborne, Flight, Northern Warfare, Jungle Warfare, and Survival, Evasion, Resistance, and Escape. Cadet Troop Leader Training gives cadets an opportunity to serve as platoon leaders in Regular Army units in the United States and abroad.

*7 Weeks, Ungraded*

**Military Science III**
*Academic Year*
**MS 300 Army Systems Management**
Course begins with an overview of the basic functions and organization of the Department of the Army, the principal commands and their inter-relationship, and the total Army concept. The final portion of the course introduces the basic concepts of management within a company as they relate to maintenance, personnel, and training.

*1.5 Credit Hours*

## FIRST CLASS MILITARY INSTRUCTION

**Cadet Leader Training**
*Summer*
First Class cadets serve as instructors, counselors, commanders, and staff during Cadet Basic Training for the incoming class, in the field training of the Third Class, and as cadre and commanders for selected Second Class training programs.

*8 Weeks, Ungraded*

**Military Science IV**

*Academic Year*
**MI 400 Service Orientation**
Instruction involves a series of service orientation conferences designed to assist cadets in selecting their branch within the Army and their initial assignments; also provides information on matters such as finance, travel, personal and professional affairs, and interface with sister services.

*Ungraded*

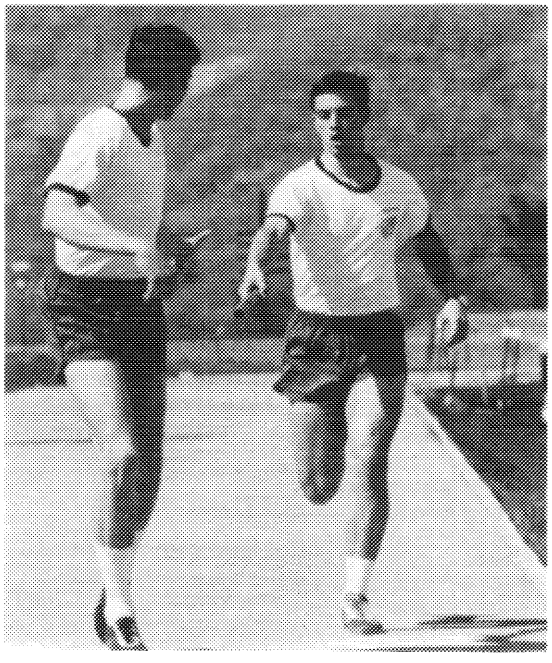
**MS 401 Small Unit Training**
This course provides the basics of how to plan, prepare, conduct, and evaluate military training at the platoon and company level.

*1 Credit Hour*

# DEPARTMENT OF PHYSICAL EDUCATION

*Professor and Head of Department*
James L. Anderson, COL; B.S., USMA; M.S., Indiana.

The Department of Physical Education provides an extensive and progressive program of physical education instruction which prepares each cadet for a career of military leadership. Active participation in an intramural or intercollegiate athletic program is mandatory. Satisfactory performance in certain physical education tests is required.



## STANDARD COURSES

**PE 100 Foundations in Physical Education (Men)**
**PE 101 Foundations in Physical Education (Women)**

Emphasizes the development of basic physical ability through instruction in combatives (boxing and wrestling for men, and self defense for women), gymnastics, and swimming. Opportunity for basic instruction in one or more lifetime sports.

*3 Credit Hours*

**PE 200 Development of Sports Skills (Men)**
**PE 201 Development of Sports Skills (Women)**

Provides basic instruction in a selection of sports and athletic activities. Lectures on various aspects of personal fitness programs.

*1.5 Credit Hours*

**PE 300 Development of Sports Skills (Men)**
**PE 301 Development of Sports Skills (Women)**

Provides basic instruction in a selection of various sports and activities not previously taken.

*1 Credit Hour*

**PE 400 Physical Training Leadership (Men)**
**PE 401 Physical Training Leadership (Women)**

Provides leadership experiences by assignment as cadet-in-charge, coach, or official in the mandatory athletic program.

*1.5 Credit Hours*

# DEPARTMENT OF PHYSICS

*Professor and Head of Department*

Edward A. Saunders, COL; B.S., USMA; M.S.E.E., Purdue; Ph.D., R.P.I.

**PH 201 Physics I**

*First Term—Prerequisite: MA 101-102 or equivalent*

A comprehensive calculus-based study of mechanics including conservation principles and translational, rotational, and oscillatory motion. An integrated laboratory program illustrates basic scientific techniques.

*3.5 Credit Hours*

**PH 202 Physics II**

*Second Term—Prerequisite: PH 201*

A calculus-based study of electricity, magnetism, and optics with a comprehensive laboratory program. Emphasis is placed on problem solving in support of science and engineering students.

*3.5 Credit Hours*

**PH 204 Physics II**

*Second Term—Prerequisite: PH 201*

A calculus-based course in the fundamentals of electricity, magnetism, and optics with emphasis on the nature and significance of physics principles. Studies in the history and philosphy of science are included.

*3.5 Credit Hours*

**PH 303 Physics III**

*Either Term—Prerequisites: PH 202 and MA 207*

A modern physics course including quantum, atomic, and nuclear physics. A laboratory program stressing quantum interactions and spectroscopic measure-

ments demonstrates the physical principles. Designed for students concentrating in engineering or applied science.

*3.5 Credit Hours*

**PH 305 Physics III**

*Either Term—Prerequisites: PH 201 and PH 204 (PH 202 with Department Permission)*

A continuation of the PH 201-204 sequence designed to provide the student interested in fields other than science and engineering with the fundamentals of quantum, atomic, and nuclear physics.

*3.5 Credit Hours*

**PH 381 Intermediate Classical Mechanics**

*First Term—Prerequisite: PH 201*

An intermediate development of theoretical physics. Special techniques, including the Lagrangian formulation of mechanics, are used to solve problems in dynamics, central force motion, rigid body motion and vibrational modes.

*3 Credit Hours*

**PH 382 Intermediate Electricity and Magnetism**

*Second Term—Prerequisite: PH 202 or PH 204*

An intermediate development of the physics of electromagnetism. Topics covered include Maxwell's equations and the propagation and interaction of electromagnetic waves. The effects of special relativity are also considered.

*3 Credit Hours*

**PH 385 Topics in Physics**

*Either Term—Prerequisite: PH 303 or PH 305, may be taken concurrently*

Offers a variety of physics topics for in-depth study. Topics differ each semester and are selected to emphasize the application of basic physics principles to contemporary areas of concern.

*3 Credit Hours*

**PH 385B Laser Physics**

*Second Term*

A combined theoretical and experimental investigation of laser devices. The basic principles of electromagnetism, optics, and atomic structure will be utilized in analyzing both solid state and gas lasers.

*3 Credit Hours*

**PH 385F Atmospheric Physics**

*First Term*

A course in the physics of the atmosphere to include cloud formation, hail, snow and ice formation, atmospheric electricity, atmospheric optical effects, air pollution, and federal standards.

*3 Credit Hours*

**PH 483 Solid State Physics**

*Second Term—Prerequisite: PH 303 or PH 305*

A course in the fundamentals of solid state physics including the important mechanical, electrical, magnetic, and thermal properties of crystals. Metals, semiconductors, and statistics pertinent to solid state theory are discussed.

*3 Credit Hours*

**PH 484 Quantum Mechanics**

*First Term—Prerequisite: PH 303 or PH 305*

A course stressing the physical meaning and the mathematical methods of quantum mechanics. Solutions of barrier problems, the harmonic oscillator, and the hydrogen atom are investigated. Perturbation theory is introduced.

*3 Credit Hours*

**PH 486 Experimental Physics**

*Either Term—Prerequisites: PH 303 or PH 305 and one elective in physics*

Individual laboratory experiments, selected by the student and designed to develop experimental ability, are performed. Equipment is available for a number of standard experiments in both classical and modern physics.

*3 Credit Hours*

**PH 487 Nuclear Reactor Theory**

*Either Term—Prerequisite: Ph 303 or PH 305*

An introductory course in the theory and operation of thermal fission reactors. Includes both theoretical and laboratory coverage of radiation detection, neutron activation, cross-section determination, thermal diffusion, and flux distribution.

*3 Credit Hours*

**PH 488 Nuclear Physics**

*Second Term—Prerequisite: PH 303 or PH 305*

A study of selected topics in nuclear physics covering primarily the structure of the nucleus and nuclear reactions. Radioactivity is covered in detail. Scattering and fundamental particle classifications are introduced.

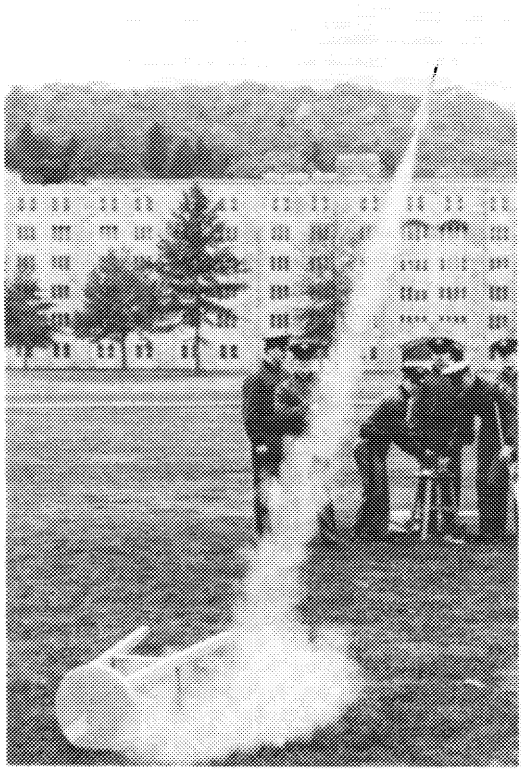
*3 Credit Hours*

**PH 489 Advanced Individual Study in Physics**

*Either Term—Prerequisites: PH 303 or PH 305, two electives in physics, and permission of Head of Department*

Individually supervised research and study in a selected problem area.

*3 Credit Hours*



# DEPARTMENT OF SOCIAL SCIENCES

*Professor and Head of Department*

Lee D. Olvey, COL; B.S., USMA; B.A., M.A., Oxford; Ph.D., Harvard.

## STANDARD COURSES

**SS 201 Economics: Principles and Problems**

*Either Term—Prerequisite: None*

A survey of basic economic principles and their application to public policy. Macroeconomic, microeconomic, and international economic principles and problems are studied.

*3.5 Credit Hours*

**SS 202 Introduction to Political Science**

*Either Term—Prerequisite: None*

Examines the American political system and contrasts this system with others. Emphasis will be on the political process along with the study of competing value systems, the impact of public opinion and the mass media, the political behavior and participation of individual citizens, the role of interest groups and political parties, and the structure and function of major governmental institutions.

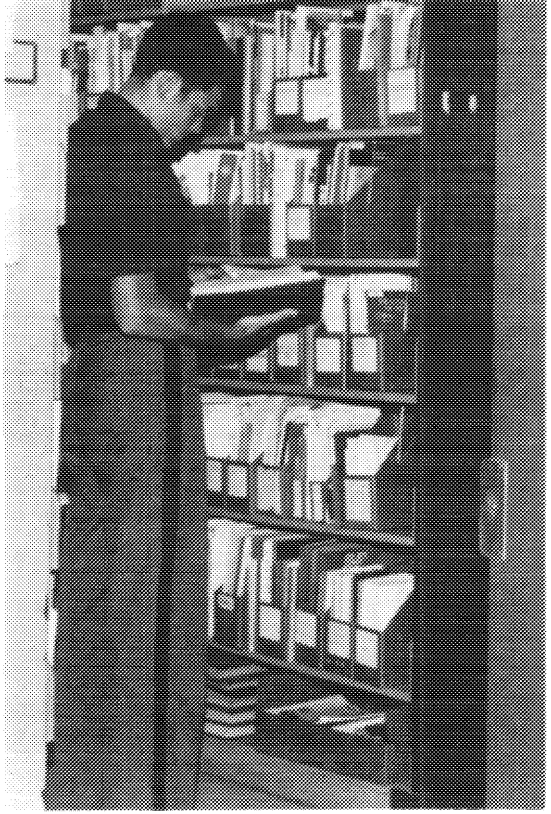
*3.5 Credit Hours*

**SS 307 International Relations**

*Either Term—Prerequisites: SS 201 and SS 202 or equivalent*

An interdisciplinary study of the relations between nations, building upon previous Social Science courses, with particular emphasis on the role of the United States in the international system.

*3.5 Credit Hours*



## ADVANCED COURSES

**SS 251 Economics: Principles and Problems**

*Either Term—Prerequisite: Permission of Instructor*

This course parallels SS 201 in content and objectives with emphasis on individual effort and quantitative understanding.

*3.5 Credit Hours*

**SS 252 Introduction to Political Science**

*Either Term—Prerequisite: Permission of Instructor*

This course parallels SS 202, with emphasis on individual effort. SS 252 explores the distributive approach to politics in a comparative perspective.

*3.5 Credit Hours*

**SS 357 International Relations**

*Either Term—Prerequisite: Permission of Instructor*

A more in-depth and analytical study of the same general body of knowledge treated in SS 307. International relations are analyzed on the levels of foreign policy, international interaction, and the international political system.

*3.5 Credit Hours*

## ELECTIVE COURSES

**SS 372 Public Policy and Administration**

*Either Term—Prerequisite: None*

An in-depth study of the nature of the public policy-making process with primary emphasis on the central role of administrators in the federal bureaucracy. Organizational and political perspectives are among the conceptual tools utilized to analyze methods of policy development, implementation, and control.

*3.0 Credit Hours*

**SS 373 Quantitative Analysis in the Social Sciences**

*First Term—Prerequisite: None*

The course is designed to present insights into the application of quantitative analytical tools to problems in political science and economics, and to highlight the strengths and weaknesses of various statistical techniques. Emphasis is placed on the appropriate application of quantitative techniques and the evaluation of the results obtained.

*3.0 Credit Hours*

**SS 375 Government and Politics of the USSR**

*First Term—Prerequisite: None*

An introduction to the study of Soviet policies, designed to provide the student with an appreciation of Soviet society, the basic ideological precepts influencing the direction of politics in the USSR, and the essence of the political process in that country. Particular attention will be given to analyzing the strengths and weaknesses of the current regime, the USSR's foreign and domestic policies and the nature of the current Soviet-American relationship.

*3.0 Credit Hours*

**SS 376 Comparative Political Systems**

*Second Term—Prerequisite: SS 202 or equivalent*

Building upon concepts studied during the introductory political science course, CPS seeks to expand the student's capacity for political analysis and for understanding political diversity. The course focuses primarily upon the organization, leadership and evaluation of the nation state, and the behavior of individuals and groups within it.

*3.0 Credit Hours*

**SS 377 Economics of National Security**

*Second Term—Prerequisites: SS 201 and SS 202 or equivalent (s)*

Examines the application of economic principles to national security problems. The major emphasis is on the linkage of macroeconomic stabilization policy to the federal budgetary process in general and the defense budgeting process in particular.

*3.0 Credit Hours*

**SS 383 Middle Eastern Studies**

*Second Term—Prerequisite: None*

An introduction to the contemporary problems and progress of the countries of the Middle East in light of political and economic history and cultural traditions.

*3.0 Credit Hours*

**SS 384 Government and Politics of Latin America**

*Second Term—Prerequisite: None*

A basic course in government and politics of Latin America focused on political power contenders and employing case studies of those nations considered to have diverse political cultures.

*3.0 Credit Hours*

**SS 385 Comparative Modern Economic Systems**

*First Term—Prerequisite: SS 201 or equivalent (may be taken concurrently)*

This course represents an effort in bringing the decision-making approach of modern economic theory to the study of economic systems. The decision-making, information, motivation approach is thus allied more closely to current economic theory and its emphasis on decision-making under conditions of uncertainty than to the more traditional approaches to comparative economic systems which emphasize instead the role of ideology or ownership of property.

*3.0 Credit Hours*

**SS 386 Political Philosophy**

*First Term—Prerequisite: None*

A history of political theory from Plato through Marcuse examining certain ethical, moral, and epistemological concepts, the evolution of Western democracy, and its alternatives.

*3.0 Credit Hours*

**SS 387A Seminar in Public Policy: Urban/Suburban Policy Issues**

*First Term—Prerequisite: None*

An interdisciplinary course which analyzes urban/suburban policy issues. It studies the interaction between the political, economic, and bureaucratic considerations, emphasizing the trade-offs and implications of associated public policies.

*3.0 Credit Hours*

**SS 387B Seminar in Public Policy: Issues of Energy, Ecology, and Economy**

*Second Term—Prerequisite: None*

An interdisciplinary course which studies energy and environmental policy from a political and economic

perspective. It analyzes the trade-offs between energy production and use, and the environmental consequences of these activities.

*3.0 Credit Hours*

**SS 388 Macroeconomics: Theory and Practice**

*Second Term—Prerequisite: SS 201 or equivalent*

A blend of aggregate economy theory, empirical analysis and political considerations dealing with macroeconomic theory and national economic policy designed to achieve full employment, price stability, and economic growth.

*3.0 Credit Hours*

**SS 389 Managerial Economics**

*Either Term—Prerequisite: None*

This course deals with: (1) financial accounting, (2) operating problems, (3) capital budgeting, and (4) performance analysis.

*3.0 Credit Hours*

**SS 471 Government and Politics of China**

*Second Term—Prerequisite: None*

This course examines the contemporary political problems of the Peoples Republic of China with special emphasis on traditional political behavior, Marxist political principles, and contemporary issues.

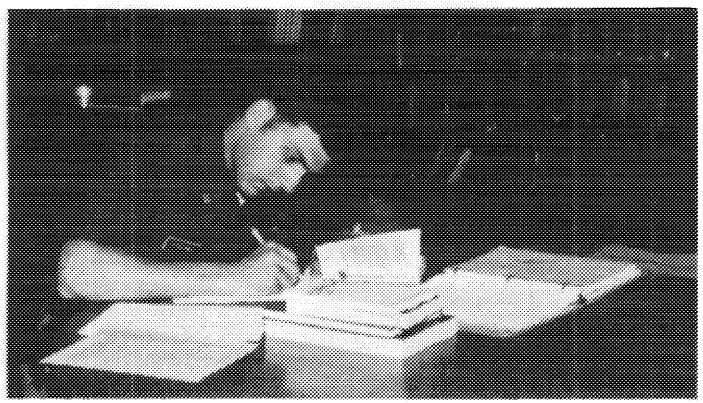
*3.0 Credit Hours*

**SS 472 Comparative Civil-Military Relations**

*Second Term—Prerequisite: None*

Analysis of the socio-economic and political roles of the armed forces of different countries. Patterns of military intervention or civil supremacy are related to institutional, sociological, and ecological factors.

*3.0 Credit Hours*



**SS 473 Issues in American Foreign Policy**

*Second Term—Prerequisite: None*

This seminar-type course will provide a thorough grounding in U.S. foreign policy; substance and process. The field of focus will be a geographic area of functional issue providing current problems for U.S. policymakers.

*3.0 Credit Hours*

**SS 476 International Affairs: Theory and Application**

*Second Term—Prerequisites: SS 201 or 251*

This course supplements the required course in International Relations by introducing the student to alternative explanations of state behavior, which are applied to investigations of major contemporary events.

*3.0 Credit Hours*

**SS 482 Microeconomics: Theory and Application**

*Second Term—Prerequisite: SS 201 or 251*

An intermediate level course in microeconomics applying marginal analysis to decision-making in the public and private sectors.

*3.0 Credit Hours*

**SS 483 National Security Seminar**

*Either Term—Prerequisite: None*

Course focuses on issues affecting U.S. security. Examination of the chaing context in which U.S. foreign and defense policies operate, the formulation and execution of national security policy, and contemporary security postures and issues.

*3.0 Credit Hours*

**SS 484 International Economics**

*Second Term—Prerequisite: SS 201 or 251*

Covers trade issues and theory, international finance, international economic policy, the international monetary system, and selected economic issues of current interest such as OPEC, multinational corporations, the "North-South" problem and economic integration.

*3.0 Credit Hours*

**SS 485 Problems of the Developing Nations**

*Either Term—Prerequisite: SS 202 or 252 (may be taken concurrently)*

The course develops an understanding of the political, economic, social and cultural problems of the developing nations of Asia, Latin America, and Sub-Saharan Africa as they continue to modernize.

*3.0 Credit Hours*

**SS 486 Political and Cultural Anthropology**

*Either Term—Prerequisite: None*

An introductory course in anthropology focusing on the political mechanisms inherent in the various levels of society. Case studies demonstrate how man adapts to diverse environmental challenges through his culture.

*3.0 Credit Hours*

**SS 487 Public Policy Decision Making and Debate**

*First Term—Prerequisite: Permission of the Course Instructor*

Instruction in techniques of rational decision making and persuasive argument focusing on substantive policy issues related to the national debate topic. Skills of effective research, analysis, and presentation are emphasized.

*3.0 Credit Hours*

**SS 489 Advanced Individual Study in Social Sciences**

*Either Term—Prerequisite: Approval of Head of the Department*

Course permits study in an environment conducive to independent effort to accomplish original research or specialized study of special student interest in economics, political science, international affairs or anthropology.

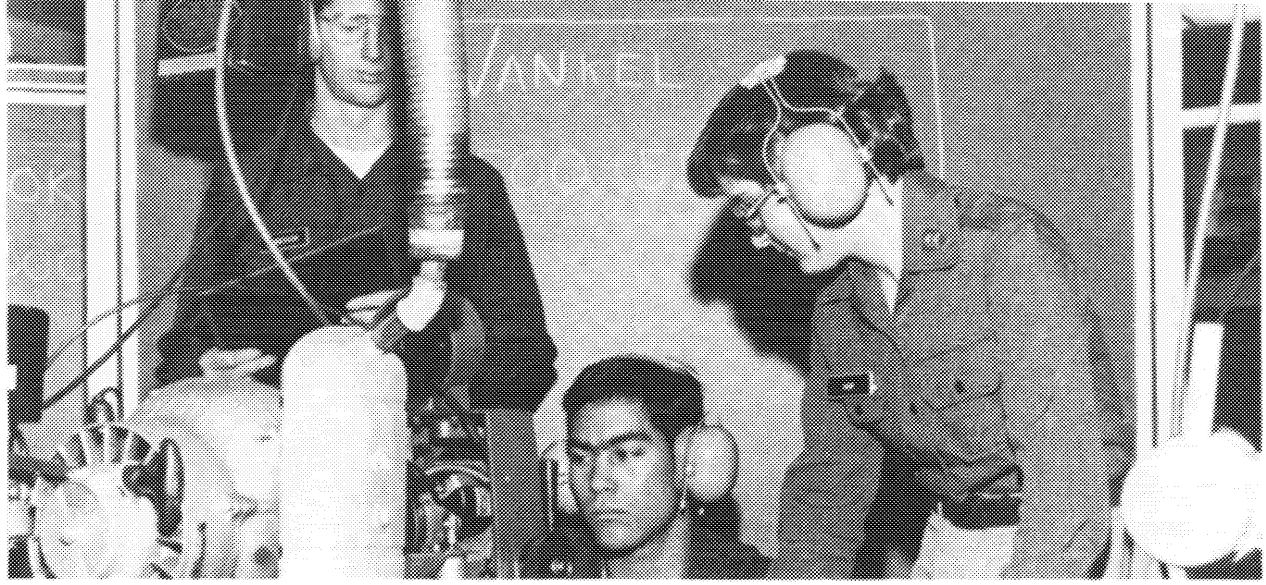
*3.0 Credit Hours*

## INTERDISCIPLINARY COURSE

**AI 479 American Institutions**

*Either Term—Prerequisite: None*

An interdisciplinary course examining the interaction of American Institutions (Military, Congress, Media...) through the study of public issues. It is designed to sensitize cadets to the ambiguity and complexity of issues which they and their society will face.


VANGEL

# 7. Athletic Program

"Upon the fields of friendly strife are sown the seeds that upon other fields on other days will bear the fruits of victory."

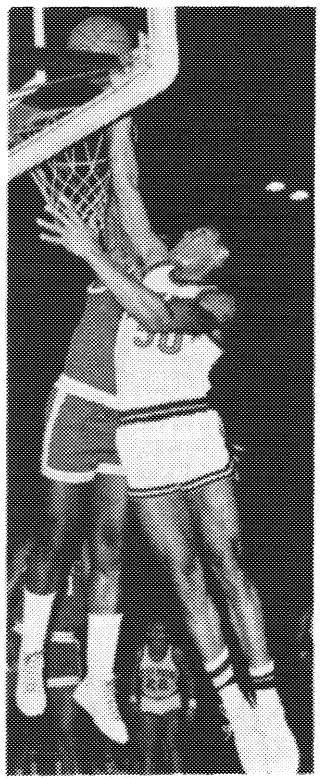
GENERAL DOUGLAS MacARTHUR

# Every Cadet An Athlete

Every cadet at West Point competes in intercollegiate or intramural sports. In addition, each cadet participates in the physical education program. The value of athletic experience to the potential Army officer has long been recognized. General Douglas MacArthur, Superintendent shortly after World War I, was largely responsible for establishing the first-rate athletic program of the Military Academy. MacArthur's view was that "The training of the athletic field, which produces in a superlative degree the attributes of fortitude, self-control, resolution, courage, mental agility and of course, physical development, is one completely fundamental to an efficient soldiery."

The cadets who have worn the Army "A" bear out the accuracy of this view. Among them are former President Dwight D. Eisenhower and Generals Omar N. Bradley and James A. Van Fleet. Former Secretary of the Army Howard ("Bo") Callaway won five varsity letters. Colonel Pete Dawkins was an Army football captain, Heisman trophy winner, all-American halfback, Rhodes Scholar, and the youngest man ever named to the college football Hall of Fame. The late Ed White, first astronaut to walk in space, was a track star; fellow astronaut, Frank Borman, also won a varsity letter.

The Military Academy has a sincere commitment to fully integrate women cadets into the athletic program—intercollegiate, club squad, and intramural. Women cadets may compete for positions on the following varsity squads: fencing, golf, pistol, rifle, skiing, and squash. Women cadets are not allowed to participate on the following men's teams: basketball, baseball, football, 150-lb. football, ice hockey, lacrosse, soccer, or wrestling. There is a varsity women's basketball team, and club sport teams for women in cross-country, gymnastics, indoor and outdoor track, team handball, tennis, softball, swimming, and volleyball. Other club teams will be developed as interests, abilities, and facilities warrant. After a transition period and upon demonstration by the women's club squad teams that they are ready for intercollegiate competition, varsity intercollegiate teams will be organized for those sports.



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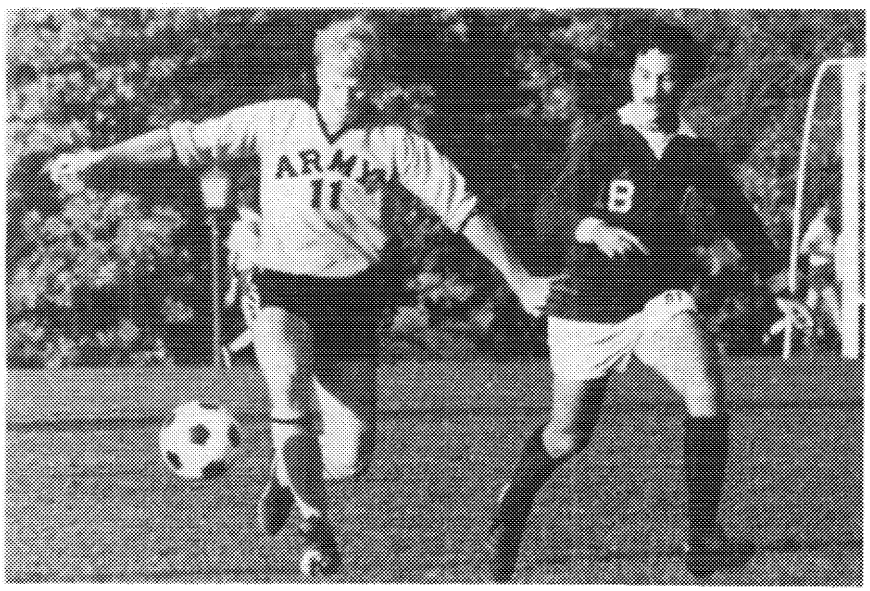
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# Intercollegiate Athletics

Army teams are nationally known for their competitiveness. Nearly one-third of the Corps of Cadets participates in 23 varsity sports: football, lightweight football, soccer, cross-country, and water polo in the fall; basketball, fencing, gymnastics, ice hockey, pistol, rifle, skiing, squash, swimming, indoor track, volleyball, women's basketball, and wrestling in the winter; and baseball, golf, lacrosse, outdoor track, and tennis in the spring.

Several Army teams and individuals have done well in NCAA national championships. The soccer team has been invited to play in the NCAA tournament 11 times in the past 14 years. Lacrosse has been a frequent entrant in that sport's national competition. Army 150-pound football teams have won or shared the Eastern Intercollegiate Championship six of the last seven years for a total of 13 titles in 20 years of competition. Pistol and rifle teams have captured a number of national championships, while the Army basketball team has competed several times in the prestigious National Invitational Tournament (NIT) in New York City. The water polo team has been invited to the NCAA championships twice in recent years, and the volleyball team has played in the national championships three of the last four years.

The intercollegiate athletic program is financed by the Army Athletic Association, a self-supporting, non-profit organization with approximately 14,000 Military Academy graduates as members.

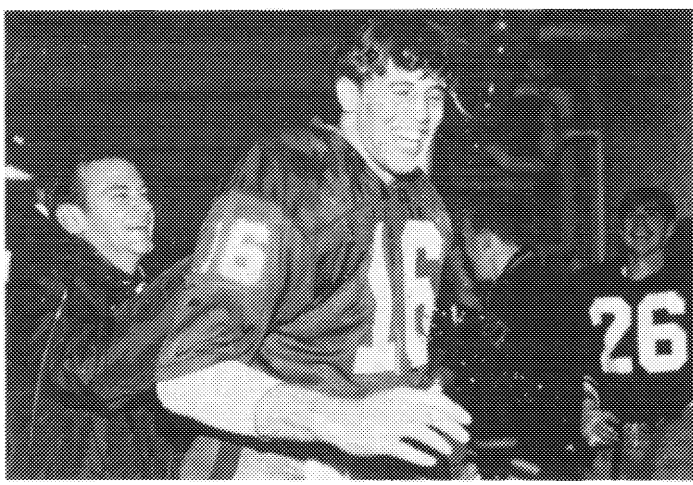
## 1978 FOOTBALL SCHEDULE

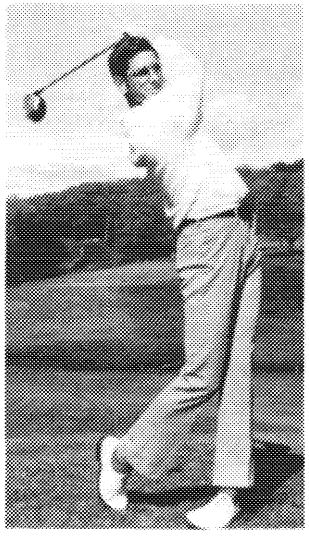
*September*
16 LAFAYETTE at West Point
23 VIRGINIA at West Point
30 WASHINGTON STATE at West Point

*October*
7 TENNESSEE at Tennessee
14 HOLY CROSS at West Point
21 FLORIDA at Florida
28 COLGATE at West Point (Homecoming)

*November*
4 AIR FORCE at West Point
11 BOSTON COLLEGE at West Point
18 PITTSBURGH at Pittsburgh

*December*
2 NAVY at Philadelphia





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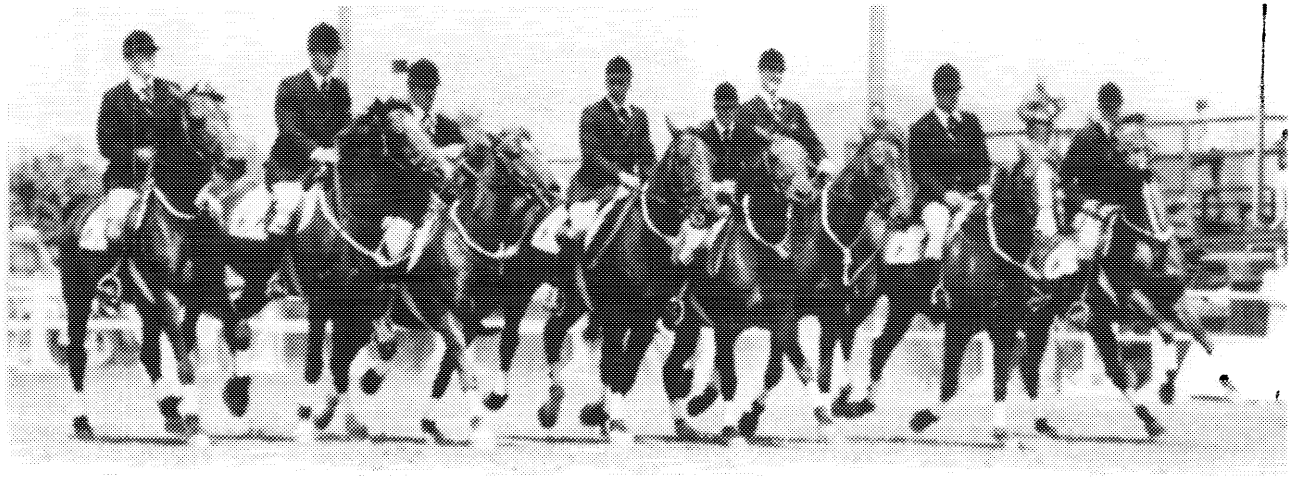

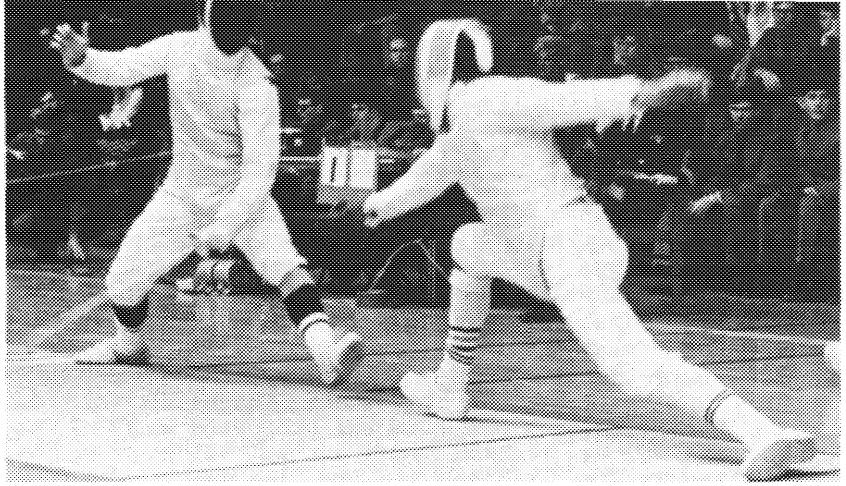

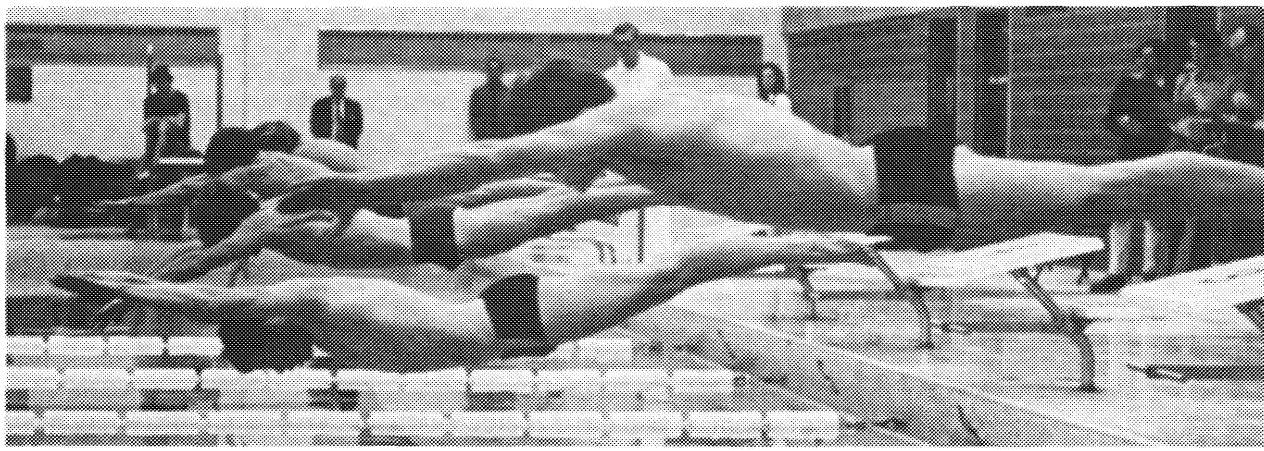

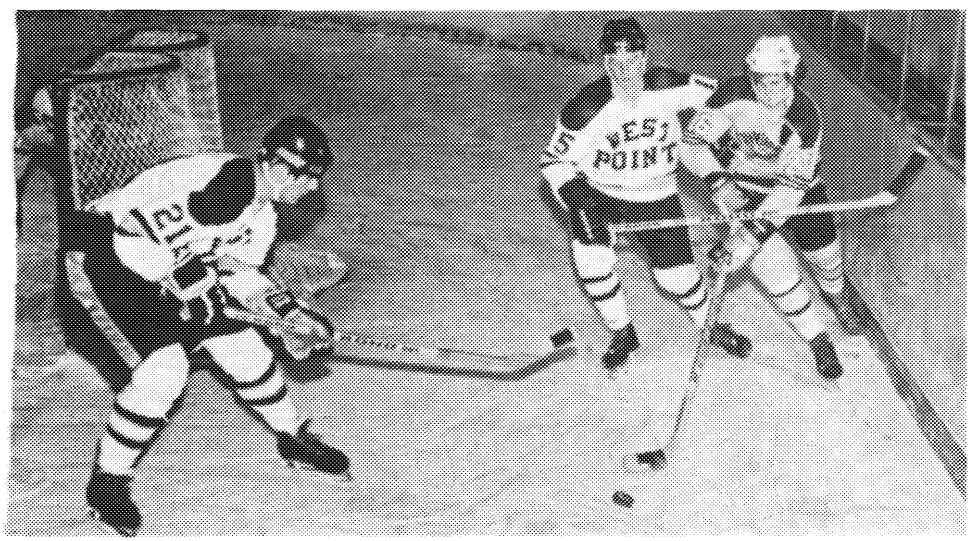
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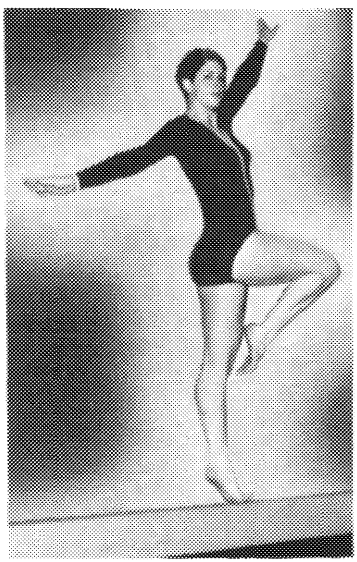


# Club Teams

Club teams offer competition and fun in everything from rugby football to sailing. Many of the 25 competitive teams are among the best in the nation. The Pistol Club won the National Collegiate Club Championship in 1977, and the team handball and orienteering teams have been either national champions or second the past two years. The riding and debate teams qualified for the first time ever in 1977 for their respective national tournaments. The skeet and trap team won the individual first place awards at the national matches in Omaha, Nebraska, in 1977. The judo, handball, karate, and sport parachute teams were represented at their national tournaments, and the triathlon team regularly competes at national and international meets. The marathon team traditionally fields a strong group of runners and has had over 20 cadets finish the Boston Marathon in the past three years.

In all of these clubs, the cadets are the leaders, the planners, and the participants, and they do much of the coaching as well.

# Intramural Athletics

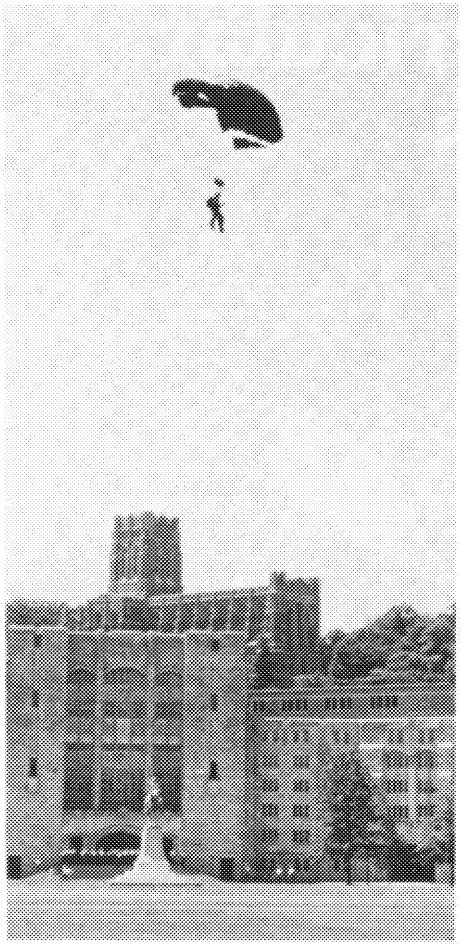
At 3:40 p.m. every Monday through Thursday, the "fields of friendly strife" are flooded with intramural athletes. Normally, each cadet competes in intramurals twice weekly. Participation during the spring is voluntary. Intramurals give every cadet a chance to build strength, coordination, and endurance as well as an opportunity to blow off steam and have a little fun. Fall brings competition in flickerball, football (with full gear), soccer, triathlon, and track. With winter the action moves indoors for basketball, boxing, handball, squash, swimming, volleyball, and wrestling. Spring intramurals feature team handball, lacrosse, touch football, water polo, and a number of others as determined by cadet interest.

# Physical Education

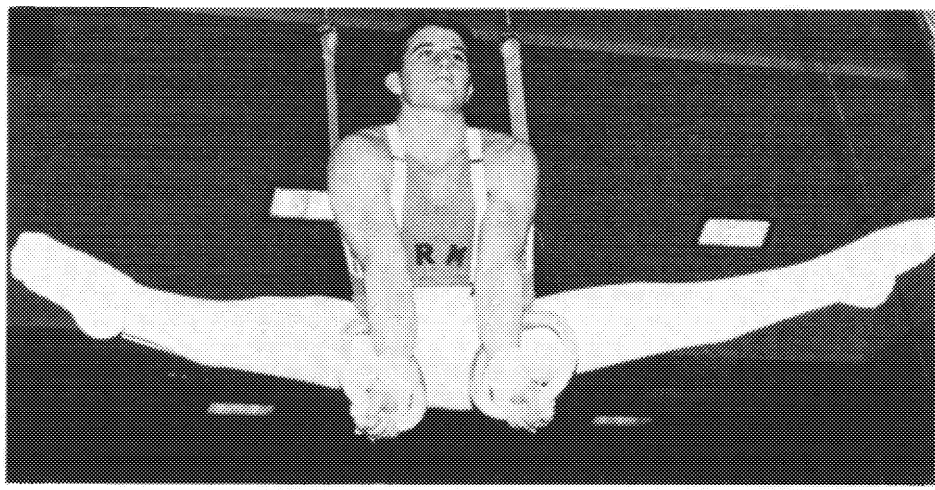
Every cadet takes seven credit hours in the comprehensive, four-year physical education program. The progression begins the first years with fundamentals of conditioning, combatives, swimming, gymnastics, and carryover sports. Carryover sports, activities cadets may engaged in for the rest of their lives, receive progressively greater emphasis during upperclass years. Among such sports are golf, tennis, badminton, handball, bowling, ice skating, racquetball, personal conditioning, senior life saving, scuba, skiing, squash, volleyball, water safety instruction, and aerobics. Upperclass cadets also learn techniques of instruction and coaching, which provide additional leadership experience and help build confidence.

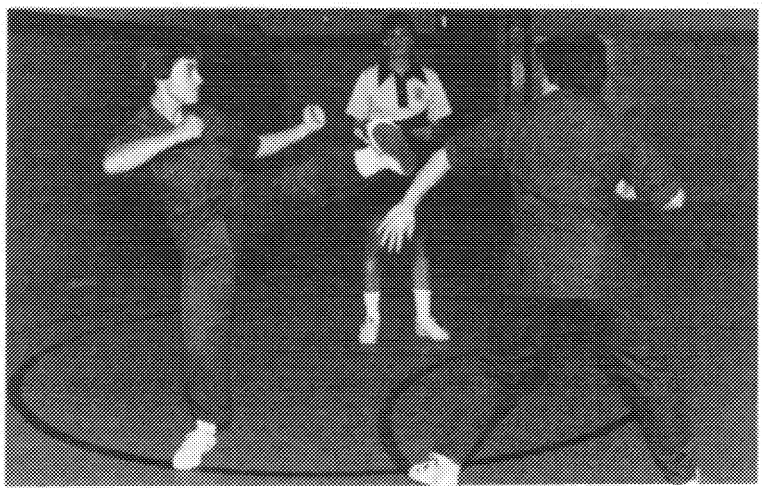
The program is administered by the Department of Physical Education (DPE), part of the Office of the Commandant. A DPE instructor is assigned to each cadet company as a guidance counselor. This counselor maintains an overall physical progress record on each cadet; concerns himself with corrective assistance for posture deficiency, or weight control; and, where necessary, provides special programs for cadets having difficulty meeting minimum standards in swimming or other sports.

Individual attention, team activity, and fine coaching rank the total physical education program at West Point among the country's best.

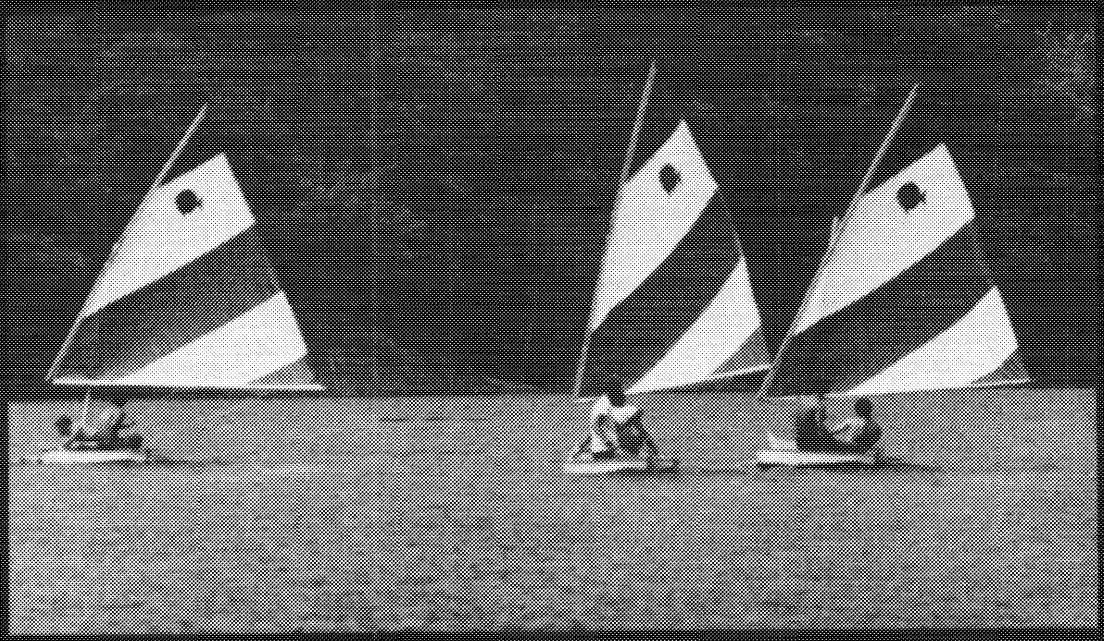


*West Point Heisman Trophy winners Glenn Davis 1946, "Doc" Blanchard 1945, Pete Dawkins 1958.*





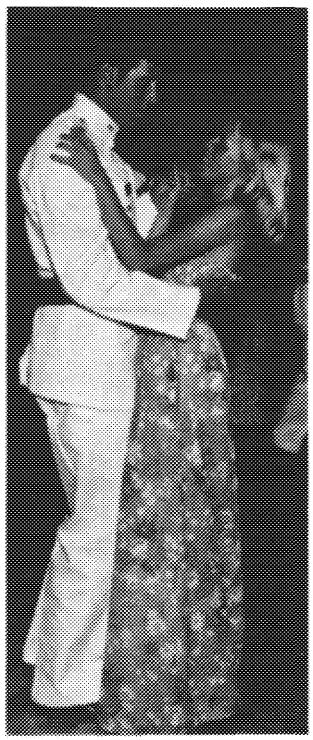
# 8. Extracurricular Activities



"Let it be your pride....to show all men everywhere not only what good soldiers you are, but also what good men you are."

WOODROW WILSON

You can imagine what all work and no play would to to a cadet. So can we. Woods, lakes, ski slopes, sports fields, athletic buildings, lounges, golf courses, tennis courts—you name it—provide places for the cadet to get away from it all for a while. Diverse interests and know-how are important to the Army officer. So, time-out from studies and military training permits such relaxing activities as golfing, sailing, ice skating, fishing, canoeing, or the more active pastimes of skiing, sky-diving, cycling, mountain climbing, hunting, and scuba diving. Scholastic groups delve into languages, engineering, math, geology, and the arts. A wide variety of religious activities are available to the cadets in addition to the normal Chapel services.

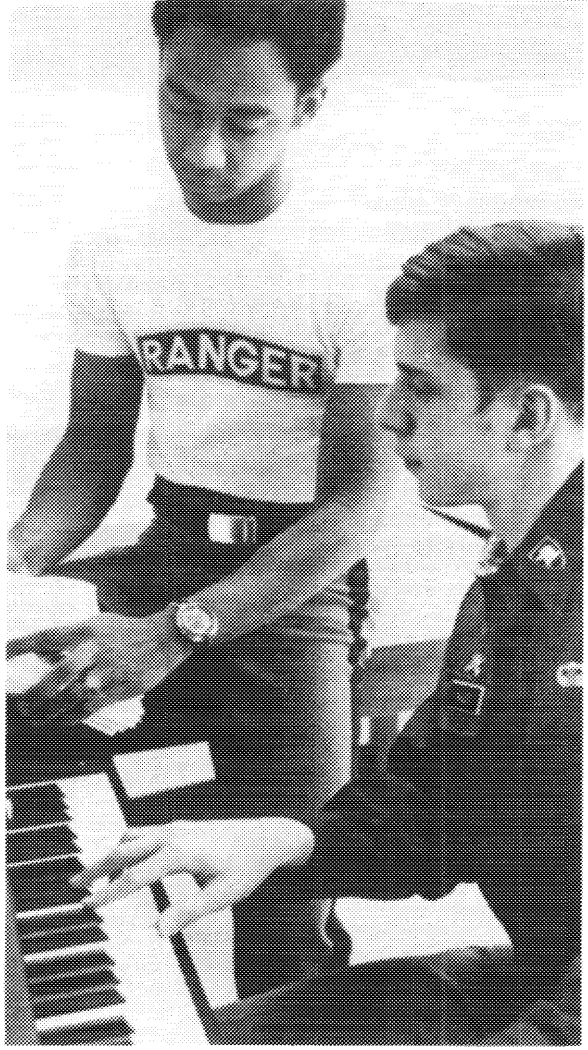


## Social Life

Cadets, like college students everywhere, find time for social activities. Frequent dances bring students from neighboring campuses. Cadets hold functions in the First Class Club, the Ski Lodge, the Golf Club, a remodeled railroad depot, two lake cabins, and even on a West Point excursion boat. The Military Academy's Hotel Thayer provides a place for cadets to dine with friends and families. First Class cadets (seniors) also have access to the officers' club. Both facilities have panoramic views of the Hudson River. Movies, plays, concerts, other live entertainment, and formal dances in Eisenhower Hall (cadet activities center) are common weekend activities.

## The Arts

The Cadet Fine Arts Forum is the largest extracurricular group at West Point. Interests in archaeology, ballet, theater, photography, sculpture, painting, films, and music are pursued through the Forum's cadet-organized activities. In 1977-78 the Forum brought to West Point such performers as Eugene Fodor and the American Symphony Orchestra, the Soviet Georgian Dancers, Red Skelton, and such productions as "My Fair Lady," "Les Ballets Jazz," and "The Intimate P.D.Q. Bach."



In 1976, the Military Academy proudly opened the Class of 1929 Gallery in Eisenhower Hall. The new gallery opened with a major exhibition of works by the distinguished 19th Century American contemporary artist, Robert W. Weir, who taught at West Point from 1834-1876.

The traditional "100th Night Show," sponsored by the Dialectic Society 100 nights before graduation, is written, produced, directed, and performed by cadets. The Cadet Acting Troupe also produces and presents at least two stage plays each year. The musicals, "No Time for Sergeants," and "How to Succeed in Business (Without Really Trying)," are two of their recent successes.

Musical talents are exercised through the Cadet Band, dance combos, and the nationally famous Cadet Glee club. WKDT, the Cadet operated FM-stereo radio station, broadcasts music, news, and sports commentary.

Cadet writers and editors strive to prove that the word can be (almost) as mighty as the sword. The *Howitzer* yearbook, the *Pointer* magazine, the *Bugle Notes* handbook for Plebes (freshmen), and the *Slum and Gravy* sports newsletter are some of their publications.

The very active West Point Debate Council and Forum is another popular activity at the Military Academy. Cadets speak out on current issues in competitions with their college peers at debate tournaments throughout the United State.

Cadets assimilate the literature and customs of foreign countries through these language clubs: Arabic, Chinese, French, German, Portuguese, Russian, and Spanish.

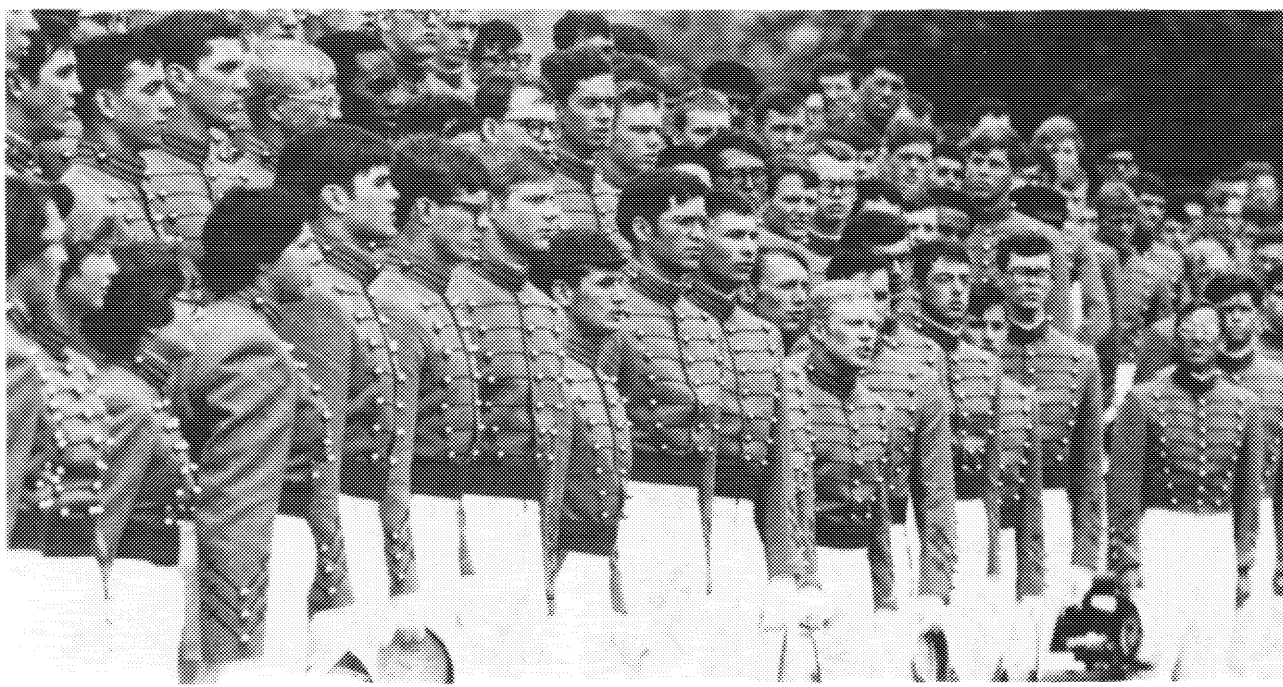
## Scientific Clubs

Guest lecturers, innovative projects, discussion groups, and field trips are sponsored by cadet scientific clubs. The Aeronautics and Astronautics Club, the Astronomy Club, the Engineering Forum, the Electronics Club, and the Geology Club are active in this category.

# Community Affairs Groups

Many cadets step out of the West Point community to help in veterans' hospitals, juvenile correctional institutions, and young people's organizations. The Cadet Scoutmasters' Council works with local Boy Scout units and annually hosts a camporee which draws over 3,000 scouts from all over the Eastern seaboard.

The Cadet Public Relations Council sponsors cadet appearances at junior and senior high schools for military and civic organizations, and on radio and TV throughout the nation. Cadets talk about their experiences at West Point and present audiovisual portrayals of cadet life.



# Religious Activities

A large and enthusiastic group of cadets combine fune and religious activity. Saturday nights find them with their dates, gathered for "rap sessions," singing, and guitar-strumming good times at the Coffee House in the Cadet Chapel. Retreats, worship services, conferences, choirs, discussion groups and Sunday School teaching revolve around the three West Point chapels. All cadets are encouraged, though not required, to become involved in religious activities.

Protestant cadets serve as acolytes, choir members, and ushers in the interdenominational services at the Cadet Chapel and at the outdoor amphitheater. Three hundred children of the West Point community attend Sunday School classes taught by cadets. Discussion groups, Bible studies, and morning devotions are offered weekdays. Regular activities of the Fellowship of Christian Athletes include a monthly prayer breakfast in the cadet dining hall. Cadets may participate in certain authorized retreats on weekends. The Officers' Christian Fellowship features workshops, speakers, and Bible study. Specific denominational groups such as the Church of Jesus Christ of Latter Day Saints, Baptists, and Lutherans also get together on a scheduled basis.

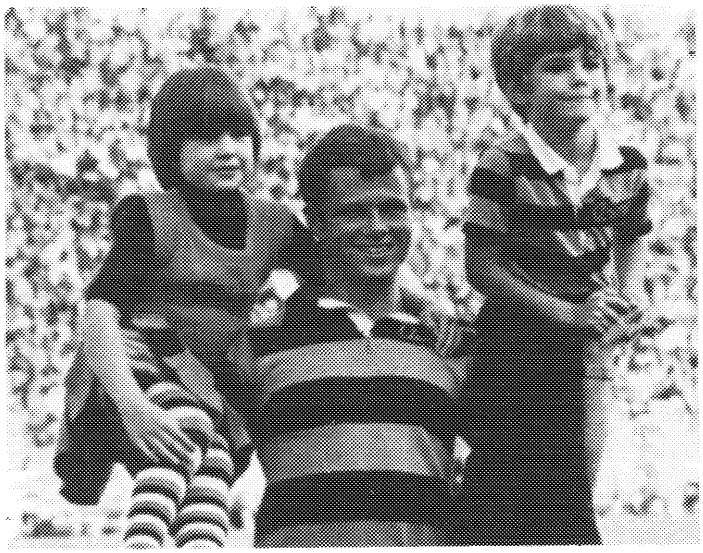
Additional activities for Catholic cadets include Masses and other liturgical ceremonies held in the Holy Trinity Chapel. A cadet Cardinal Newman Forum meets each week, offering instruction and discussions in religion, morals, and philosophy.

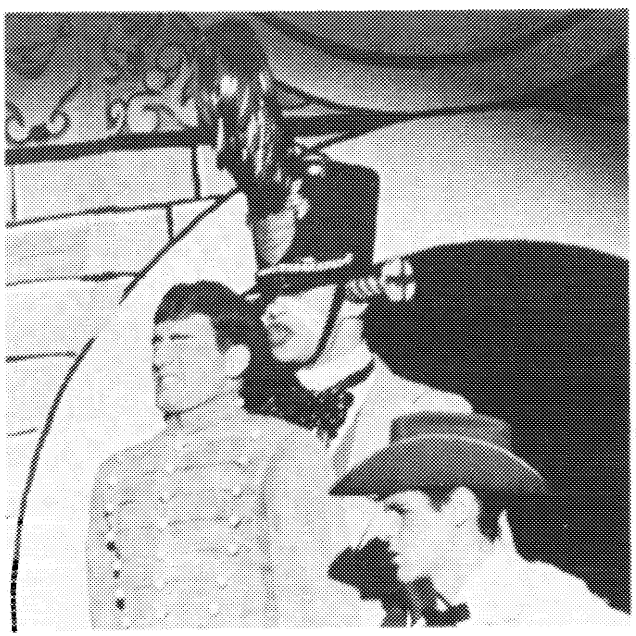
Jewish cadets may attend denominational worship services each Friday. Cadets participate in all services each Friday. Cadets participate in all services and actually lead many of them. High Holy Day services are observed in nearby communities where cadets stay in homes of members of the congregation. A community Seder is held each year, and four weekends a year a Jewish Cadet Choir sings for congregations in neighboring communities.

Chaplains of various denominations are quick to lend a sympathic ear to the cadet who seeks individual spiritual guidance or advice about personal and family problems, or who simply wants to talk. A Chaplain's office in Washington Hall, hub of the cadet living area, makes this kind of personal counseling readily available.

West Point religious activities are as varied and as interesting as the cadets who participate in them. Sharing and fellowship make the Military Academy a close-knit community.

# EXTRACURRICULAR ACTIVITIES





# 9. Administration, Staff, and Faculty

"Leadership in a democratic Army means firmness, not harshness; understanding, not weakness; justice, not license; humaneness, not intolerance; generosity, not selfishness; pride, not egotism."

GENERAL OMAR N. BRADLEY

Administrative titles at the Military Academy may differ from those at most colleges, but the responsibilities that go along with the titles are similar. The Superintendent is like a college president, except that in addition to heading the Military Academy he commands the military post at West Point. The Dean of the Academic Board, like a college dean of faculty, coordinates the activities of the academic departments and advises the Superintendent on academic matters. The Commandant of Cadets is the military equivalent of a dean of students. He oversees student government, works with student activities, and supervises the military training of the Corps of Cadets. The Superintendent, Dean, and Commandant join 13 heads of academic departments to form the Academic Board, which establishes standards for admission, academic performance, and a wide range of other educational and administrative policies. The faculty, composed primarily of Army officers, combines the wisdom and continuity of tenured professors and associate professors with the fresh new ideas of young assistant professors and instructors assigned to West Point for three or four years.

Since 1815 a Board of Visitors, similar in function to a board of trustees, has annually reviewed the Military Academy's curriculum, policies, and equipment, and submitted recommendations to the President of the United States.

# USMA Staff and Faculty

Listing as of the spring semester, 1978

## SUPERINTENDENT

Andrew J. Goodpaster, LTG; B.S., USMA; M.S.E., A.M., Ph.D., Princeton.

**Aide-de-Camp**
Gary W. Halstead, CPT; B.S., USMA; M.S., Long Island.

**Deputy Superintendent**
Charles W. Bagnal, BG; B.S., USMA; M.S., Georgia Tech.

**Aide-de-Camp**
James A. Coggin, ILT; B.S., USMA.

**Protocol Officer**
Dennis M. Mikale, MAJ; B.S., USMA; M.S., Southern Illinois.

## USMA STAFF

**Chief of Staff**
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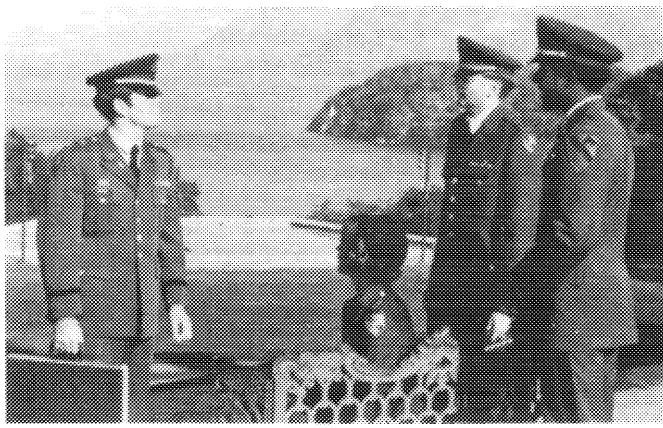

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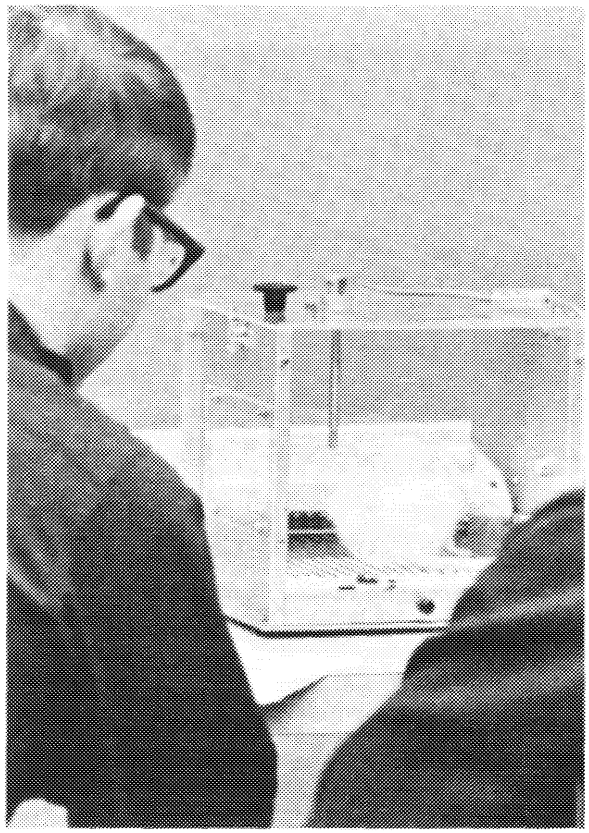

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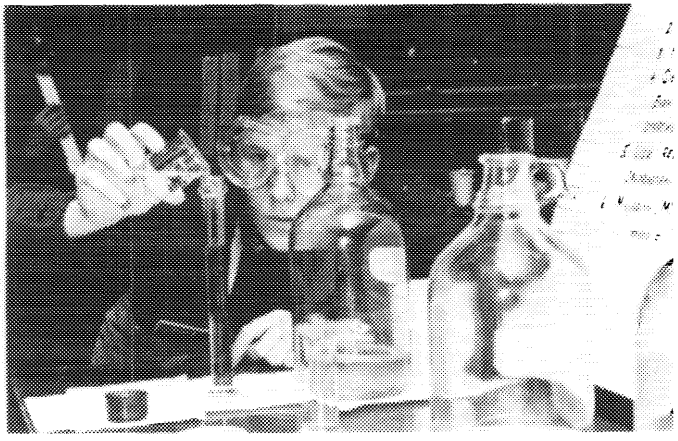

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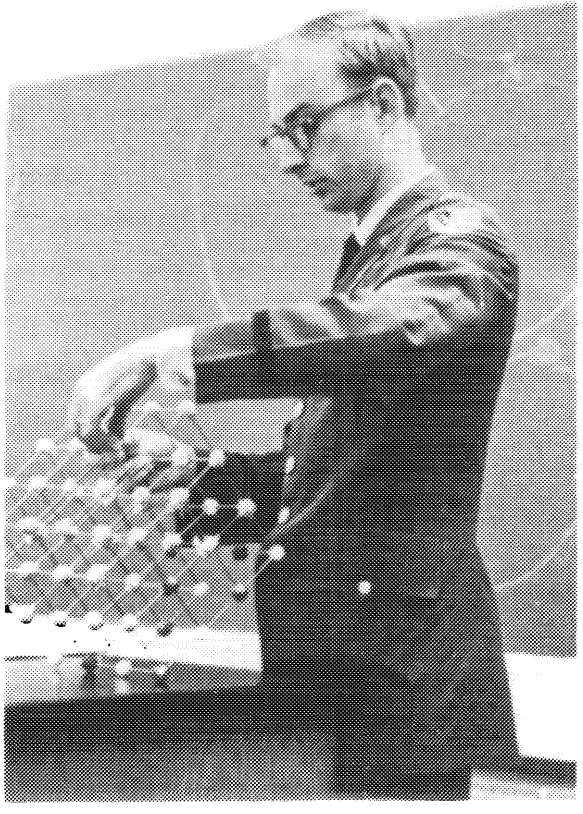
Michael E. Velten, CPT; B.Ch.E., Dayton; M.S., Scranton.



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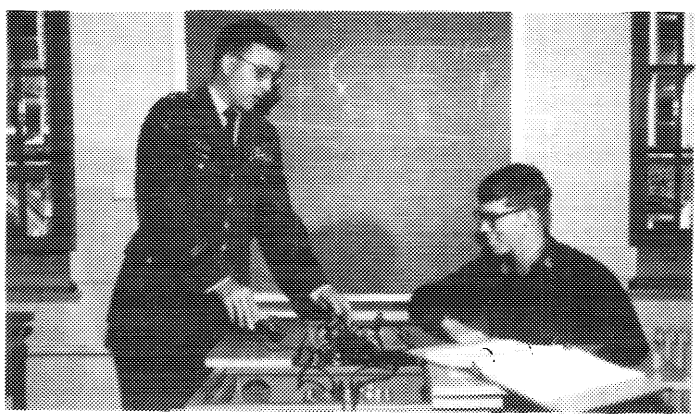
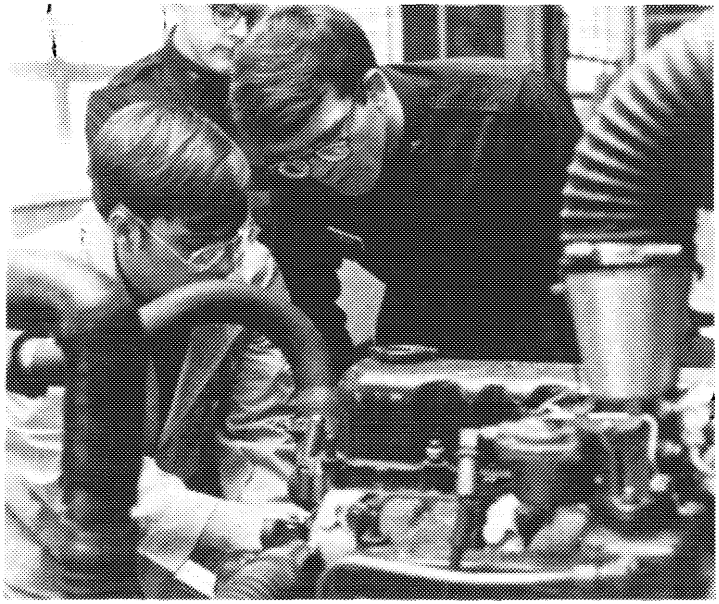


# DEPARTMENT OF ENGINEERING



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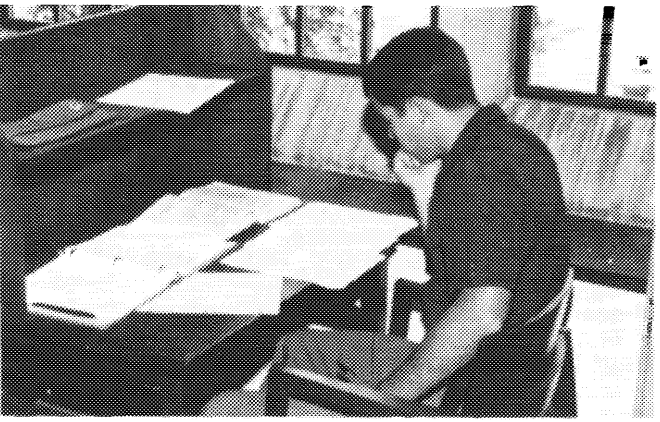

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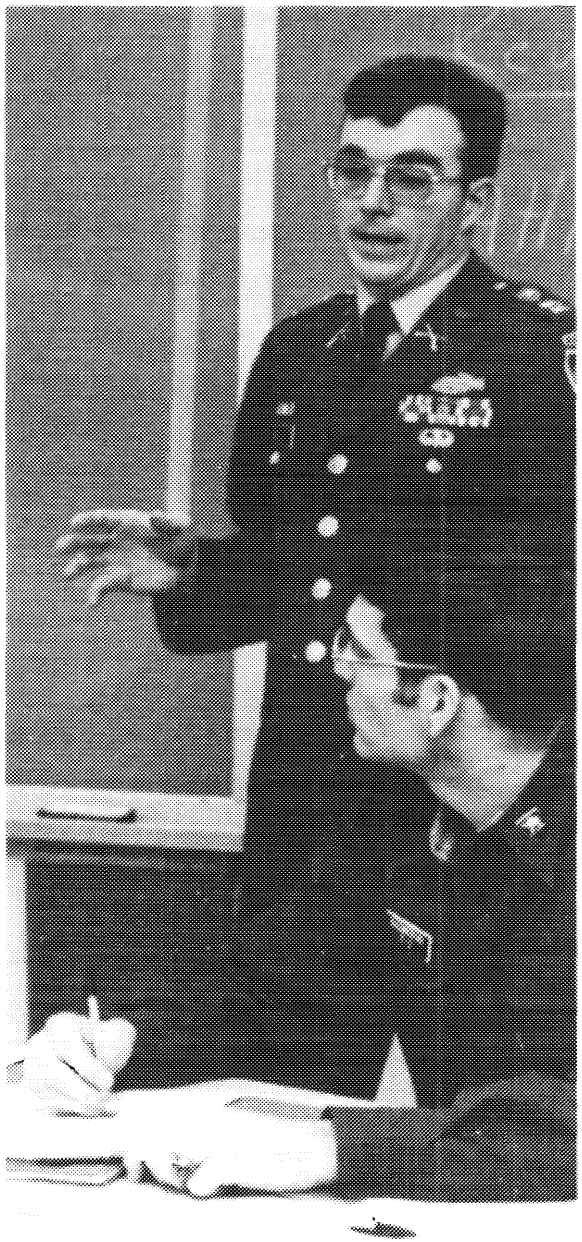

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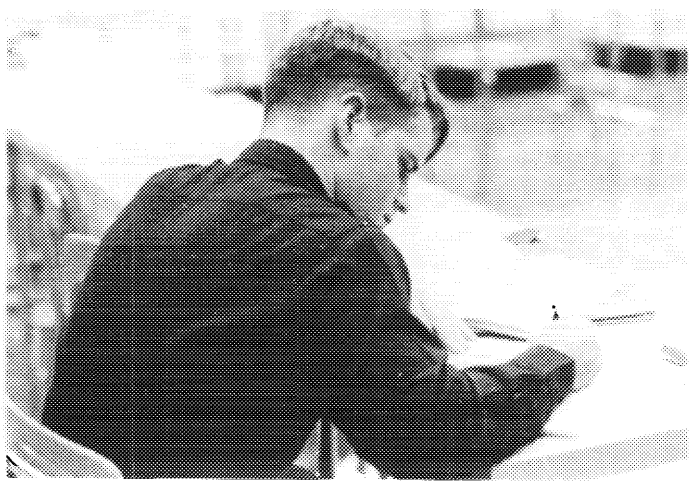

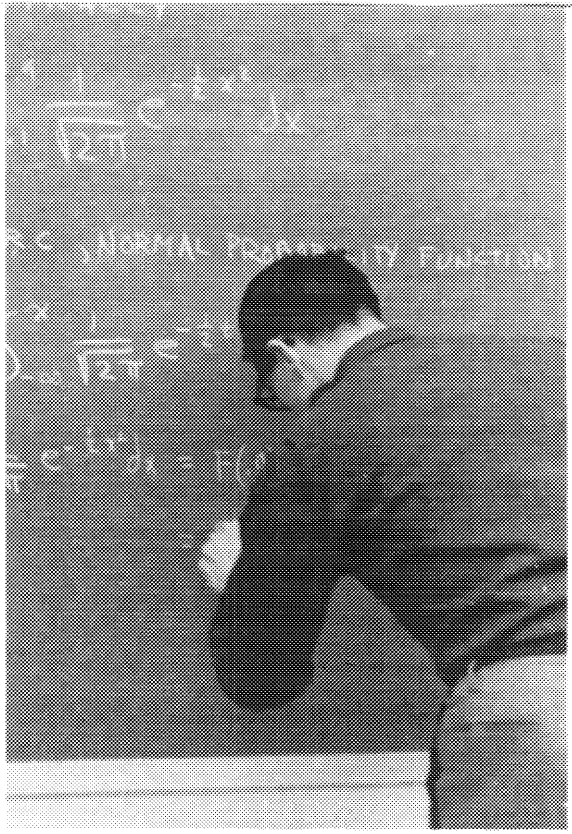

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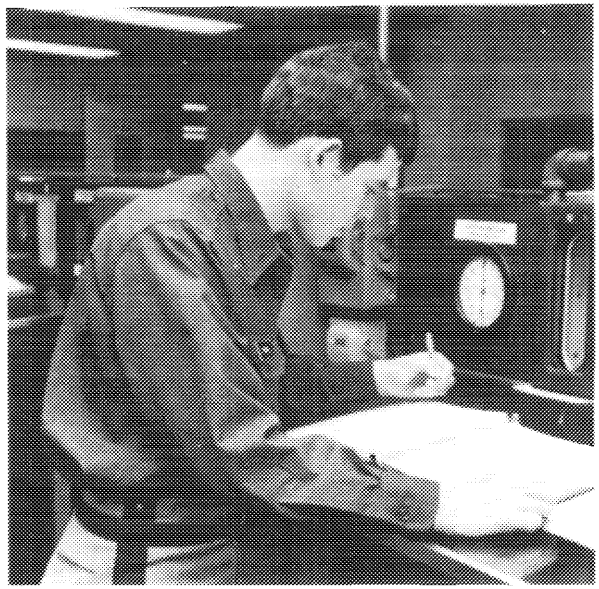

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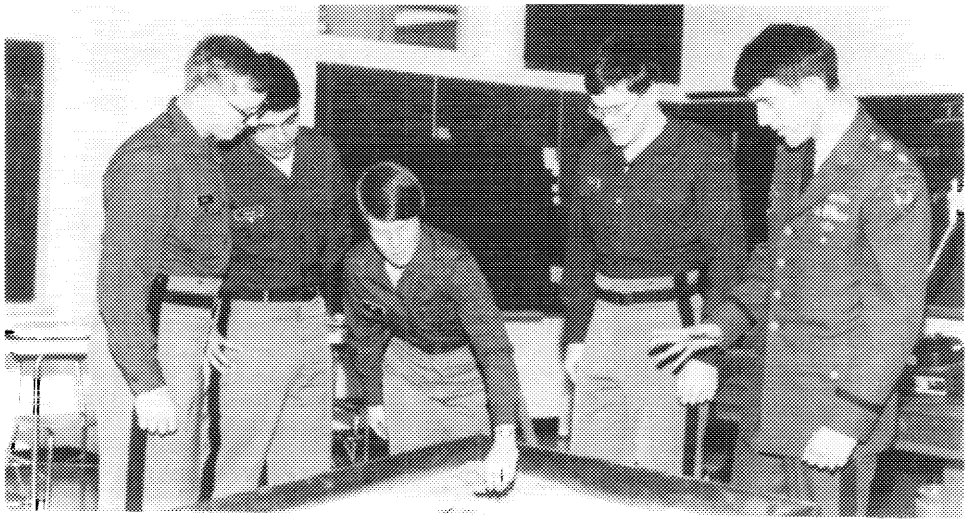

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Michael J. Reynolds, MAJ (British Army); Eaton Hall OCS.
Larry E. Stoll, CPT; B.S., Kearney State.
Robert H. Taylor, MAJ; B.A., M.A., Western Kentucky.
Stephen B. Webber, MAJ; B.S., The Citadel; M.A., Duke.

**Plans & Operations Branch Chief**
Steven L. Arnold, LTC; B.S., USMA; M.A., Auburn.

**Programs Officers**
Stephen S. Overstreet, CPT; B.S., USMA.
Frederick M. Pope, MAJ; B.S., USMA; M.S., Michigan.
Charles R. Scott, MAJ; B.S., Illinois; M.S., Purdue.
Thomas A. Smith, MAJ; B.S., Eastern Tennessee State.

**Senior Branch Representatives**
Andrew E. Andrews, MAJ (Air Defense Artillery); B.S., USMA; M.S.N.E., California.
C. Hilton Dunn, Jr., MAJ (Corps of Engineers); B.S., USMA; M.S., Illinois.
Michael L. Horstman, MAJ (Field Artillery); B.S., USMA; M.S., Iowa State.
William J. Major, Jr., MAJ (Infantry); B.S., USMA.
Geoffrey S. Moakley, MAJ (Armor); B.S., USMA; M.B.A., Tulane.

**Professor and Head of Department**
James L. Anderson, COL; B.S., USMA; M.S., Indiana.

**Associate Professor and Deputy Head of Department**
Alfred S. Rushatz, LTC; B.S., USMA; M.S., Penn State.

**Associate Professor and Director of Instruction**
Robert G. Tetu, MAJ; B.S., USMA; M.S., Illinois.

**Associate Professors**
Herbert J. Kroeten, MR.; B.A., M.Ed., Minnesota.
William F. Lewis, MR.; B.S., Springfield; M.A., NYU.
George W. Linck, MR.; B.S., Springfield; M.A., Columbia.
James A. Peterson, DR.; B.S., California (Berkeley); M.S., Ph.D., Illinois.
Robert W. Stauffer, DR.; B.S., Frostburg State; M.S., Virginia; Ed.D., Temple.

**Assistant Professors**

Peter A. Dencker, CPT; B.S., USMA; M.S., Georgetown.

Oliver R. Johnson, CPT; B.S., USMA; M.S., Indiana.

Timothy D. Kearin, CPT; B.S., Arizona; M.S., Indiana.

Kenneth W. Smith, CPT; B.S., USMA; M.S., Washington.

M. Gregory Smith, CPT; B.S., USMA; M.S., Indiana.

**Instructors**

Leroy A. Alitz, MR.; B.S., Iowa State; M.S., Iowa.

Paul D. Assaiante, SP5; B.S., Springfield.

Robert A. Bertucci, MR.; B.S., Springfield.

Ishmon F. Burks, CPT; B.S., Lincoln; M.S., Indiana.

Lawrence F. Butler, MR.; B.S., Penn State.

George G. Cantlay, CPT; B.S., USMA; M.S., Indiana.

Roger J. Capan, MR.; B.S., SUNY (Buffalo); M.S., Illinois.

Joseph R. Ciampi, MR.; B.S., Mansfield State; M.S., Azusa Pacific.

Edmund O. Crossley, MR.; B.S., M.E., Springfield.

Larry R. Ellis, CPT; B.S., Morgan State; M.S., Indiana.

Robert A. Frank, MAJ; B.S., USMA; M.S., Indiana.

Dennis S. Forbes, MR.; B.S., M.Ed., Witchita State; M.S., C.W. Post; P.D.D., Long Island.

Robert M. Hensler, CPT; B.S., USMA; M.S, Indiana.

Robert J. Hoffman, CPT; B.S., USMA; M.S., Indiana.

Eileen R. Johnston, 1LT; B.S., Central Missouri State; M.S., Washington.

George A. Latham, MAJ; B.S., Illinois; M.Ed., Wayne State; M.A., Indiana.

John D. Lemperle, MR.; B.S., Utah; M.S., Idaho State.

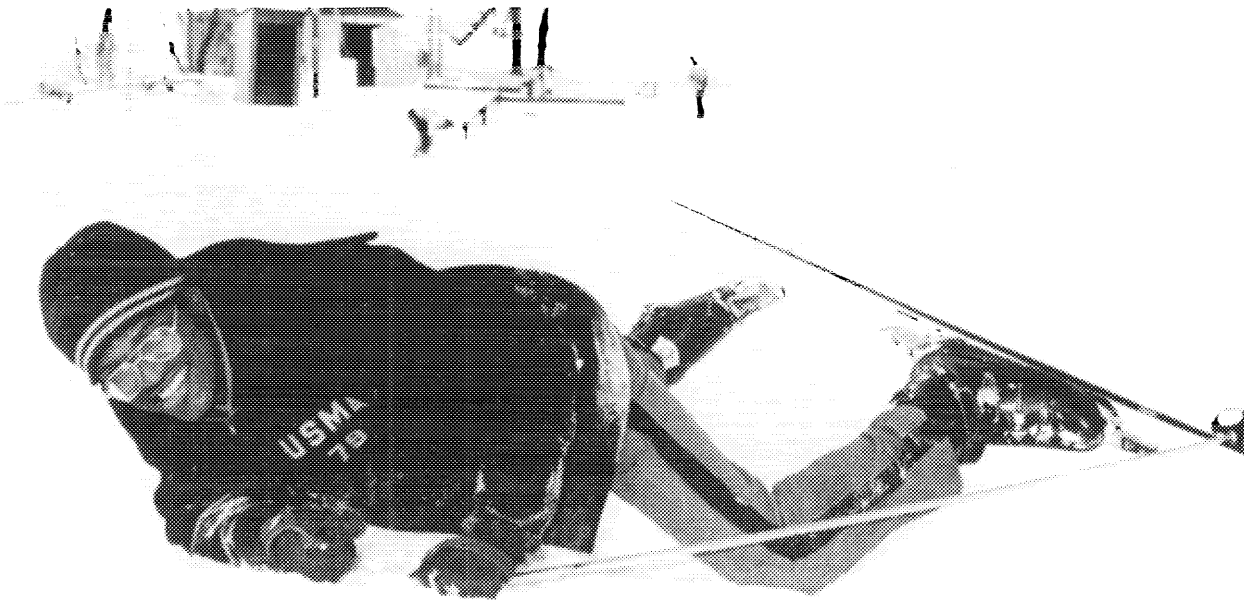
Harold I. Magee, CPT; B.S., Tennessee; M.S., Indiana.

Joanne S. Micka, MS.; B.S., Westchester State; M.A., Wake Forest.

Joseph M. Palone, MR.; B.S., Cortland State; M.S., New York U.

Bill Permakoff, MR.; B.A., M.S., St. Johns.

Susan L. Peterson, MRS.; B.S., California (Berkeley); M.S., Illinois.



*Historical moment—June 1978; the first upperclass women "recognized" plebe women at the end of their freshman year.*

Michael J. Petrucci, CPT; B.S., Western Michigan; M.S., Indiana.
Ronald V. Pifer, MR.; B.S., Penn State; M.S., Wisconsin State.
William R. Schutsky, CPT; B.S., USMA; M.S., Indiana.
John A. Scipione, CPT; B.S., M.S., Syracuse.
Michael T. Spinello, CPT; B.S., USMA; M.S., Indiana.
Joseph W. Sutton, CPT; B.A., Ohio; M.S., Indiana.
Susan M. Tendy, MISS; B.A., Adelphi; M.S., Penn State.
Charles R. Thompsen, CPT; B.S., USMA; M.S., Indiana.
Gene B. Tomlinson, MAJ; B.S., USMA; M.S., Indiana.
Deborah L. Van Dormolen, 2LT; B.S., Westchester State; M.S., Indiana.
Henry J. Veix, MR.; B.S., Cortland State; M.A., Columbia.
David M. Yates, MR.; B.A., B.S., M.S., Delaware.

**Trainers**
Beverely Land, MISS; B.S., Penn State.
John P. Trainor, MR.; B.S., Springfield; M.S., Indiana.
Louis F. Tomasi, MR.; B.S., Vermont; M.S., East Stroudsburg State.

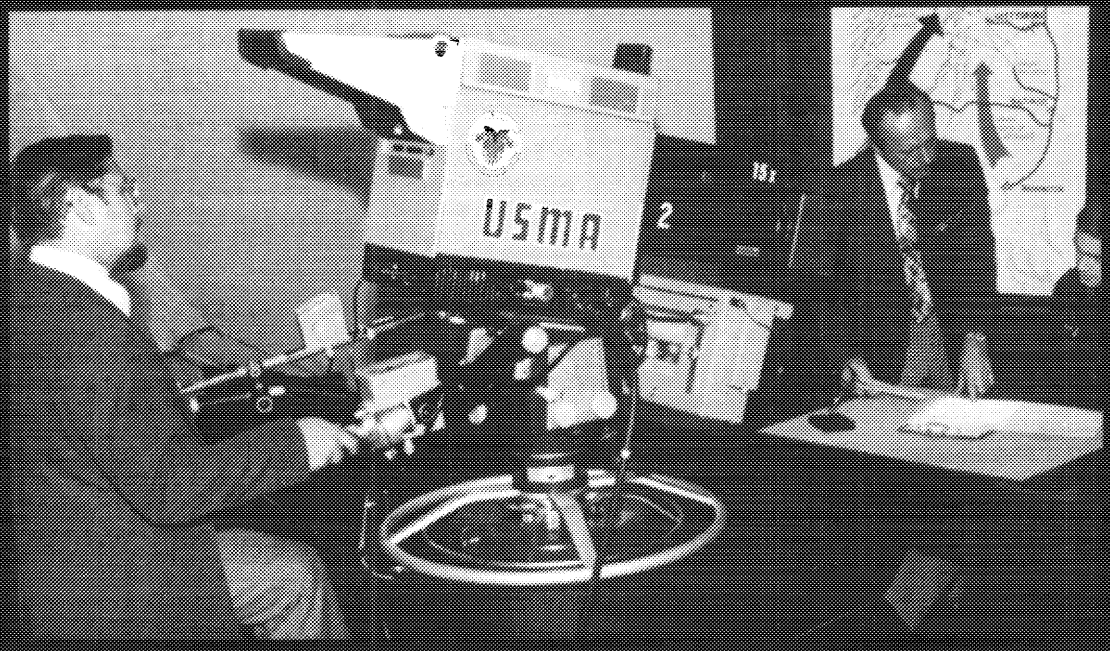
# Board of Visitors, 1977

**From the United States Senate**
Honorable Mark O. Hatfield, Oregon
Honorable J. Bennett Johnston, Jr., Louisiana
Honorable Patrick J. Leahy, Vermont
Honorable Dewey F. Bartlett, Oklahoma (representing John C. Stennis, Chairman of the Committee on Armed Services)

**From the House of Representatives**
Honorable Benjamin A. Gilman, New York
Honorable Clarence D. Long, Maryland
Honorable Elford A. Cederberg, Michigan
Honorable John M. Murphy, New York
Honorable Thomas J. Downey, New York (Representing Melvin Price, Chairman of the Committee on Armed Services)

**Appointed by the President of the United States**
Mr. Carleton J. King, Esq., Senior Member, Law Firm of King, Murphy, F. Fitzpatrick (appointed in 1975 to serve through 1977)
Mr. Joseph T. Power, General President, Operative Plasterers & Cement Masons International Association of the United States and Canada (appointed in 1975 to serve through 1977)
Major General George H. Olmstead, USAR (Ret), President and Chairman of the Board, International Bank of Washington (appointed in 1976 to serve through 1978)
Mrs. Helen M. Wilkins, President, Servo-Tek Products, Hawthorne, New Jersey (appointed in 1975 to serve through 1978)
Mr. Douglas P. Bennett, Esq., Attorney at Law, Washington, D.C. (appointed in 1977 to serve through 1979)
Mr. Robert M. Kaufman, Esq., Partner, Proskaver Rose Goetz and Mendelsohn, New York, New York (appointed 1977 to serve through 1979)

# 10. Supporting Activities



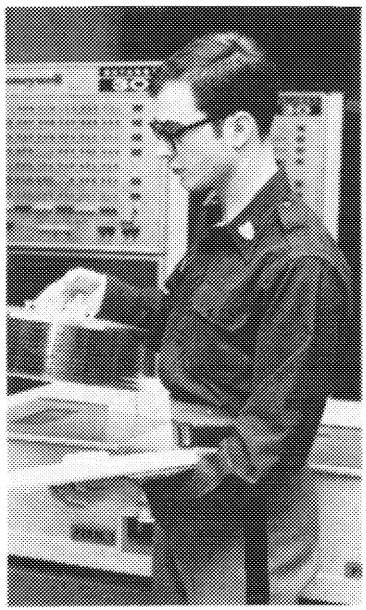

"If I do my full duty, the rest will take care of itself."

GENERAL GEORGE S. PATTON, JR.

A number of supporting activities add significantly to the variety and quality of life at the Military Academy. Among them are the Directorate of Automation and Audiovisual Systems, the Museum, the Office of Institutional Research, and alumni organizations.

## Directorate of Automation and Audiovisual Systems

In the early 1800's, cadets at the Military Academy were the first American students to have their lessons illustrated on the blackboard, and the first students to make extensive use of "philosophical instruments" and other laboratory equipment. Today, the Directorate of Automation and Audiovisual Systems (DAAS) helps West Point retain its traditional position at the front of instructional technology. Chalk dust still flies but, today, the chalkboard is supplemented by slide and overhead projectors, learning resource carrels, and other products of modern technology which complement straight talk between individuals in the Military Academy's traditional small-class sections. In the past dozen or so years, cadets at West Point became some of the first students in the country to have access to interactive computing via timeshare; to computer graphics; to short, high-impact, color television programs made at their own institution for their own needs; and to high-impact, multi-image instruction.



All cadets learn the basics of computer use and have free access to the computer. One hundred and fifty remote, time-sharing terminals in cadet barracks, laboratories, classrooms and academic department offices assist both cadet and faculty members. Graphics terminals allow pictorial output as well. By integrating the computer with television facilities, an instructor may present computer output on his classroom TV set, controlling it through a terminal in the classroom. The Computer Systems Division of DAAS also helps manage data for the academic program. Among other things, this allows cadets periodically to retrieve information regarding their current academic standing.

The Audiovisual Instructional Technology Division of DAAS provides instructors virtually any teaching aid they desire to vary or liven classroom instruction. Television, multi-media, and multi-screen audiovisual productions, as well as motion pictures, slides, audio tapes, graphic aids, and training devices are within the Division's capabilities. The professional quality color TV studio, in conjunction with two 12 channel closed-circuit TV systems, produces or rebroadcasts instructional films and tapes, commercial network or PBS educational TV, and special computer graphics. This network serves every classroom and laboratory, cadet barracks study room, the library, and many other locations on campus. Portable videotape recorders, tape recorders, and projectors of all descriptions are also available for cadet and faculty use.

DAAS provides the academic faculty technical assistance in applying computers, television, and other educational media to the academic program. Additionally, the Directorate serves members of the academic community in a variety of other instructional matters.

# The Museum

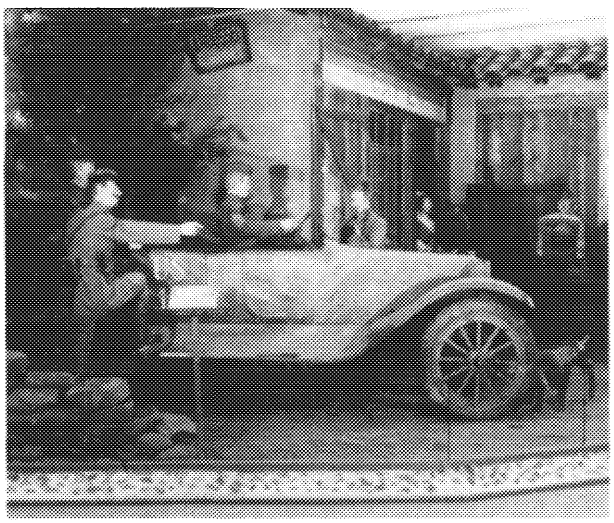
The West Point Museum allows cadets to see first hand our nation's colorful military heritage. Its collection of military relics is thought to be the largest in the Western Hemisphere. Lectures and demonstrations, loans to instructors and cadets, and rotating exhibits in cadet areas make the museum a kind of huge reference book for the entire community and for the country. Located in Thayer Hall, the museum welcomes hundreds of visitors daily, free of charge.

Among the museum's historic memorabilia are Custer's footlocker; uniforms of Grant, Patton, and Eisenhower; the French artillery piece that fired the first artillery round of the American Expeditionary Forces in World War I; German Field Marshal Hermann Goering's handgun; and a pressurized suit worn by astronaut Frank Borman. War trophies and other items of national interest have been collected and maintained at West Point since 1777, when British weaponry captured in the Battle of Saratoga was sent here. Links of the famous Great Chain which stretched across the Hudson at West

Point to bar British navigation are on display at Trophy Point. Cannon given the Continental Congress by Lafayette and others captured by Winfield Scott in the Mexican War can also be viewed.

Unlike most military museums, the West Point Museum tells an international story. Dioramas show major battles from Cynoscephalae (197 B.C.) to Gettysburg (1863). One gallery takes military instruction and the art of war from the Romans to the present; others concentrate on weapons, logistics, decorations, tactical developments, great leaders, and the everyday life of the soldier. Visitors may see full-scale replicas ranging from part of an early 19th century frontier stockade to a World War I staff car in a typical French rural scene.

The museum also monitors the Military Academy's holdings of portraits, paintings, and battle flags, such as those in the Library, the Cadet Chapel, and in Grant Hall. The Department of Earth, Space, and Graphic Sciences, once the Department of Drawing, takes pride in displaying the early work of Cadet James A. McNeil Whistler, as well as that of less likely artists Sheridan, Grant, and Jefferson Davis.



# Office of Institutional Research

The Office of Institutional Research helps the Military Academy better understand itself. It conducts various research projects for the Superintendent and supports studies by other individuals and departments of the Military Academy. The primary research programs focus on cadet recruitment, selection, values, motivation, and performance here and after graduation. The office also maintains a central library of institutional research at West Point, as well as information regarding candidates, cadets, and graduates.

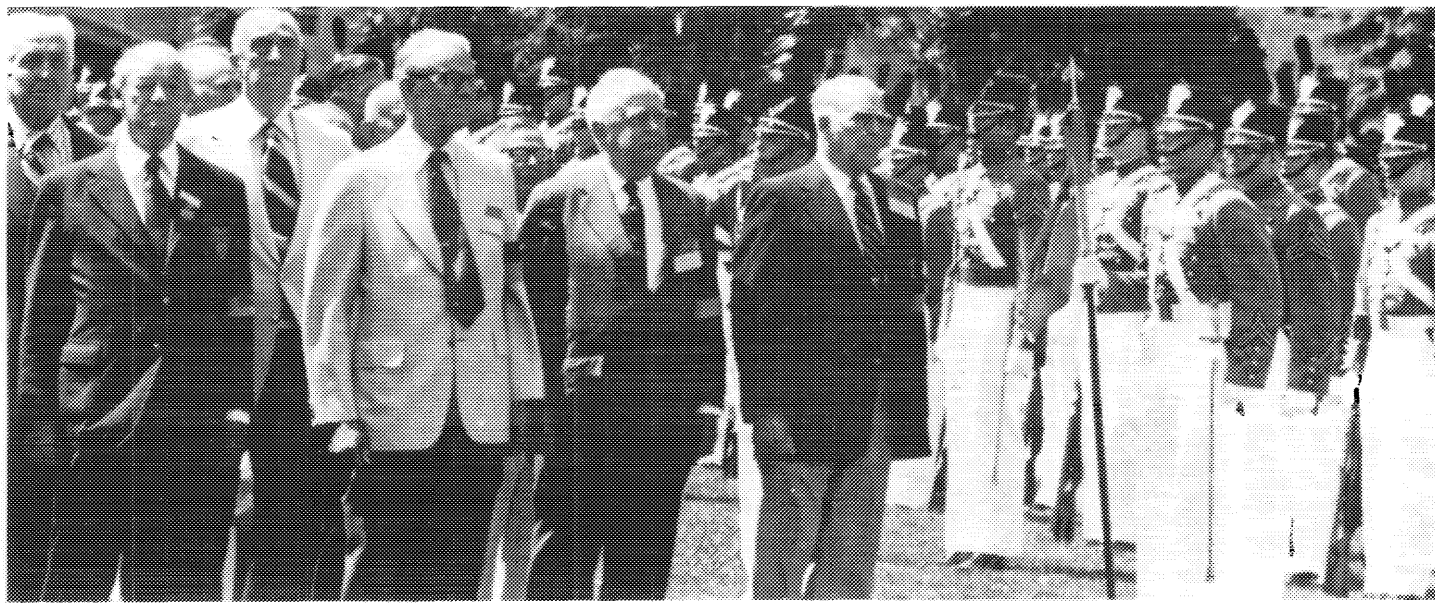
# Alumni Organizations

## ASSOCIATION OF GRADUATES

Alumni keep in touch with each other and with their alma mater through the Association of Graduates. Membership in the Association is open to all graduates of the Military Academy and former cadets who spent at least one academic term here. Over 98 percent of the 25,652 living graduates are members.

Since its founding in 1869 under the personal leadership of Sylvanus Thayer, "Father of the Military Academy," and Robert Anderson, Commander of Fort Sumter at the start of the Civil War, the Association has preserved and circulated historical information, encouraged the study of military science, and supported West Point through a variety of programs.

A major program of the Association is support of the West Point Fund. Tax-deductible donations and bequests to the Fund add to programs, equipment, facilities, and other improvements at the Military Academy for which no budgetary support is available. The use of such gifts is determined by the Superintendent and an Advisory Committee. Gifts directly to the Association of Graduates, Inc.—a tax-exempt organization—support the West



Four annual events supported by the Association have grown into important traditions at the Military Academy. The Long Gray Line gathers each June Week for the Alumni Parade. Since 1958 alumni have been returning to West Point to take part in the Homecoming football game festivities. Founders Day, March 16, is celebrated at West Point and more than 100 other locations around the world. Also since 1958 the Association has annually presented the gold Sylvanus Thayer medal to the United States citizen whose life's work best exemplifies devotion to "Duty, Honor, Country." Recipients of the award have included such figures as Henry Cabot Lodge, Dwight D. Eisenhower, Douglas MacArthur, Francis Cardinal Spellman, Neil Point Fund, operating expenses of the Association, or are earmarked for the Endowment Fund, where they work for the Military Academy and the Association in perpetuity. Conditional gifts are accepted only if their provisions are acceptable to the Military Academy or the Association; unrestricted gifts are preferred.
Armstrong, Omar N. Bradley, and W. Averell Harriman.

The Association presents awards to cadets, maintains up-to-date addresses of and information about graduates, assists in the formation of West Point Societies, and publishes an annual *Register of Graduates and Former Cadets* and the quarterly, *Assembly.* The Association's Military Academy offices are in Cullum Hall. Additional information may be obtained from the Executive Vice President, Association of Graduates, West Point, NY 10996.

Cooperating with the Association are 77 autonomous West Point Societies in 41 states and foreign countries.

## THE WEST POINT ALUMNI FOUNDATION

The West Point Alumni Foundation, Inc., is a nonprofit, tax-exempt educational institution-support organization that contributes to the welfare of the United States Military Academy and the Corps of Cadets. The Foundation, chartered in Maryland in 1945, maintains an office at West Point. A Board of Managers composed of distinguished alumni directs its activities.

# APPENDIXES

## Appendix A

### OATH OF ALLEGIANCE AND PROVISIONS OF SERVICE

Candidates accepted for admission to West Point begin their training in July. At that time they are required to sign the Oath of Allegiance and the Agreement to Serve. Prospective cadets are advised that an Act of Congress provides they must swear allegiance to the United States. Adherence by affirmation was not contemplated. Candidates should familiarize themselves with all provisions of service set forth herein:

I. Oath of Allegiance

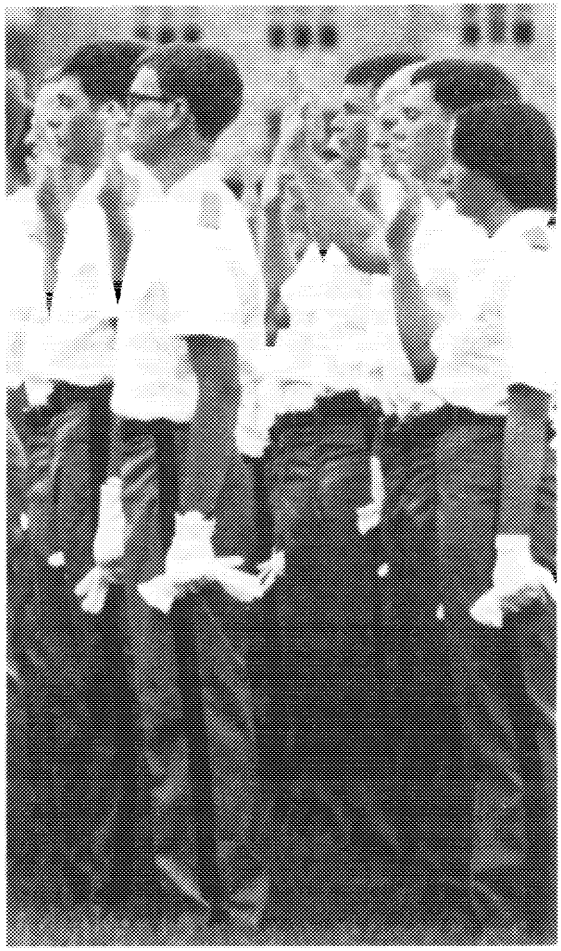
I, ....., do solemnly swear that I will support the Constitution of the United States, and bear true allegiance to the National Government; that I will maintain and defend the sovereignty, of the United States, paramount to any and all allegiance, sovereignty, or fealty I may owe to any State or country whatsoever; and that I will at all times obey the legal orders of my superior officers, and the Uniform Code of Military Justice.

II. Agreement to Serve

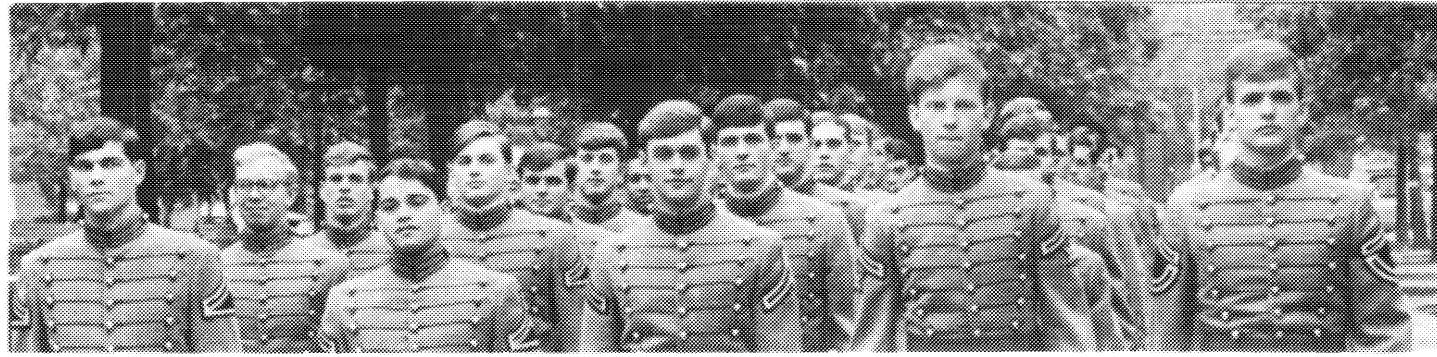
I, having been appointed a cadet of the United States Military Academy, do hereby agree, with the consent of my parents or guardian if I am a minor, unless separated from the Military Academy:

a. To complete the course of instruction at the United States Military Academy.

b. If tendered an appointment as a commissioned officer in a Regular component of one of the armed services upon graduation from the United States Military Academy, to accept such appointment and to serve under such appointment for not less than five consecutive years immediately following the date of graduation.



c. If an appointment as provided in IIb above is not tendered, or if permitted to resign my commission in a Regular component of one of the Armed Services prior to the sixth anniversary of my graduation, to accept an appointment as a commissioned officer in a Reserve component of one of the Armed Services and remain therein until such sixth anniversary.



III. Marital Status

I am unmarried. Furthermore, I understand that a cadet who marries prior to graduation will be separated from the Military Academy.

IV. Statement of Policies

I have read and understand the following policies applicable to cadets who are separated prior to graduation:

a. A cadet who enters the United States Military Academy directly from a civilian status assumes a military service obligation of six years (10 USC 651).

b. A cadet who is separated from the Military Academy because of demonstrated unsuitability, misconduct, or physical disqualification for military service will be discharged.

c. A cadet who enters the Military Academy directly from a civilian status and resigns or is separated from the Military Academy prior to the commencement of the Second Class Academic Year will be discharged. A resignation tendered by a Fourth or Third Class cadet will be accepted when found to be in the best interests of the service. A cadet who tenders a resignation will be required to state a specific reason for the action.

d. A cadet who enters the Military Academy from the Regular or Reserve Component of any military service and resigns or is separated from the Military Academy prior to the commencement of the Second Class Academic Year will revert to his former status for completion of any prior service obligation unless sooner discharged. All service as a cadet is counted in computing the unexpired portion of the enlistment or period of obligated service (10 USC 516 (b).

e. With the commencement of the Second Class Academic Year, a First or Second Class cadet who resigns or is separated prior to completing the course of instruction, except for physical disqualification, misconduct, or unsuitability, normally will be transferred to the Reserve component in an enlisted status and ordered to active duty for not less than two years (10 USC 4348 (b)).

(1) Completion or partial completion of service obligation acquired by prior enlistment in no way exempts a separated cadet from being transferred to a Reserve component and ordered to active duty under the provisions of 10 USC 4348 (b).

(2) When separation occurs as a result of deficiencies which are not considered willful, the active duty provision may be waived by the Department of the Army, upon recommendation of the Superintendent.

f. In any case where it is necessary to determine whether a cadet resigned or was separated prior to or following the commencement of the Second Class Academic Year, the critical date is the date that action is initiated, either by the cadet or by authorities at West Point.

g. Any First Class cadet who completes the course of instruction and declines to accept an appointment as a commissioned officer will be transferred to the Reserve component in an enlisted status and ordered to active duty for four (4) years (10 USC 4348 (b)).

# Appendix B

## MEDICAL REQUIREMENTS

### MEDICAL EXAMINATION

Every candidate must take a Qualifying Medical Examination given at authorized examining centers throughout the United States and at certain overseas bases (See Chapter 3, for detailed explanation of Qualifying Medical Exam). Examination by private physicians and dentists cannot be considered qualifying examinations. Only examinations given at authorized military medical facilities are acceptable as qualifying examinations.

### MEDICAL STANDARDS AND DISQUALIFICATIONS

Your private physician and dentist should examine you for disqualifying medical conditions listed below. In addition, your full medical history, including all illnesses, injuries, and operations, should be compiled. Medical care which significantly affects your medical status must be documented with supporting statements from the attending physician or hospital records.

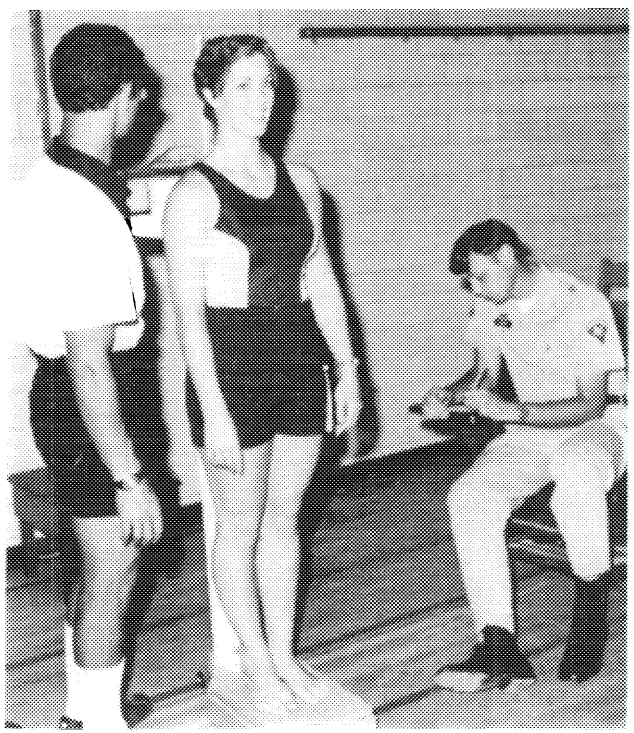
### HEIGHT AND WEIGHT STANDARDS

Each male candidate should be from 60″ to 80″ tall (measured to the nearest half-inch). Each female candidate should be 58″ to 72″ tall (measured to the nearest half-inch). Anyone below the minimum height requirements will automatically be considered for a waiver if he or she has outstanding academic, military, athletic, or leadership abilities.

Desirable weight ranges for each height are listed below. Underweight disqualification will not be waived. Exception to overweight disqualification may be made if the applicant has a large bone structure and well-distributed, proportioned muscle masses with little evidence of thick layers of subcutaneous fat. Gross obesity is a disqualifying factor unless excess weight is lost before admission. Each case will be judged on its own merits.

| Height (inches) | Weight (lbs.) | |
|---|---|---|
| | Male | Female* |
| 58 | — — | 90 to 121 |
| 59 | — — | 92 to 123 |
| 60 | 100 to 158 | 94 to 125 |
| 61 | 102 to 163 | 96 to 127 |
| 62 | 103 to 168 | 98 to 129 |
| 63 | 104 to 174 | 100 to 135 |
| 64 | 105 to 179 | 102 to 136 |
| 65 | 106 to 185 | 104 to 140 |
| 66 | 107 to 191 | 106 to 144 |
| 67 | 111 to 197 | 109 to 147 |
| 68 | 115 to 203 | 112 to 152 |
| 69 | 119 to 209 | 115 to 158 |
| 70 | 123 to 215 | 118 to 162 |
| 71 | 127 to 221 | 122 to 168 |
| 72 | 131 to 227 | 125 to 171 |
| 73 | 135 to 233 | — |
| 74 | 139 to 240 | — |
| 75 | 143 to 246 | — |
| 76 | 147 to 253 | — |
| 77 | 151 to 260 | — |
| 78 | 153 to 267 | — |
| 79 | 159 to 273 | — |
| 80 | 166 to 280 | — |

*The upper end of each female weight range is subject to change downward.



## EYES AND VISION DISQUALIFICATIONS

*Vision:* Distant visual acuity not correctable to at least 20/20 in each eye with *spectacle lenses.*

*Muscle Balance:*
Esophoria over 15 prism diopters.
Exophoria over 10 prism diopters.
Hyperphoria over 2 prism diopters.
Strabismus (Tropia) of any degree.

*Color Vision:* Inability to distinguish vivid red and vivid green.

*Refractive Error:*
Myopia over 5.50 diopters in any meridian.
Hyperopia over 5.50 diopters in any meridian.
Astigmatism all type over 3 diopters.
Anisometropia over 3.50 diopters.

*Hard Contact Lenses:* Must be removed 21 days prior to examination.

*Soft Contact Lenses:* Must be removed 3 days prior to examination.

Candidates who wear eyeglasses or contact lenses must have their eyeglasses with them at the time of the medical examination.

## EARS AND HEARING DISQUALIFICATIONS

The auditory acuity of all candidates is determined by an audiometer. Maximum allowable decibel loss at certain frequencies are listed below:

**Hearing Loss**

| | ISO or ANSI | | | |
|---|---|---|---|---|
| **Frequency** | **500** | **1000** | **2000** | **4000** |
| **Maximum Loss in Decibels:** | | | | |
| **Right Ear** | **30** | **25** | **25** | **45** |
| **Left Ear** | **30** | **25** | **25** | **45** |

Both ears must be free from any disfiguring or incapacitating abnormalities. Other disqualifying features are existing perforations of the tympanic membrane regardless of etiology.

**NASAL DISQUALIFICATIONS**

Any congenital or acquired lesion which interferes with the functions of the nasopharynx or Eustachian tubes. Septal deviation, hypertrophic rhinitis, nasal polyps, or other conditions which result in 50% or more obstruction to either sinus drainage or airways. Allergic rhinitis not controllable by antihistamines or by desensitization or both. Histories of acute or chronic sinusitis will be reviewed.

**LUNG AND CHEST DISQUALIFICATIONS**

Tuberculosis active in any form or location during the past two years. A positive skin test without other evidence of active disease is not disqualifying. Individuals taking prophylactic chemotherapy because of recent skin test conversion are not disqualified. A candidate is disqualified if he has had pneumothorax due to simple trauma or surgery within one year of date of Qualifying Medical Examination, or pneumothorax of spontaneous origin within three years of Qualifying Examination. Surgical correction is acceptable if no significant residual deforming disease remains and pulmonary function tests are within normal limits.

**ALLERGIC DISQUALIFICATIONS**

Asthma or a history of asthma. (Exception: childhood asthma with no symptoms since 12th birthday.) A history of allergic rhinitis past the 12th year, including those cases in which desensitization therapy has been initiated, will be reviewed. Consultation with an allergy specialist will be required in many cases of allergic rhinitis. (See Nasal Disqualifications)

**SKIN DISQUALIFICATIONS**

Psoriasis, even if moderate in degree. Moderately severe acne or resultant scarring, disfiguring face or interfering with wearing of military equipment. Unsightly congenital markings or chronic skin disease such as eczema. Pilonidal cyst with mass or discharging sinus. Deep or adherent scars which interfere with movement or wearing of military equipment.

**HEART AND VASCULAR SYSTEM DISQUALIFICATIONS**

An electrocardiogram is required of all applicants. Electrocardiographic abnormalities will be evaluated for evidence of an organic basis. A history of rheumatic fever requires a careful general medical examination as well as a detailed health history, fluoroscopic examination of the heart, and an X-ray film. All murmurs will be evaluated thoroughly to determine if functional or organic in origin. Any evidence of organic heart disease is unequivocally disqualifying. Any valvular disease of the heart is disqualifying even if improved by surgery. Hypertension evidenced by preponderant systolic pressure readings of 140-mm or more, or preponderant diastolic pressure of over 90-mm. Heart rate greater than 100 on repeated examinations will be reviewed. Severe or symptomatic varicosities of any extremities unless correctable by treatment.

**GENITOURINARY SYSTEM DISQUALIFICATIONS**

Persistent albuminuria of any type including so-called orthostatic albuminuria or persistence of casts in urine--even if the etiology cannot be determined. Phimosis, epispadias, or hypospadias severe enough to interfere with micturition. Amputation of the penis; infantile genitalia; atrophy, absence, deformity, or maldevelopment of both testicles; or undescended testicle of any degree unless surgically corrected. Chronic orchitis or epididymitis. Chronic kidney diseases. Repeated attacks of renal calculi. Absence of one kidney, regardless of cause.

In addition to the abnormalities of the bladder and kidneys listed above, the following disqualifications apply exclusively to females: bartholinitis, bartholin cyst; cervicitis, manifested by vaginal discharge; dysmenorrhea, incapacitating to a degree which necessitates recurrent absences of more than a few hours from scheduled activities; endometriosis; hermaphroditism; menopausal syndrome manifested by more than mild constitutional or mental symptoms (in all cases

of artificial menopause, a clinical diagnosis fully reported, and surgical and pathological reports will be obtained and recorded); menstrual cycle, irregularities of, including heavy menses, bleeding between menses more than one every 28 days, or lack of menses; tumors of the internal or external genitals, except for single uterine fibroid, subserous, asymptomatic, less than 3cm in diameter, with no general enlargement of the uterus; acute or chronic inflammation of the ovaries or tubes; pregnancy; cervical polyps; cervical ulcer or marked erosion; generalized enlargement of the uterus due to any cause; malposition of the uterus if more than mildly symptomatic; congenital abnormalities or severe lacerations of the vagina; leukoplakia of the vulva; chronic or acute vulvitis; major abnormalities or defects of the genitalia, such as a change of sex, a history thereof or complications residual to surgical correction of these conditions.

**SEROLOGIC TEST**

A serologic test for syphilis is required for all applicants.

**ABDOMEN DISQUALIFICATIONS**

Weakness of abdominal wall sufficient to interfere with function. Hernias of any type unless surgically corrected. History of operation for hernia within past 60 days is temporarily disqualifying. Chronic diseases of abdominal viscera. History of gastric or duodenal ulcer. Acute or chronic gallbladder disease. History of splenectomy for any reason other than trauma.

**ORTHOPEDIC DISQUALIFICATIONS**

Ununited fractures, old joint fractures with evidence of arthritis. Pes planus more than mild, symptomatic, or with marked bulging of the inner border due to rotation or eversion of the astragalus and any callosities. Pes cavus with clawing of the toes and calluses beneath the metatarsal heads can be cause for rejection. Hammertoes of such degree as to interfere with function or wearing of suitable footwear. Other conditions of the feet which would interfere with successful compliance with military routine. History of derangement of knee joint not corrected by surgery. Six months must elapse after knee surgery before final evaluation. Postoperative instability, stiffness, traumatic arthritis, muscle atrophy or weakness will be thoroughly evaluated, and may be disqualifying.

**SPINE AND MUSCULOSKELETAL DISQUALIFICATIONS**

Defects and diseases of the spine, scapulae, ribs, or sacroiliac joints which interfere with daily participation in rigorous physical training or athletic programs, with the wearing of military equipment, or which detract from military bearing or appearance. Spondylolysis or spondylolisthesis that is symptomatic or likely to interfere with performance. Gout. Deficient muscular development. Tuberculosis of the spine, active or healed. History of herniated nucleus pulposus, even if surgically corrected, is cause for disqualification.

**EXTREMITIES DISQUALIFICATIONS**

Absence or loss of more than one third of the distal phalanx of either thumb. Absence of one phalanx of any finger in association with the absence of the little finger of the same hand. Absence or loss of great toe(s) or loss of dorsal flexion thereof if function of the foot is impaired.

**NEUROLOGICAL DISQUALIFICATIONS**

History of head injury resulting in unconsciousness will be thoroughly evaluated. Lengthy periods of unconsciousness will require a complete neurological consultation to include electroencephalogram. Degenerative disorders, convulsive disorders, even though controlled by medication. Residuals of infection (polio, menigitis, etc.). Miscellaneous disorders such as tics, spasms, and spina bifida associated with neurological manifestations. All periods of amnesia will be evaluated thoroughly and completely regardless of length. History of unexplained unconsciousness. Multiple episodes of syncope (fainting). Documented history of migraine headaches or chronic

headaches which interfere with daily functions or require medical treatment. A history of multiple episodes of air sickness (air, sea, swing, train, or carnival ride) will be thoroughly evaluated and may be cause for rejection.

**PSYCHIATRIC DISQUALIFICATIONS**

History of emotional instability, psychosis, anxiety reaction or dissociative reaction. Pathologic personality types; other obsessive-compulsive reactions or neurotic depressive reaction. Indication of addiction to or abuse of alcohol or drugs. Antisocial behavior. Sexual deviation. Immaturity reaction if marked; situational maladjustment. Enuresis (bedwetting) which is habitual or persistent, not due to an organic condition ocurring beyond early adolescence. Stammering or stuttering of such a degree that the individual is normally unable to express himself clearly or to repeat commands. History of attempted suicide. Other disorders of emotion, behavior, thought, intelligence, or mood, difficult to define, will be thoroughly evaluated and may be cause for disqualification.

**INDOCRINE and METABOLIC DISQUALIFICATIONS**

Diabetes mellitus. Persistent glycosuria including renal glycosuria. Exophthalmic or adenomatous goiter, from any cause associated with toxic symptoms. History of thyroidectomy. History of partial thyroidectomy will be cause for thorough evaluation and may be disqualifying. Other endocrine or metabolic disorders which preclude satisfactory performance of duty or which would require long term treatment.

**DENTAL DISQUALIFICATIONS**

1. Diseases and abnormalities of the mouth:
   (a) Diseases such as cysts, tumors, osteomyelitis, or other acute or chronic conditions which are not easily remedied or which will incapacitate the individual and which may prevent the satisfactory performance of duty.
   (b) Loss of oral tissues sufficient to prevent replacement of missing teeth with a satisfactory prosthetic appliance.
   (c) Perforations(s) of the hard palate.
   (d) Harelip, unless satisfactorily repaired by .surgery, and unsightly mutilations at the lip.
   (e) Fractures:
      (1) Malunion of a fracture that interferes significantly with function.
      (2) Ununited Fractures.
      (3) Any fracture in which an insert such as a plate, pin, or screw was left in place for fixation and may be subject to easy trauma.
   (f) Deformities or conditions of the mouth, to include insufficient functionally opposed natural or artifical teeth or malocclusion, which interfere with speech, breathing, or mastication and swallowing of ordinary food.
   (g) A skeletal relationship between the mandible and maxilla which will preclude future satisfactory prosthetic replacement, if necessary.
   (h) Appliances below generally accepted standards of design, construction, and tissue adoptation.
   (i) Lower appliance which is not retained or adequately stabilized by sufficient serviceable natural teeth.
2. Teeth:
   (a) Numerous carious teeth which are unfilled or improperly filled or restored may be cause for disqualification.
   (b) Grossly disfiguring spacing of anterior teeth.

# Appendix C

## THE PHYSICAL APTITUDE EXAMINATION (PAE)

Overall performance on the following physical tests constitutes the Physical Aptitude Examination of the Military Academy:

**Pullups (For Men):** From the arm hang position on a horizontal bar, palms away from the face, elevate the body until the chin is above the bar.

**Flexed-Arm Hang (For Women):** With arms fully flexed, grasp the bar with the palms of the hands away from the face, the thumbs under the bar, and chin over the bar. Hold this position for time.

**Standing Long Jump:** Jump for distance.

**Basketball Throw:** Throw a basketball overhand from a kneeling position for distance.

**Shuttle Run:** Run back and forth between two lines, 25 yards apart, to cover a distance of 300 yards.

The final Physical Aptitude Examination score is a total accumulated score for all items in a given examination series adjusted to a 200-800 scale. A low or high score on any one test item does not determine success or failure on the entire examination.

### WEST POINT PHYSICAL APTITUDE EXAMINATION

**Candidate Population for a Recent Class**

| | PULLUPS (MEN) | FLEXED ARM HANG (WOMEN) | STANDING LONG JUMP (MEN) | STANDING LONG JUMP (WOMEN) | BASKETBALL THROW (MEN) | BASKETBALL THROW (WOMEN) | 300 YARD SHUTTLE (MEN) | 300 YARD SHUTTLE (WOMEN) | PERCENTILE |
|---|---|---|---|---|---|---|---|---|---|
| TOP QUINTILE | 19 | 59 sec | 8'8" | 7'11" | 90' | 62' | 55 sec | 60 sec | 100% |
| | 15 | 51 sec | | | | | | | |
| | 13 | 45 sec | | | 80' | 54' | 56 sec | 63 sec | |
| | 12 | 40 sec | 8'0" | 6'11" | 75' | 50' | | | 80% |
| | 11 | 36 sec | | | 70' | 47' | 57 sec | | |
| | 9 | 34 sec | 7'8" | 6'8" | 67' | 46' | 58 sec | 66 sec | |
| | | 30 sec | 7'6" | 6'7" | | | | | 60% |
| MIDDLE QUINTILE | 8 | | | | 65' | 44' | | | |
| | 7 | 28 sec | 7'4" | 6'4" | 61' | 42' | 59 sec | 67 sec | |
| | 6 | 26 sec | 7'2" | 6'2" | | | 61 sec | 68 sec | 40% |
| | 5 | 22 sec | | | 60' | 39' | 62 sec | 69 sec | |
| | 4 | 18 sec | 7'0" | 6'0" | 55' | 36' | 64 sec | 72 sec | 20% |
| BOTTOM QUINTILE | 3 | 16 sec | 6'8" | 5'9" | 50' | 33' | 65 sec | 75 sec | |
| | | | 6'4" | 5'5" | 40' | 25' | 68 sec | 78 sec | |
| | 1 | 11 sec | 5'8" | 4'10" | | | | | |

# Appendix D

For further information about the Military Academy, fill out one of these inquiry slips and mail to: SUPERINTENDENT, UNITED STATES MILITARY ACADEMY, ATTENTION: MAAR, WEST POINT, NEW YORK 10996.

Please send information concerning Admission to West Point to:

*(Please print or type)*

NAME .....
*Last* *First* *MI*

ADDRESS .....
*Street* *City* *State*

ZIP CODE [ ][ ][ ][ ][ ] SSN [ ][ ][ ] [ ][ ] [ ][ ][ ][ ]

YEAR OF HIGH SCHOOL GRADUATION [ ][ ][ ][ ] SEX ☐ MALE ☐ FEMALE

Data you voluntarily submit will be used for fulfilling your request for admission information to USMA, as authorized by 10 USC 4346, Failure to provide data may preclude action on your inquiry.

**K**

Please send information concerning Admission to West Point to:

*(Please print or type)*

NAME .....
*Last* *First* *MI*

ADDRESS .....
*Street* *City* *State*

ZIP CODE [ ][ ][ ][ ][ ] SSN [ ][ ][ ] [ ][ ] [ ][ ][ ][ ]

YEAR OF HIGH SCHOOL GRADUATION [ ][ ][ ][ ] SEX ☐ MALE ☐ FEMALE

Data you voluntarily submit will be used for fulfilling your request for admission information to USMA, as authorized by 10 USC 4346. Failure to provide data may preclude action on your inquiry.

**K**

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# WEST POINT CALENDAR

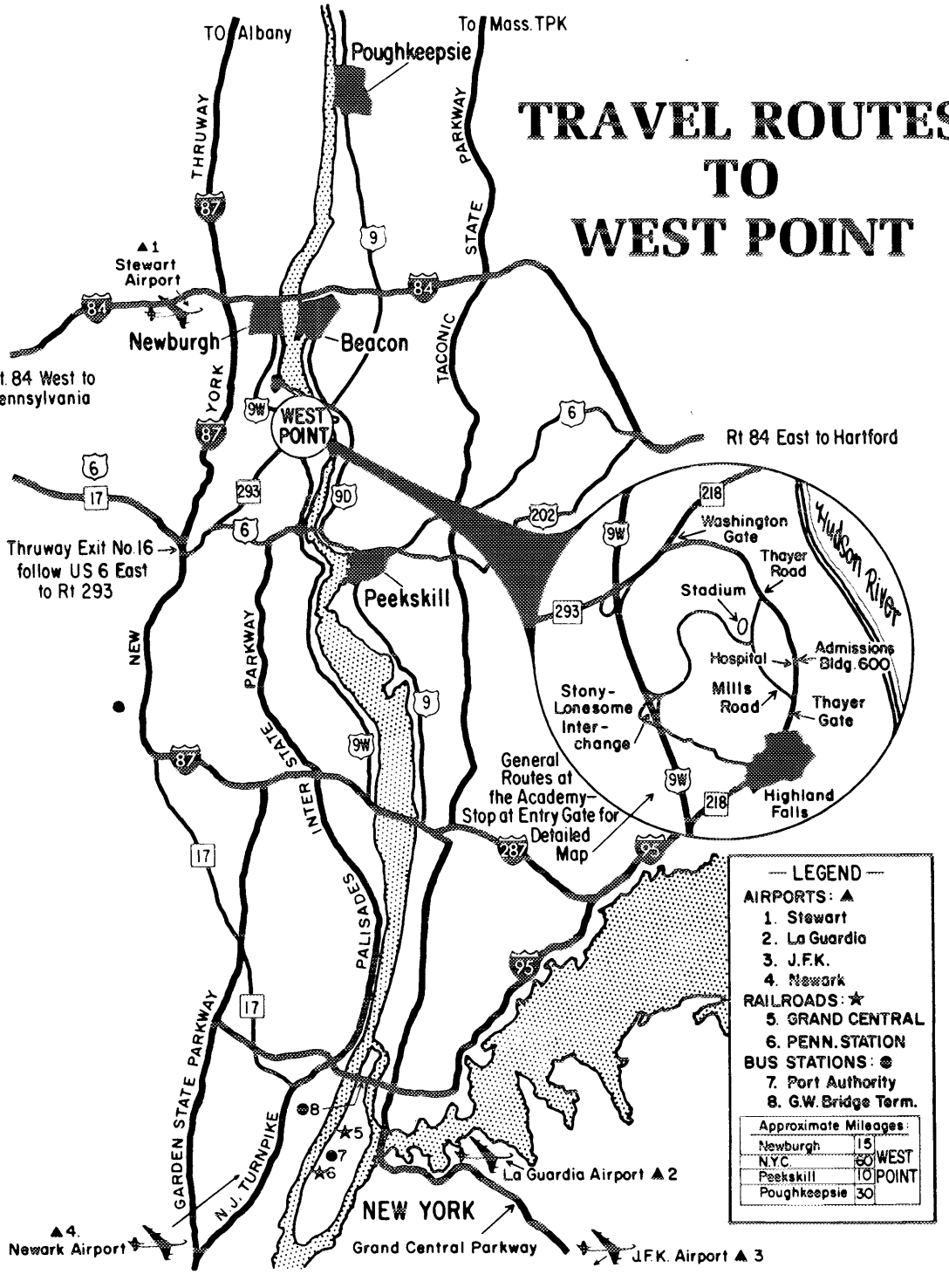
## 1978

August 27, Sunday - **Reorganization Week Begins**
September 4, Monday - **Labor Day** (Holiday)
September 5, Tuesday - **First Term Begins**
October 28, Saturday - **Homecoming** (Classes Suspended)
November 13, Monday - **Veterans Day** (Holiday)
November 23-24, Thursday-Friday - **Thanksgiving** (Holiday)
December 2, Saturday - **Army-Navy Football Game** (Classes Suspended)
December 22, Friday - **Christmas Leave Begins** (12:00 Noon)

## 1979

January 7, Sunday - **Christmas Leave Ends** (5:30 p.m.)
January 12, Friday - **Term End Examinations Begin**
January 20, Saturday - **First Term Ends**
January 22, Monday - **Second Term Begins**
February 19, Monday - **Washington's Birthday** (Holiday)
March 24, Saturday - **Spring Leave Begins** (12:00 Noon)
April 1, Sunday - **Spring Leave Ends** (5:30 p.m.)
May 21, Monday - **Term End Examinations Begin**
May 26, Saturday - **Second Term Ends for 1st Class**
May 28, Monday - **Memorial Day** (Holiday)
May 30, Wednesday - **June Week Begins**
May 31, Thursday - **Second Term Ends**
June 6, Wednesday - **Graduation Day, Class of 1979**
— Beginning of approximately 4 weeks of leave for new 3rd Class prior to reporting to Camp Buckner for 8 weeks of summer training.
July 2, Monday - **Reporting Day, entering Class of 1983** (tentative)

# TRAVEL ROUTES TO WEST POINT



DEPARTMENT OF THE ARMY
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OFFICE OF THE DIRECTOR
OF ADMISSIONS AND REGISTRAR
WEST POINT, N.Y. 10996

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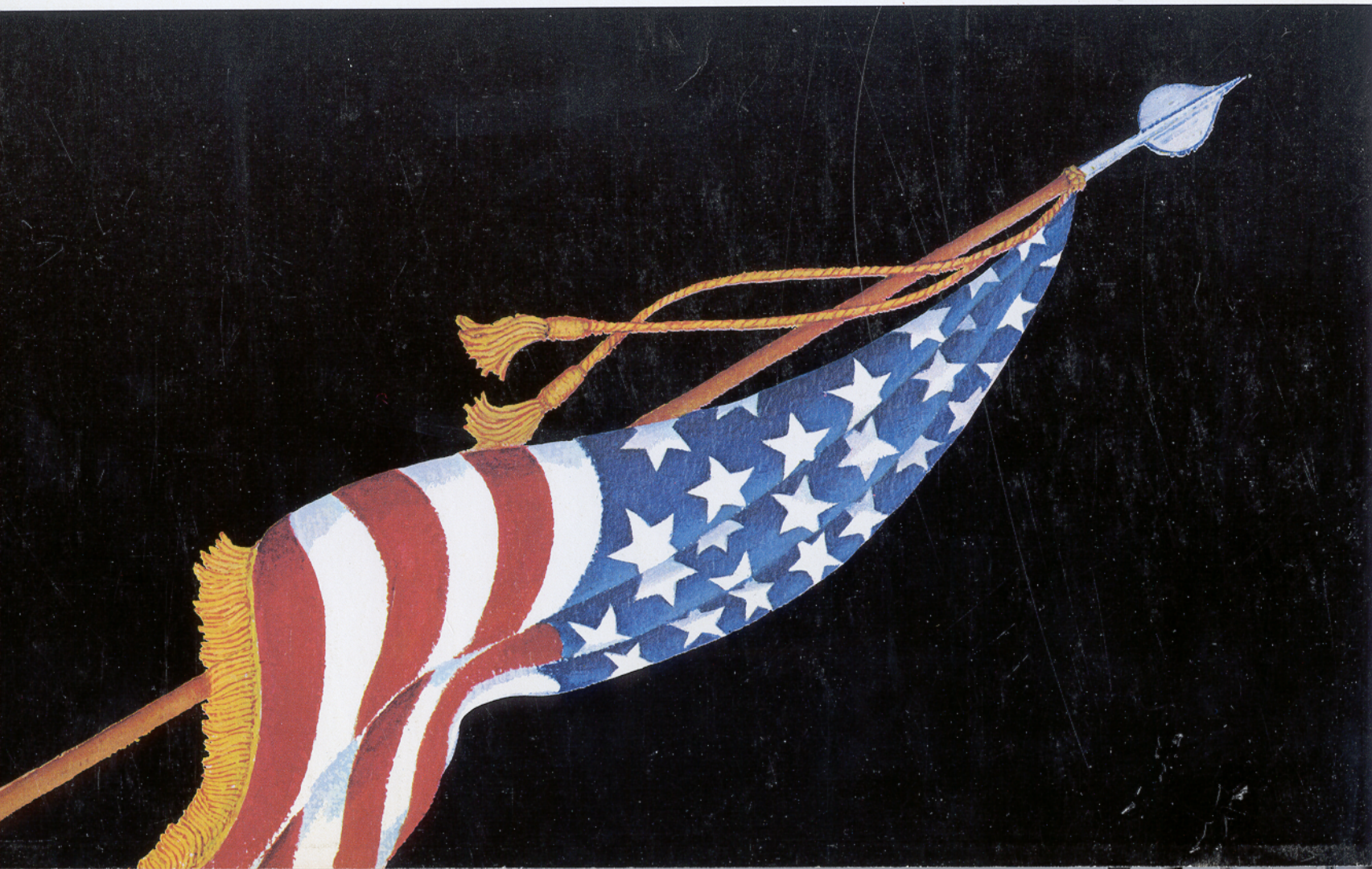
**THIRD CLASS**