



# AIR UNIVERSITY **review**

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**REVIEW**













# AIR UNIVERSITY **Review**

THE PROFESSIONAL JOURNAL OF THE UNITED STATES AIR FORCE

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the cover

Traditionally, in its service to the entire Air Force, *Air University Review* has scrupulously avoided sounding AU's horn loudly, if at all. In this issue of the *Review* we depart that stance slightly for Air University's Commander, Lieutenant General F. Michael Rogers, and his Educational Adviser, Dr. Kenneth J. Groves, to discuss the idea and reality of Air Force professional military education. In addition, and in more usual *Review* practice, several AU officers (namely, Appel, Dent, Schrader, and Wasson) write on a variety of topics.



# WHY PROFESSIONAL MILITARY EDUCATION?

LIEUTENANT GENERAL F. MICHAEL ROGERS





*The nation that will insist on drawing a broad line of demarcation between the fighting man and the thinking man is liable to find its fighting done by fools and its thinking done by cowards.*

SIR WILLIAM BUTLER



My first thoughts upon being ordered to command the Air University were, for me, rather shocking ones. It occurred to me that, after more than three decades in uniform as an officer in the Army Air Corps and the United

States Air Force, I had no fundamental belief whatsoever in systematic professional military education. Although I had always believed in the necessity for education in order to prepare the whole man for any professional career, I had not satisfied myself that professional military education was essential or even desirable for progression to the higher ranks—or indeed for the execution of the tasks that might be expected of an officer as he approached and reached the responsibilities of the general officer.

I was, of course, familiar with the elements of the total system that is the underpinning for the professional officer corps, especially with precommissioning programs and with my own experience as a student at the National War College. Nonetheless, I had not experienced any elements of Air Force precommissioning or career educational programs. I had indeed gone to the National War College when more than four years of service as

a colonel was behind me. I had already served a tour on the Joint Staff and two tours on the Air Staff prior to being assigned to a school that was supposed to prepare me for higher staff and command!

While indorsing the concept of professional military education and thoroughly enjoying my sabbatical at the National War College, I had not come to grips with the need for a systematic educational process after commissioning, nor had I in any way convinced myself of the advisability of the systematic approach. Rather I was skeptical of the necessity for sidetracking capable career officers to education assignments, in particular for attendance at the Squadron Officer School and in general for attendance at an Air Command and Staff College or an Air War College.

As a putative historian, I had read much about the evolution of professional military education and was aware of the reasons for creation of the eponymous *Kriegsakademie*. I had read with interest about early efforts in the United States, England, and France more or less to emulate the example of the Prussians and inaugurate professional military education in those countries. In our own nation, I was familiar with the background underlying the efforts of Commodore Luce and Admiral Mahan in



establishing the Naval War College in 1884 and of Major General Emory Upton and Elihu Root in establishing the Army War College in 1901. On his return from a two-year tour of foreign military establishments in 1878, General Upton stressed that for American Army officers

... we have not as yet . . . provided them the means of acquiring a theoretical and practical knowledge of the higher duties of their profession.

Abroad it is the universal theory that the art of war should be studied only after an officer has arrived at full manhood, and most governments have established postgraduate institutions for nearly all armed services, where meritorious officers come up from whatever sphere they may enter the army, may study strategy, grand tactics, and all the sciences connected with modern war.

Implicit in Upton's views is the notion that a direct cause-and-effect relationship exists between the complexity of military arts and sciences and the need for postgraduate professional education for officers. I viewed the works of these men and what they created, along with the efforts of General Tasker Bliss, in a historical context. I made no effort to extrapolate from them the fundamental theory of career education for the professional officer, nor did I test any career educational theory for its viability and applicability to the United States Air Force in the 1970s.

Again, my reading of the history of the establishment of the Air Corps Tactical School shortly after World War I left me with the view that it was an effort by airmen to break away from the patterns of Leavenworth and the Army War College and establish a formal school of their own in competition, more or less, with the land forces and sea forces of the

nation. All of this interests and is well known to the military historian. It should be of interest to any professional officer.

Professionalism in the officer corps as we know it today really is an outgrowth of the first half of the nineteenth century. It probably is founded on the French concept of the *levée en masse*, but it is most certainly the child of the Prussian whose theory it was that mass warfare in an industrial society made soldiering too complicated for the gentleman amateur (who purchased his commission).

Prussians such as Gneisenau and Scharnhorst believed that the collective brain could guard against total incompetence, and hence they founded the modern General Staff. These ideas spread throughout Europe and even early in the nineteenth century were fostered in this country by John C. Calhoun, one of our greatest secretaries of war. The Prussians proved their theories in the payoff campaigns of Schleswig-Holstein, Austria-Hungary, and, finally, the Franco-Prussian War of 1870, and other nations began to see the necessity for a similar approach, based on events peculiar to them. France, which had blinded itself with the Napoleonic illusion that *élan* was all, renovated its war college after the defeat by the Prussians. Britain turned from the "bad show" of the Boer War and from fighting colonial wars to the Haldane reforms. And the United States Army found out after Cuba and the Philippines that it had to evolve from a band of Indian fighters into defenders of an industrial society in the modern age. This, in turn, led to the Root reforms.

It was during the last century that the American public became conscious of the widespread canard that the "generals always fought the last war over again"



when faced with different circumstances. I concluded that if there were truth in this accusation it was certainly more accurate before the initiation of career education in the professional officer corps.

Against this knowledge I measured my own experience. For a long time I was inclined to draw conclusions about the professional military education (PME) system solely from this experience and from my peers and their experiences. I knew many outstanding general officers who had no PME throughout their careers in the United States Air Force. Indeed, many had no military education as such during the same period. I also know many products of PME in staff and command who in no way distinguished themselves from their peers of the same age and rank who had not the advantage of attending staff or war colleges.

Looking among one's peers as justification for professional military education or as reason for condemning professional military education is quite obviously committing the fallacy of the circumstantial argument, *ad hominem*. It became painfully obvious to me that my enthusiasm in accepting the charge of the Chief of Staff as the Commander of the Air University needed to be matched with an understanding of the reasons for systematic professional military education. This in turn seems to require an analytical and objective assessment of PME before concluding that my skepticism was unjustified or my enthusiasm badly founded.

After 18 months in command I have come to the firm conclusion that I not only understand the underlying rationale for professional military education for the USAF officer corps but that I can explain it in reasonable, even convincing terms. To be able to make that statement

I had to reread the historical antecedents to Air Force PME and place PME in the context of today's society and today's Air Force, keeping in mind that we were entering the period when the entire common defense was to be left in the hands of professional forces.

Also to be kept in mind is that we are in a period of Western civilization when technical knowledge becomes rapidly obsolescent. This is an age of discovery unequalled in the annals of man, and most of what is known today in disciplines such as medicine, physics, biology, and anthropology was unknown twenty years ago. If General Upton was worried about the complexity of warfare in a modern industrial society, should we not be concerned to a much greater degree a century after his report was written?

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*To be considered a professional, one must belong to a corps that embodies formal education, a sense of corporateness, a mystique, and a responsibility to a higher authority.*

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I came to realize that the military art cannot be mastered either solely in the classroom, as within the graduate or precommission training, or solely by experience, as with participation in warfare or on-the-job training. Most of us, if asked, would reaffirm the classical Greek approach to the whole man, which encompassed not only the mind and the body but also the spirit. To be considered a professional, one must belong to a corps that embodies formal education, a



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*. . . the importance of the professional military education of the officer corps, in my view, continues to grow.*

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sense of corporateness, a mystique, and a responsibility to a higher authority. Contrary to popular opinion and to the educational practices of other professions, the officer in the beginning stages of his career knows relatively little about the art and science of warfare, and it will be years before he can be described accurately as being truly professional in the sense that he can deal effectively with broad, complex problems of strategy, tactics, or high command and staff. In the precommissioning programs conducted in the academies and civilian institutions, the student spends most of his time on formal undergraduate studies and relatively little time on professional military subjects, which are taught in postgraduate schools. This is not to denigrate the extremely valuable contributions of precommissioning programs in motivating and inculcating ethical and moral attributes that will serve the officer throughout his career. Rather, it is to emphasize that the precommissioning education is relevant to the young man or woman at that particular stage of his or her professional development. This focuses our attention on the unique feature of the PME system, which is that it is phased in time to match the officer's potential with his years of service. The educational opportunities ideally should be interspersed with suitable intervals to allow the officer to acquire maturity and

experience while using the knowledge gained in the previous educational program.

PROFESSIONAL military education in the Air Force is essential, I find, because it is the best known way to fulfill the needs implicit in the following basic tenets:

- To make sure that the officer's knowledge beyond his specialty is not limited, as often happens in other professions, PME imparts attitude, knowledge, and skills on the art of warfare and national security to all officers.
- Each level of education should be given when it is most relevant to a particular stage of career development. This permits the Air Force officer corps to develop expertise in aerospace concepts, doctrine, and strategy from a progressively higher level of experience and maturity.
- PME prevents obsolescence of professional knowledge and skills in highly technical and constantly evolving fields of knowledge. Information gained at the beginning of a career may well become obsolete before the individual reaches the point in development where he is capable of applying this knowledge.
- The ever growing problems of national security require that all officers be informed. PME provides education that is timely to the officer's career in resolving these problems.
- All professionals, regardless of career field, need periodically to reflect on their profession, where they have been and where they are going. PME allows the professional Air Force officer to review all aspects of the military profession and the Air Force at designated intervals.



- Manpower requirements within the Air Force remain fluid at all levels. PME provides skilled manpower for Air Force and defense community leadership positions at the right level and at the right time.

- Though often overlooked, the faculty and student bodies of the PME schools represent a pool or ready reserve of highly trained and qualified officers. These individuals could quickly be returned to their specialties in the event of national emergency.

- A vast reservoir of experienced and specialized talent in the form of students is brought together at each school. The interaction of these students among themselves and with the faculty in effect serves as a review board of aerospace experts to evaluate and recommend improved aerospace concepts, doctrine, and strategy.

- The question of ethics is always paramount among any professional corps. PME provides the necessary forum for addressing, reviewing, and imparting military ethics and professional officer responsibilities.

The various levels of professional military education should be constituted as a series of experiences in solving problems of increasing complexity. As weapon systems grow more and more complex, as

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*Air Force PME should provide the knowledge and understanding of the contemporary issues needed by the military leaders of tomorrow.*

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*... it behooves the airmen of the Republic to be prepared for the next war better than any who may seek to bring on that competition.*

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the weight of firepower increases, as the spectrum of war widens to include operations in space, and as U.S. relations with other countries become more interdependent, the importance of the professional military education of the officer corps, in my view, continues to grow. Air Force PME should provide the knowledge and understanding of the contemporary issues needed by the military leaders of tomorrow. Nor should it neglect the ethical aspects of the individual's own life and his own spirit. We are reminded by Bertrand Russell that "the performance of public duty is not the whole of what makes a good life; there is also the pursuit of private excellence."

*God will see to it that war shall always recur as a drastic medicine for ailing humanity.*

HEINRICH VON TREITSCHKE

Using an analytical and objective approach, we at Air University have now devised a model for professional development which seems to be congruent with all the general concepts and philosophical standards against which we have measured it. It traces the professional development of the new officer into a senior officer throughout his career and encompasses all the different facets of career education toward his total growth. (Figure 1)

Whereas one may not accept



*... our PME relates to the unique features of the United States Air Force, its mission, and the necessity of providing to it experts in the application of air power.*

Treitschke's theological view of the inevitability of war, one would hardly hesitate to subscribe to the historical view expressed by Will and Ariel Durant that "war is one of the constants of history, and has not diminished with civilization or democracy." Regrettably, man has not rid himself of this ultimate form of competition in the latter half of the twentieth century, and so, because of the great destructiveness of modern weaponry, it behooves the airmen of the Republic to be prepared for the next war better than any who may seek to bring on that competition. We cannot afford to be ignorant of the art of war, and we cannot afford the fatal expense of ignorant practitioners of the art. Having concluded that there is a fundamental necessity for PME, I should say a word about how we at Air University go about the business of conducting professional military education.

*We cannot afford to be ignorant of the art of war, and we cannot afford the fatal expense of ignorant practitioners of the art.*

I shall leave to the following article a more detailed discussion of the Air University education system, but we have, we believe, conceptually and philosophically, strengthened a three-tiered system of professional military education. Progress is depicted and contrasted with the approaches used by the United States Army, United States Navy, and United States Marine Corps. Comparing PME among the services, while useful, is not

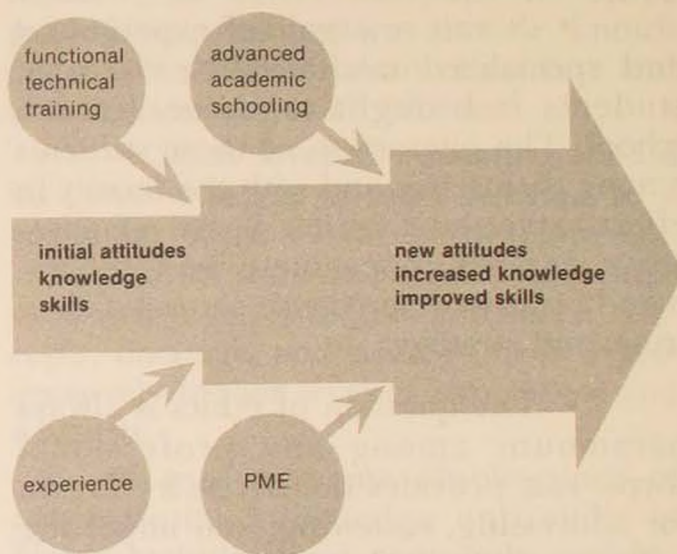


Figure 1. Professional development of an Air Force career officer

the concern of this article, for our PME relates to the unique features of the United States Air Force, its mission, and the necessity of providing to it experts in the application of air power. Air University makes no pretense of producing experts in the manipulation of land forces or sea power or of producing political scientists *manquês*, or diplomats of the first water. We concentrate on the production at all levels to differing degrees of expertise in the application of air power.

My studies since arriving at Air University, which have caused great attitudi-



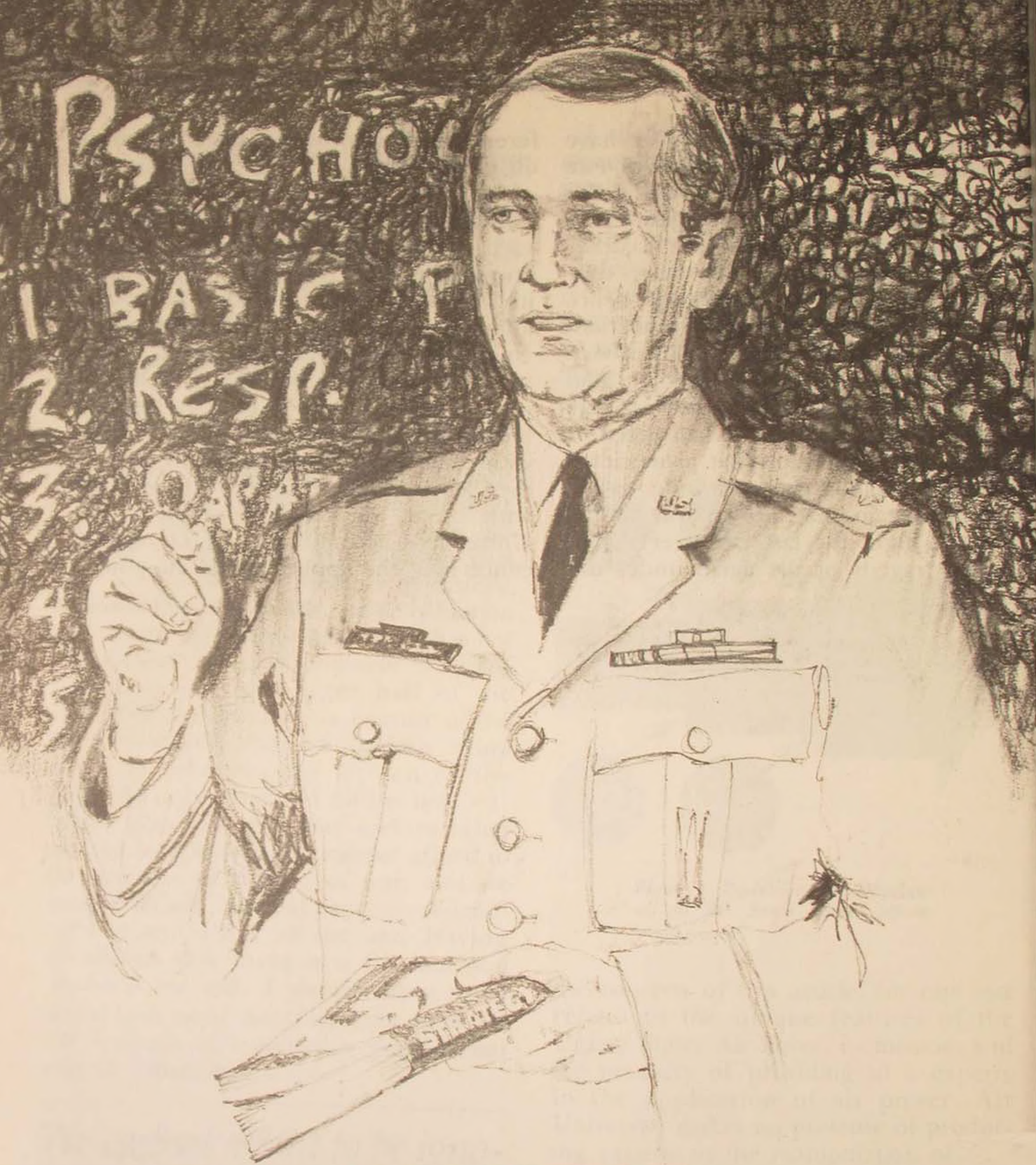
nal changes in my approach to PME, have convinced me that the founders of PME for airmen at AU's predecessor, the Air Corps Tactical School at Langley Field, Virginia, in the twenties were basically sound thinkers. Among other things they foresaw a need for the emerging science of air power to be pursued by practitioners trained in this facet of the art of war. Implicit in the motto of that school and now of Air University, *Proficimus More Irretenti*—We go forward unhampered by tradition—is the notion that professional military education can go a long way in making certain that airmen will not attempt to fight the last war over if that human tragedy occurs again under dif-

ferent circumstances at a later time in a different place.

PRESIDENT A. Lawrence Lowell of Harvard once said, "Universities are full of knowledge. The freshmen bring a little in, and the seniors take none away, and knowledge accumulates." We here at Air University think President Lowell would not have minded if we revised his saying on a more serious note: Our students do indeed bring a great deal of knowledge with them as they come, but we believe they leave here taking more knowledge with them, yet having enhanced Air University's accumulation of knowledge concerning the application of air power.

*Headquarters Air University*





# AIR UNIVERSITY AND THE PROFESSIONAL EDUCATION SYSTEM

DR. KENNETH J. GROVES



ON 12 March 1975 Air University celebrated its twenty-ninth anniversary as the hub of a professional education system unique among the armed forces of the world.

In one sense the professional education system and Air University are well known to officers throughout the Air Force. Nearly all career officers at one time or another are exposed as students or faculty members to at least one of the educational programs provided. In another sense the professional education system as a whole is not well known, much less understood, by most people in the Air Force. Only a small number of officers and professional civilians who serve in Headquarters Air University or in the Directorate of Personnel Programs, Hq USAF, have the opportunity to observe and work with the system in its entirety. With the increasing attention being given to professional education at the highest levels of our government, it is imperative that the Air Force officer corps, particularly those who serve as its spokesmen, have a greater understanding of the Air Force professional education system and the major issues concerning it. It is toward that end that this article is addressed.

Although Air University (AU) administers most Air Force professional education, some elements come under other institutions within the Air Force, in our sister services, and in institutions under the direct jurisdiction of the Joint Chiefs of Staff. Nevertheless, in the minds of many Air Force people, AU and professional education have become synonymous.

The existence of two major commands—Air University and Air Training Command—as focal points for education and training, respectively, has led inevitably to discussions over the differences

between *education* and *training*. Regardless of where one draws the line, it is useful to label certain programs as training and others as education. Here we shall consider education as being general and abstract. Also, it is oriented toward the entirety of one's career. Training is more specific and concerned with the development of specific skills.

### Areas of Professional Education

The Air Force professional education system consists of three distinct, though not mutually exclusive, areas: *professional military education*, *specialized professional education*, and *continuing education*.

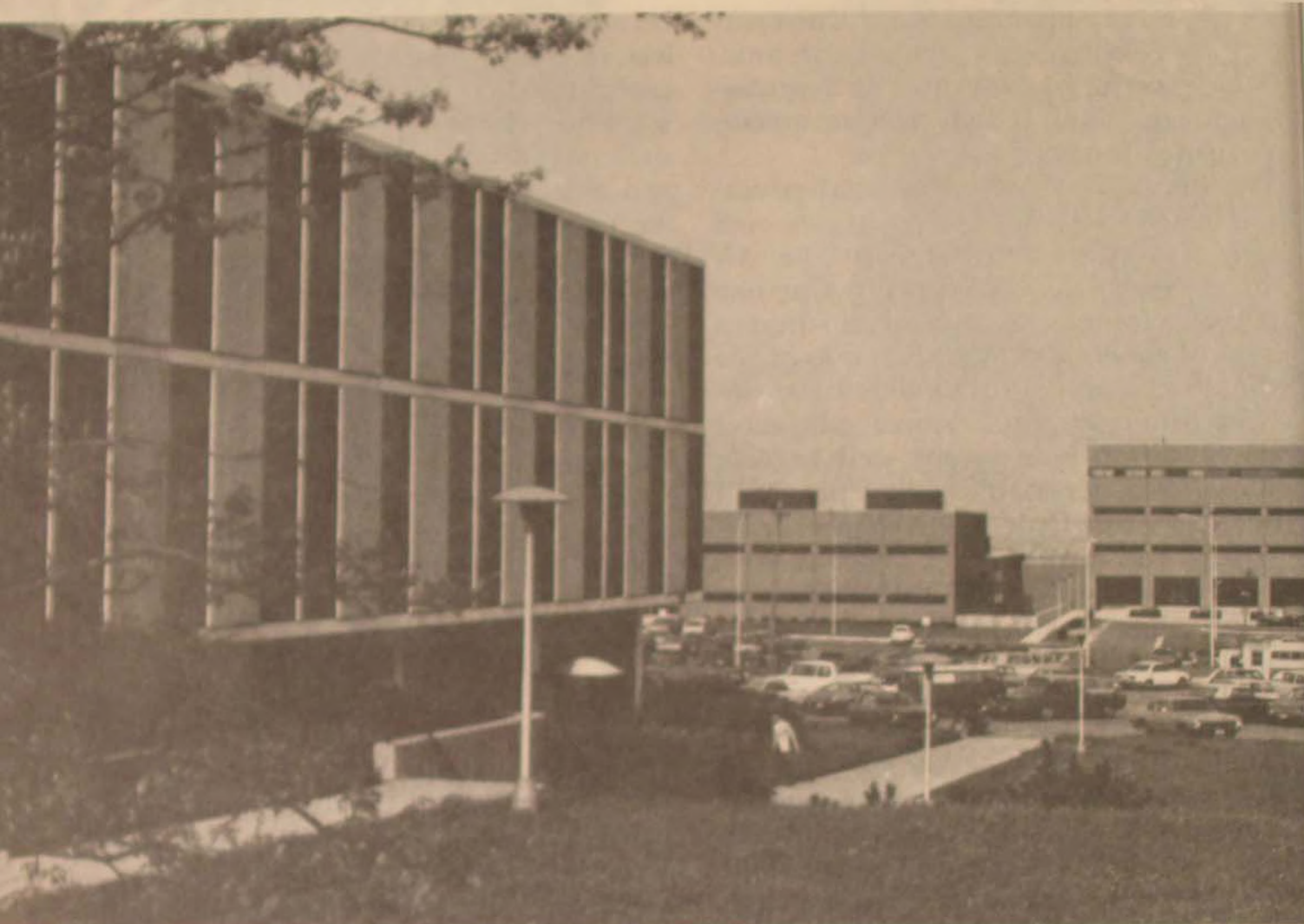
#### *professional military education*

Professional military education (PME) deals with that body of knowledge unique to the profession of arms. For the Air Force, it focuses on the theory and application of air power. We find it in increasing complexity from the precommissioning programs through the staff colleges and senior service colleges.

Postcommissioning PME in the United States began to develop in the last half of the nineteenth century. Its history parallels the development of civilian graduate education in the United States. The key points were the establishment of the Naval War College in 1884 and the Army War College in 1901. Thus, by the turn of the century, American professional military education was well established.

The Air Service Tactical School was founded shortly after World War I. As the Air Corps Tactical School after 1926, it was instrumental in preparing for the employment of air power in World War II. The next major development occurred at the end of World War II,





*The Air Force Institute of Technology (AFIT), the principal agency for specialized professional education for the Air Force, has been at Wright-Patterson AFB, Ohio, since 1950. The Engineering Building is the newest installation at Air University's northern campus.*

when Air University was created. Later (in 1947) it became the professional education center of the independent U.S. Air Force. At the same time, the Department of Defense was established, and the Joint Chiefs of Staff was given legal status. The JCS created the joint senior service colleges, the National War College and the Industrial College of the Armed Forces. During the late 1940s and the 1950s several boards met to consider the why and how of a professional education system for Air Force

officers, who formerly were sent to the Army Command and General Staff College and the Army War College. These boards laid the framework for the present three levels of Air Force PME schools: Squadron Officer School, Air Command and Staff College, and Air War College.

#### *specialized professional education*

The second area of the Air Force professional education system, known as spe-



cialized professional education, consists of education in a number of disciplines essential to the Air Force mission. Among them are engineering, the physical and social sciences, medicine, law, and the humanities. These high-level courses, usually at the graduate level, are conducted by degree-granting civilian and military institutions. Like military postgraduate education, specialized education grew out of the increasing complexity of warfare, although it began somewhat later.

The history of specialized professional education in the Air Force dates back to World War I, when an Army and Navy School of Aeronautical Engineering began at Massachusetts Institute of Technology. Soon, the Army established internal programs. After several changes in school names and locations, by 1950 these had evolved into the Air Force Institute of Technology (AFIT) of Air University, at Wright-Patterson Air Force Base, Ohio. Since then AFIT has been the principal agency for specialized professional education for the Air Force. Other schools involved in this area include the AU Institute for Professional Development (IPD) and the Academic Instructor and Allied Officer School (AIAOS), both at Maxwell.

### *continuing education*

Continuing education takes place in the same schools that conduct military and specialized education. The background and purpose of continuing education for the Air Force are similar to those of the civilian professions. It encompasses a large number of short courses in virtually every academic discipline of interest to the Air Force. The purpose is to prevent the knowledge and skills learned in the advanced degree programs and

the PME schools from becoming obsolete. They meet education requirements that new technological developments demand.

THESE, then, are the three areas of professional education that Air University provides—military, specialized, and continuing. Each has its own purpose, and each helps maintain the professionalism required of Air Force officers, airmen, and civilian personnel.

To carry out such a wide range of educational programs, Army Air Corps leaders put all of them under one command. They were farsighted and wise. By such organization of professional education the Air Force has been able to give centralized support to its schools, colleges, and institutes, achieving economies of operation that otherwise would have been impossible. The Air University Library (AUL) and the centralized computer-managed correspondence course programs of Extension Course Institute (ECI) are examples of the advantages of the centralized organization.

Outside the scope of this article are the Air Force Reserve Officers Training Corps (AFROTC), Air Force off-duty education programs, and Air Force Senior NCO Academy.

### The Major Issues

Over the years the main issues of Air Force professional education have concerned purposes and objectives, curriculum content, accreditation, numbers and kinds of students, faculty, the role of student and faculty research, costs, and accountability.

#### *purposes and objectives*

The purposes and objectives of the Air



Force professional education system stem from the nature of the military profession itself. These are now well stated for the Air Force in the most recent revision of Air Force Manual 53-1, *United States Air Force Officer Professional Military Education System*.<sup>1</sup> This provides the rationale of professional military education and the legal, ethical, and other obligations one incurs in the profession.

One of the oldest issues debated within the PME schools and various boards and study groups has been whether to prepare specialists in a variety of military areas or generalists for duties at higher levels of responsibility. In the early 1950s the intermediate PME level included several special staff courses for officers in logistics, comptrollership, intelligence, communications and electronics, as well as a field officers' course principally for operations officers. These courses were later discontinued and replaced by the present Air Command and Staff College. The evolution of PME missions and objectives indicates that this issue has been resolved in favor of the generalist. The resolution, however, led to problems in the development of curricula.

There has been little problem of specialist versus generalist in specialized education, since the purpose is obvious. Even here, however, many of the advanced-degree programs are designed to give an officer a broad educational background in an appropriate discipline in which to serve the Air Force.

### *curricula*

Regarding curricula, the basic issue continues to be: What subject matter best meets the overall purposes and objectives of professional education? At first the curricula of the three PME schools (AWC, ACSC, and sos) were developed partly from the

experiences of World War II and partly from Army PME schools. However, today's curricula are products predominantly of the postwar period, thanks to continuing revision.

The curricula of the PME schools are not sequential, that is, sos attendance is not a prerequisite for attending ACSC, nor is ACSC a prerequisite for attending AWC. When the schools began, it was thought that officers who attended the senior school would necessarily be graduates of junior and intermediate schools, as in Army practice. However, that sequential pattern of education was never realized because of problems in selection and availability of officers stemming largely from wars and other exigencies. What happened was that each school developed its curriculum independent of the others to meet the educational needs of its students. Consideration was given to officers whose professional education would end after graduation from a lower school, as well as to those who would attend higher-level schools. Inevitably, this led to considerable curriculum overlap.

Some duplication is justified and occurs in any education system. Perhaps it is needed more in professional military education than in education for other professions. The curricula are dynamic; the subject matter changes in step with changes in technology, the international situation, and military concepts and capabilities. Since an officer who attends more than one school would do so at about six-year intervals, he would find a much different curriculum at each, despite the duplication among the schools' curricula at any given time.

The negative aspect of duplication in the curricula of the PME schools is "curriculum creep," which occurs when one school, usually a lower one, tends to emulate a higher-level school. It can lead to less emphasis on knowledge and skills needed





*Squadron Officer School, the only unit of professional military education that a majority of Air Force officers will complete in residence, has graduated more than 59,000 junior officers.*

immediately in one's career. For example, in recent years many have felt that ACSC's curriculum had become quite similar to that of AWC. As a consequence, a comprehensive study was undertaken, and there will be major shifts in emphasis in academic year 1975-1976. These changes are designed to prepare a newly promoted major to meet his responsibilities in the next six to seven years. The curriculum will emphasize staff communicative processes, both oral and written, for instance. Emphasis on international relations will be reduced, and what remains will be integrated more closely with military planning and employment.

While changes in the PME curricula come from a variety of sources, primarily they come from the three faculties. The validity of the curriculum rests, in the main, with them. These curriculum planners have been officers from all sectors of the Air Force, including the most experienced officers in all areas. Faculty

rotation every three or four years has assured a staff reasonably current in Air Force problems. Such rotation inhibits academic inbreeding and the perpetuation of obsolete ideas.

To insure further that the PME curricula meet Air Force needs, Air University has a system of curriculum review and revision. It includes suggestions from major command and Air Staff agencies, AU staff review during Record Staff Visits,\* and Curriculum Review Board actions. Finally, curricula are approved by the AU Commander, who also issues any necessary guidance.

Curriculum development in resident advanced-degree programs of AFIT's School of Engineering and School of Systems and Logistics is different from that in the PME schools. These schools have the dual task of meeting Air Force requirements in logistics management

\* Formal visits by Headquarters AU staff to review primary mission activities.



and engineering as well as standards imposed by the North Central Association of Colleges and Secondary Schools (NCA), to which AFIT belongs. Engineering curricula are also reviewed and accredited by the Engineering Council for Professional Development (ECPD).

To insure that AFIT's three major schools meet Air Force requirements, they maintain close contact with functional users in the Air Staff and major commands, particularly Air Force Logistics Command (AFLC) and Air Force Systems Command (AFSC). By such contact the schools have assured that their programs meet Air Force needs. There is considerable evidence that their graduates are better prepared for their jobs than those whose advanced education was in civilian universities. Graduate research in AFIT's schools, along with the extensive research facilities of AFSC and AFLC, provides a unique capability and further helps insure that we meet Air Force requirements for specialized professional education.

Every known technique of gathering data for curriculum development has been used. AU schools have conducted numerous surveys, interviews, case studies, documentary research studies, and continual field studies for nearly twenty-five years. The Air Force and its sister services have pioneered in the employment of student, alumni, and field surveys as means of curriculum development. Many civilian institutions have only recently begun to use these methods on a regular basis.

#### *accreditation*

The degree, graduate or undergraduate, as an accepted mark of educational attainment, both within the Air Force and without, has been a factor in motivating people to enroll in AFIT's programs. For

that reason, in the early 1950s AU began the long and difficult process of gaining accreditation for AFIT. Although a resident school in engineering was needed and well established many years earlier, the School of Engineering had not been accredited. Therefore, many students preferred to attend civilian institutions for their advanced degrees.

In August 1954 the 83d Congress passed Public Law 733, which permits the AU Commander to confer appropriate degrees on graduates of those AFIT programs that are accredited by a nationally recognized accreditation association or authority. The engineering programs first met the accreditation requirements of the Engineering Council for Professional Development in 1958 and have been reaccredited periodically since then. The North Central Association of Colleges and Secondary Schools granted AFIT its first recognition at the master's degree level in 1960, and AFIT is now fully accredited to grant engineering degrees through the doctorate.

Since the Air Force and its people had shown keen interest in academic degrees, the desirability of degree-granting in PME schools became a much debated issue in military professional education circles. Inasmuch as the Air Force and AU have held that much of what is taught in PME schools is not within the competency or authority of accreditation associations or authorities, we have not sought accreditation of the PME schools. That decision was based on the belief that an advanced degree in the military arts and sciences would find little acceptance by the academic world or the individual. The value of any degree depends on the extent to which it is accepted by other institutions of higher learning and by agencies that would employ the degree holder. It was felt that a degree awarded by a civilian institution in an academic discipline com-



plementing PME would be most useful to the student and would also help the Air Force meet some of its advanced-degree requirements. Consequently, the Air Force and AU arranged cooperative degree programs with civilian institutions by which students attending ACSC or AWC can simultaneously earn academic degrees. The Army Command and General Staff College has recently obtained enabling legislation to award advanced degrees, but no plans are being made to seek the same authority for ACSC or AWC.

### *students*

From the student standpoint, most Air Force professional education system issues have been related to Air Force personnel objectives, policies, and procedures. The main questions raised have concerned numbers and kinds of officers selected to attend the schools, appropriate career points at which professional schooling should take place, and the amount of education provided.

The Gerow Board of 1945 established the present PME system pattern, and the Fairchild Board in 1950 confirmed it. Both recommended that officers attend the junior PME school between the fourth and fifth years of promotion-list service (PLS), the intermediate school during the ninth or tenth years, and the senior school during the fourteenth or fifteenth year. Although many changes have been made in selection criteria, the career points have remained fairly consistent. Today the typical sos student has slightly more than five years of promotion-list service, the ACSC student about eleven years, and the AWC student about eighteen years. Changes made have been based largely on changes in PLS requirements for promotion.

The logic of the system is to have the officer attend school at critical points during his career. Ideally, the officer attends the junior school at the time he is deciding on an Air Force career or shortly thereafter. Attendance at the intermediate school occurs about the time of promotion and serves to prepare one to assume field-grade responsibilities. The senior school prepares the officer to assume senior field-grade and general-officer responsibilities. The PME system, which permits an officer to take postgraduate education at intervals throughout his career, has a decided advantage over postgraduate programs of other professions. The latter require the student to take most professional education before beginning a career. By contrast, the PME system provides simultaneously for *continuing* education and professional military education. More important, the system permits an ideal combination of experience and education in producing the learned professional officer. The individual receives education when needed most and when its importance to a military career is evident. The officer can also study with and learn from others with wide experience in Air Force specialties.

The PME system lends itself to another important element in officer career development. As an officer progresses in a career and assumes higher levels of responsibility, the activities and decisions involve more and more areas outside a particular specialty. Thus, the PME system increases an officer's knowledge and understanding of all areas of the profession.<sup>2</sup>

The design of the Air Force PME system has been found to be sound and fits the Air Force officer's career progression. However, wars and other crises have prevented the Air Force from using



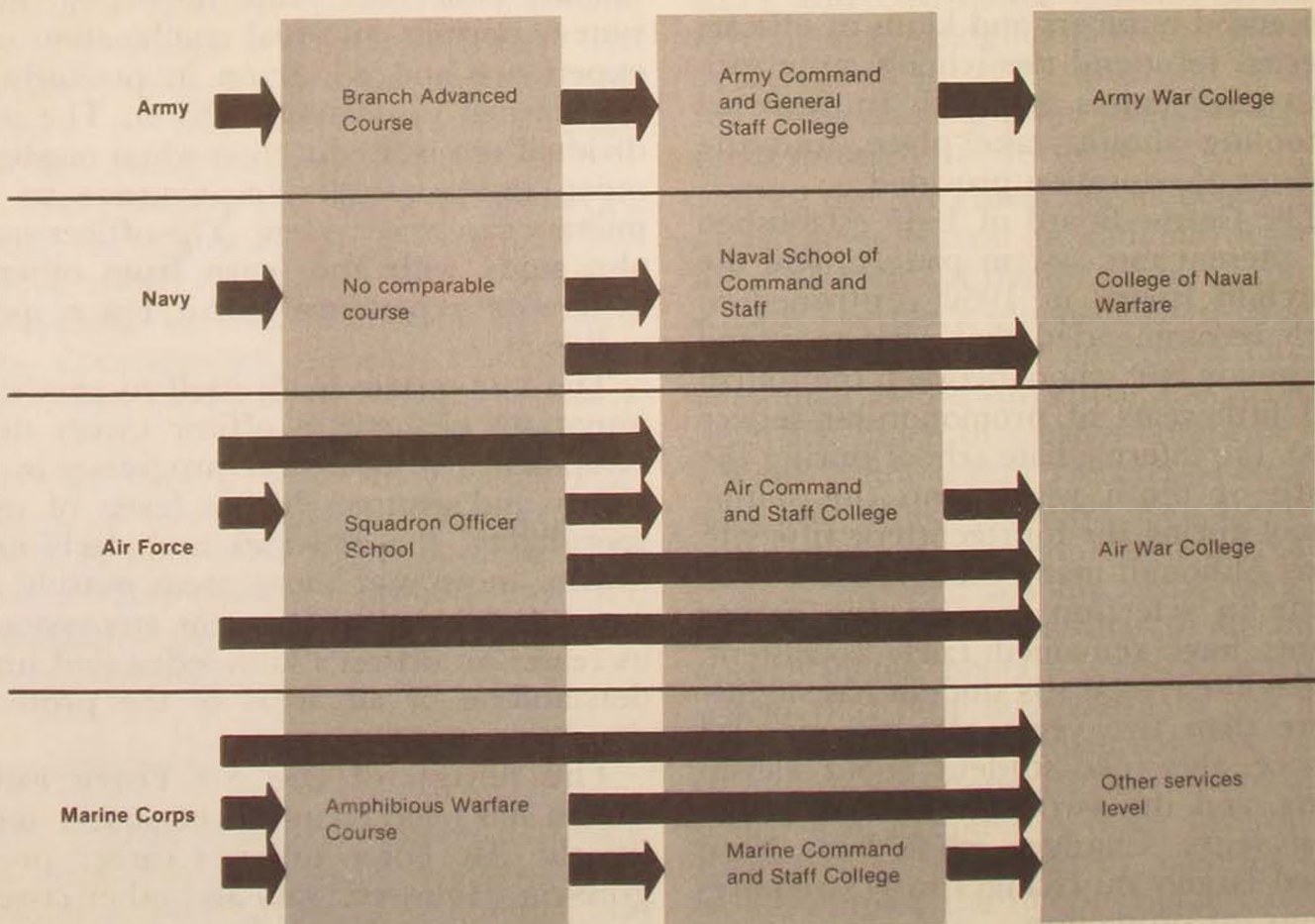
the system ideally. For instance, wide eligibility zones have resulted in some officers' attending schools at convenient rather than optimum career stages.

The PME system is designed to educate the best-qualified officers, those most likely to be promoted and assigned to higher positions. The policy of selecting the best has been implicit in the resident system from the outset. In the past, however, some of the most highly qualified officers avoided attending the schools. They felt that a year in a key assignment would be more favorable to advancement than PME school attendance. Often they were right, particularly in the past. Some officers, although a small minority, have achieved the highest

grades without attending any PME schools.

In recent years the Air Force has modified selection criteria and procedures for intermediate and senior schools, tying them more closely to those for promotion. These improvements in selection procedures reflect changes in the Air Force's application of its affirmative policy on the importance of PME. There is a contrast in the views of the services on selection for PME schools and the relation to career progression, as depicted in Figure 1. In the Army it is essential for an officer to attend all three levels of PME if he is to win stars. On the other hand, the Navy career officer typically will attend only one PME school; if

Figure 1. The progression of professional military education





he has attended the intermediate school, he is ineligible to attend the senior school. Selection systems for the Marine Corps are essentially the same as those for the Air Force. Differences in the systems which the four services use are accounted for partially by differences in roles and missions. It is obvious, however, that the Army in practice attaches the greatest importance to PME in officer career development. The Air Force has been moving in that direction with respect to making its procedures consistent with its affirmative policies.

Perhaps the most difficult question about the PME system is how many officers should attend each school. Much discussion about this is in reports of the USAF Military Education Boards that convened between 1945 and 1959: The Gerow Board (1945), Fairchild Board (1950), Rawlings Board (1956), and Power Board (1959). An examination of their recommended attendance goals shows that, although the Air Force always has considered PME important, in practice none of the goals were ever achieved. Availability of officers at their appropriate career points and limited school facilities have kept the Air Force from meeting the goals.

During war and other crises, emphasis on sending officers to PME schools tended to diminish. Schools and classes were reduced. Occasionally, as during the Cuban missile crisis, SOS students have been withdrawn from school to return to the cockpit within days or even a few hours. Of course, the availability of such a student officer pool has aided our mobilization and readiness. During periods of peaceful stability, attendance at PME schools has been emphasized. The USAF Military Education Boards met during periods between crises. In 1974 a symposium consisting of major command

vice commanders met to review PME. That meeting was prompted in part by the cessation of U.S. fighting in Southeast Asia. Thus the Air Force has followed Horace's dictum: "... a wise man in time of peace prepares for war."

Pertinent to the question of how many officers should attend PME schools is how much time they should spend there. The total of the three Air Force programs—SOS, ACSC, and AWC—amounts to about 93 weeks. That equates to about six semesters in a civilian university. The amount of postgraduate education that educators now deem essential for entry into most professions varies from 18 to 24 months, the second degree for most professions usually requiring at least 24 months. The total professional military education program available to Air Force officers is small compared with that of other learned professions. However, training which an officer receives as part of his professional development should also be considered.

Thus, if an officer were to receive all available PME, he would have an education equal to that of other professions. However, few officers attend all PME resident schools. Assuming a force structure of 91,202 (the estimated number for a low force structure) with the desired balance of grades and years of service, selection opportunity for resident PME schools would be:

	School Enrollments (5-Year Total)	Eligibles (5-Year Total)	Percent Opportunity
SOS	15,200	17,875	85
ACSC	2,445	16,340	15
ACSC & equivalent	3,445	16,340	21
AWC	1,105	9,481	12
AWC & equivalent	1,690	9,481	18



Early it became obvious at AU that many officers would never be able to attend resident PME schools. That was true not only because of limited facilities, manpower, and financial resources but also because of the philosophy that resident schools should be for the most highly qualified and others would be "selected out" as suggested by the Fairchild Board. That rationale made sense, but it placed the Air Force in the position of not having standards of professional education uniformly applied to all its officers—a position that other professions for the most part do not accept. AU has developed correspondence courses and extension seminars, which partially fill the deficit in PME. Although these courses are not the equivalent of resident programs, they do provide an economical means of PME for all Air

Force officers at the proper grades and years of service.

Problems of meeting requirements in specialized professional education have differed from those in PME. The advanced-degree programs are voluntary. Recruiting qualified officer graduate students in engineering and the physical sciences always has been difficult, largely because of a lack of applicants with undergraduate prerequisites to pursue the advanced-degree programs. Many officers who are qualified for these programs are rated and must meet their flying obligation, much of it at a time when it would be desirable to study toward advanced degrees. The Aviation Career Incentive Act of 1974 with its "gates" probably will complicate the problem further. Actions being taken to improve the situation include intensive





recruiting throughout the Air Force, as well as special emphasis in the various precommissioning programs to recruit more cadets in the engineering and physical sciences.

### *faculty*

The PME military faculty member is not typically a career professional educator, as a civilian college professor is. At senior and intermediate schools, in particular, the faculty member has had considerable professional experience, including other professional education and training. The nature of the military profession is such that all military people get a lot of education and training. The primary task of all military forces is to achieve and maintain a state of readiness, which can be accomplished only through training

and education. Thus, the PME faculty member is usually well trained and educated. Faculty tours are short, usually about three years; and from the standpoint of maintaining a dynamic curriculum, that is a strength. However, some critics charge that service schools have not produced military scholars in their faculties.

Developing military scholars requires extensive faculty duty, which to most promising career-oriented officers historically has been unacceptable. Despite the importance ascribed to education by the Air Force, long periods of assignment in AU or any other educational institution practically would eliminate an officer's chance for promotion to general. Understandably, some of the most capable officers have avoided PME faculty assignments.

*Air Command and Staff College prepares the newly promoted major to meet his responsibilities in the succeeding six to seven years.*





Partly to offset this real or perceived weakness in faculty quality, PME schools of all the services rely on civilian faculty members to varying extents. The military profession draws on many academic disciplines, institutions, and agencies, as do other professions. The PME schools have guest lecture programs, which at low cost bring a wide range of high-level talent to help teach the students. The Naval War College has relied heavily on civilian chairs filled by prominent scholars who contribute to PME. Only recently AU proposed a program of bringing in visiting professors under the Intergovernmental Exchange Program. The plan is for a modest program, with no more than four visiting professors at a time. They will assist principally at ACSC and AWC. Also, AU has civilian specialists in other schools who contribute to the PME schools by furnishing documentary research, lectures, and teaching electives—another benefit of centralizing Air Force education in one command. Each PME school also has one or two key civilians who help maintain continuity.

In general, however, AU policy has been that PME faculties will continue to be military, though there have been recent suggestions that greater use of civilians be made, even to the extent of conducting PME by contract with civilian universities.

The idea presupposes that civilian postgraduate education and professional military education are identical or at least quite similar. Civilian graduate education concerns itself with developing increased understanding and awareness of a discipline through a “concentration of courses” within a study program. Professional military education, however, is a “broadening” program. It is a systematic acquisition of theoretical and applied knowledge over a broad spectrum

unique to the profession of arms. PME schools provide for a core of understanding common to all officers, regardless of their specialty or department. Also, they differ from civilian graduate education in that service schools must examine specific service roles, missions, doctrine, and employment of military resources. While it is true that the armed forces make use of civilian degree programs, they do so to meet specific needs in a definite academic discipline, not to satisfy PME needs.

Comparisons between civilian professors and military faculty members are irrelevant. The civilian professor is a career educator—one who, perhaps, has great depth of knowledge in an academic discipline needed to contribute to the body of knowledge pertinent to the military profession. Such an individual, however, is not a member of the profession of arms, and with few exceptions he is not an authority on it.

Air Force policy has been to use existing resources in civilian institutions as needed. Uniquely military training and education can be carried out best by internal military education programs where the faculty is predominantly military.

More use of civilian instructors is made in the specialized education programs of AFIT's Schools of Engineering and Systems and Logistics. Even here, though, about half the faculty is military, to help insure that the programs meet unique Air Force requirements.

### *research*

Traditionally, a strength of postgraduate education has been the research opportunities provided to students and faculty. So it has been in AU. From the beginning, ACSC, AWC, and AFIT's advanced-



degree programs have had extensive student research programs.

One vital question has been the role of AU research in developing Air Force doctrine. In its early years AU was designated "the doctrinal center of the Air Force." Many recent senior Air Force leaders served on the AWC's Evaluation Staff. It was charged specifically with formalizing Air Force doctrine. Later the Evaluation Staff was transformed into the Concepts Division of Aerospace Studies Institute, which has since been discontinued.

Gradually the idea of AU's being a doctrinal center gave way to that of a university carrying out research applicable to a variety of Air Force problems, including the development of doctrine. This approach has decided advantages for both the Air Force and AU. First, doctrine will be established only at highest levels of authority on roles and missions, strategy, and tactics. These levels are not at AU but at Headquarters USAF and other major commands. Second, AU can contribute better to Air Force concepts and doctrine by maintaining an environment that supports academic freedom to study Air Force and DOD problems. Such an environment is more conducive to producing innovative thought, unencumbered by the daily decision-making and short-fuse deadlines so incompatible with creative thought.

In keeping with AU's primary mission, the major purpose of student research programs is the professional development of students and faculty. A secondary but important purpose is to contribute to solving Air Force problems. Although which of these purposes is the more important has been debated frequently at AU, the question is academic. It would be difficult to serve one purpose to the exclusion of the other. Stu-

dents are free to choose their own research topics, so long as they relate to school subject matter. Many students prefer to work on a live problem of current Air Force interest. So, for any important research project that the Air Staff, a major command, or another agency may suggest, there are usually enough volunteers.

In recent years AU has placed increased emphasis on group research, in order for research here to be more responsive to Air Force problems too big for one person to pursue. Also, AU is improving procedures for identifying the most critical Air Force problems suitable for student research and then making better distribution of research reports to Air Force and DOD organizations that need them most.

#### *costs and accountability*

Most Air Force professional education is assigned to Air University, and the cost is included in its annual operations and maintenance budget. To show what professional education costs the Air Force, AU's share of the Air Force's annual appropriation is less than one percent (.8% or \$216.4 million). In addition to the costs of major professional education programs, that amount also includes the cost of operating the Extension Course Institute, which manages and administers 317 Career Development Courses for 150,000 airmen and represents a significant proportion of airman training. However, it is not part of officer professional military education. AU's budget also includes the cost of operating AFROTC.

The comparative percentages of AU's budget spent on PME, specialized education, and continuing education are shown in Figure 2. Among the three



areas considered in this article, the greatest amount is spent on PME, 38 percent. This is followed closely by specialized education, 36 percent. More than a third of the latter goes for medical education. All resident and civilian-institution short courses have been included under continuing education, 26 percent. Although the amount of USAF's budget for professional education is relatively small, the total expenditure is a matter of concern to USAF, DOD, and the Congress.

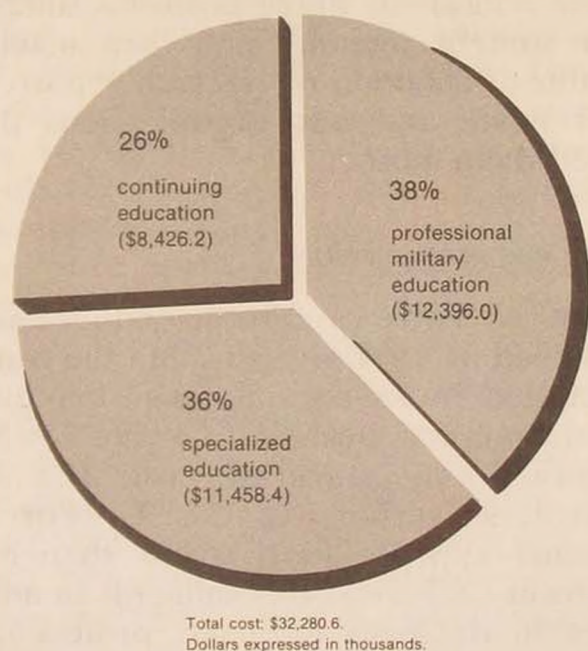


Figure 2. Proportion of direct costs for AU areas of professional education, FY 74

USAF has developed a comprehensive system for computing and reporting education costs (AFR 173-7), applying to all formal education programs. Cost reports are completed in detail. They serve several purposes, such as figuring tuition rates for reimbursement from the Security Assistance Training Program (SATP), estimating costs for new education programs, and preparing replies to inquiries

about Air Force education costs. For budgeting, programming, and planning purposes the system is useful. However, the cost per entrant/graduate required by AFR 173-7 reflects figures seldom reckoned in civilian higher education circles. Those not involved in managing higher education may be shocked by the cost per graduate of many of our longer Air Force educational programs. Most people consider the cost of civilian higher education as the amount of tuition fees and room and board, which means that education in a quality institution may cost less than \$4000 per year. The cost per graduate of a 40-week education program for an Air Force officer can be as much as \$35,000 or more.

The great difference in the cost of educating a student in a civilian institution is partly because tuition and fees cover only 30 percent of the total cost per academic year in a civilian institution.<sup>3</sup> The largest part of the cost of civilian higher education is covered by state and federal appropriations and by grants, endowments, and other contributions. Moreover, the cost per graduate would be even higher if the high attrition rate during freshman and sophomore years in civilian colleges were included. Also an Air Force officer student is being paid his salary and allowances; normally the civilian student is not.

Another more important reason for the apparent cost difference stems from the elements included in the computations of total cost per graduate in Air Force programs. The accompanying table shows approximate costs to the Air Force for a typical 30-week educational program for students in the grade of major.

Direct costs consist mainly of faculty salaries, purchased services, materiel, and other expenses used directly in conduct-



### Example of Thirty-Week Education Program for Majors

Type of Cost	Cost per Student Week	Cost per Graduate
I Direct Cost	\$120	\$ 3,600— (16.8%)
II Indirect Costs	130	3,900— (18.2%)
III Command Support	5	150— ( 0.7%)
IV Student Costs	458	13,740— (64.2%)
Total	\$713	\$21,390— (99.9%)

ing the educational program. Indirect costs are mostly base operating costs. They are analogous to the costs of civilian institutions in operating and maintaining their physical plants. Command support costs are roughly equal to administrative costs of a typical civilian university, such as the president's staff and related costs. By far the greatest costs (nearly two-thirds) are for paying student salaries and their travel and moving expenses. These costs, rarely incurred in civilian educational programs, account for much of the difference between Air Force program costs and those of civilian institutions.

One of the main problems with AU professional education costs has been in explaining them to Congress and others responsible for approving and appropriating the funds. Much of the concern about high costs of Air Force education grows out of the cost-per-graduate method of accounting. However effective that method might be for accounting purposes, it exaggerates education costs by including student salaries.

The underlying assumption seems to be that student man-years spent in professional education programs have no

value to the Air Force, besides the education given the officers who attend. In other words, if there were no requirement for an officer educational program, the end-strength could be reduced. The fallacy of that assumption is that PME students have given the Air Force a "surge" capability to respond to every crisis since World War II.

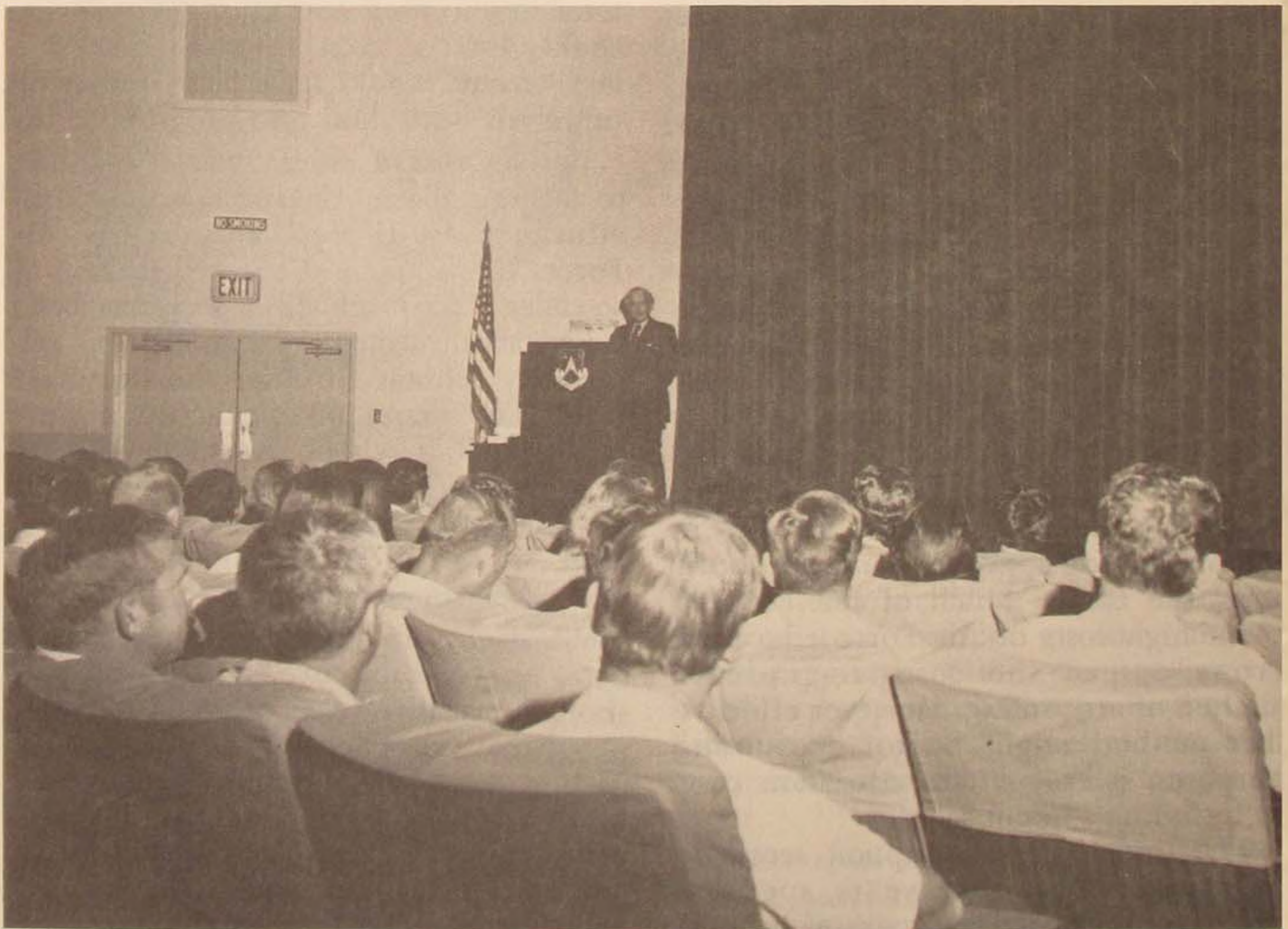
A second problem of costs is that those responsible for conducting educational programs control only a small proportion of funds spent on education. To achieve economies, the school operator can only reduce some direct costs; only to a very limited extent can he reduce indirect costs. For the Air Force to achieve economies, the alternatives are to reduce the number of those attending school or reduce the course length. Lessening the total amount of education we provide could result in false economy, and dollars "saved" would have little impact on other Air Force and DOD programs.

Besides cost, a more difficult question to answer about Air Force professional education is its *real* value to the Air Force. It is actually the same question of so-called "accountability" that has been raised about civilian education from elementary schools through the doctorate level. For many people accountability means that a school should be able to prove that its output—in the form of its graduates' increased skills and knowledge—is worth the investment in funds and other resources.

While one may get bits and pieces of data, largely subjective, that purport to show the relative value of an educational program, the question does not lend itself to scientific inquiry. We have all kinds of data from students, alumni, using agencies, and various Air Force and other boards attesting to the value of professional education. None, however,



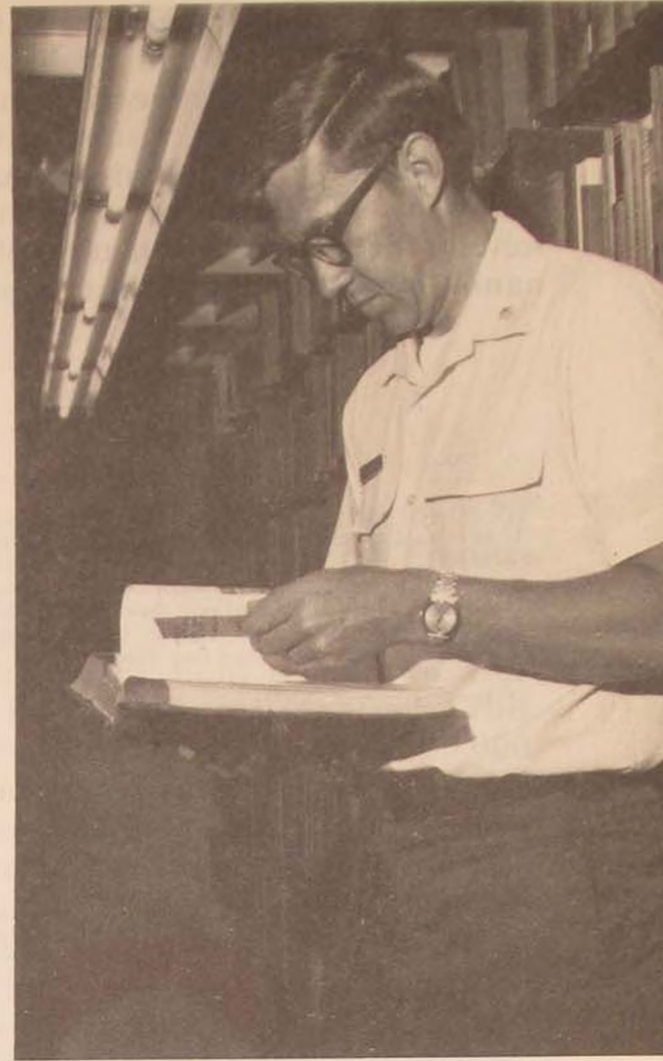
*Studies and research accomplished by Air War College faculty and students, individually and in seminars, make substantial contribution to AF doctrines and concepts.*





constitute hard data in dollars to prove that the returns are worth the investment.

The problem is a little easier in skill training. Outcomes there can be measured in terms of overt behavioral changes that occur because of training. In educational programs, where objectives are general, the specific contribution to the Air Force mission and defense cannot be shown in precise terms. For the time being, at least, we must rely on the general principle that the more Air Force officers and airmen learn about their profession, the more successful they will be in carrying out the mission. In view of the true costs of education, which are moderate, a greater risk would be to give too little professional education, rather than too much. To those most interested in cost-effectiveness, that answer may not satisfy. Perhaps they should be required to prove that professional education is *not* worth the resources which the Air Force invests.



*Fairchild Library, with its unique resources, supports the academic and research endeavors of the whole Air Force as well as Air University's education program.*



IN THE preceding pages I have focused on the main issues and problems that have faced Air University and the professional education system of the Air Force. None of them is insurmountable, yet many will never be completely resolved, for that is the nature of a dynamic profession and the university

which serves it. With the active participation and interest of all Air Force organizations and personnel, we shall continue to improve our professional education system, which is second to none.

*Headquarters Air University*

#### Notes

1. As of April 1975 Air University was in the final stages of a revision of AFM 53-1.
2. See article by Major David R. Dent on professional military education from a student's point of view, elsewhere in this issue, p. 92.
3. National Center for Education Statistics, U.S. Department of Health, Education, and Welfare. Preliminary Data, February 1975.

#### Acknowledgments

The author gratefully acknowledges the contributions of present and former AU commanders, commandants, faculties, and staffs, whose views both pro and con are reflected in the article.





## DEFENSE POLICY IN A WORLD OF LIMITED RESOURCES

*a look at the possibilities*

CAPTAIN CHRIS L. JEFFERIES

IN November 1973 the Department of Defense invoked the Defense Production Act of 1950, which gives it authority to take first priority in domestic petroleum production, to acquire 19.7 million barrels of aviation fuel. This action diverted an additional 300,000 barrels of fuel per day from domestic supply to defense needs. The diversion was taken in response to the Middle East oil embargo, which had critically limited the availability of overseas petroleum sources upon which Defense had been depending for fifty percent of its fuel needs. On 20 December 1973, however, William E. Simon, the newly appointed Energy Administrator, ordered the Department of Defense to surrender 1.5 of its 19.7 million barrels for the use of domestic airlines in their international routes. The Department of Defense protested the loss of this portion of its fuel allocation in a letter from Secretary of Defense James R. Schlesinger, claiming that it would "weaken our defense posture and leave Defense supplies almost thirty percent below the amount required for military war reserves."<sup>1</sup> Under Defense pressure, Simon reduced the amount to 900,000 barrels.

Thus occurred what may become a



classic confrontation over the allocation of resources between military and civilian needs and may well presage an emerging pattern of military-civilian relations. As resources become increasingly scarce and expensive in a world of limited resources, confrontations between the military and civilian organizations over their use may occur more frequently and over even more critical issues.

The realization that the earth does indeed have finite resources and that both the world's population and its resource consumption are increasing exponentially has caused many to reflect upon the consequences and, most important, to question the utility, validity, and wisdom of continued unlimited growth. As the world's population doubles every thirty years, with a corresponding doubling of resource consumption and an increase in pollution and ecological damage caused by exploiting these resources, concern centers on the prospect that these trends may soon converge in a serious, if not disastrous, crisis for civilization as we now know it. Hence, it is argued, growth must be limited.

Studies of the issue range from "doomsday" predictions that, if present growth continues, our social and economic system will collapse in as little as seventy years;<sup>2</sup> to a more moderate and practical assessment of an impending breakdown which can be avoided by "systematically" integrating resource and environmental use, population control, and social values into a "framework" for policy-making research;<sup>3</sup> to an optimistic, ethereal evaluation of the future centered in a "transformation," already occurring, from which man will gain "empathy with nature and other people" and a "transcendent merging with all existence," thus preventing the "rape of the world."<sup>4</sup>

Whether or not one can accept these evaluations of the consequences of continued economic growth and expansion, he must accept that there does appear to be a limit to the type of growth which civilization is now experiencing. If this limit is reached because of the population explosion, environmental damage, or a massive failure of the world's present economic system coupled to ever increasing inflation, at the base of it must be the finiteness of resources available for man's exploitation.

This article is not an attempt to evaluate the validity of the "limited growth" concept. Indeed, it accepts that premise. Given the fact of limited resources, then, it is an attempt to explore the issue of defense policy and the use of force in a world of limited resources, a world most graphically suggested by the recent oil crisis. It will do so by examining the trend of defense spending, the likely short-term effects of limited resources on defense policy, and some long-term implications.

#### *the increasing costs of Defense spending*

In our consideration of defense in a world of limited resources, we must first examine the argument that defense spending in the United States represents an increasingly smaller proportion of the nation's gross national product (GNP). At first glance the claim appears to be fact: the FY 1974 Defense budget represented six percent of GNP, the sixth successive yearly decline. The FY 1975 budget claims to remain constant at six percent, but examination of the budget indicates that it marks not only the end of the decline but probably the beginning of an increase.

First, the requested obligational authority of \$92.9 billion for 1975 defense



expenditures did not include a supplemental request for obligational authority of \$6.2 billion to meet the previous year's defense budgetary obligation. In addition, \$1.5 billion of the Atomic Energy Commission (AEC) budget is to provide for military purchase of weapons. Together, then, the 1975 defense budget request, the supplemental request for 1974, and the military portion of the AEC budget equal \$101.3 billion or 6.5 percent of GNP.<sup>5</sup> Although the validity of doing so can be questioned, it is also argued that the costs of past wars should be categorized as part of the defense budget, as well as costs for veteran's benefits and interest on the national debt that has financed the wars. If this were done, the defense budget for 1975 would actually represent 8.5 percent of GNP.<sup>6</sup>

Second, the portion of the budget providing for strategic forces is less today than in the early 1960s because our present systems were funded then. The 1975 budget, however, includes expenditures indicating a new phase of strategic force modernization; almost one-third of the budget is for research and development of new weapon systems (the B-1, Trident SLBM, etc.), which will require sharp increases in future expenditures. This is made clear in the President's 1975 Budget Message. "These increases [in defense spending] are required . . . to meet today's higher costs of maintaining force levels. They would also provide for a vigorous research and development effort that would enable us to produce new weapons systems . . ." <sup>7</sup> Because obligations incurred for major equipment, research and development, and construction indicate the measure of succeeding years' expenditures, the Brookings Institution estimates that if present policies on expenditures are continued as

planned, the trend of higher spending foreshadowed this year may reach, in current dollars, \$142 billion by 1980, or almost 9 percent of the projected GNP for that year.<sup>8</sup>

The significance of these increases for our purpose lies in their causes. The Brookings study identifies four: the increased costs of defense manpower (the all-voluntary force); the growing ratio of manpower-to-force levels brought about by increased weapon sophistication; the increasing costs of military retirements; and the increasing technological complexity and higher performance demanded of each new system.<sup>9</sup> To cope with these increasing costs, we traditionally rely on the nation's economic growth, a continually increasing GNP. Thus, if defense costs remain a near-constant percent of GNP, increasing costs can continue without substantial alterations in defense spending patterns. But suppose GNP declines. Will defense costs decline as well? If not, high defense spending could become an economic burden. Of the four causes of increased costs isolated by Brookings, only one, manpower costs, is likely to decline with a decline in GNP, since it alone is a direct reflection of general economic conditions (i.e., as the cost of living goes up, so do military salaries; if it should go down, so would salaries). The ratio of manpower-to-force levels may level off, but it, like increasing sophistication of weapon systems and the increasing number of retirees, is normally not closely related to economic conditions. Indeed, the number of retirees will continue to increase for at least another decade largely independent of economic conditions since we have not yet passed the "hump" of the Korean War era retirees. Thus, with a decline in GNP brought about by a scarcity of resources,<sup>10</sup> the increasing costs of defense will represent an ever increasing share of GNP unless present defense policies,



philosophies, and strategic doctrines were to change.

The point of discussing the increasing costs of defense is *not* to decry defense spending or to imply that it is too high. It is to make the point that as costs continue to increase, and as resources become more expensive and scarce (implying economic contraction rather than growth), fiscal pressures and competing domestic requirements may well force a re-examination by society of the role of defense with its increasing costs. It is this possibility that demands attention: that we, the military, recognize the problem and consider some of its possible effects on defense policy.

*limited resources and defense:  
the short term*

The immediate effects of limited resources on defense are not too difficult to identify. Indeed, scarcity is not new to the armed forces, the pattern of response having been set in other periods: an attempt to constrain costs by increasing productivity and improving resource management, by slowing force modernization, or by reducing commitments and force readiness. The last effect was most evident in the oil crisis when fuel shortages forced a decrease of 20 percent in the time spent by ships at sea and 33 percent in flying time for the Air Force. While the effects were soon overcome with an increased supply of fuel, their significance was not lost: degradation in readiness and proficiency. Can we not, first, expect such trends to become intensified as resources become increasingly scarce and costly?

Additional indications suggest that the armed forces are indeed aware of resource limitations. In a recent *Air Univer-*

*sity Compendium of Research Topics*, the area concerning energy is of importance for our consideration. It suggests a study to "develop policies, programs and procedures which will allow the Air Force to make more efficient use of energy resources."<sup>11</sup> Two effects of the energy crisis are addressed: (1) the increasing difficulty of procuring sufficient fuel to support air and ground missions and (2) increasing fuel costs, which require a greater share of limited funds. The objects of the study: to identify operations and procedures causing undue drain on energy resources; and to design policies, programs, and procedures that will encourage the more efficient use of available resources.

In addition, the prospect of limited resources is causing the armed forces to re-examine the increasing costs of new weapon systems. Both the Navy and the Air Force, for example, are interested in an "austere" fighter, a lightweight, low-cost aircraft that, in the words of Secretary of Defense Schlesinger, "would permit us to procure and operate a larger number of aircraft within the same budgetary resources."<sup>12</sup>

While effects on readiness and capabilities, on a growing awareness of increasing costs, and on greater conservation efforts are apparent, more difficult to determine are the effects that limited resources are likely to have on strategies for the use of force. Cost considerations, for example, raise the issue of counterforce versus deterrence by mutually assured destruction (MAD), labeled by a military-related journal as the "most important single defense issue of the day."<sup>13</sup> Regardless of the esoteric and technical arguments for or against a counterforce strategy, a world of limited resources may well decide the issue: the greater accuracy and increased numbers



of missiles required to make counterforce strategy credible require increased expenditures for development and production, the resources for which soon may not be available. Thus, competing domestic demands in a limited resource world may force a reliance on our established MAD doctrine and capability. Indeed, this possibility was suggested with the deletion, by the Research and Development Subcommittee of the Senate Armed Services Committee, of \$77 million requested in the 1975 defense budget to improve the yield and accuracy of strategic missiles.<sup>14</sup> The possibility was further suggested by the House Armed Services Committee's deletion of \$15 million requested for research and development of an advanced ballistic re-entry system.<sup>15</sup>

While Congressional opposition to defense expenditures is not new and most of the funds for the two programs were subsequently restored, at the very least the action illustrates how opposition to increasing defense costs may have a very direct effect on military strategies—even more so as the effects of limited resources begin to be felt on the economy. Beyond that, the action could indicate a developing trend: opposition to increasing defense expenditures as they compete with domestic spending needs. Indeed, the latter possibility is further suggested by the closeness of the votes on two key amendments to the 1975 Defense Authorization Bill that would have led to significant defense expenditure reductions: manpower cuts in Europe and cuts in research and development were defeated by very close votes (24 and 21 votes in the House and 2 and 11 votes in the Senate), indicating an increasing "sense of legislative uncertainty and conditional commitment" to high levels of defense spending.<sup>16</sup>

*limited resources and defense:  
the long term*

To this point, we have been considering some possible short-term effects of limited resources on defense, suggested by trends and actions already discernible: a growing awareness within the military of shortage importance; increased efforts to conserve and husband resources; and possible reliance on a strategic war doctrine reflecting the increased costs of resources (i.e., less reliance on counterforce). More important to our discussion, however, are the long-term effects that a resource shortage is likely to have on defense policy and the use of force, changes in policy that may occur as resource shortages become more acute and more frequent—a probability suggested almost daily in the press since the oil crisis.

*Military Capability and Policy.* First, may we not expect a change in military doctrines and capabilities reflecting a national concern with assuring the availability and supply of the needed resources? The energy crisis raised the issue and indicated a possible trend in this direction. In an interview taped by the Public Broadcasting System during the crisis in 1973–74, Secretary Schlesinger said that Arab countries "ran the risk of increasing public demand for force against them if they carried their oil curbs too far."<sup>17</sup> The Arabs immediately interpreted this remark as a threat of American intervention against them and reacted by mining their oil fields for destruction if anyone tried to occupy them by force.<sup>18</sup> The issue brought into the open then the question of whether or not the United States or other Western nations actually contemplated the use of force to assure a continued supply of oil. The *New York Times* reported that



British Members of Parliament and American "officials" had been "involved in discussions about it."<sup>19</sup> A Lebanese weekly magazine published details of what it described as American "contingency plans" to occupy the Persian Gulf oil fields. U.S. military sources, when questioned about the matter, replied that we had contingency plans for every conceivable military action, "even the occupation of Ottawa."<sup>20</sup>

If, indeed, a policy of the use of force to assure supply of scarce resources is truly considered an alternative, then it should be reflected in planned U.S. force structures. In an article addressing "some energy security matters," Brigadier General George A. Lincoln, USA (retired), former Director, Office of Emergency Preparedness, points out:

Neither the sources of supply nor the transport lines are under our control. . . . As to force and threat of force . . . . Mention of general war brings up thoughts of protecting transport lines, and the sobering possibility that within a decade or so the foreign supply line for oil would require the equivalent of a super tanker every fifty miles from [the Persian Gulf] to the coast of the US.<sup>21</sup>

It is undoubtedly this "sobering possibility" that has prompted a Mahan reaction in the Navy to push for two particular weapon systems: Nimitz-class carriers, "floating sovereign airfields . . . whose purpose . . . is to protect the sea lanes from air attack";<sup>22</sup> and "sea control ships," small carriers with helicopters and v/STOL aircraft whose mission is surveillance and defense against submarine and surface threats. Admiral Elmo Zumwalt, former Chief of Naval Operations, points out that 69 of 72 raw materials must come to us by sea.<sup>23</sup> With a protracted conventional war in Europe requiring overseas support unlikely in light of the

current doctrine and strategy of nuclear war, assuring secure lines of resource supply does seem a likely justification for these weapons.

Army structures also reflect the possibility of force to secure resources. The *New York Times* reports that the Army is "shuffling its forces to increase their flexibility and hitting-power and to speed overseas reinforcement."<sup>24</sup> "Shuffling" includes formation of lightly armed ranger battalions, four new "heavy" reserve brigades (2 mechanized, 2 armored), and a "tri-cap" (triple capability) division—a mix of armor, helicopter, and infantry. Justification, of course, includes concern for dealing with major aggression in Europe, but, more significantly, for dealing with "crises" in the third world. Can such a major "shuffle" be justified for third world crises *solely* on the basis of evacuating U.S. citizens and safeguarding "vital communications links"? A negative answer is suggested by the Nixon Doctrine and his statement on 8 September 1973 that "the United States cannot be at the mercy of Mid-East oil producers,"<sup>25</sup> by Secretary of State Henry Kissinger's "warnings" against "economic strangulation" of the U.S., Schlesinger's statement concerning possible intervention to secure oil resources, Naval concern for sea-lane security, and an Army "shuffle." Thus, there indeed appears to be a very real possibility that, in a world of limited resources, force might be employed to assure their availability and supply.

The idea of using force to assure resource availability, however, raises a paradox. The immediate U.S. public response to the increasing costs of defense as resources become scarcer will probably be negative, a reaction likely to lead to significant cuts in defense spending. However, as scarcity increases and it becomes readily apparent that we are in



competition with other nations for resources, the mood is likely to change with a corresponding increase in defense spending to levels providing the means to assure resource supply.

This leads to another paradox: as resources become scarcer, hence more expensive, may not the point be reached when the process of securing them requires expenditure of more resources and costs than may be gained by their acquisition? The high cost of using force was classically illustrated during the October war between Israel and the Arab nations when costs of the three-week war ran to an estimated \$1 billion per day, the totals being greater than the combined GNP's of the countries involved.<sup>26</sup> Had it not been for external assistance, the conflict would have been limited to less than half the time and the economies of the three principals would have collapsed. Clearly the use of force on such a scale illustrates its disutility and the fact that the costs may be greater than the gains, particularly if the issue concerns the availability of resources and there are no "external" sources to assist in the deficit.

*A "New" Environment?* Second, Defense policy and the use of force cannot legitimately be considered in isolation from the societies in which they are conceived. Thus, to the extent that our analysis of the effects of a limited resource environment on defense does not relate to this broader context, it is necessarily incomplete; indeed, its purpose is to explore what appear to be effects based on society as we now perceive and experience it while the significance of a limited growth environment and the costs of defense spending become increasingly apparent. Accepting a limited resource and growth hypothesis, however, means accepting an implication that our society

must change. It is too firmly based and dependent upon an ever expanding and growing economy to continue unchanged in an environment of limited resources. To be complete, then, our analysis of the effects of limited resources on defense and the role of force must move beyond the symptomatic stage of immediate and long-term effects and into a consideration of the possible role of force and defense policy in a "new" environment.

In this context, then, the "net cost" issue can be expanded to embrace yet another aspect of the use of force in a world of limited resources, perhaps the most important aspect of the entire issue. Is it not possible that resource damage and the extreme cost of resorting to war may bring into even sharper question the utility of war, particularly nuclear war? Because nuclear weapons are so destructive to resources and subsequent contamination so greatly limits their use, could the result be greater hesitation to use nuclear weapons, decreasing the likelihood of nuclear war? Might this be the "new" environment?

Indeed, the greatest proportion of U.S. defense expenditures is concerned with countering perceived Soviet aggressive tendencies and reactions. If the Soviets were to limit their spending for defense, would it lead to a corresponding U.S. decrease in defense expenditures, hence a decrease in military tensions? While speculation that such mutual interaction would occur has long served as justification for those seeking a unilateral U.S. defense reduction, it is clearly far from certain. Nevertheless, the possibility exists and some evidence indicates that the Soviet Union may be also becoming aware of the increasing costs of defense spending as resources become scarcer. Thomas Wolfe, in an analysis of the economic issues affecting Soviet attitudes



toward SALT, cites a school which maintains that economic factors are a weighty "perhaps even overriding factor in persuading leaders to seek a halt in arms competition."<sup>27</sup> These factors include a growing need for investment and technological innovation in the nondefense sector<sup>28</sup> and rising consumer demand, both trends indicating that difficulties could arise in meeting an additional major round of arms procurement. In addition, this school argues that the slowdown of economic performance of 1968-1969 supports the thesis that the Soviet economy is "hurting" from the large military programs of the previous years. Slippage of previously planned investment for long-term economic growth in nondefense and agriculture is likewise regarded as an adverse effect of high military priorities.<sup>29</sup> Indeed, logic alone suggests that the Soviet government cannot be entirely insensitive to pressure for nonmilitary resource allocation. Failure to recognize it would surely affect both national morale and international standing as a technically and economically advanced nation. As apparent as these trends may be now in a relatively resource-abundant environment, may they not be intensified in an environment of resource scarcity and ever increasing costs?

While the characteristics of a monolithic and authoritarian state would undoubtedly give the Soviets an initial advantage over capitalist societies in allocating limited resources, they would soon find themselves in the same position as—if not worse than—the capitalists with regard to defense versus consumer needs. Capitalist economies allow a much greater private consumption sector that can absorb significant increases in defense expenditures before a point is reached where guns clearly come before

butter. In an economy as heavily geared to defense expenditures and defense-related industry as that of the Soviet Union, the consumer sector is very thin. Hence, as resources become increasingly scarce, a greater proportion of consumer goods and investment capital must be lost to defense in the U.S.S.R., with the competing "costs" of defense spending manifesting themselves sooner and more dramatically as more resources are diverted from domestic needs to defense expenditures. Thus, the constraints of limited resources could well hasten agreement on arms limitation and ultimately lead to a "new" environment in which the risk of nuclear war is minimal.

While the arguments supporting the point that increasing costs and scarcity of resources may lead to a rational decrease in the likelihood of nuclear warfare are admittedly tenuous and certainly no justification for a change in strategic war doctrines and capabilities in the present environment, the possibility must nonetheless be addressed in our consideration of the effects of limited resources on defense and the use of force.

IN SUMMARY, then, does the confrontation between the Department of Defense and the Federal Energy Office that occurred during the fuel crisis indicate an emerging pattern of relationships between the military and society, symptomatic of the "realities" and limitations of resource shortages? Certainly events and trends discernible now indicate the potential for such a pattern, even though it is far from certain. Nevertheless, there is no question that increasing costs and scarcity of resources are already beginning to have an impact on defense policy. Of even greater importance is the question whether the shortages lead pol-



icy toward greater reliance on force to assure the supply of needed resources or toward a decreased likelihood of nuclear war and the use of force. It is an issue

that deserves attention and concern, as this article has attempted to illustrate.

*United States Air Force Academy*

#### Notes

1. *Aviation Week and Space Technology*, January 7, 1974, p. 14. See also *Aviation Week and Space Technology*, January 14, 1974, pp. 14-15; *New York Times*, November 16, 1973, p. 20.
2. Donella H. Meadows and others, *The Limits to Growth* (New York: New American Library, 1972).
3. Kan Chen and others, *Growth Policy: Population, Environment and Beyond* (Ann Arbor: University of Michigan Press, 1974).
4. George B. Leonard, *The Transformation* (New York: Dell Publishing Co., 1973), p. 85.
5. *The Budget of the United States Government: Fiscal Year 1975*, (Stock No. 4101-00088, U.S. Government Printing Office), pp. 60, 69 (hereafter cited as *The Budget*). For Supplemental Appropriation information see *Budget Appendix*, pp. 265-351, or Barry M. Blechman and others, *Setting National Priorities: The 1975 Budget* (Washington, D.C.: Brookings Institution, 1974), p. 68.
6. *New York Times*, May 20, 1974, p. 31.
7. *The Budget*, p. 9.
8. Barry M. Blechman and others, *Setting National Priorities: The 1975 Budget* (Washington, D.C.: Brookings Institution, 1974), p. 97.
9. Edward R. Fried and others, *Setting National Priorities: The 1974 Budget* (Washington, D.C.: Brookings Institution, 1973), pp. 265-301.
10. The pattern indicated by the oil crisis which precipitated an annual GNP decline rate of 4.1 percent for the first half of 1974. *New York Times*, July 19, 1974, p. 1.
11. *Air University Compendium of Research Topics*, vol. I, Academic Year 1973-74 (Maxwell AFB, Alabama: Air University, 1973), p. SAC-26.
12. Secretary of Defense James R. Schlesinger as quoted in *Air Force Magazine*, June 1974, p. 34.
13. *Ibid.*, p. 7.
14. "R&D Funding Under Fire." *Air Force Magazine*, June 1974, p. 12.
15. Claude Witze, "The Budget Is Off the Pad," *Air Force Magazine*, June 1974, p. 10.
16. *New York Times*, July 20, 1974, p. 1.
17. As quoted by *New York Times*, January 7, 1974, p. 6.
18. *New York Times*, January 10, 1974, p. 17.
19. *New York Times*, January 12, 1974, p. 3.
20. *Ibid.*
21. George A. Lincoln, "Energy Security—New Dimension for US Policy," *Air Force Magazine*, November 1973, pp. 49, 55.
22. *New York Times*, May 27, 1974, p. 1.
23. *Ibid.*
24. *New York Times*, May 3, 1974, p. 16.
25. As quoted by General Lincoln in *Air Force Magazine*, November 1973, p. 49.
26. *New York Times*, November 5, 1973, p. 1; December 8, 1973, p. 2.
27. Thomas W. Wolfe, *Impact of Economic and Technological Issues on the Soviet Approach to SALT* (Santa Monica: The RAND Corp., June 1970), p. 11.
28. For a more current analysis arriving at essentially the same conclusions, see the *New York Times*, June 5, 1974, p. 57. The article is an interview with Arthur F. Burns, Chairman, Federal Reserve System, conducted upon his return from talks with Soviet Premier Alexei I. Kosygin; Finance Minister Vassily Garbuzov; the head of the Soviet State Bank, Mefoldi Sveshnikov; and the head of the Soviet Bank for Foreign Trade, Yuri Ivanov.
29. Wolfe, p. 10.



An aerial photograph of a city, likely during a military operation. A large, dark plume of smoke or dust rises from a central area, partially obscuring the buildings below. The city's layout, including streets and building footprints, is visible in the lower half of the frame. The overall tone is dark and somber.

# BOMBING ACCURACY IN A COMBAT ENVIRONMENT

LIEUTENANT COLONEL BERNARD APPEL



**H**OW accurately does a fighter pilot deliver a weapon on a target? What are his chances in a duel with an anti-aircraft site? Does probability favor the destruction of a heavily defended railroad bridge attacked by a flight of four, or is the mission likely to be a failure? The questions seem so basic to military planning that it seems paradoxical that, in the early 1960s, almost fifty years after a German lieutenant first hand-dropped two four-pound bombs while flying over the outskirts of Paris, no one knew the answers.

Our German lieutenant, father of the concept of delivering weapons by air, was not too much concerned with measuring his accuracy. He did the best he could, as did his fellow World War I aviators. Their impact on the battle was minimal. Concern over accuracy during the Second World War varied from time to time depending on the nature of the target, its location, the weather, and the stage of the war. The air campaign in North Vietnam in the 1960s, in contrast, mostly involved missions where accuracy was of the utmost importance. Without an industrial base, North Vietnam had few significant targets. Even of these few targets that were of military importance, most were protected from attack by political considerations. During the first years of the air war in North Vietnam, or "Rolling Thunder" as it was called, targets for our fighter-bombers were essentially the lines of communication of the enemy. This meant roads, rail yards, lines and rolling stock, and bridges. North Vietnam, being a wet lowland cut

by the Red and Black Rivers, was a land of bridges—fair game for the fighter pilot but among the most difficult of targets to hit. If the type of target required a high degree of accuracy, the constraints of the mission were demanding. The nature of the conflict, the way the war was conducted, and the criticism by the world press made large target misses, or "short rounds," unacceptable. Rules of engagement followed by the pilot required not less than putting his weapons precisely where the mission planner dictated. A short round had to be accounted for in the court of world public opinion. Along with these demands for accuracy, there was a countervailing force militating against it.

The countervailing force was the enemy's defenses. Inconceivable to those who have not encountered them, they were a powerful deterrent to the accurate placement of air-delivered weapons. The defense of North Vietnam was four-pronged. First, but not of greatest importance, was the enemy air threat. This amounted mostly to harassment but often caused F-105s to jettison their unarmed bombs to enter an air battle, from which the enemy then often tried to flee. With the advent of air protection by F-4s, this threat tended to diminish, enemy aircraft assiduously avoiding air-to-air engagement. What enemy attacks did come from the air were largely high-speed stern firings directed by ground-controlled interception (GCI), followed by rapid disengagement. Then there were the surface-to-air missiles (SAM). The kill ratio—number of aircraft downed to



number of SAM's fired—was misleadingly small. What the missiles did, before the introduction of fighter-carried electronic countermeasures (ECM) equipment, was to cause the tactical pilot to fly low, beneath the optimum altitude of the SAM guidance system and into the area of maximum ground-fire effectiveness. After the introduction of ECM equipment, the pilots flew above the ground fire but in a cumbersome "pod" formation, which made flying and bombing more difficult. The third prong of the enemy's defenses was his high-altitude anti-aircraft weapons. The 85- and 100-mm cannons were largely ineffectual and caused little distress to the fast-flying aircraft. It was the low-caliber, high-rate-of-fire weapons, 37- and 57-mm cannons and automatic guns, the fourth prong, that made fighter-bomber weapons delivery extremely hazardous and necessitated the standoff bombing techniques that were developed and used over North Vietnam.

Instead of delivering weapons from as low an altitude as possible, where accuracy was greatest, high release altitudes were chosen. Moreover, speeds were increased to minimize exposure time in the target area. So the defensive environment necessitated tactics that had an effect on accuracy that was beyond previous experience and, at that time, incalculable.

Shortly after our first employment of tactical aircraft in Southeast Asia, it became abundantly clear that very little was known about the accuracy of weapons delivery in a combat environment. Much was supposed, but beyond the optimism that our tactical aircrews could do the job expected of them, there were no firm accuracy figures on which to base war plans. What was known about accuracy of fighter-delivered weapons was learned

from training bomb ranges. It is there that pilots developed their skills, going back day after day to their well-known, well-marked areas with highly defined targets (usually bull's-eyes) to practice the techniques of ordnance delivery. Optimum conditions were used for each practice delivery: best airspeeds, minimum altitudes, turns at known geographic locations, and run-in lines—all this in usually good weather conditions and clear visibility of the Southwest United States, where most of the training ranges were located. In addition, there were ground observers to broadcast winds aloft, and, of course, there were no enemy defenses. Single-aircraft attacks, with each pilot concentrating on his own delivery, were the order of the day. Under these conditions, pilots calculated their circular error probable (CEP),\* which gave us our only information about combat accuracy.

Those who have not delivered weapons from an airplane have little or no conception of the problems involved or the requisite skills. There are so many variables in the accuracy equation and the chance for error is so great as to make one wonder how fighter pilots do as well as they do.

Dive bombing, for example, must take into account the ballistics of the weapon, the dive angle, airspeed, altitude, aircraft attitude, g (gravity) conditions, symmetry of flight, and wind. Of these, the only constant is the weapon ballistics, but even this is subject to errors due to manufacturing tolerances. Using tables, the pilot predetermines his release conditions—that is, airspeed, altitude, and dive angle—and computes a depression angle for his bombing sight. The reticle of the sight, if superimposed on the target

\* The circular error probable is the diameter of a circle encompassing 50 percent of the weapons delivered.



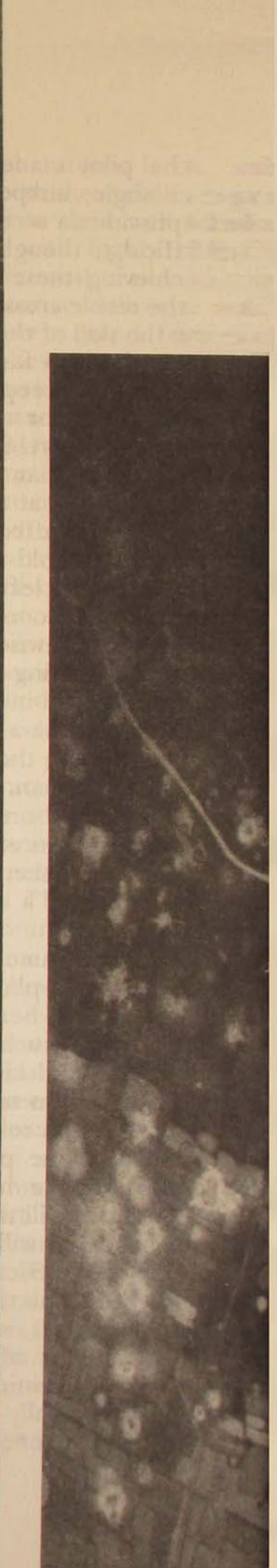
when the pilot maneuvers to his pre-planned angle, airspeed, and altitude, should provide an accurate release point. The difficulty, though, is in simultaneously achieving these three main variables as the reticle crosses the target. That is where the skill of the pilot comes in. If the airspeed is too fast or too slow, the dive angle too steep or shallow, the altitude too high or too low, the bomb will be long or short. Similarly, release at a g force other than the cosine of the dive angle (.866 g at a 30-degree angle, for example) will affect the bomb trajectory. Inability to hold the wings level will throw the bomb left or right of the target. Lack of a coordinated flight condition will do likewise. Wind, too, is a strong factor, drifting the aircraft during the prerelease run-in and affecting the bomb in free fall after release. The problem of a pilot, then, is not the same as that of a rifleman. A pilot may have the target centered under the reticle and still encounter gross errors. The chances for these errors, then, even under the ideal conditions of a training range, are significant.

Now take this same bombing problem of accuracy and place the pilot in a hostile situation where the chosen parameters are a much higher airspeed, steeper angles, and high weapon release altitudes; force him to fly a pod formation prior to bomb release; make it hard to find a target he probably has never seen before; make him keep one eye peeled for SAM's; fill the sky with anti-aircraft fire; and you will have some appreciation of the difficulty, in a combat environment, of putting a weapon precisely on target. It is because of these added difficulties of combat that the CEP's scored in training, on which force planning was initially based in the Vietnam war, were erroneous.

New estimates of accuracy were urgently needed for a number of reasons. First, the mission planner must start with this statistical information to determine how many aircraft are necessary to achieve a certain probability of target destruction. Proceeding from this required number of aircraft, he can then apply known maintenance nondelivery rates, ground and air abort rates, and a percentage of weapons malfunctions to determine the total number of aircraft to schedule for a particular mission. The mission planner must also consider the probability of success, again based on expected accuracy, to determine the relative worth of attacking a particular target. A marginally important target, for example, that has a low probability of being destroyed might in fact not be worth attendant risks. Of crucial concern, too, is the matter of collateral damage, whether to surrounding targets that are important to avoid or, more critically, damage to friendly forces. It may perhaps be militarily feasible for an aircraft to attack enemy troops in contact, with a 99 percent chance of not missing by such a distance as to endanger friendly forces. A 70 percent probability, however, may not be acceptable because, on the average, three out of ten times the target will be missed by an unacceptable distance.

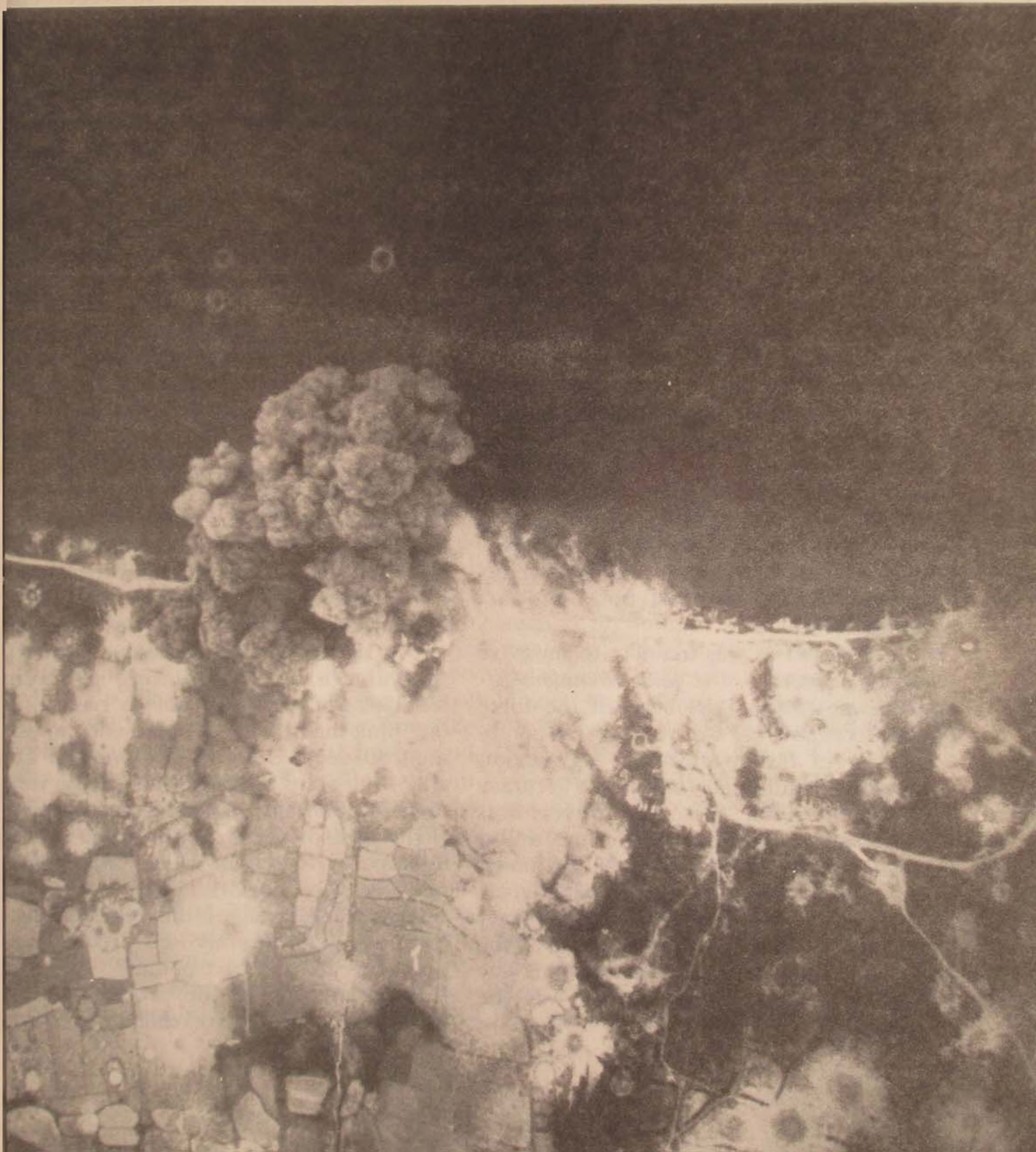
There were attempts during the Second World War and in Korea to measure bombing accuracy in combat, but none met with any degree of success. Methods generally involved using pre- and post-strike photography. The pre-strike photo was used to locate all existing bomb craters if the target had been struck before. Of course, a target that had not been attacked needed no such first step. After the mission, a reconnaissance aircraft would take photos of the







*Bomb release by an F-105 as photographed by the nose-mounted KB18 camera . . .  
Bomb impacts photographed by the same camera as the F-105 exits the target area . . .  
Smoke billows from direct hits on a North Vietnamese transshipment point on Route 107  
by fighter-bombers of the 355th Tactical Fighter Wing. The target was 18 miles north-  
west of the coastal city of Dong Hoi in North Vietnam's southern panhandle district.*





target area, and photo interpreters would locate new bomb craters. Measuring the distance from the designated target to the bomb craters presumably yielded miss distances. The flaw in this method was that the target was not, in fact, precisely known. Although a rail yard, for example, might have been the designated target, there was no way to know where in the target complex the pilot was trying to center his bombfall; i.e., his desired mean point of impact (DMPI). It would have been highly inaccurate to assume that the center of the yard was the target because of the size of the target area. A crater at a rail choke point at one end, say, may have been a direct hit if that was where the pilot was trying to put his weapons. Otherwise it might have been a miss of several hundred feet. Even with more discrete targets such as buildings and bridges, the possible measuring error due to an unknown exact aim point allowed no better than gross estimates of accuracy. Further, there was no known method of determining which crater belonged to which pilot, an absolutely essential piece of information when individual pilots have different desired bomb impact points.

As a result of this inability to measure combat accuracy, the *Joint Munitions Effectiveness Manual*, the bible of the force planner, cited CEP's developed on bombing ranges and suggested a degradation factor as a multiplier to estimate accuracy in combat. The factor, however, was conjecture, albeit an educated one, and it was subsequently found to be an inadequate predictor of success probability.

A new concept for measuring accuracy in combat came as a side product of the introduction of a new camera to the Vietnamese war theater. This was the Fairchild KA-71A and its follow-on

model, the KB-18, a panoramic strike camera of high resolution designed to be carried aboard fighter-bomber type aircraft. The first cameras delivered to Southeast Asia were mounted in the nose of the F-105, not for the purpose of measuring accuracy but to document what the pilot did; that is, what target he attacked and what damage ensued. The primary objective in using the camera was expressed in Air Force Regulation 95-13 as being the immediate evaluation of strike effectiveness. Such was the need for documentation that Lieutenant General William W. Momyer said, in July 1967, that we wanted a strike camera on every strike aircraft. Plans were therefore made to fit F-105s, F-4s, F-100s, and A-37s with the camera.

This camera, either housed in the body of the aircraft or carried in an external pod, was activated by the aircraft's weapons release button and ran automatically for a preset length of time between 2 and 32 seconds. The lens aperture was controlled by an automatic internal light meter, and one, two, or four still pictures could be taken each second. With 250 feet of film, the capacity of the camera, approximately 300 exposures could be made. Designed for use in fighter or reconnaissance aircraft, the camera, with a rotating prism in front of the lens, was able to record, in one nine-inch frame, a scene encompassing 180 degrees vertically, fore and aft, and 40 degrees laterally. Such a side view of field generally recorded the complete flight path of the weapons from release to impact, no matter what aircraft maneuvers were performed after weapons release. Resolution of the resultant pictures was high and allowed precise location of weapon impact points.

Initial viewing of the product of this new camera, with its excellent portrayal



of the battle scene, gave rise to the idea of measuring accuracy. To this end, a test program was started at the 388th Tactical Fighter Wing, Korat Royal Thai Air Base, in August 1967 to evaluate the F-105 on combat missions. The method of measurement developed was relatively simple. At the end of each daylight mission, the pilot of every strike aircraft was individually shown an intelligence prestrike photo of the target area and asked to indicate exactly where it was he was trying to center his bombfall. Such indication of the DMPI was made with an "X" mark. While this debriefing was going on, the film, which had been downloaded as soon as the aircraft landed, was being developed, an approximately 20-minute process. With prompt handling, the film was available for viewing at the completion of the pilot debriefing process. By careful analysis of the sequence of still photos, the weapons could actually be followed after their release from the aircraft to impact on the ground. Then by use of readily identifiable ground landmarks, bomb impact points were plotted on the original prestrike photo on which the pilot had indicated his target. (This was done because the scale of the panoramic photo of the strike camera was variable throughout the length of the photo and did not allow accurate measurements.) Distance was measured on the prestrike photo, which was a vertical image and had a constant scale. It was obvious in this initial study that bomb impacts could be plotted with a great deal of accuracy and that, if the pilot debriefing was handled correctly, the target could be pinpointed. The evaluation was direct and straightforward and led to a preliminary estimate of a combat CEP. Surprisingly, this preliminary estimate, which contained only 31 measurements, dif-

fered only eight percent from a more conclusive CEP derived some 500 samples later.

As a result of the brief but successful attempt to determine CEP's, the decision was made at Headquarters Seventh Air Force to formalize the evaluation program and gather more data. Seventh Air Force Regulation 55-51 was written in September 1967 and directed procedures essentially the same as those developed in the test program. The postmission briefing was used to determine the pilot's DMPI, and the strike film was studied to determine the point of weapons impact. Plotting of all data was done on a prestrike (vertical) photo of the target area. Since F-105s were still the only aircraft with the KB-18 camera, the evaluation process was confined to Korat and Takhli Air Bases.

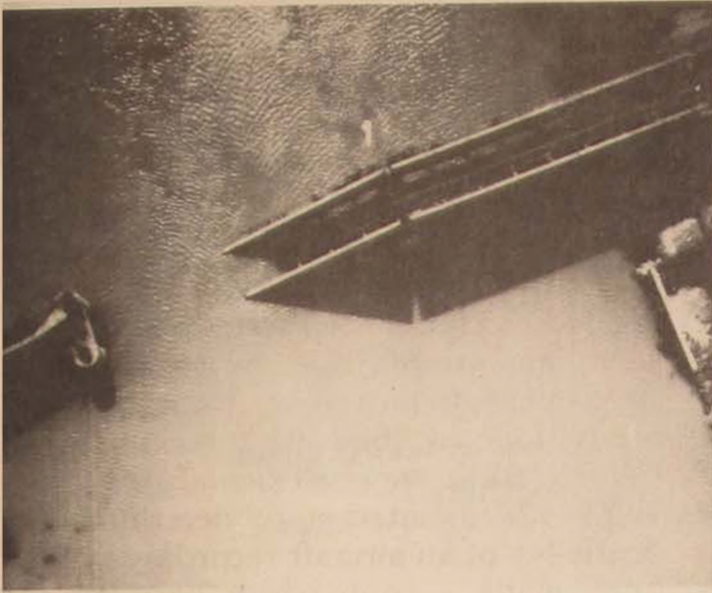
At about this time, forces were at work at Headquarters Pacific Air Forces (PACAF) to alter the program and, in effect, made serious changes in its concept. Despite the demurrers of Seventh Air Force, PACAF took over management of the evaluation, designated it Weapons Delivery Evaluation Program (WDEP), and expanded it to include peripheral data such as preliminary estimates of bombing accuracy, explanations of large miss distances, and maintenance reports. In addition, the governing directive, PACAFM 55-25, required that reports be identified by crew member and that wings keep a record of individual aircraft commanders' CEP's. The thrust of the program was clearly changed from one of analysis of accuracy to that of command and control.

The reaction from the wings was almost instantaneous. The program came to a virtual standstill, partly because of its new complexity but primarily because the finger was now being pointed at the

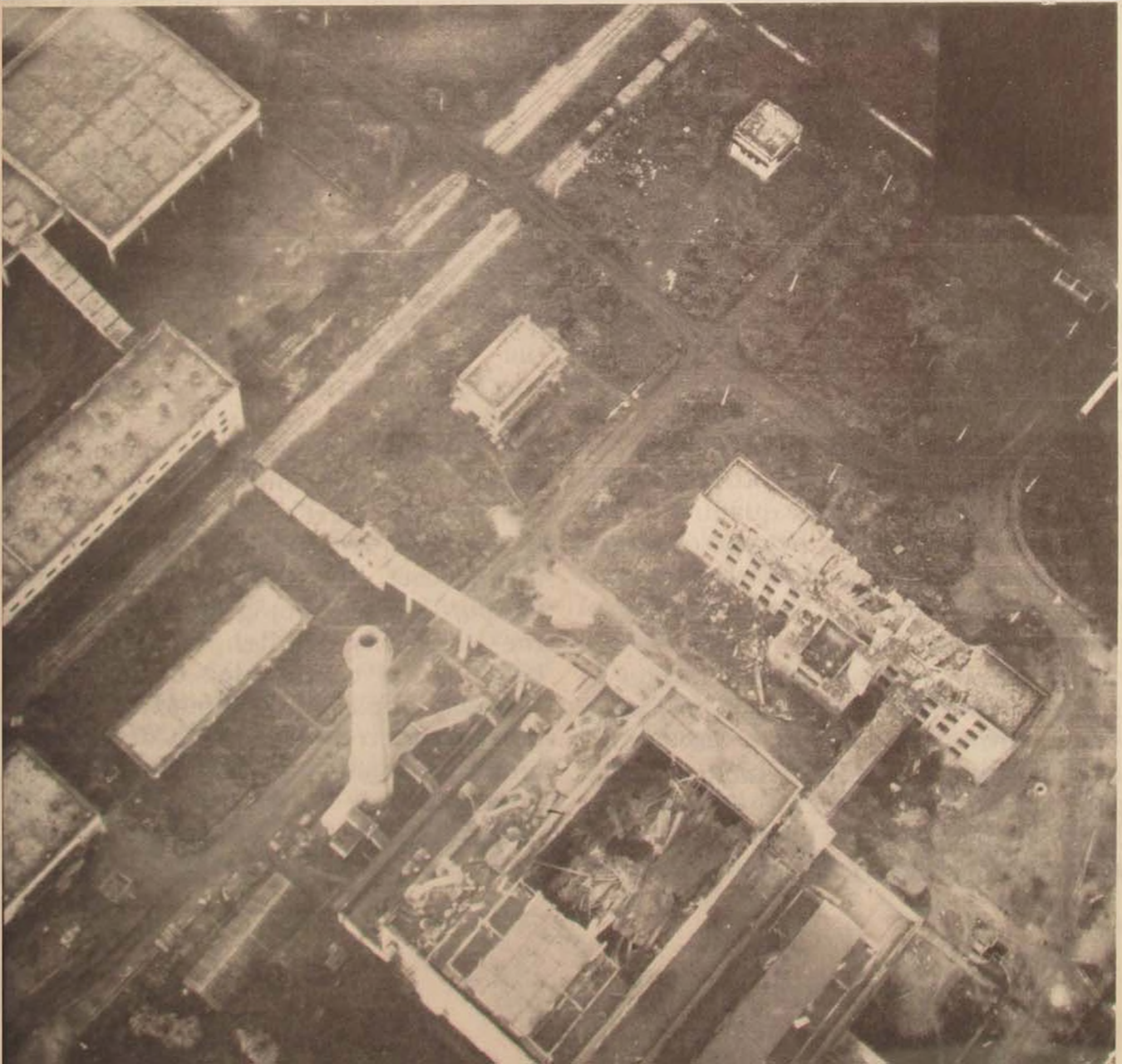








*An F-105 Thunderchief dives through bursting flak to hit river shipping in Communist North Vietnam, January 1966. . . . A railroad bridge 135 miles south of Hanoi is photographed after being struck by F-105s, 17 April 1965. . . . Reconnaissance photography on 29 March 1967 shows that the boiler plant (lower center) and administration building of Thai Nguyen thermal power plant near Hanoi were destroyed by air strikes.*





pilot. Where reports had been anonymous in the past, records were now to be kept on individual accuracy. Cooperation, essential for the plotting of DMPI's, died, and the data submitted dropped to very low levels, both unreliable and unacceptable.

As a result of the impending demise of the program and the importance attached to its original goal of determining accuracy, steps toward simplification were taken, and the reports once again were made anonymous. In addition, a new measuring technique was developed that obviated the need for a vertical photo of the target area. Designation of the DMPI and all measurements were made directly on the strike photos by use of a newly developed method of scaling. The changes brought a resurgence to the program.

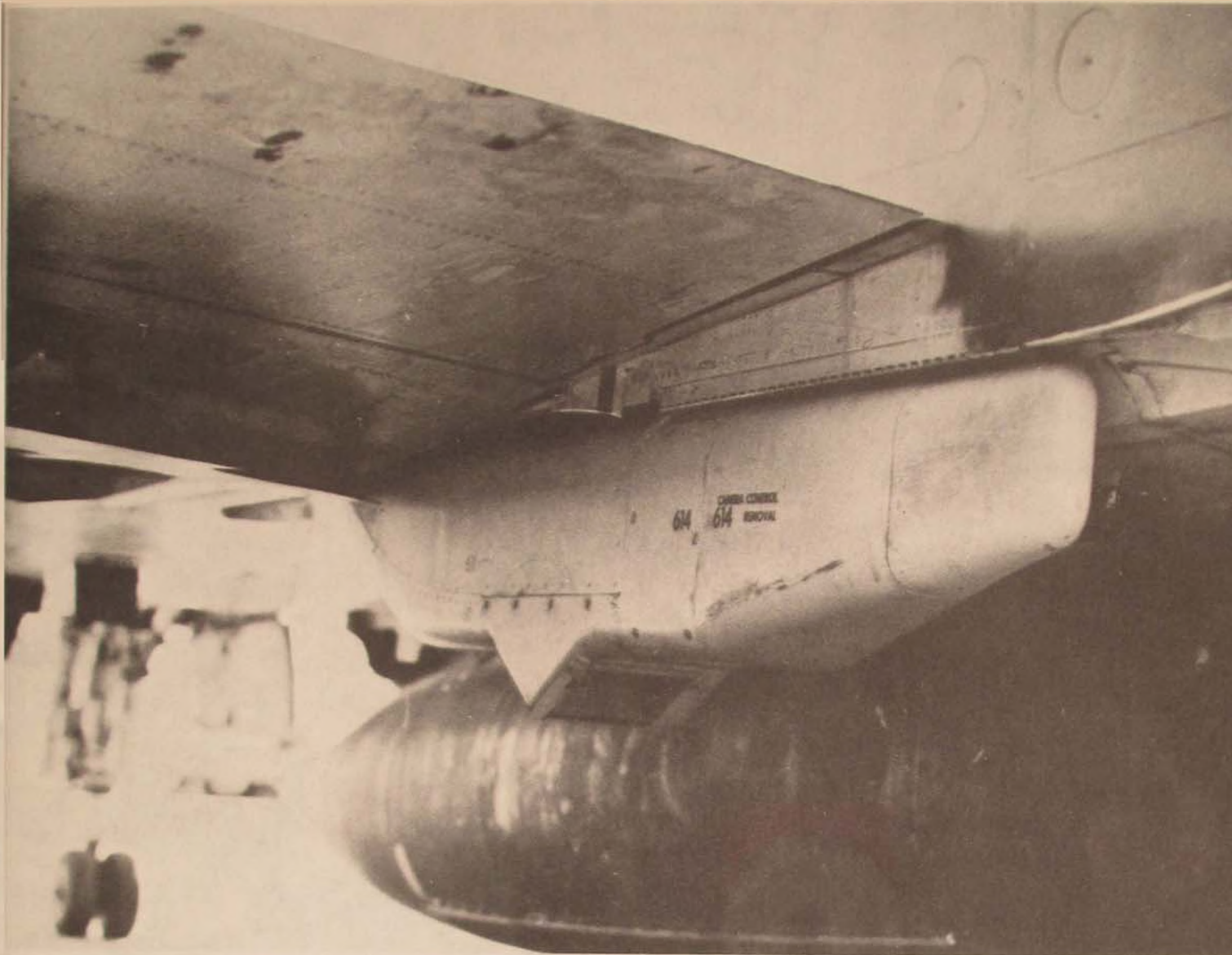
In short order, more cameras were delivered to South Vietnam, and they were rapidly installed on the F-4, F-100, and A-37. The measurement program expanded, and the data being generated multiplied rapidly. By the end of the air campaign in Vietnam, the question originally posed, How accurate is weapons delivery by a fighter aircraft? was answered conclusively. Not only was there sufficient information to determine the accuracy of each of the camera-equipped aircraft, but a number of other parameters were addressed and quantified. Accuracy was determined by type of target, whether it was being struck for the first or a subsequent time, and by type of enemy defenses. It was possible to tell differences in accuracy when attacking in a SAM environment as opposed to just an AAA environment. Accuracy was plotted as a function of altitude, airspeed, and dive angle. The effect of weather was determinable. And, of great importance, accuracy with different types of weapons

could be assessed. The figures were startling and gave rise to the questions of how valid they were.

The determination of bomb impact points was the least troublesome aspect of the measurement process. The estimate of photo interpreters was that they could pinpoint the location of weapon impact within 25 feet. Assuming no bias on their part, these measuring errors tended to cancel themselves out over an adequate sample size. Supporting this assessment of measuring accuracy was a study done by Joint Task Force Two at Sandia Base, New Mexico. In conjunction with an attempt to determine the feasibility of an aircraft recording system, they made a comparison between the measurement of miss distance on the basis of strike camera photographs and ground-scored impacts. Their investigation concluded that the CEP of error in weapon impact point measurement with strike cameras was 17 feet on photographs taken from the F-4D aircraft and 24 feet on those from the A-7A.

The determination of the DMPI was another question and was probably the greatest possible source of error within the measuring system. No matter how specific the target—a small bridge, for example—there was still a variety of DMPI's the pilot could have chosen. The system depended on his accurately describing the target to the mission debriefer. To minimize this bias, the pilot had to indicate his DMPI before viewing weapon impact photography. There was the possibility, though, that he might have had a rough idea of where his weapons impacted. It would have been possible, therefore, if he so desired, for him to designate a DMPI that evidenced a greater degree of accuracy. There were mitigating factors, however. First and foremost was the PACAFM 55-25 prescrip-





*A KA71 pod installed on the left aft side of an F-4*

tion that if the pilot was unsure of his DMPI, no evaluation was to be made. Second, the report was anonymous, removing most motivation for indicating greater accuracy. Third, in a defended area, postrelease maneuvering often precluded observing impacts. Fourth, it was often difficult to adjust the DMPI rationally to any extent—if the target was a river ford, for example, a target downstream was not believable. Fifth, there

was the integrity of the aircrews involved in the evaluation.

Another limitation of the measuring system was the possibility that a “short round” might have been out of view of the camera and that photographs were therefore taken only of bombs delivered close to the target. During operations in North Vietnam, however, there was a multiplicity of cameras photographing the same target at any one time, and the

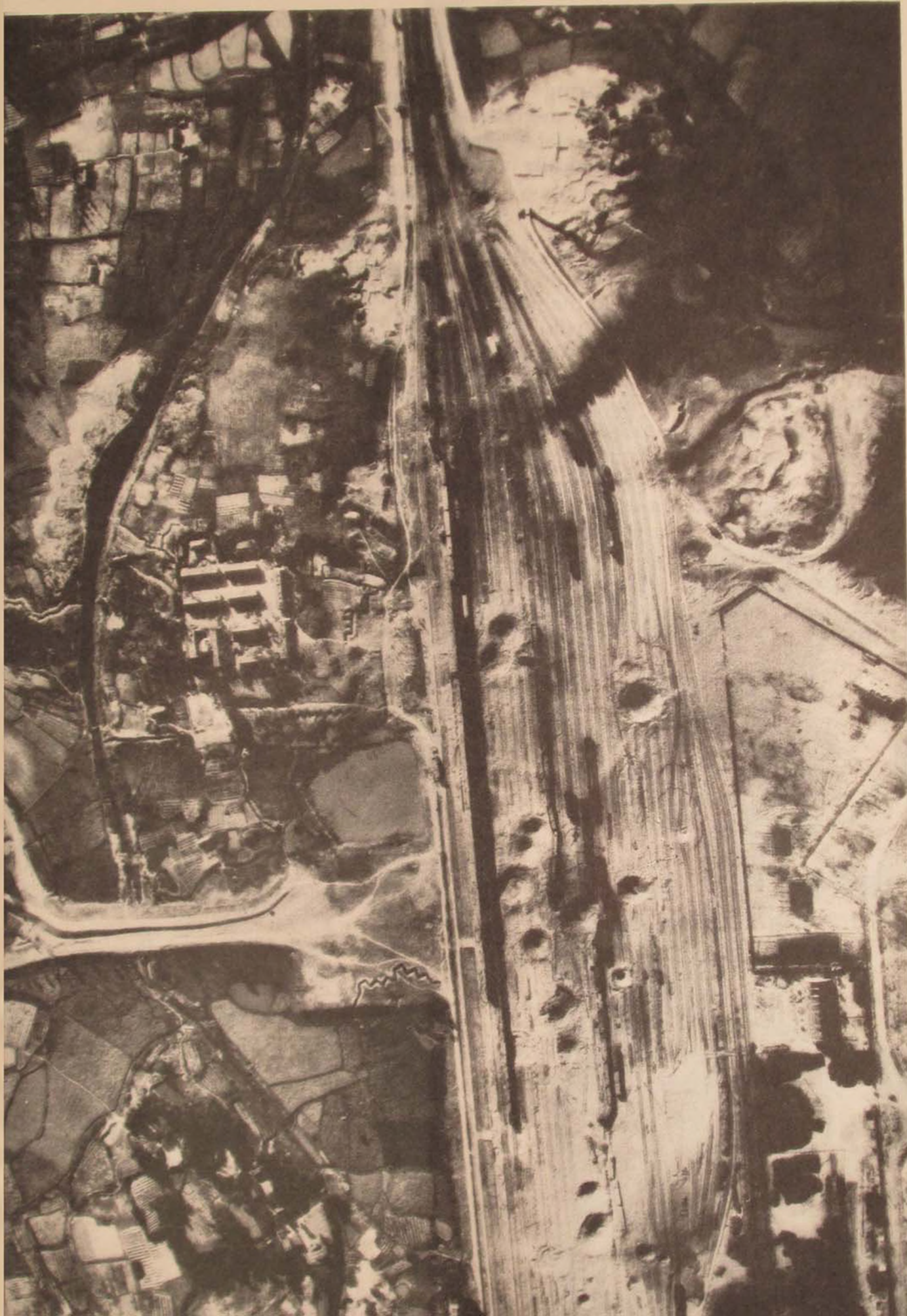




altitudes flown provided such wide coverage that the possibility of a weapon's not being in at least one camera's purview was minimal. On missions in South Vietnam, with only one or two cameras present and with lower weapons release altitudes, there was less photographic coverage in terms of square area—horizon-to-horizon and approximately 1500 feet wide when photos were taken at a 2000-foot altitude in level, nonturning

*Xon Phoung highway and railroad bridges, about 5 miles NNW of Dong Hoi, were among 165 bridges damaged or destroyed in North Vietnam by air strikes in July 1966. These two on Route 1A were major choke points for traffic between Dong Hoi and Vinh. . . . After F-105s bombed the Thai Nguyen rail yard 35 miles north of Hanoi in April-May 1966, bomb damage assessment revealed 15 rail cars damaged, 12 tracks cut and twisted, and numerous craters.*







flight. Compensating for this, though, was the greater pilot accuracy from attacking at lower levels.

At best, then, this measuring system was an imperfect tool. Yet the degree of imperfection was within reasonable limits, and the data were statistically valid and significant.

WHAT WAS accomplished by this evaluation process that carried over the course of five years and involved all the Tactical Fighter Wings in Southeast Asia? Essentially, the program met its objectives. Only two questions were asked originally: "What was the pilot trying to hit?" and "Where did his weapons go?" The questions were answered definitively. For the first time, insight was gained into the effect of combat conditions on the delivery of ordnance. More was found out about bombing accuracy than was ever anticipated by those who conceived the idea of trying to measure it. Combat planning factors were revised to reflect

the newly documented information. Beyond that, though, serious questions were raised regarding our avionics, weapons, and training. The bombsight being used in fighter aircraft was recognized as unsuitable for its task—an instrument designed for other conditions than those found in a heavily defended war zone. Improvements were made, and they were effective. The weapons, primarily unguided bombs, were supplemented by "smart bombs," and the evaluation of their accuracy permitted the choice of the most effective weapon for a particular target. Training, too, was affected. Combat conditions were more closely simulated with practice attacks from higher altitudes, faster speeds, steeper angles, and from different attack formations. The evaluation program, in sum, had a profound effect on weapons employment and, by any criterion, was successful.

*Maxwell Air Force Base, Alabama*



# SOCIAL REVOLUTIONS

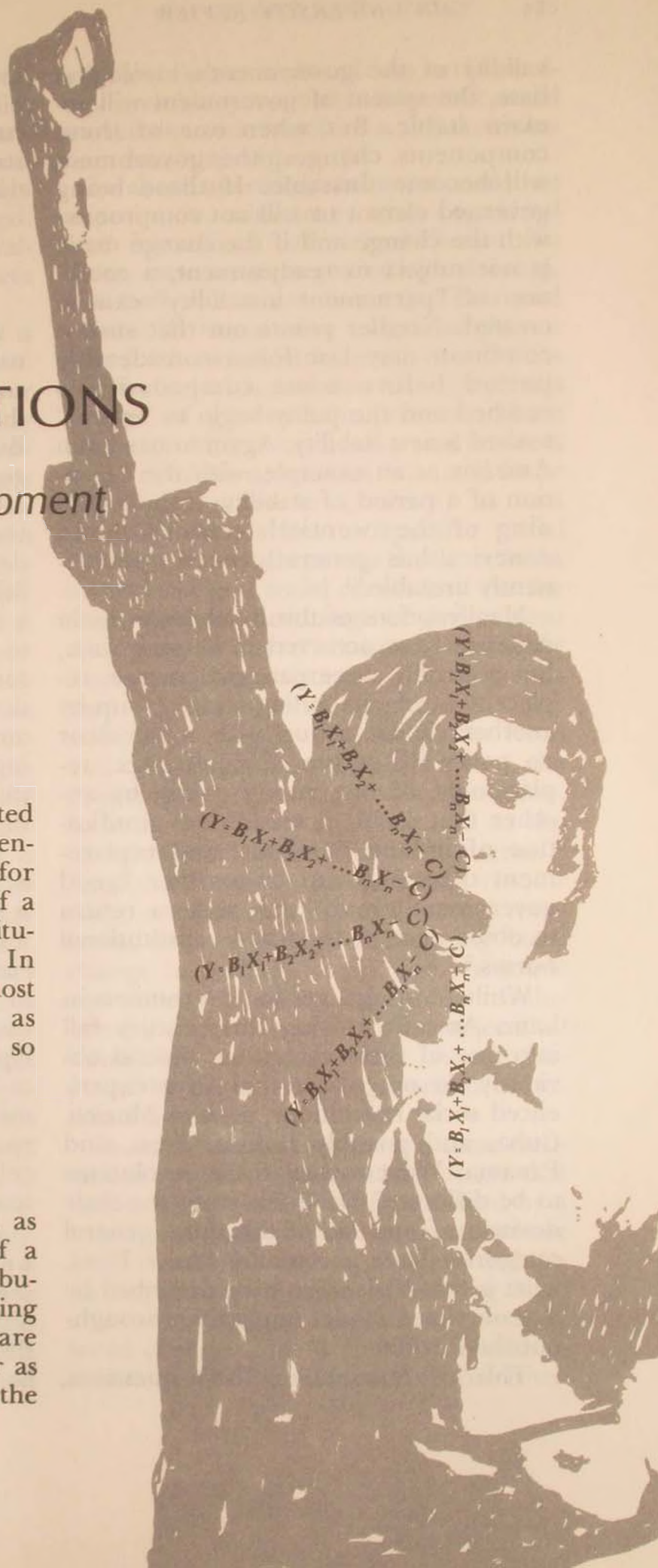
## *Thoughts toward Development of a Generalized Model*

MAJOR JOEL D. CREEL

**A**T any one time in history a limited number of political ideas are generally acceptable as the basis for the formal institutions and policies of a government. What enables these institutions to remain viable over time? In Latin America, for example, where most governments profess "democracy" as their set of ideals, what has caused so many changes in government?

### Political Stability and Instability

Martin C. Needler theorizes that as long as the formal institutions of a government reflect the internal distribution of power, as long as those being governed believe that their needs are being satisfied by the government, or as long as those being governed accept the





validity of the government's ideological base, the system of government will remain stable. But when one of these components changes, the government will become unstable. If those being governed cannot or will not compromise with the change and if the change made is not subject to readjustment, a condition of "permanent instability" can be created. Needler points out that such a condition may last for a considerable period before some compromise is reached and the polity begin to "evolve" toward a new stability. Again to use Latin America as an example, with the exception of a period of stability at the beginning of the twentieth century, Latin America has generally been "permanently unstable."<sup>1</sup>

Manifestations of this instability in Latin America have occurred in varying ways, but generally three patterns emerge: replacement of one ruling social group by another similar group with minimal or no policy difference of significance, replacement of one ruling group by another that seeks to secure the gratification of limited demands, and replacement of one group by another "good government group" that seeks a return to observance of legal and constitutional norms.<sup>2</sup>

While most changes in governments in Latin America during this century fall into one of these categories, several obviously do not: those that have experienced social revolutions, such as Mexico, Cuba, and possibly Bolivia, Peru, and Panama. What caused these revolutions to be different? Do the reasons for their deviation from one of the three general categories have a common basis? If so, what is that basis? Can it be described by a generalized model applicable throughout the world?

This article examines these questions,

giving particular attention to the applicability of the theory of revolution discussed by James C. Davies in his classic study, "Toward a Theory of Revolution."<sup>3</sup>

### Factors that Distinguish the Social Revolution

*El Gobierno Revolucionario* is a phrase used by almost every government that comes to power in Latin America through an extraconstitutional process. But are they in reality revolutionary governments in the sense that they advocate radical social reform? Seldom. What then are the criteria to be used in defining a revolution? Leiden and Schmidt feel that it is not possible to give a conceptually concise answer acceptable to all who study revolution.<sup>4</sup> But perhaps some minimal ingredients of any revolution may be identified in such a way that any change of government not possessing those ingredients cannot qualify for the title "revolutionary government" in the sense of being a social revolution.

First and foremost, a social revolution is, in effect, a social movement. As such, it must meet the tests used to define such movements. Herbert Blumer defines social movements as "collective enterprises to establish a new order of life."<sup>5</sup> Social movements may be classified in three types: (1) general social movements, such as labor movements; (2) expressive social movements, such as religion; and (3) specific social movements, which include reform movements and revolutionary movements.<sup>6</sup>

The specific social movement has a well-defined objective or goal that it seeks to reach. In striving toward this objective or goal, it develops an organization and structure and in so doing becomes essentially a society. A leader-



ship is recognized and accepted, along with a definite membership, which is characterized by strong individual identification with the movement. Traditions, values, philosophy, sets of rules, and a general body of expectations are formed. Its members form allegiances and loyalties. A social structure develops, complete with status positions.

The specific type of social movement is not born fully grown. It must evolve. Rex Hopper suggests a scheme of four stages: social unrest, population excitement, formalization, and institutionalization. But more important than the stages of growth, at least from an identification criteria viewpoint, are the mechanisms used to enable the specific social movement (e.g., the social revolution) to develop.<sup>7</sup> Blumer classifies these mechanisms under five headings: agitation, development of an esprit de corps, development of morale, the formation of an ideology, and the development of operating tactics.<sup>8</sup> While all five of these mechanisms are necessary to a specific social movement, ideology plays a very significant role in the life of a movement. It is essential to the durability and the development of a movement. The ideology consists of a body of doctrine, beliefs, and myths that define the movement's objective, purpose, and premises, that condemn the existing structure which the movement is attacking, and that defend and justify the movement and its objectives; and, last, it has a body of beliefs dealing with the policies, tactics, and practical operation of the movement. It is this ideology which provides the movement with its philosophy and psychology. But, most important, as an identification criterion for specific social movements (e.g., social revolutions), the ideology must have popular appeal. Accordingly, it must be visible and easily usable as an

identification criterion. If no such ideology is visible, presumably a specific social movement and therefore a social revolution does not exist.

In short, specific social movements are societies in miniature, with organized and formalized collective behavior. In them, new social organizations develop, and new values are formed. Their end results, if they survive long enough, are new institutional structures, new bodies of functionaries, and new views. Unless a change of government possesses these characteristics, it cannot be said to be a social revolution, nor can it be said to be a reform movement, since, as was pointed out earlier, a specific social movement encompasses both reform movements and social revolution. On the other hand, if the change of government does possess these characteristics, how may one differentiate the reform movement from the social revolution? Lenin said: "The transfer of State power from one class to another class is the first, the principal, the basic sign of a revolution, both in the strictly scientific and in the practical political meaning of the term."<sup>9</sup> Sigmund Neuman, in discussing revolutions, emphasizes the social factor: revolution is regarded as a sweeping basic change in political, social, and economic structures.<sup>10</sup> Needler speaks of revolutionary social innovation that rejects all inhibitions to rapid social change imposed by pre-existing legal and constitutional norms.<sup>11</sup>

In an attempt to synthesize these definitions into one statement, let us say that the social revolution is characterized by a transfer of political and economic power from one social class to another, with an accompanying rejection of existing legal and constitutional inhibitions to rapid social change. This definition provides a means of differentiating the social revo-



lution from the reform movement, since revolutionary innovation without regard to existing legal and constitutional institutions is characteristic of social revolutions but not of reform movements.<sup>12</sup>

Using the criteria that describe a specific social movement, together with the criteria that differentiate reform movements from social revolutions, a set of standards is now available to test a so-called *gobierno revolucionario* to determine if it represents a social revolution.

### Elements of a Social Revolution Model

With the criteria established to determine if a social revolution has occurred, the next question appears to be, Why did it occur? Why was it different from previous changes in governments?

One of the approaches frequently used to study social movements has been the typical life-cycle approach. Hopper did this, based on a historical study of Latin American revolutions.<sup>13</sup> His approach acquires significance in causal analysis when each stage is regarded as contain-

ing some preconditions for the development of the following stage. Under this theory the progression from stage to stage is not inevitable, since each stage contains only a portion of the preconditions necessary for movement to the subsequent stage. The special value of the life-cycle approach is to permit discovery of the *additional conditions* that have to be present if a movement is to proceed from one stage to the next.

In another approach to determining what causes a social revolution, John Davies relates the causes of revolution to the government's ability to satisfy the needs of the population. His model (Figure 1) does not necessarily conflict with Hopper's earlier model. Rather, it can be argued that Hopper's *additional conditions*, which have to be present at each stage in the life cycle in order to move to the next cycle, can be equated to the unsatisfied needs in Davies's model. Because the Davies model appears to represent a more elegant approach, it will be examined further.<sup>14</sup>

Davies alludes to the writings of Marx and Tocqueville to establish the theoretic-

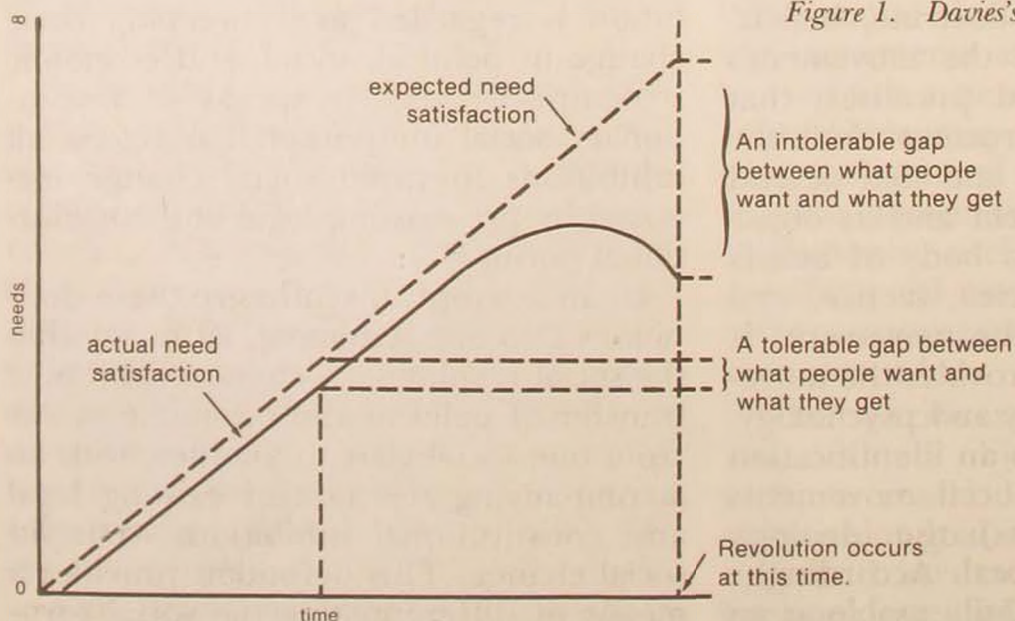


Figure 1. Davies's need satisfaction and revolution



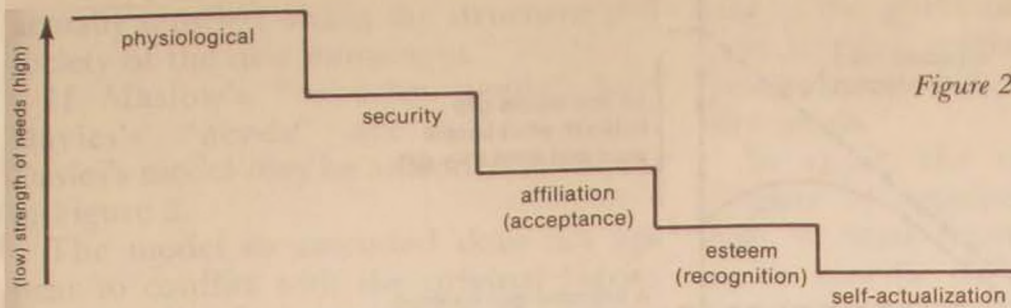


Figure 2. Maslow's hierarchy of needs

cal basis of his model—that “revolutions are most likely to occur when a prolonged period of economic and social development is followed by a short period of sharp reversal.”<sup>15</sup>

As shown, Davies's model is predicated on the difference between actual need satisfaction and expected need satisfaction. This generalized classification of needs appears to be somewhat unsatisfactory, however, because of the wide range of differing needs that people experience. Abraham Maslow has developed an interesting framework that helps explain the relative strengths of certain needs.<sup>16</sup> According to him, there appears to be a hierarchy into which human needs present themselves and which can be used to explain behavior. Possibly Davies's model can be further defined by use of Maslow's classifications.

Maslow classifies human needs into five categories, in descending order according to the relative strength of the need: physiological, security, affiliation (acceptance), esteem (recognition), and self-actualization. (Figure 2)

The physiological needs are shown at the top of the hierarchy because they have the highest strength until they are at least partially satisfied. These basic needs are the basic human needs necessary to sustain life itself—food, clothing, shelter. Until these are satisfied, all the person's activity will be at this level.

Davies obliquely infers this when describing the Minnesota starvation studies made during World War II. As he points out, these studies demonstrated that enduring concern over fulfillment of the physiological needs is a force strongly militating against rising expectations and the community-sense and consensus of joint political action necessary to a revolution. If this is so, the vertical axis of Davies's model (needs), when used to explain or as a predictive device, can be amended as shown in Figure 3.

According to this model, as long as physiological needs are not met, a revolution will not occur regardless of how irregularly those physiological needs are filled.

Once physiological needs are gratified, the security or safety needs become predominant, as illustrated in Figure 4. These needs are basically the need to feel free from physical danger and deprivation of the basic physiological needs. In addition to the cares of today, there is the concern for the future. Will an individual have food and shelter tomorrow? Will he be able to maintain his property? When an individual's safety or security is threatened, other things seem unimportant. Davies's model appears to recognize this fact. Indeed, the cause of revolutions, according to the model, is a sudden, unacceptable gap between expected need satisfaction and actual need



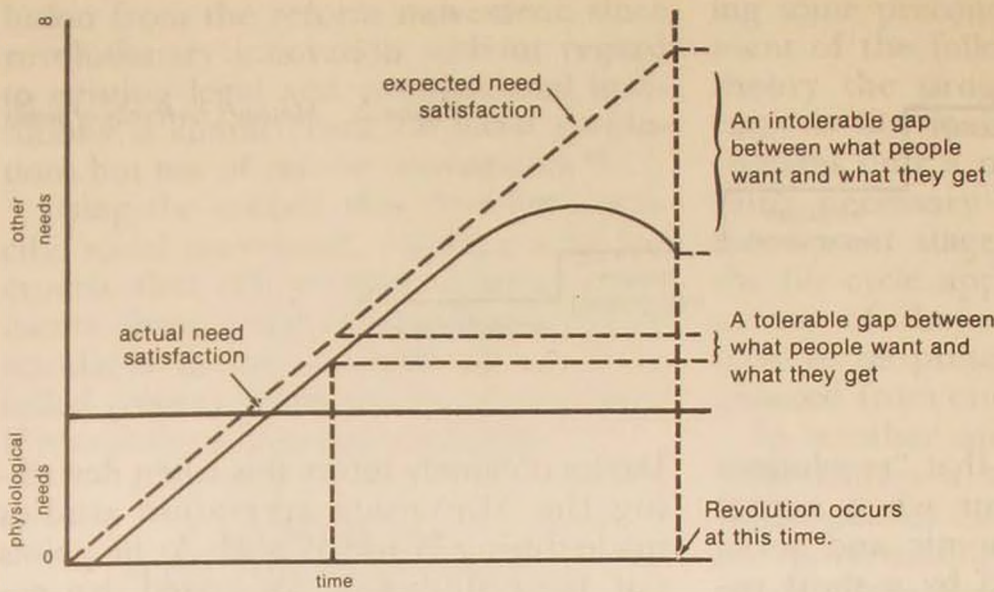


Figure 3. *Need satisfaction and revolution*

satisfaction, which causes, in Maslow's scheme, the security needs to become paramount.

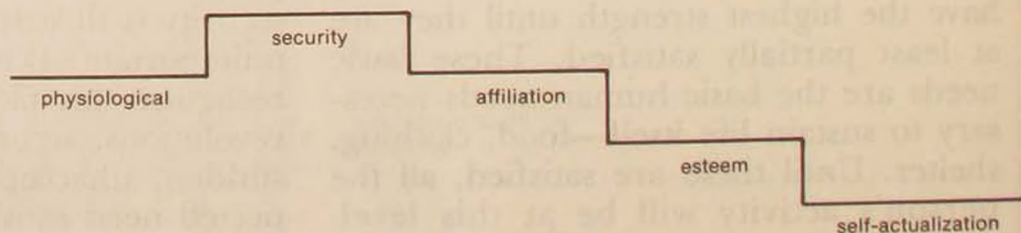
Once the physiological and security needs are fairly well satisfied, the affiliation need, or the need to belong, will emerge. As an individual begins to satisfy his need to belong, he then feels the need for esteem, both self-esteem and recognition from others. Once the esteem needs begin to be adequately satisfied, the self-actualization need—the need to maximize one's potential—becomes dominant.

These last three needs may never be completely met in any society, on either an individual or a societal basis. But because people have more things, tangi-

ble and intangible, as each need in the hierarchy is met or partially met within a society, there will be an accompanying and equal increase in security needs. Each individual will feel that his security is threatened if there is a danger he might slip back down the hierarchy, if some needs presently met will not be met in the future.

On these bases, one may theorize that the needs Davies is speaking of, those which are basic to the implementation of a social revolution, are in effect the same as Maslow's security needs. The other Maslow needs of affiliation, esteem, and self-actualization do come into consideration after the social movement or revolution begins; however, these needs can be

Figure 4. *Security need when dominant in the need structure*





actually satisfied within the structure and society of the new movement.

If Maslow's "security needs" and Davies's "needs" are synonymous, Davies's model may be amended as shown in Figure 5.

The model so amended does not appear to conflict with the original Davies concept, for, as he said, "... the necessary additional (revolutionary) ingredient is a persistent, unrelenting threat to the satisfaction of these needs: not a threat which actually returns people to a state of sheer survival but which puts them in the mental state where they believe they will not be able to satisfy one or more basic needs."<sup>17</sup>

Neither does the revised Davies model necessarily conflict with Hopper's life-cycle model. The *additional conditions* Hopper mentions, which have to be present for a movement to move from one stage of the life cycle to the next, can be equated to the appearance of new security needs at each stage in the cycle. These new security needs are the combined results of rising expectations, fail-

ure of the government in power to meet past security needs, and doubt as to the government's future ability to meet security needs.

In short, the revised Davies model (Figure 5) appears to be a more exact one, at least from the standpoint of a more specific definition of what needs are being referred to.

### Predictive Possibilities of the Model

As Davies points out, for his model to be predictive, an assessment of the state of mind, the mood of a people, is required. He cites several instances—West Berlin in 1948, for one—where interviews ascertained the sense of security that people felt. But he concludes that we are still not at the point of being able to predict social revolution.

But work has been done in another discipline that perhaps could be useful in assessing the state of mind of people. George Katona, at the University of Michigan, has done extensive research in

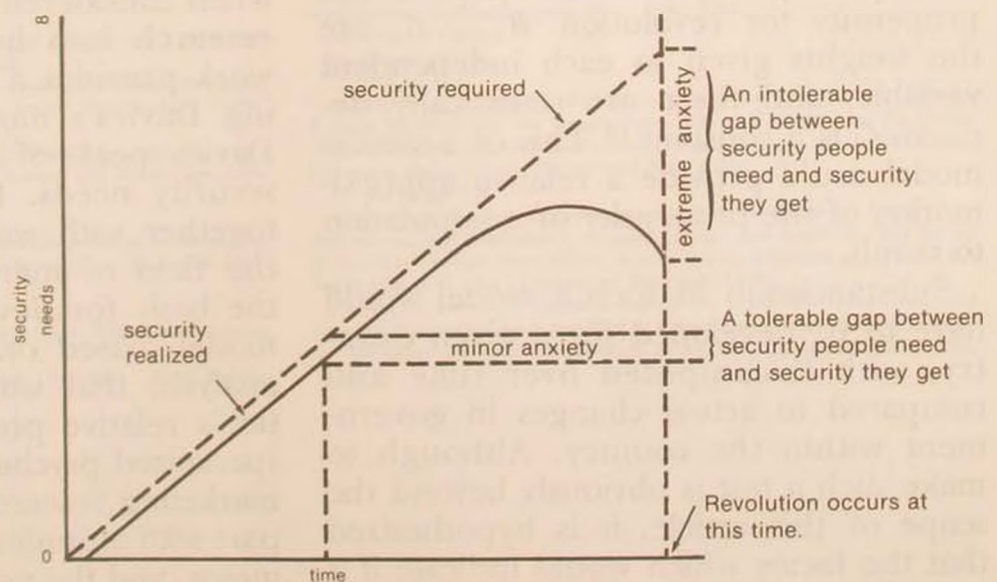


Figure 5. Security need satisfaction and revolution



the United States, Europe, and elsewhere, attempting to relate a population's state of mind to its economy.<sup>18</sup> Using multivariate statistical techniques, he produced models that explain much of the fluctuation in a nation's economy as a function of anxieties about the future.

On the theory that anxiety in a population is a reflection of how well their security needs are being met, it is felt that a similar technique, drawing on Katona's research methods, might prove useful in predicting a population's propensity for a social revolution. Various measures of anxiety could be incorporated into the development of a model that would have the form

$$Y = B_1X_1 + B_2X_2 + \dots + B_nX_n + C$$

where  $Y$  is the dependent variable indicating the propensity for revolution in a country, and  $X_1 \dots X_n$  are the independent variables (mainly anxieties) within the country. The anxieties about the economy, type of government, length of period of rising expectations, etc., are a result of unfulfilled security needs, and consequently they affect the population's propensity for revolution.  $B_1 \dots B_n$  are the weights given to each independent variable, and these are statistically derived.  $C$  is a constant.<sup>19</sup> This or a similar model could provide a relative approximation of the propensity of a population to revolt.

Substantiation of such a model would have to be developed for a given country, with  $Y$  computed over time and compared to actual changes in government within the country. Although to make such a test is obviously beyond the scope of this article, it is hypothesized that the factor which would indicate if a movement is to be a social revolution would be the sharpness and depth of a

drop in  $Y$ . The sharper such a drop and the longer it drops, the more self-reinforcing the propensity for revolution would become. Anxieties would beget anxieties. Within such an environment, radical solutions leading to social revolution would find ready listeners.

The technique discussed here does not contradict Davies's theory but in fact reinforces it and provides a possible approach to the development of quantitative measures approximating a population's relative propensity to revolt.

## Conclusions

The examination of the distinguishing features of a specific social movement, together with the factors that distinguish a reform movement from a revolution, has enabled us to assemble a working definition of a social revolution: to identify criteria against which a new government can be checked to see if it does represent a social revolution.

The models for revolutions proposed by Hopper and Davies were examined and found to complement each other when considered together with Maslow's research into human needs. Maslow's work provides a basis for further refining Davies's model so that the needs Davies speaks of are, in fact, identified as security needs. I feel that this model, together with work done by Katona in the field of market research, could be the basis for developing a sophisticated model (based on multivariate statistical analysis) that would indicate a population's relative propensity to revolt. The specialized psychological theories used in marketing research, which deals in large part with attitudes, opinions, social movements, and the needs of people, could be useful in developing explanations of why social revolutions occur.



The form of the model suggested is admittedly simplistic, but this is felt to be a necessary step in the formation of a more sophisticated model along the line of contemporary national econometric models. The compilation of the data base necessary to the development of such a model will be a major difficulty that must be overcome. The effort should prove to be worthwhile, however. For example, even in the simplistic model proposed

$$Y = B_1X_1 + B_2X_2 + \dots + B_nX_n + C$$

the predictive potential of the weight  $B_1$  through  $B_n$  would identify factors that a government could influence to prevent or preclude a social revolution. Last, it should be emphasized that the proposed general model would be equally applicable to social revolutions of the left and of the right, to a communist or to a fascist social revolution.

If the model suggested here is valid, then one might logically assume that the current world energy and food crises are causing the populations of many of the world's nations to feel that their security needs are threatened. Since the threat to security needs appears in many cases to be beyond the control of the governments in power, one may expect an ever increasing gap between the security the populations need and the security they get. The resultant increasing anxieties can be expected to be accompanied by an ever increasing propensity for social revolution in the nations most threatened by these two crises. Under such circumstances a social revolution would appear inevitable. The question is, Will the United States adequately anticipate the advent of such revolutions?

8 SOSq, Hurlburt Field, Florida

#### Notes

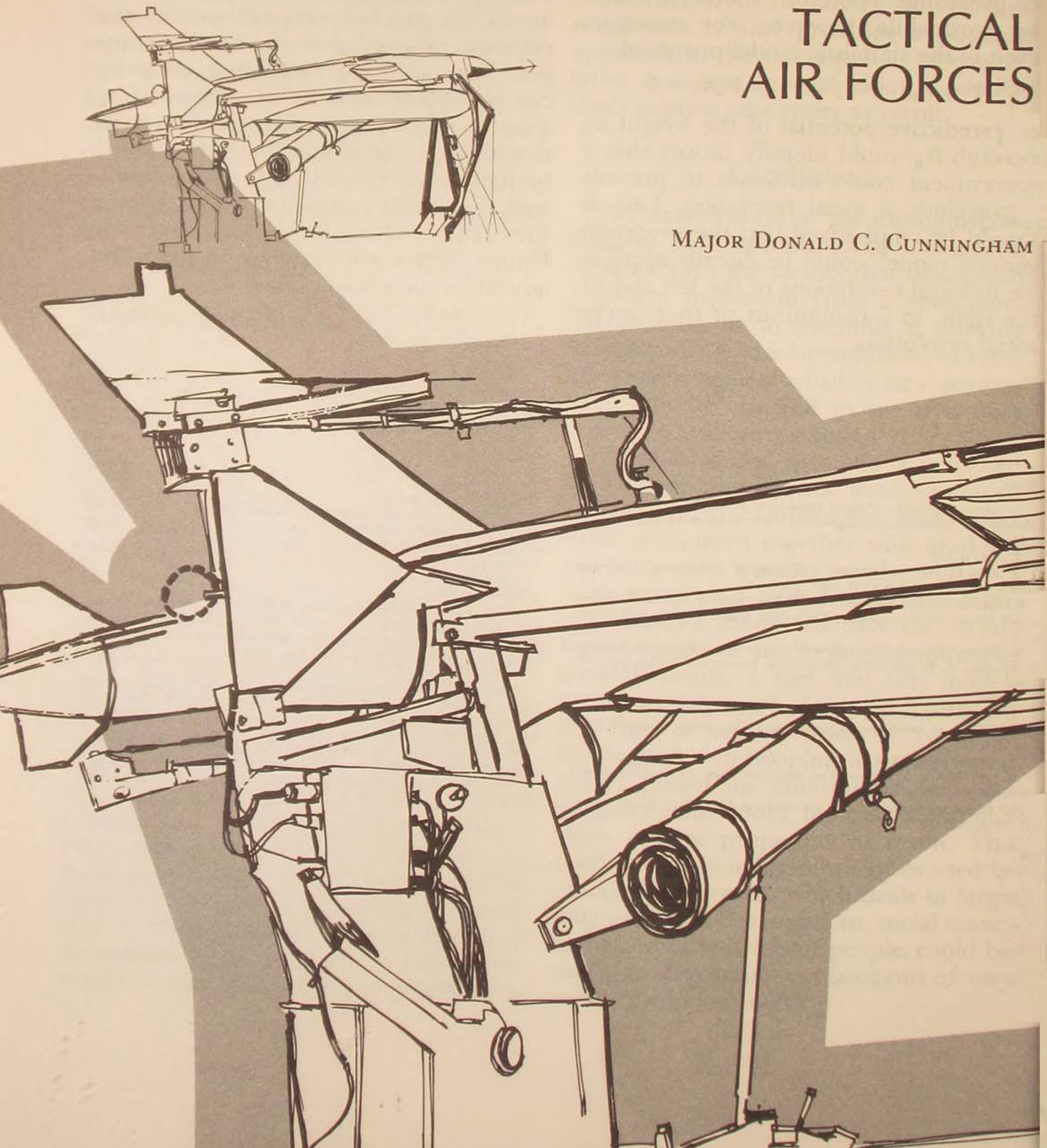
1. Martin C. Needler, *Political Development in Latin America: Instability, Violence and Revolutionary Change* (New York: Random House, 1968), p. 157.
2. *Ibid.*, p. 158.
3. John C. Davies, "Toward a Theory of Revolution," *American Sociological Review*, vol. XXVII, 1962, pp. 5-19.
4. Carl Leiden and Karl M. Schmidt, *The Politics of Violence: Revolution in the Modern World* (Englewood Cliffs, New Jersey: Prentice-Hall, 1968), p. 3.
5. Herbert Blumer, "Social Movements," in *New Outline of the Principles of Sociology*, A. M. Lee, editor (New York: Barnes and Noble), pp. 199-200.
6. *Ibid.*
7. Rex D. Hopper, "The Revolutionary Process: A Frame of Reference for the Study of Revolutionary Movements," *Social Forces*, 28 March 1950, pp. 270-79.
8. Blumer, *op. cit.*
9. Jack Woods, *New Theories of Revolution* (New York: International Publishers, 1972), p. 17.
10. Sigmund Neuman, "The International Civil War," *World Politics*, vol. 1, pp. 335-36.

11. Needler, pp. 120, 158.
12. In fact, as Needler indicates, a reform movement can be transformed to a social revolutionary movement by the introduction of revolutionary innovation from above. (page 120)
13. Hopper, *op. cit.*
14. Davies, *op. cit.*
15. *Ibid.*, p. 6.
16. Abraham H. Maslow, *Eupsychian Management* (Homewood, Illinois: Richard D. Irwin and the Dorsey Press, 1965); *Motivation and Personality* (New York: Harper and Row, 1954); *New Knowledge in Human Values* (Scranton, Pennsylvania: Harper and Row, 1959).
17. Davies, p. 10.
18. George Katona, *Measurement and Predictive Value of Attitudes and Expectations*, and Dankelberg, Schniedeskemp, and Stafford, *1960 Survey of Consumer Finances* (Ann Arbor: Survey Research Center, distributed for Social Research, The University of Michigan, 1969).
19. For a complete explanation of the statistical techniques and research designs involved, see Paul E. Green and Donald S. Tull, *Research for Marketing Decisions* (Englewood Cliffs, New Jersey: Prentice-Hall, 1970).



# THE FUTURE OF RECOVERABLE DRONES FOR TACTICAL AIR FORCES

MAJOR DONALD C. CUNNINGHAM





**T**ACTICAL air forces have been in the recoverable drone business since 1968, when the COMBAT ANGEL Task Force (CATF) was established to perform a chaff-dispensing mission in Southeast Asia, although the force was not deployed. In July 1971 the CATF was formalized into the 11th Tactical Drone Squadron (11 TDS) and assigned to the 355th Tactical Fighter Wing, Davis-Monthan AFB, Arizona. The 11 TDS is an operational squadron assigned an electronic warfare support mission as well as a low-level photoreconnaissance mission in support of tactical air forces (TAF). The squadron has also been committed to support several development and operational testing programs managed by the USAF Tactical Air Warfare Center (USAFTAWC).

These testing programs have been designed to improve the operational aspects of the squadron's electronic warfare equipment and to develop the tactics and techniques required to employ the drones in support of TAF. This brief article on TAF experience in the drone business concerns where we are today, what are we looking at for the future in recoverable drones, and why.

What is a recoverable drone? A recoverable drone is defined for the purpose of this discussion as a mission drone in the 3500- to 6000-pound class that is controlled from a ground station or a launch aircraft and designed to perform electronic warfare, reconnaissance, or weapon delivery missions. The drone can be launched from a ground launcher or cargo-type aircraft such as the DC-130. Parachute recovery of the drone is accomplished by descent to ground impact or by helicopter midair recovery methods. This definition of the recoverable mission type of drones is not intended to exclude advanced launch and recovery

methods but is a description of today's drones.

### *Why drones?*

The two questions most often asked about drones are, Why do you want them and what are they going to do? The why can be answered best by four issues that impact on any weapon system in the Department of Defense: the decreasing availability of dollar resources; the increasing cost of men and machines; a continually increasing enemy threat; and the newly emerging sensitivities, national and international, on the value and presence of man.<sup>1</sup> By introducing a low-cost recoverable drone system to perform tactical missions in support of manned aircraft, TAF primarily is hoping to reduce the overall costs of performing these missions and, secondly, to eliminate man from high-risk environments.

### *expanding missions*

Historically, drones have not been introduced into the force structure under conditions similar to those for manned aircraft. The drone program to date has been characterized by quick reaction to urgent national priorities and needs.<sup>2</sup> Specialized management procedures have been the rule, and capability advancement by improvement and modification of existing vehicles and equipment has been the norm.<sup>3</sup> The operational use of drones in low-altitude reconnaissance was successfully demonstrated in Southeast Asia. The success of the reconnaissance mission there led to formation of the CATF and addition of the electronic warfare role to missions performed by drones.

In 1970 the feasibility of drones delivering guided weapons against fixed tar-



gets led to the further modification of an existing recoverable drone with sensors designed to acquire the targets and improved avionics systems to launch the weapons. The feasibility demonstration was successful, and the 11 TDS was assigned strike drones for further testing and evaluation.

The promise of drones to perform an increasing number of tactical missions resulted in the TAF requirement for a multipurpose drone. The requirement is for a single drone airframe to perform electronic warfare, reconnaissance, and strike missions. The drone would accept various sensors and equipment to perform the specified tactical missions. The advantages of a single drone airframe to perform various missions are to eliminate the proliferation of single-purpose vehicles; simplify maintenance, operations, supply, and training; and reduce overall costs. The development of a multipurpose vehicle is currently under way, designated Advanced Multi-Mission Remotely Piloted Vehicle (AMMRPV).<sup>4</sup> In addition to the AMMRPV, which is being developed for the 1980s, a recent review of the Mideast conflict resulted in the start of an interim multipurpose recoverable drone program titled BGM-34C.

#### *interim systems*

The BGM-34C interim multipurpose drone program is designed to give TAF an operational capability in minimum time; therefore, the vehicle will incorporate the best avionics, engine, and airframe from existing equipment and technology. The interim vehicle will enable TAF to develop the concepts and tactics for future multimission vehicles. This is essential to the long-range use of multipurpose drones in TAF because, while the reconnaissance mission has been proven

and the electronic warfare mission is relatively free of major problems, the air-to-ground strike role is not as clear. This was well stated by Secretary of the Air Force John L. McLucas regarding the air-to-ground role:

There are fundamental questions about effectiveness, vulnerability, and cost that have yet to be answered. Certainly we don't want to build a large force with an obvious Achilles' heel. I see a series of prototype or interim systems with extensive test and evaluation required as we enter each new mission area. In this way we can build on our past experience and pursue an orderly expansion into new uses for RPVs. Demonstrated operational concepts will pace our future growth because I don't think that Technology presents any major barrier.<sup>5</sup>

The interim BGM-34C multipurpose vehicle will allow TAF to refine operational and maintenance concepts and provide additional insight into effectiveness, cost, and vulnerability as well as focus on reliability and maintainability. From our experience with our current drones, coupled with data from the BGM-34C, we hope to establish a data base for advanced multimission drones as well as demonstrate that the drone can perform various tactical missions.

#### *BGM-34C mission roles*

The missions planned for the BGM-34C are tactical electronic warfare support (TEWS), reconnaissance, and air-to-ground strike. In all three mission areas, drones will be used primarily to support manned aircraft conducting tactical interdiction missions. A separate drone force is not planned.

The BGM-34C, modularized for electronic warfare support, will jam selected defense network radars and dispense





*In addition to the Advanced Multi-Mission Remotely Piloted Vehicle (AMMRPV), which is being developed for the 1980s, recent international developments have resulted in the start of an interim multipurpose recoverable drone program entitled BGM-34C. Shown here is a BGM-34B.*

chaff or expendable jammers to aid strike aircraft penetrating high-threat areas. The combination of both manned and unmanned aircraft carrying electronic warfare equipment and devices offers TAF a cost-effective alternative to larger electronic countermeasure pods. In addition, the combination provides a synergistic electronic warfare capability against defense radar networks.

In the reconnaissance area, the BGM-34C will perform special purpose surveillance, prestrike reconnaissance, and bomb damage assessment to complement the TAF RF-4C capabilities.

The air-to-ground strike role of the BGM-34C will encompass primarily the destruction of high-priority fixed targets; however, if the fixed target requires a weapons payload beyond the carrying

capability of the strike drone, the drone's mission will be suppression of the defense systems surrounding the target. When the drones have suppressed the defenses in tandem with manned defense suppression aircraft, then strike aircraft will attack the fixed target. Although other roles have been investigated, strike drones appear to offer more potential in attacking fixed targets rather than the mobile targets encountered in the close air support role.

#### *cost reduction*

To accomplish these missions, multimission RPV's have to be cost effective; therefore, TAF is looking at several cost-reduction solutions to near- and far-term RPV problem areas. These areas are



ground launch; ground recovery; contingency operations; command, control, and communications; sensors; simulators; and joint Army–Air Force drone development.

*Ground Launch.* In order to design future AMMRPV's with lower life-cycle costs, alternative drone launch and recovery methods are mandatory. Current launch and recovery costs are approximately 55 percent of the yearly operating costs of the Air Force drone program.<sup>6</sup> The launch capability of DC-130 aircraft limits the number of drone sorties that can be flown in support of TAF manned forces. Although the airborne launch of drones from DC-130s adds flexibility to operations, the disadvantages of limited drone sortie rates and higher operating costs dictate alternative launch methods to complement the airborne launch of drones.

The use of ground launch methods for target drones is standard operating procedure. Although there are problems in ground-launching the heavier-weight mission drones, the technology should be available to apply the target drone launch techniques to the mission drones. Air Force Systems Command (AFSC) and Tactical Air Command (TAC) are currently conducting a joint Development Test and Evaluation/Initial Operational Test and Evaluation (DT&E/IOT&E) to ground-launch a 4500-pound mission drone. Until this test no ground launch capability has existed to launch 4500-pound tactical drones with variable weight/center of gravity parameters.<sup>7</sup> A booster rocket thrust-vectoring system has been developed that solves the variable weight/center of gravity problems and maintains the proper drone attitude during the boost phase of the ground launch.<sup>8</sup> The first ground launch was completed successfully on 27 November

1974. Five more launches are scheduled to complete this joint test. The results provided by the ground-launch DT&E/IOT&E will provide data toward the BGM-34C program to make that drone weapon system ground-launchable.

*Ground Recovery.* Another high-cost area in current drone operations involves recovery methods. The primary drone recovery method presently in use is the Midair Retrieval System (MARS), which employs specially equipped CH-3/HH-53 helicopters. The current reliability of the system is 98 percent. The MARS is ideal for operations with a low sortie rate; however, it has several inherent limitations. The recovery operation is limited to one helicopter for one drone. As drone sortie rates increase, more helicopters would be required if dependence on MARS continues. As the drones are increasing in weight, which limits the use of the CH-3, TAF would need the larger HH-53 helicopter. The limited recovery capabilities of MARS, coupled with cost considerations, necessitate other recovery systems to reduce life-cycle costs for drone systems.

The current alternative to MARS is ground recovery. There are several factors that adversely affect both maintenance and operations when drones are ground-recovered. The drone usually sustains unacceptable ground impact damage, which increases maintenance workloads and directly affects turnaround times, thereby decreasing drone availability. Additionally, there is no current method to insure that a drone intended for ground recovery will impact the ground in the area planned for recovery. This is because once the chute is deployed the drone can no longer be controlled or directed toward the recovery area. Several proposed methods are under way or envisioned to improve



ground recovery. These proposals include inflatable impact bags or attenuation devices attached to the drones to reduce impact damage. Steerable chutes could more accurately control the drone during descent into the recovery area. A dual chute system is under investigation to slow the drone descent rate to lessen impact damage.

All the proposed launch and recovery alternatives are based on feasible modifications to existing drone systems and have application to the BGM-34C. Modifications to existing systems do not solve the longer-range problems of the AMMRPV because new concepts and ideas are required that do not focus on parachute recovery systems or rocket ground-launch techniques, since these methods are inherently costly and do not appear to promise low life-cycle costs for the AMMRPV.

*Contingency Operations.* TAF requirements for drone weapon systems vary significantly from previous Air Force drone programs. The current concept for overseas operations does not involve contingency operations that require short-notice deployment and subsequent employment operations. The operating locations overseas are established organizations conducting special-purpose missions that do not require high sortie rates. The current drones were designed to perform a low-sortie-rate type of operation, and they have been successful. For this type of mission, airborne launch and midair recovery systems are sufficient and relatively economical.

Why do the TAF requirements differ significantly from the aforementioned operations? TAF will require a stateside operation that will train for contingency operations requiring standard deployment practices. Future RPV systems will have to be designed against these mobil-

ity requirements, that is, compact packaging for drones, aerospace ground equipment, sensors, and other support equipment. The advanced systems will require minimum maintenance turnaround times to reduce the number of drones required for deployment. If turnaround times can be improved significantly from the present-day systems, fewer drones will be required to support the necessary employment sortie rate.

Current drones are not designed for mobility and require an inordinate amount of airlift relative to their combat contribution in the employment theater. The DC-130 aircraft can be deployed readily; however, the MARS helicopters would require packaging for deployment or be limited by an interminable delay if they were flown to the overseas deployed base. The current drone deployment capability is being studied by USAFTAWC, and a recent overseas movement of the 11 TDS is being evaluated for deployment, employment, and redeployment to identify areas for improvement and simplification of mobility requirements.

*Command, Control, and Communications.* The next area of concern for employing drones is the command, control, and communications required to interface the unmanned vehicles with the manned force. We have had some experience with these areas in exercises such as CORONET ORGAN and GALLANT HAND and have been successful in partially integrating drones into the Tactical Air Control System (TACS); however, the drone operations were conducted in sterile airspace so as not to conflict with the manned forces. USAFTAWC, in conjunction with the 11 TDS, is conducting a test designed further to evaluate the integration of drones in direct support of tactical fighter aircraft. Hopefully, this test will answer some key questions and enable



the drone force to develop initial tactics required to support manned forces with electronic countermeasures and chaff.

Another element of control considerations is the direct control of drones from the airborne control aircraft (DC-130) or the ground control van. The two control systems are basically the same. The current control system was designed to control one drone in real time and up to two drones on a sequential basis. For the Air Force drone program to date, with its special purpose reconnaissance missions, the control system was adequate.

As TAF expanded the drone mission application to electronic warfare support, the control system became inadequate. To correct this situation, an interim multiple drone control system has been installed in a DC-130. During the initial operational testing of the system, a sufficient number of airborne drones were controlled to demonstrate that multiple flights of drones could provide electronic warfare support to tactical fighters. Although the multiple drone control system works, further modification to significantly increase its capabilities does not appear to be cost effective. This consideration led to studies of future candidate control systems under the AFSC-directed Drone Control and Data Retrieval System (DCDRS).

The future DCDRS will increase the real-time control capability and include data links with antijam protection. The DCDRS program will also investigate the required features of a ground Drone Control Facility (DCF). This facility would be interfaced with the Tactical Air Control System. The DCF will increase the navigation accuracy of the drones being controlled through the use of Time of Arrival/Distance Measuring Equipment (TOA/DME) techniques. To extend the range of a DCF beyond the line of sight, a

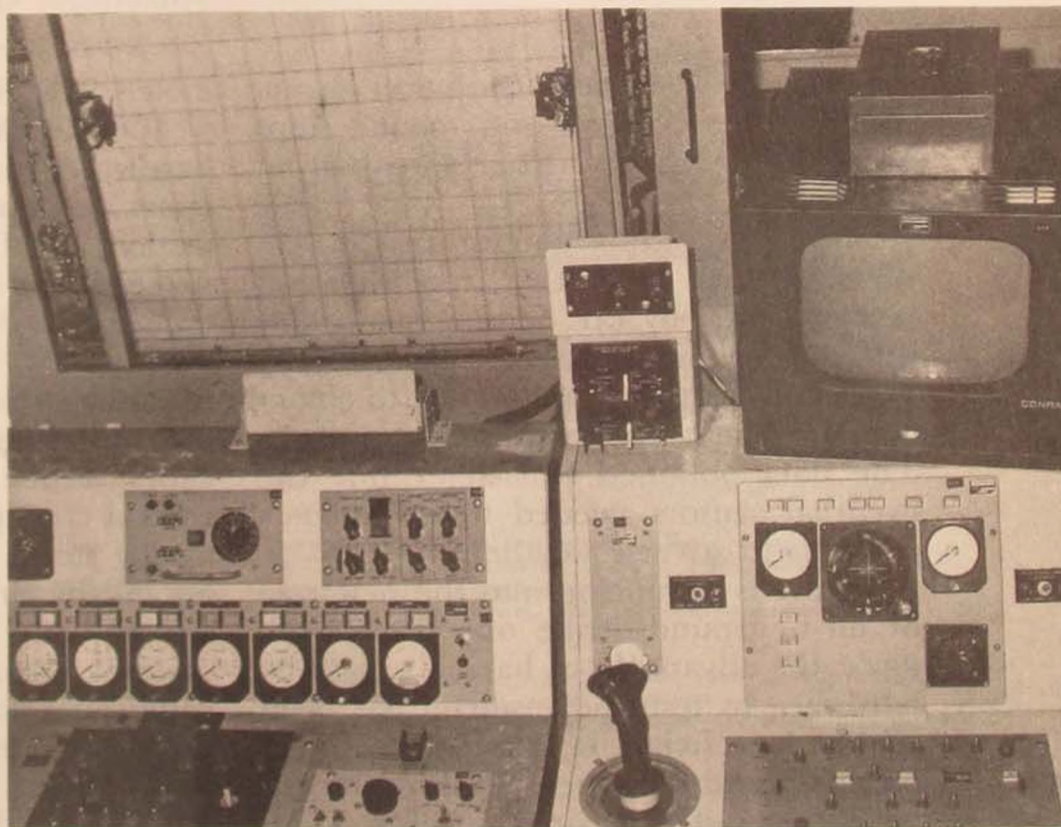
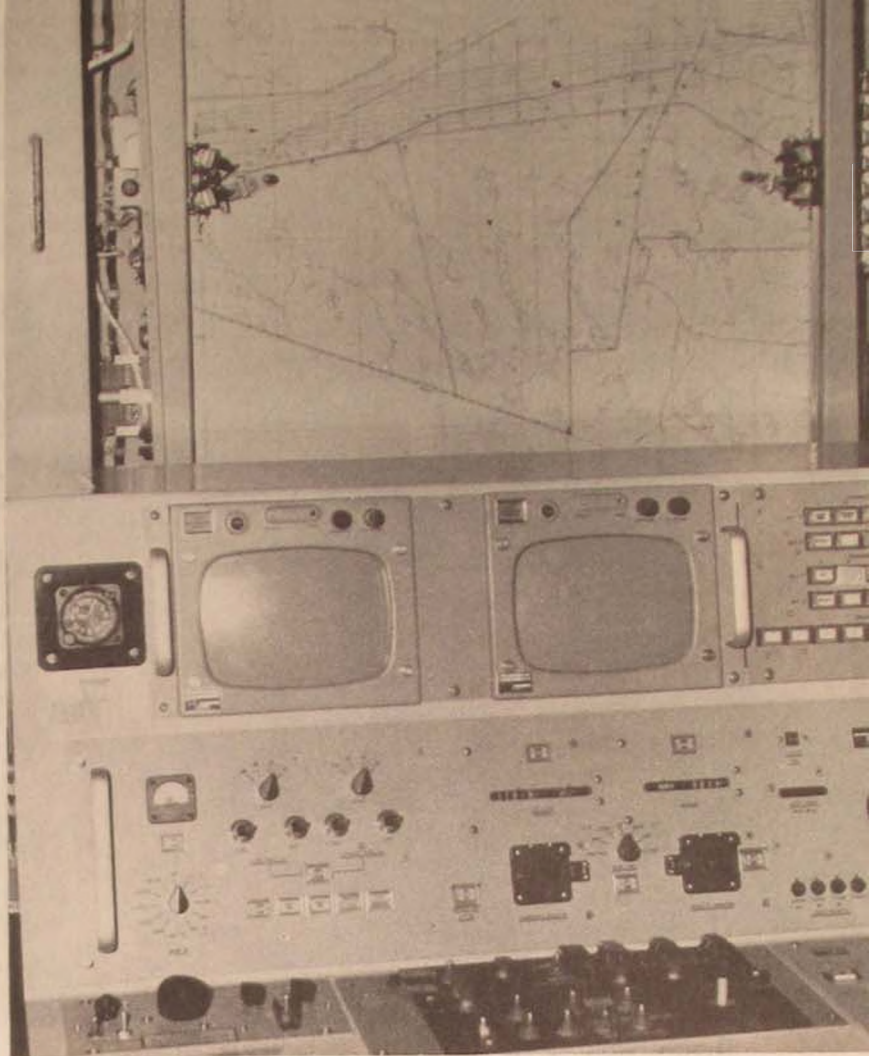
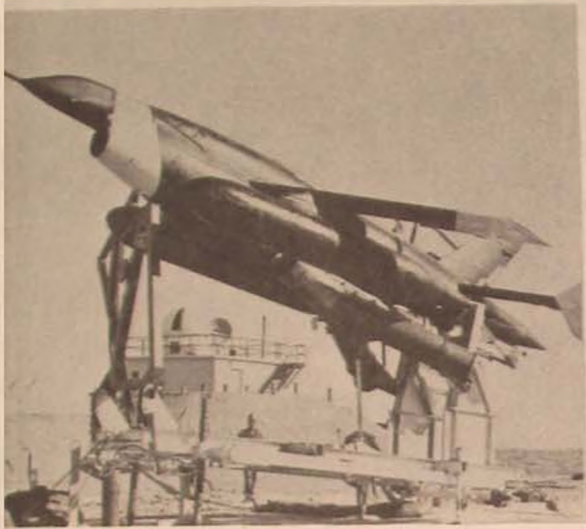
manned or unmanned high-altitude relay vehicle is required. The overall advantage of a DCF, a high-altitude relay, and a drone ground-launch and ground-recovery system is the elimination of dependence on drone launch aircraft and MARS helicopters. Higher rates of launch and recovery can be supported. If the eventual future systems are built with low acquisition cost and low life-cycle costs as the driving factors, the overall logistics problems should decrease, resulting in increased effectiveness.

*Sensors.* With the advent of the strike drone (BGM-34A/B) and its television and other types of sensors, a requirement was created for reception stations in the DC-130. The drone sensors are used for both navigation and target acquisition. The drone relays the sensor information to the DC-130, where the Weapons Control Officer Station (wcos) provides both visual and telemetry readouts. The wcos also provides control over the weapons and strike drone interfaces, enabling the wco to launch the strike drone's weapon(s) against the desired target. The DCDRS program includes secure data links to improve the sensor and telemetry reception capability for future drone weapon systems.

Extensive testing is being conducted by AFSC and TAF to gather data to improve the future sensors and control links for the AMMRPV. Target acquisition and the man/machine interface requirements to produce a viable strike drone weapon system are the key issues. Tests have been conducted to examine the wco's ability to acquire targets remotely with the strike drone and his ability to take the necessary steps to launch the weapon on the target. Technologically, the target acquisition can be achieved; however, the lack of the "pilot's eyes" in the entire system does curtail the time available to

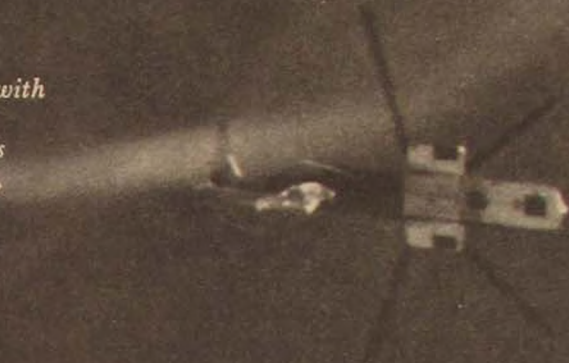


Testing of ground launch of an AQM-34 is part of the effort to make the less costly ground launch methods applicable to mission drones as well as target drones. . . . The station of the weapons control officer in a DC-130, which adds flexibility to operations by airborne launch of drones. . . . Station for multiple drone control in the DC-130.





*The Midair Retrieval System (MARS) recovers a drone with a specially equipped CH-3E helicopter. Heavier drones require the larger HH-53 helicopter. The limited capacities and high costs of MARS necessitate other recovery systems, the current alternative being ground recovery.*



the wco after target acquisition to accomplish the physical and mental steps necessary to fire the drone's weapon on the target.

The target acquisition process in adverse weather is another area that has been analyzed by TAF. Sensors compatible with RPV's have been evaluated in the European weather environment to obtain data on the target acquisition process. The data obtained will determine the eventual sensors needed to make RPV's operable in adverse weather.

As TAF is advancing into the new role of air-to-ground strike operations with RPV's, the advantage of having prototype hardware to test and evaluate has been highly beneficial. It is difficult to be objective, and only theoretical results can be obtained from paper studies of re-

motely acquiring targets and delivering weapons. The prototype BGM-34A/B hardware has enabled both the developers and operators to gather the information and facts required to evolve the strike drone into a viable future operational weapon system.

*Simulators.* To reduce operating costs in today's drone systems, the Air Force currently is investigating the use of simulators. Drone launch and drone remote control crew positions in the DC-130 are ideally suited to simulation. Initial training on the first strike drones introduced into the Air Force was conducted on a specially designed simulator at Wright-Patterson AFB, Ohio. The 11 TDS is continuing to send crew members to the simulator in an effort to reduce the number of drone flights required for



proficiency training. The simulator at Wright-Patterson will be improved in capability and moved to Davis-Monthan AFB, Arizona, this year. Both Strategic Air Command and Tactical Air Command drone controllers will be able to simulate flights, thus lowering costs through reduction of drone free flights dedicated to aircrew training. For future drone systems the DCDRS will be capable of integrating simulation into its control systems.

*TAC-TRADOC Joint Working Group.* In further efforts to reduce overall RPV costs, TAC and the U.S. Army's Training and Doctrine Command (TRADOC), headquartered at Fort Monroe, Virginia, formed a Joint Working Group (JWG) in July 1974 to "promote mutual cooperation and collaboration between TAC and TRADOC in resolving joint issues as they pertain to the coordinated and integrated development and use of RPVs of the Army and Air Force."<sup>9</sup> The RPV JWG currently is investigating the possibilities and feasibility of joint Army-Air Force development and testing of prototype RPV's where both services have common interests and requirements.

### *the future*

Do recoverable drones have a future in tactical air forces? As described herein,

the problems associated with drones and their integration into the manned tactical forces are not uncomplicated tasks, but these problems can be solved technologically. Through the aforementioned series of tests and exercises, TAF is increasing both the data base and experience with recoverable drones. If suitable launch, recovery, and control systems can be incorporated into future systems, the recoverable drone will be able to perform electronic warfare, reconnaissance, and certain types of strike missions. As Secretary McLucas stated in referring to RPV's:

I see three basic reasons, and I think we should constantly keep these in mind when we talk about the future. *First*, RPVs can be used to reduce manned aircraft attrition in the very high threat environments. . . . The *second* reason is to provide an acceptable way to accomplish certain tasks when the mission or area of operation is *politically sensitive*. . . . The *third* reason, and by far the most important for the future, is to achieve a *significant cost advantage* over comparable manned aircraft systems.<sup>10</sup>

TAF is concerned mainly about the significant cost advantage in RPV systems. This will be the determining factor for the future of recoverable drones in TAF.

*Hq Tactical Air Command*

### Notes

1. *United States Air Force Drone/RPV Mission Analysis Final Report*, vol. 1, February 1974, p. 30.

2. *Ibid.*, p. 40.

3. *Ibid.*

4. No significant difference exists between a drone and a remotely piloted vehicle (RPV); the terms are used interchangeably.

5. John L. McLucas, "The Role of Remotely Piloted Vehicles in the Air Force," in *Abbreviated Proceedings of the National Association for*

*Remotely Piloted Vehicles, First Annual Symposium*, 1 May 1974, p. 2.

6. Colonel James B. Killebrew, USAF, Air Force Systems Command Drone RPV Ad Hoc Group Briefing, 30 March 1974.

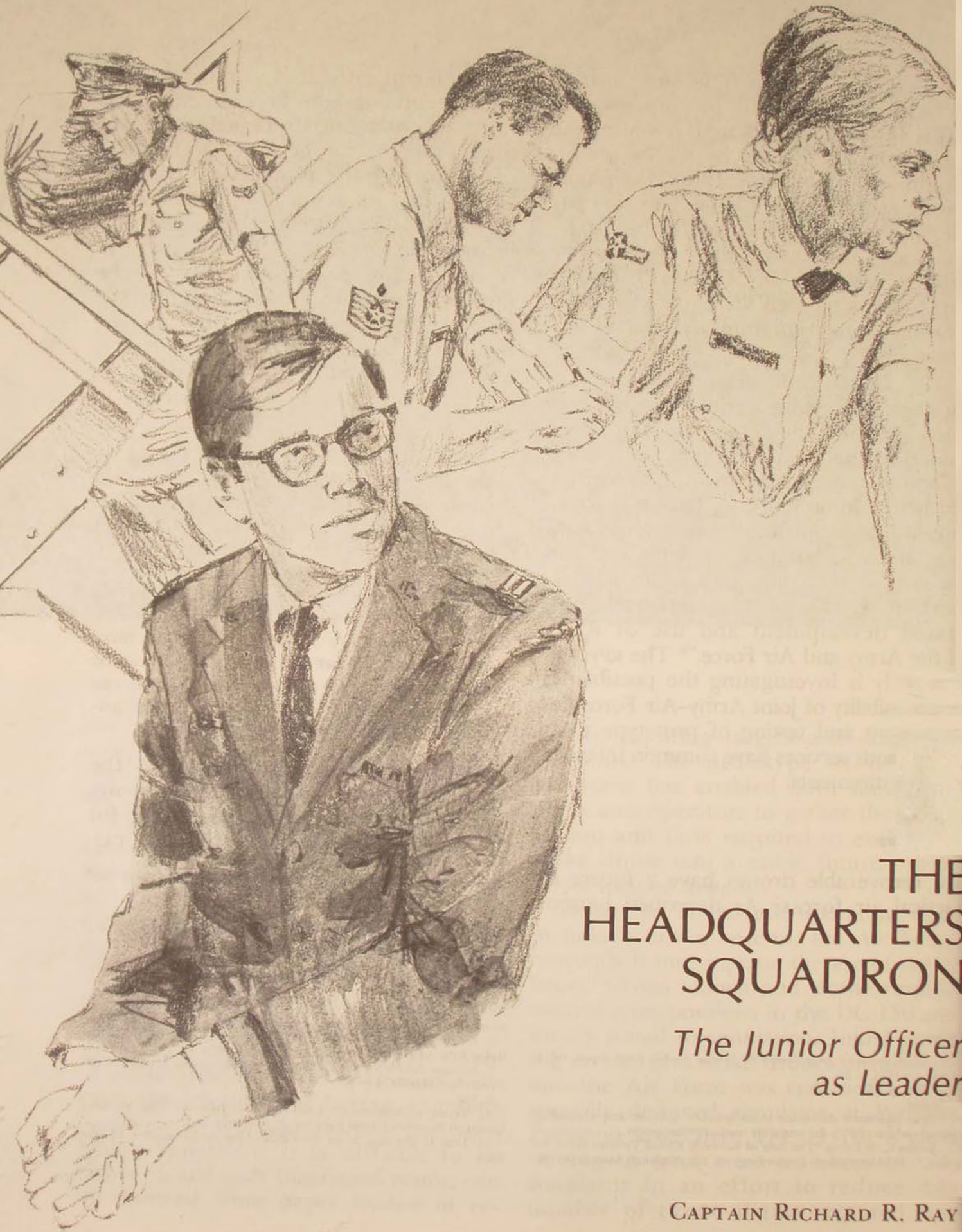
7. Captain Robert M. Kern, USAF, *AQM-34H Ground Launch IOT&E Project Plan*, May 1974, p. 1.

8. *Ibid.*

9. "Terms of Reference," TAC/TRADOC Joint Ad Hoc Working Group on Remotely Piloted Vehicles, 12 July 1974, p. 1.

10. John L. McLucas, in *Air Force Policy Letter for Commanders*, 15 May 1974.





# THE HEADQUARTERS SQUADRON

*The Junior Officer  
as Leader*

CAPTAIN RICHARD R. RAY



It has been my observation that there is little information or guidance readily available relative to the practical aspects of command from the junior officer's point of view. Since I had the opportunity to be a headquarters squadron commander while still a junior captain, this article has been written in the hope that other Air Force junior officers may find some profit from my leadership experiences and resultant philosophies.

A headquarters squadron is an organization composed of various divisions, each a separate organization of itself. The squadron section, which consists of the commander and his staff, is on the same management level as the divisions but has administrative responsibility for all personnel functionally assigned to the various divisions. The commander's staff consists of a first sergeant, two supervisors who manage the administrative and training sections, and their subordinates. Three of the cardinal responsibilities of the commander are the administering of disciplinary actions, maintaining a dormitory for bachelor and unaccompanied personnel, and operating an effective training program. Maintaining morale, health, and welfare at a high level, scheduling personnel for appointments and details, and counseling personnel are also some of his more important responsibilities. The divisions, which are further divided into sections, are headed by a chief, who has section supervisors reporting directly to him. The division chiefs are responsible to the wing commander for effectively managing their functional areas and therefore are relieved of command requirements that are performed by the headquarters squadron commander. The squadron structure makes it necessary for the division chiefs and squadron commander to develop a good social relationship that will insure

spontaneous cooperation and teamwork, so that the administrative squadron commander can effectively discharge his responsibilities. Although the commander may have "positional authority" to make decisions without consulting division chiefs, more will be accomplished by his effectively using social skills to secure their involvement, participation, and cooperation with regard to decisions that he has to make. The squadron commander must strive to bring about the effective integration and meshing of the divisions into a unit with a singularly common goal of creating and maintaining those situations that will produce the necessary group and individual behavior to assist the wing in accomplishing its mission and satisfy the individual and group needs of the people.

#### *the leader*

The squadron commander is the designated leader of what can be considered the basic organization of the Air Force. An individual may be appointed to a position of command by virtue of someone with higher command authority; however, recognition as leader is earned by one who is generally accepted by members of his organization because of respect for his ability to make the proper decisions for the organization as a whole. Therefore, a major goal of the commander should be to become the accepted leader of the organization.

Perhaps the first step of a new commander is to accept the responsibility of command, which is well expressed by a quote from the *Air Officer's Guide*:

The commander is responsible for the execution of all activities pertaining to the unit. This includes the successful accomplishment of all missions assigned. . . . He



is responsible in every way for all that his organization does or fails to do. To a greater degree than other commanders, he must be in intimate touch with his men, and know their individual characteristics and capacities, their degree of training, their morale, and discipline. He must provide for the welfare of his men in all ways and under all conditions. . . . The conditions which the airman experiences in his own squadron determine his opinion of the Air Force as a whole.<sup>1</sup>

Every commander works from the same vantage point; that is, he has the legal authority to impose punishment and reward appropriate acts and behavior by virtue of his position. He possesses the legal authority within the squadron. He can use that authority to build a strong, viable organization, or he can mismanage that authority (power) and cause the organization to wither to ineffectiveness. The assistance of the legal and personnel offices, as well as other specialized agencies, can help a commander avoid mismanaging his authority; however, the possibility of such a thing happening is always present. A commander must realize his responsibility and get on with the business of managing his squadron. In this regard, a new commander will rely heavily on those personal leadership traits that have been successful for him in the past.

An individual who is selected to command a squadron should possess personal qualities perhaps described as follows: (1) The leader is somewhat more intelligent than the average of his followers but not so superior that he cannot be readily understood by those who work with him. (2) The leader is a well-rounded individual from the standpoint of interests and aptitudes. He tends toward interests, aptitudes, and knowledge with respect to a wide variety of fields. (3) The leader has an unusual

facility with language. He speaks and writes simply, persuasively, and understandably. (4) The leader is mentally and emotionally mature. He has come of age mentally and emotionally as well as physically. (5) The leader has a powerful drive or motivation that impels him to strive for accomplishment. (6) The leader is fully aware of the importance of cooperative effort in getting things done; he therefore understands and practices very effectively the so-called social skills. (7) The leader relies on his administrative skills to a much greater extent than he does on any of the technical skills that may be associated with his work.<sup>2</sup>

In addition to these sophisticated qualities, training in interviewing, coaching, and counseling is necessary in order to succeed in a commander's role. Good training and experience in listening and understanding of individual and group sentiments can be obtained through participation on military court-martial boards, community council committees, race relations and drug abuse seminars, and Human Relations Council meetings. Additionally, the commander must develop his "social, diplomatic and diagnostic skills" and be creative, innovative, and imaginative to effectively generate teamwork, participation, and cooperation among the various groups and individuals within the squadron. However, of all the skills that might affect his effectiveness, the most important is his ability to communicate with others. He must be able to communicate in a manner that allows all personnel, regardless of grade, to understand him.

A leader in today's Air Force must not only be socially and administratively adept; he must also be dynamic and should effectively employ charisma if he possesses that quality. Life itself is dynamic, and a leader must be dynamic to keep



abreast of the people and situations about him. In order to deal effectively with dynamic situations, the commander must be thoroughly familiar with the organization he is leading. He must acquire good staff personnel to accomplish administrative tasks because he cannot afford to become so entangled in paperwork that he is stuck behind a desk. A capable first sergeant is the heart of a good staff, and the commander should exercise care in selecting a person for this position.

### *the people*

The primary concern of the squadron leader should be his people because the individuals and groups of people that make up the squadron are those who actually "get the job done." Commanders, managers, and leaders have one thing in common—they have to work with the one resource that is always used: people. The people who comprise today's military organization bring a wide variety of experience and behavior with them that must be dealt with by the leader. In order to deal effectively with people and maintain an atmosphere that is conducive to mission accomplishment, the leader must have frequent contact with the people in the organization.

The leader, by his position, is visible to his superiors, peers, and followers in the organization he is leading. To be a successful leader, he must remain highly visible in the eyes of his followers. He should take advantage of every opportunity to come face to face with the people in the organization. Commander's call, base parades, and council meetings provide the commander excellent opportunities for visibility and "leading by example." It will become readily apparent that the people have little respect for a leader

and place little trust in him if he does not set the example in duty performance and personal conduct. He should visit the various workshops and talk with people, eat in the airmen's dining hall periodically, and make a genuine effort to appreciate the personal and official people problems, because the people's problems sooner or later become his if they are not individually resolved. The commander should learn where the various groups of people spend their off-duty time. This is not to say that he should know every place the members of the organization frequent, but he should have a general knowledge of which groups or individuals frequent various types of social activities. This knowledge should provide him the familiarity to understand sentiments and allow him to create an atmosphere conducive to "cooperation, appreciation for others, patient understanding and teamwork" within the squadron. Good human relations, in addition to enhancing the leader's effectiveness, aid in fostering an atmosphere of mutual trust and understanding in the leader-follower relationship that thrives on trust and confidence. The leader must take it upon himself to understand and respect the people who follow him.

Keeping the people informed is perhaps one of the better ways of developing a strong positive relationship between the leader and the people. Suspicion can wreck a sound relationship faster than any other type of action. One earmark of a good manager is his ability to keep suspicion and rumor to a minimum. The "grapevine" operates with extreme rapidity. It can sometimes be used as a trial balloon. If you want to know the possible reaction to a proposed course, let the grapevine hear that such a course is in the wind. The kind of reaction could



help you determine whether to go the proposed route. Learn to use the calculated leak to precondition the group to some unusual news that is apt to follow. To keep the grapevine healthy, to keep suspicions and rumors from developing: (1) Conduct yourself in an open and aboveboard way. (2) Keep people well informed on what is going on. (3) Be constantly on the alert for things that might be misunderstood or misinterpreted; you can become suspicious, too. When you have questions, don't speculate; go directly to the people concerned and get the facts. Facts kill rumors.<sup>3</sup>

The squadron commander is probably placed in a more exacting role than a commander at any other level because of his more frequent interacting with the people. Since he has legal corrective and punitive authority, he must maintain the proper social distance in order to be objective in dealing with people and to exercise his authority judiciously. On the other hand, he must maintain sufficient contact with the people to be decisive and exert positive leadership with regard to people improvements. The nature of the situation and the personalities of the leader and the people involved should be carefully considered with regard to the degree of intimacy established between leader and subordinate. It is difficult to specify where the line should be drawn with regard to the contact a leader should maintain with his people, but he should not become involved in their personal affairs unless absolutely necessary. In most instances the people will solve their own problems, but the leader should be willing to assist those who need his help. Since the leader is often required to evaluate the capabilities of his subordinates, he should maintain sufficient contact to be objective in giving praise or corrective action.

Counseling is one of the more important skills that a leader should develop to assist his people in adjusting to the problems they encounter. The headquarters squadron commander will find himself counseling on personal problems more than on any other kind. In this regard, he will be concerned with both formal and informal counseling. Normally, formal counseling will take place in the commander's office or an office setting. Informal counseling might take place in the dormitory after an inspection, in a workshop, on the street, or at other places where his people approach him to ask assistance in resolving a personal problem. Under formal conditions, the commander might initiate a counseling session as a result of noticing a subordinate's discipline, personal appearance, or some other matter. In other instances, one of the people may request an appointment or just stop by his office to discuss a problem. When he knows in advance of a counseling situation, he should try to learn as much as possible about the individual before he begins to counsel him.

Perhaps the most important element of the leader and subordinate counseling situation is the leader's ability to listen. Before the leader can be a good listener, he must be able to get the individual to talk about his problems. Putting a man at ease as quickly as possible will greatly facilitate matters. The leader should never sit behind a desk during a formal or informal counseling session if he can avoid it; the desk is simply a barrier to communications. By moving to a couch or chair alongside the individual, the leader will gain the minimal but crucial time needed to get psychologically prepared for "patient listening." In addition, his moving from behind the desk will tend to alleviate the anxiety of talking



with "the commander." He should relate to the individual's explanation of the problem and reflect a genuine interest in the feelings expressed. Often the leader will sit and listen patiently, contributing an occasional word or gesture of encouragement, while the individual being counseled talks through and solves his own problem.

Informal counseling is generally of shorter duration, as the problem may relate to something the leader dislikes and expects to see changed in the future. In other instances it may be a matter of a yes or no answer to a problem in the form of a question.

Counseling is an effective tool for the leader in providing for the welfare of his people, but he cannot expect to become a professional counselor because of his busy schedule. The Air Force has many agencies with professional counselors, such as the chaplain, Social Actions Office, and medical and legal staffs, that can assist the commander in dealing with his men and their problems. The leader must recognize cases appropriate for referral to a professional and schedule an appointment. The leader's responsibility for welfare is for all his people, not for just a few.

Perhaps the squadron commander's closest relationship will be with the first sergeant. To a greater degree than other noncommissioned officers in the squadron, the first sergeant is the most important link between the leader and the younger, lower-grade airmen. In essence, he is in a better position to keep the leader informed of the pulse of the organization. His advice should always be considered for the simple reason that normally he will have many more years of experience in dealing with people. He can and should resolve many people problems that do not necessarily need

the attention of the commander. The commander and first sergeant should have separate offices but in close proximity, to allow frequent and sufficient discussion of matters that affect the organizational situation. The commander and first sergeant should seek every opportunity to learn from each other, because there are many situations when they will have to assume each other's responsibilities. The commander and first sergeant must be truly committed to each other, to insure the effectiveness and enhancement of the organization. Keeping each other informed on situations and decisions made with regard to the people of the squadron is a must. There should be few secrets between the first sergeant and commander, if any. To insure this, the commander must give the first sergeant status and prestige by delegating authority and supporting him in his actions to carry out the mission of the organization. An active and effective first sergeant can truly be the "backbone" of the squadron.

#### *policies and programs*

A new commander should announce his policies and establish procedures for managing programs as soon as possible after assuming command. Many programs that must be continued by every commander should be retailored by each new commander to achieve the goals he has established for the organization. Although a squadron commander can establish policies pertaining to his organization, these policies are often reflections of policies established at higher command levels. There are many ways for publicizing policies and positions on programs. The commander can publish articles in the base newspaper at the more propitious times so that all mem-



bers of the squadron are informed. Publishing letters and sending them to each division for circulation and posting on bulletin boards is another method. He should make use of every communication instrument to keep people informed of policies and programs.

The more effective social programs are, the more effectively the organization should function. These programs should be people-oriented and highly publicized as such. Maximum publicity should also be given to programs relating to complaints, equal opportunity and treatment, formal training, and career advice. The commander should go on record (both written and oral) that he expects these programs to be supported by everyone. If he is fortunate, he may find an officer who is willing to accept the responsibility for these programs and take a genuine interest to insure that they are viable and effective. He should insure that the individual administering these programs keeps him well informed. There are several programs that the commander should conduct and participate in actively. One of these is the squadron formal training program. The number of people in training for a given month could range from 100 to 120 people for a headquarters squadron. If he assumes command of a squadron with a high failure rate, he can assume that his training program is ineffective and the rate of disciplinary problems high, for training has a direct relation to disciplinary problems. An ineffective training program can generally be attributed to a lack of involvement and direction on the part of the squadron commander, division chiefs, and supervisors. There is a misconception that the squadron training NCO is responsible. That is not the case; the commander is responsible. The squadron training NCO should work di-

rectly for the commander, not for the first sergeant. The commander should insure that the training NCO and his assistants are highly qualified and that they have established administrative, inspecting, and monitoring procedures to account for the division training programs. The commander should develop a rapport with division chiefs to get their supervisors involved in the training program. One method that has worked is to appoint division training monitors and hold a monthly meeting, where they present their problems and proposed solutions. The cross-talk between monitors is often beneficial to other monitors, the training NCO, and the commander. If the training program is good, disciplinary problems should be minimal. The training administrative process must function properly with regard to training and developing individuals to foster adequate growth for assuming greater responsibilities. Training also helps one develop an appreciation for the job and a better understanding of the Air Force mission. These ingredients, blended with other factors, establish the degree of morale and healthiness of individual and group attitudes with regard to the discipline of the squadron.

Commander's call is another program that the leader should conduct personally. The first commander's call after assuming command is perhaps the most important because the initial impression one makes is normally a lasting one. Sometimes it is necessary to make drastic changes; however, a new commander should avoid making arbitrary changes for the sake of change. Perhaps at the first commander's call he might announce his support of senior NCO's in their efforts to enforce regulations that govern Air Force members and his support and expectations of members of the organization with re-



gard to equal opportunity and treatment for all persons. The monthly commander's call gives the commander an opportunity for face-to-face communication with all the people and to present awards as proper recognition to deserving individuals. He can also use this opportunity to answer questions and clarify situations that may have become misconstrued. To make this program more interesting, he might invite different staff agencies, such as legal, personnel, and Social Actions Offices, to talk on their areas of responsibility. The majority of these talks are not only informative but interesting. Do not try to stretch the time period because it is not fair to your people. Extending beyond the time allotted, especially after duty, is worse.

An incoming briefing can be beneficial to the commander. He can meet face to face with all newcomers and give them the opportunity to form their opinion of him without a great deal of influence from other people. He should try to get as much information as he can about each individual's background, without prying, and try to remember the name of each individual assigned to the squadron. An open-door policy can also help; but once the people discover the commander will assist them even if they just drop in, he will have a difficult time accomplishing his paperwork during duty hours. The advantage is that he will have the opportunity to help an individual resolve his problem before it is blown out of proportion. Additionally, effective use of these tools can keep the AWOL rate at a minimum.

Dormitory policies and procedures should be published upon his assuming command. The condition of the dormitory can change from one day to the next. However, to establish some consistency, the commander must post standards and procedures and take corrective

action to enforce compliance with them. In regard to the dormitory, there is often a tendency to apply group corrective action, but it is not recommended unless thorough inspection dictates it.

#### *discipline of the squadron*

The squadron leader has primary responsibility for maintaining the discipline of the squadron. The degree of discipline within an organization is affected by a number of factors, of which two, rewards and punishment, probably have the greatest influence. The leader must at all times consider how the discipline of the organization will be affected when he decides to mete out punishment or present an award. In either case, he must be fair, decisive, and consistent. Discipline is important because it reflects the readiness, willingness, responsiveness, and behavior of the individuals and groups of individuals as they interact with each other to accomplish the mission and satisfy their individual and personal needs. Discipline is not the result of a spontaneous reaction; the degree of discipline that is desired will come as a result of the emphasis the leader places on training and the conduct of his people both on and off duty. Compliance with standards regarding personal appearance, such as haircuts, mustaches, dress standards, cleanliness, et cetera, should indicate to him what degree of discipline his organization possesses.

Rewards are effective as incentives and motivators for continuous good behavior. Rewarding can be accomplished in many ways other than presenting something of monetary value. For example, a day off duty, a verbal comment, or a letter of commendation can be of considerable value to the recipient provided the re-



ward is presented in a genuine manner for a significant achievement. Rewarding individuals can be overdone to the extent that normal conduct or performance is considered less than desirable because the reward is no longer a motivating factor. The leader must keep in mind that a paycheck is given because one does his job. In essence, a reward should be based on a standard that is attainable by the membership of the organization, and the standard of achievement should be set somewhat higher than that normally expected of each member. When the leader decides to give an award, he should present it at some appropriate gathering, such as commander's call, for proper recognition of the individual receiving the award. Individuals viewing the presentation may be motivated and develop an appreciation for the type of performance that is rewarded. Rewards constitute one way of guiding behavior that affects the degree of discipline within the squadron.

Punishment, the direct opposite of reward, is imposed upon the individual because his conduct or behavior is less than desirable. The first step in the administering of punishment is perhaps the publishing of those standards, policies, and procedures that the leader expects his followers to sustain. After an established rule has been violated, the next step is for the leader to insure that justice prevails in his efforts to rectify unacceptable conduct, performance, or behavior. He must realize that it is not so much the severity of the punishment but the certainty of punishment that will establish the proper degree of discipline in his organization. At times, imposing punishment may be inappropriate, especially if the individual does not understand the level at which he is to perform. When an individual is knowledgeable of

the expected standard and fails to meet that standard, a just punishment is warranted. The lack of punishment for those acts that do not meet acceptable standards may result in a complete breakdown of the squadron discipline.

In his day-to-day activities, the leader may be required to mete out punishments in both formal and informal situations. The formal situation occurs in the office in the form of nonjudicial punishment under Article 15 or letter of reprimand. The highest form of punishment that the squadron leader, as a junior officer, is authorized to administer is the Article 15 under the Uniform Code of Military Justice. Informal punishments may come as a verbal reprimand, admonishment, or a denial of what would normally be an approval. To be fair and just, the leader should be thoroughly familiar with the people and the administrative process that evolves within and around his organization. To become familiar with the administrative process, the new leader should become acquainted with and make appointments to talk with the Chief of Military Personnel, the Staff Judge Advocate, and the Office of Special Investigations, Security Police, and Social Actions. He should attend race relations classes and drug abuse seminars, become familiar with the scent of the smoking drugs, and learn what signs to look for that indicate an individual is using hard drugs. Additionally, he should review all unfavorable information files (UIF), to become knowledgeable of those individuals who have been identified as disciplinary problems and why. He may want to schedule all persons with a UIF for a personal conference, to inform them of what a UIF is and how it can be used. It would be appropriate to prepare a memorandum to the effect that he had counseled those persons with



a UIF, because documentation is extremely important in taking punitive or administrative action against an individual.

In meeting out punishment, the leader will be dealing primarily with first-term airmen. Many of these individuals may come from an environment where discipline is not so strict as in the military. This should not dictate whether punishment is imposed; however, it should be taken into consideration. Two administrative actions that do not take money directly from a lower-grade airman are to withhold or deny promotion. Placement on the control roster is another administrative action that may deny a young airman a choice assignment he has been expecting. Although these are administrative actions, the individual on the receiving end more often considers them punishment. They are very effective in correcting undesirable behavior of lower-grade airmen. As the airman progresses in rank, administrative and punitive actions should increase in severity. As he advances in grade and responsibility, his behavior and conduct should have adjusted to that expected of a normal career-minded individual. Although punishment is a negative form of motivation, it is effective and often necessary to bring about the degree of discipline that a leader desires.

#### *some personal experiences*

In every situation, some experiences have more significance than others. My situation as a squadron commander has followed that pattern. With that in mind, I would like to relate some experiences from both social and official points of view, which may be of some value to other junior officers.

Closed-door sessions, which I held on

many occasions, were among the more dynamic situations in which I was involved. In these situations, I was generally interviewing, counseling, admonishing, or imposing punishment upon someone for deviant behavior. The situation usually involved a threesome—the first sergeant, the individual concerned, and myself—behind the closed door of my office. The first sergeant is a good witness when you instruct someone to do something. Besides, the first sergeant can advise you from his many years of experience, to keep you from instructing someone improperly.

One vivid experience involved a young airman who got drunk one Sunday evening and had to be taken to the hospital. I usually visited each member of the organization who was admitted to the hospital. In this instance I sent the first sergeant with a message for him to report to me upon his release from the hospital. The airman reported a few days later, and I let him stand before my desk for a minute before telling him to take a seat. I read his rights under Article 31 of the Uniform Code of Military Justice, as I did with every individual who committed a violation. I believe that really frightened him, since he was not yet old enough to drink hard liquor. I let him know how stupid I thought he was for drinking the large quantity he had and that he could have killed himself. He looked as though he might cry, and I hoped I had scared him out of drinking forever. I told him I would investigate the matter further and let him know what action I would take. He returned three days later at my request, and I informed him I would not impose any punishment upon him because I felt he had learned his lesson. He swore he would not drink again.

I was involved in several situations that



concerned prejudice or racism. A young airman convinced me that he was a racist during a 45-minute closed-door session; he admitted he was a racist prior to the session and subsequently convinced a medical officer. He was administratively separated. Another case involved an airman who denied on one occasion and admitted on another that he was a racist. I could not prove him a racist, but his behavior certainly so indicated. I counseled him on many occasions while he was under special observation and documented his situation as being insensitive to the needs of his fellowman. I learned that the first step in dealing with racism is to arrest the active and immunize the remainder in the organization by speaking against it as often as necessary.

I once encountered four airmen in a dormitory room where a drug was being smoked. I had recognized the scent of the burning drug in passing the room, returned and knocked on the door, and then someone said something like "Come in." When I walked in, the occupants looked very much surprised. I quickly advised them not to speak. I read their rights under Article 31 and instructed one of them to get the clerk from my office. A search warrant was obtained, and the room was searched for more drugs. Two of the airmen pleaded guilty and were appropriately punished. The other two denied the use of drugs, and after thorough investigation the case against them was dropped.

One of the more significant events I experienced was the squadron Christmas party. The entertainment committee of the NCO/Airman Council had been asked to arrange the party. The council members and I were optimistic. I felt that if the party were a success it would create an atmosphere for cooperation, genuine teamwork, and participation. At the next

commander's call I announced my support of the party planners and asked all other members of the squadron to participate. Arrangements were going well, and the relationships between the individuals and groups within the various divisions began to improve. Things were going well approximately a week before the party when the vice-chairman of the council and another member suggested the party be canceled because most people were not interested and were not buying tickets. After a lengthy discussion, I asked them to continue with plans for the party. When they left the office, I called each division senior NCO and invited him and his wife to the party and asked that they encourage their subordinates to attend. In addition I called ten junior officers, who agreed to buy tickets and work as bartenders for the night. Ticket sales increased considerably, and the night of the party tickets were still selling at the door. I felt the party was a success, and I was convinced that social functions provide excellent situations to study, analyze, and understand individual and group sentiments because many people reveal their genuine feelings and behavior.

The most dynamic week I experienced as a squadron commander was the week the Air Force Inspector General (IG) team came to the base. The preceding three weeks had been unusually quiet, the Christmas party had been a success, and morale appeared to be higher than it had ever been in my eight months as commander. The morning of the day the IG arrived, the first sergeant came into the office and asked me *not* to inspect rooms that day because they were lousy. I agreed but told him to be sure they were in good shape by the next morning. Anytime your first sergeant asks you not to inspect, that is the time to inspect.



Well, the inspectors arrived that afternoon—three full colonels, one the wing commander and my boss. I would never have believed the rooms in “my dormitory” could be in such a state if I had not seen them myself. I was sick, and the first sergeant was visibly shaken. Needless to say, my boss was embarrassed, and that was the worst part of it for me. It was small consolation that I had the company of all the other squadron commanders at the chewing party that evening. A thing like that just could not happen to me, but it did!

The men in the dormitory cleaned their rooms that evening, but the wing commander was still not satisfied. He talked of firing my first sergeant or reducing him in grade and giving me a letter of reprimand. When I left the wing commander’s office, I was determined to have the dormitory immaculate. On returning to my office, I called the first sergeant in and informed him of what had happened. I asked, “Do you want to quit?” and he replied, “No, sir.” That evening I held a dormitory meeting and informed all residents that I intended to have the dormitory cleaned to the satisfaction of the wing commander. I told them that I could not require it but that the dormitory had to be that clean to help the entire wing during the final inspection the next day. I informed them that, if they did not clean the dormitory for me, the wing commander would certainly get someone else to do it, and they would have to start over again breaking in a new squadron commander. With that, the men went to work. They cleaned every square inch of that dormitory. My staff and I worked with the men until 0130 hours in the morning. Later that same morning my staff and I inspected the rooms again. That dormitory *was* immaculate. I was pleased with

the responsiveness of the men. When the general arrived that afternoon, he inspected every level of the three-floor dormitory. During the inspection he commented that “Someone has really done some cleaning.” The men deserved the credit, and later that evening I told them exactly what the general had said.

I learned some valuable lessons from that experience: (1) Beware of the slack period in your activities; if you look around, you may find that some things are not getting done. (2) When a subordinate has doubts about acting, the leader must help him. When he understands exactly what to do and fails to get the job done, some corrective action must be taken. (3) Get to know your boss. More than likely he has been over the same road and can help you avoid some of the pitfalls.

Perhaps the most significant of all my experiences as a squadron commander were those of bringing about change within the organization and the self-change that must occur incidental to progression from a staff to a command position. Change is inevitable; however, change within the squadron should be planned and accomplished through effective management. As squadron commander I often found it necessary to create situations to bring about changes, so as to accomplish the mission and satisfy the individual and group needs of the members within the organization. To bring about change effectively, the leader must gain cooperation and teamwork through his competence, personality, attitude, and approach to motivating and directing. A good record for being fair and honest will help tremendously in making changes. As commander I initiated some of my first changes through developing my immediate staff. I learned that each subordinate had a different



amount of potential, and by the same token a different method had to be employed to develop each man. Management of self-change is also crucial. Effective management of time, scheduling of appointments, effective writing, selective reading, physical exercise, and dealing with job tension should be properly coordinated to avoid frustration in such a demanding job. It is often necessary to initiate self-change before you can begin to make other changes effectively. I learned that the "oriented manager" can more effectively bring about change because he is in a better position to understand sentiments in managing the organizational, professional, and socialist man than is generally found within the organizations in which we work today.

People must be prepared for change.

In essence, I was working toward becoming an "oriented manager." I realized that my job could be exhausting and time consuming, but I was determined to make things happen without totally expending myself. I also realized that I was on my own in the sense that nobody could do the job for me. For the first time as a manager, I had the opportunity to put it all together. It was a matter of finding the necessary tools to build a good organization to accomplish the mission. The best of tools are available for every squadron commander; it is a matter of becoming knowledgeable of them and learning when, how, and where to use them.

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#### Notes

1. *The Air Officer's Guide* (Harrisburg, PA: Stackpole Company, 1967-1968 edition), p. 171.
2. Cecile E Goode, *Significant Research on Leadership* (Gunter Air Force

Base, Alabama: Extension Course Institute, Course 1B, Phase II, Lesson 4, 1972), p. 38.

3. Gabriel S. Carlin, *How to Motivate and Persuade People* (West Nyack, New York: Parker Publishing Company, 1964), pp. 100-101.

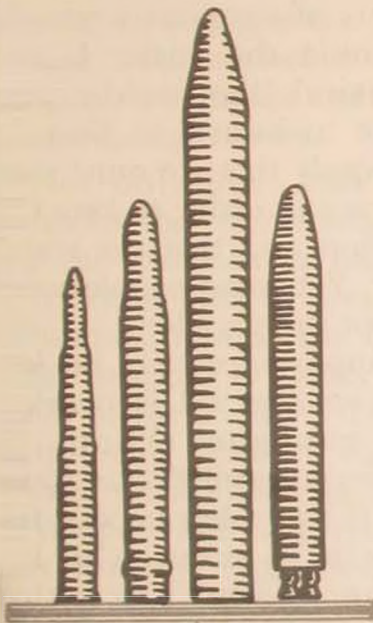


## In My Opinion

THERE are two sets of theories about war and weapons that have taken on the character of myths; that is, they are accepted on faith and almost never really examined, despite their implications for the state of the world. First, there are the theories about arms races, which deal with the dynamics of changes in force size and composition and how those changes are instigated and effected. Second, there is a partially overlapping set of theories that deals with

### SOME MYTHS ABOUT THE STRATEGIC BALANCE

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the state of the strategic balance at any one time. These theories concern static measures of the strategic balance: Who is ahead and why? . . . What are the relative static capabilities of each side? . . . What are the relevant measures for establishing such capabilities? . . . And what are the triggers for change in the existing balance?

Many of these theories have become accepted without challenge, primarily by dint of constant repetition. It is only recently that work has begun on challenging their premises and conclusions.<sup>1</sup>

In this article I summarize and comment on a number of the premises and conclusions that appear regularly and widely in the public literature about the strategic balance.<sup>2</sup> These premises have generated myths and misunderstandings that are commonly used as bases for major conclusions about the state and dynamics of the strategic balance between the U.S. and the U.S.S.R.

*Premise: Numbers do not count; once you have reached a minimum assured destruction capability, virtually nothing else matters—all else is overkill.*

This argument has been virtually beaten to death, but it still manages to arise with regularity. For example, in the May 1974 *Scientific American* lead article, Barry Carter says that the “numerical relation” of the two countries does not count beyond the level at which each side could absorb an attack by the other and then retaliate to the “assured destruction” level against population and industry.<sup>3</sup> And in *Foreign Affairs*, April 1974, no less an authority than General Maxwell Taylor argues that:

. . . numbers of missiles are important only up to a certain point. The tremendous destructiveness of megaton warheads soon produces a needless “overkill” to

which the addition of more weapons would amount to sheer wantonness.<sup>4</sup>

The fact that the SALT I agreements codified numerical disparities in the numbers of missiles—and SALT II, while so far appearing to provide for equal numbers of missiles, allows wide disparity in throwweight—suggests an explanation for the increase in frequency of statements of this genre. But repetition of an argument does not increase its validity.

On the contrary, numbers *do* count—both in the military arena and in the political one. The political value of numbers is obvious from the intensity of the debates about the meanings of “superiority” or “parity” or “essential equivalence.” If there were no importance, why such fervor? If numbers of weapons were not of value, why would the Soviet Union continue to buy more? One would expect that it would be awkward at best to believe simultaneously that we must stop a strategic arms race in order to save the world from oblivion and that the numbers don’t matter. Yet some people seem to be able to accept the paradox.

The military importance may be less clear. The premise that all is overkill beyond a small minimum (York’s 10 bombs on 10 cities example)<sup>5</sup> has some validity, but *only* if the sole purpose for strategic weapons is to threaten to kill women and children. I don’t believe that threatening to kill women and children is a legitimate purpose of the strategic force at all, from either a political or moral point of view. But even if it were, it would not be the sole purpose. This is particularly clear since an antipopulation response in a context of parity is not credible as a support for guarantees to allies. In that respect, killing—or overkilling—people is an irrelevant measure of effectiveness and, more obviously, an irrelevant measure of sufficiency. Thus



something other than spasm response against population is necessary. And small less-than-spasm responses against other-than-population targets look more credible for the side with a numerical edge, since this side would not be putting itself at even more of a disadvantage by so using a small portion of its forces. Moreover, there is a large number of nonstrategic military targets that could be attacked with strategic weapons in a discriminating fashion if such weapons were sufficiently accurate. In such a situation the use of strategic weapons could have significant advantages in timeliness and in their control. Again, numbers clearly count.

*Premise: Moreover, the number of strategic weapons on both sides does not measure reality because "it does not include the 7000 U.S. tactical weapons in Europe and the nuclear weapons aboard aircraft carriers."*

Not only does this premise fail to consider the "nonstrategic" requirements for the weapons in Europe and aboard carriers; it also ignores the presence of substantial numbers of Soviet tactical nuclear weapons in Eastern Europe—about 3500 of them<sup>6</sup>—and the several types of shipborne nuclear surface-to-surface cruise missiles that the Soviet Union has developed and deployed (and the U.S. has not), not to mention the Soviet intermediate-range (IR) and medium-range ballistic missiles (MRBM's), which the U.S. tac nukes are considered to balance in part, at least politically.

The common Soviet SALT distinction between "central" and "noncentral" systems, which defines central systems as those that can target the "homeland," ignores the fact that many Soviet cruise missiles are capable of being targeted against the continental United States. (I believe that Soviet distinction to be a very

indistinct one, and I do not agree with it.) Moreover, the Russians have insisted throughout SALT that the nuclear forces of our NATO allies should be counted in the U.S. force totals. If this were to be accepted, then the territory of the NATO allies should be included in the definition of "our homeland." And then Soviet weapons capable of reaching the territory of the NATO countries—the IR/MRBM's, the short- and medium-range bomber force, etc.—should be incorporated into Soviet force totals.

*Premise: Limiting damage from a nuclear attack is not a matter of policy choice.*

This myth is most clearly stated in the following:

Calculations indicate that an attack against all of the U.S. Minuteman silos would result in casualties (U.S. or Canadian) in the multi-million range from fallout alone; from all causes the actual numbers would be still larger.<sup>7</sup>

Elsewhere it has been stated that even under favorable conditions an attack against all of the U.S. Minuteman silos would result in fallout casualties in the ten-million range. This is a relatively clear—and thus testable—claim. And we have tested it. What we find is that numbers in the range of ten million can only be derived by assuming a configuration of Soviet forces and their employment in complete disregard for any criteria of avoiding by-product damage.<sup>8</sup> Moreover, these numbers of casualties can result only if, in addition, the U.S. completely ignores some simple, sensible protection measures. A "multi-million" figure would have to result from extreme assumptions about protecting people—that is, that people remain exposed in the open after the fallout cloud ar-



rives. These assumptions are hardly most favorable conditions.

It is within the capabilities of the attacker to reduce fatalities. Different force characteristics and targeting doctrine—smaller-yield warheads, detonation in air rather than on the ground, and cleaner weapons—would reduce fatality levels to tens of thousands without significantly reducing military effectiveness. Reasonable assumptions about population protection would reduce fatalities further and would be warranted, since the cities would not be directly under attack and there would clearly be some warning of the coming fallout. One hundred percent of the civilians need not be assumed to be standing out in the open gawking at the fallout cloud night and day.

Thus it is quite plain that there are no fixed results of attacks that are not sensitive to attacker and defender actions. It is clear that the fallout from an attack with large numbers of large-yield nuclear weapons, by either side, *could* be horrendous, although U.S.S.R. forces tend in general to have larger weapons than U.S. forces. But the key word is "could." Both the employment of weapons during a strike and the earlier force planning and procurement decisions are matters of policy choice.

*Premise: The U.S. qualitative advantage in weaponry is such that it can offset substantial numerical disadvantages in a number of categories.*

First, this premise, when used to justify U.S. acceptance of numerical disadvantages, assumes that all, or nearly all, qualitative advantages rest with the U.S. This simply is not true. There are a number of areas in which the Soviets are more advanced than the U.S. They are considerably ahead in large ICBM technology. And some Russian applications of

lasers are far ahead of ours. Electro-optical devices in advance of ours are widely deployed throughout the Red Fleet. Furthermore, the Soviets are definitely ahead in cruise missiles, particularly in antiship cruise missile launchers on both submarines and surface ships. (While generally interpreted as being aimed at ships, some of these are also potentially useful against a large variety of land-based targets in the American homeland.) The Soviets are also considerably ahead in the range they have achieved for sea-launched ballistic missiles (SLBM's); the SS-N-8, which has a range of at least 4200 nm, will not be matched by the U.S. until about 1980. Additionally, they are ahead in the areas of chemical and biological warfare weapons and defenses and in some types of ocean surveillance systems. While some of these examples are nonstrategic, the restriction of comparison to strategic technologies is arbitrary and ignores overlapping roles and missions as well as transfer of types of technology.

Second, this premise assumes the permanence of U.S. qualitative advantages, even under conditions of imposed quantitative ceilings. The existing SALT I agreements concern only quantities and not qualities.\* The qualitative advantages that the U.S. currently enjoys are not conferred by the agreement or recognized by it. The premise assumes the permanence, nonetheless, during a period in which Soviet resources can be focused on quality rather than quantity.

Third, quantity and quality are assumed to be completely substitutable in satisfying military requirements. But this is certainly not true. For example, take the matter of covering targets: one of the significant advantages of quantity lies in

\* With the exception of the restraints on ABMs. And the ABM Treaty does not codify any disparity in qualitative characteristics.



having enough weapons to use against all desired targets; on the other hand, one of the significant advantages of quality—particularly when it involves improved accuracy—is the increased probability of killing the desired target while avoiding by-product damage. These aspects are not interchangeable.

*Premise: The net effect of qualitative improvements beyond where we are now is to leave us worse off than before.*

In an attempt to establish that the current strategic balance is stable, theories often try to establish that all future changes are destabilizing, as compared to past changes that have brought us to this stable situation. The theories often focus on the question of eliminating or restricting future qualitative improvements, since these are often seen as the impetus for changing the existing force balance.

The main argument behind this premise is that qualitative improvement is dangerous in the sense that it increases effectiveness primarily in first-strike rather than second-strike capabilities. However, virtually no important technological changes of the past have fitted into the neat distinction between first- and second-strike capabilities. The development of missiles based in hard silos or in submarines increased second-strike survivability on the one hand; but on the other hand, since the missiles replaced bombers, it reduced potential warning time for the Soviets and thus added to U.S. first-strike capability. In short, there is no evidence to suggest that potential future technological changes are destabilizing or that unilateral choices made by bureaucracies tend to be destabilizing while bilateral choices of technology made by negotiation tend to be stabilizing.

Furthermore, self-denial does not nec-

essarily affect the advance of technology in general. It is frequently argued that "if we develop something, the other side will too" (the H-bomb, for example). But what is implied by such a statement is that if we don't, then they won't. There is a tendency in much of this discussion of unilateral restraint to adopt the "leader-follower" model of duopoly theory, with the U.S. as the leader and the Soviet Union as the follower. Unfortunately this appears to be wishful thinking. Unilateral restraint just hasn't worked; it has remained unilateral. The Soviet Union has clearly gone ahead despite U.S. restraint in numerous instances, e.g., by its development of large H-bombs and in its deployment of large numbers of ICBM's.

Another argument holds that it is not clear whether, if we said that we had no programs for improvements in accuracy, for example, the Soviets would believe us or, from their point of view, could rely on the belief. If there is any validity to the relationship between accuracy and stability, it is a matter not of real U.S. or Soviet capabilities but of the perceived capabilities.

Moreover, it is not at all clear that qualitative improvements which might appear destabilizing by one definition—the first-strike/second-strike distinction—may not be stabilizing by another definition. For example, in the matter of accuracy: improvements in accuracy, particularly when combined with low-yield nuclear or nonnuclear warheads, may be stabilizing precisely because they allow the achievement of an objective and *only* that objective to a degree not heretofore achievable. The capability of destroying a particular military target without causing unwanted civilian damage is an important result. If, despite all, something happens by accident, the less civilian



collateral damage the greater the possibility of containing the conflict. Furthermore, the capability to limit collateral damage leaves an option to meet nuclear attack without unleashing holocaust but also without surrendering.

Another stabilizing result is the potential substitution of high explosives for nuclear weapons in some situations, which would raise the nuclear threshold.

*Premise: The U.S. must not build new weapons because to do so would fuel the arms race.*

In contrast to the focus of the previous question on military stability of arms decisions, this premise is concerned with preparatory and budgetary effects. It asserts that change will result in "arms spirals" or "ever-accelerating arms deployments." This is the issue often called "long-term or 'arms race' stability or instability" in contrast to "crisis stability or instability."

The only real test of this proposition is to look at history. It turns out that U.S. restraint has not in fact resulted in any observable Soviet restraint. The U.S. strategic budget and U.S. forces have decreased by substantial percentages in the past fifteen years: for example, the strategic offense and defense budget has declined steadily from a peak in 1959 that was more than 2½ times the 1974 budget in real terms: the total destructive power of all U.S. strategic offense forces has declined since 1964, when it was 72 percent higher than in 1972, the lowest year since 1956. Since 1964 Soviet strategic budgets and forces have increased: the Soviet budget has increased by roughly 2/3; their ICBM's alone have increased by a factor of 14, while their heavy bombers have remained roughly constant in number; their SLBM's have increased by about a factor of 5; and the destructive power of these strategic

forces has increased manyfold.

It is hard to envision a situation in which an additional U.S. deployment would have fueled more Soviet deployment!

Of course there is some relationship between their forces and ours. This is only natural, given the basic adversary nature of the relationship. All available evidence, however, indicates that the rate of Soviet development and deployment is determined largely by "independent considerations" or internal factors (for example, the Soviet gross national product is strongly correlated with their defense budget<sup>9</sup>) rather than factors imposed by the U.S. There is no evidence to suggest that they would respond specifically to marginal changes in U.S. programs. They have clearly not responded, despite the views of many arms controllers, to cuts or halts in U.S. programs. On the contrary, there is much evidence to suggest that Soviet restraint has appeared mostly when the U.S. has demonstrated determination, as in our development of counters to Soviet area antiballistic missiles. And, contrary to common arms control theories, there is evidence to suggest that the Soviet buildup of strategic offense forces may have stemmed in part from an awareness of Secretary of Defense Robert McNamara's policy of restraint in U.S. ICBM deployments.

*Premise: Impetus for destabilizing change comes from the military, which always overestimates Soviet forces and capabilities to justify increases in U.S. forces and capabilities.*

This is the "annual Pentagon scare story" myth. Albert Wohlstetter, David McGarvey, and I have examined this premise in detail. The *Foreign Policy* article by Professor Wohlstetter summarizes part of this work.<sup>10</sup> The research shows conclusively that the history of



predictions by the Secretaries of Defense during the past fourteen years regarding Soviet strategic offense force growth has been not one of overestimation but in fact has been overwhelmingly one of underestimation. While the short "missile gap" period may have formed the basis for this myth, even that was not an overestimate but was a bit of ethnocentrism on our part—U.S. estimates of ICBM's were off by about as much in one direction as the estimates of IR-MRBM's were in the other. The evidence on this clearly demonstrates that the "missile gap" was a U.S. misreading of Soviet priorities.

The Pentagon, to be sure, does talk of the Soviet threat it expects to face when it is presenting its own force program. When else would it be more relevant? On the other hand, the evidence clearly establishes the falsity of the notion that the estimates it then presents are invariably high. Out of the 51 estimates of future Soviet capabilities that we examined in the Secretary of Defense Posture Statements since 1962, the mid-range of only two exceeded the actual achieved deployments, and the high end of only nine exceeded the reality.

WHAT IS important about all this? The belief in the myths affects decisions in three major classes of issues: assured destruction, accuracy improvement, and arms control. The major conclusions often based on the assertions I have noted are that assured destruction is enough; accuracy is bad; and arms control agreements are so important that major quantitative disadvantages can be accepted to achieve them, because our qualitative advantages can offset quantitative disadvantages and will endure. A finding that these myths are incorrect lends credibility to the opposite conclusions:

- Assured destruction—if it is relevant at all—is insufficient.
- There are many reasons why increasing accuracy may be beneficial.
- Arms control agreements that codify quantitative advantages to the Soviets and are justified by qualitative advantages to us—which are unlikely to last and are not codified in the agreement—could be highly disadvantageous to the U.S.

Arlington, Virginia

#### Notes

1. See the forthcoming book, *Competition or Race? Innovation and the Changing Size of Strategic Forces*, by Albert Wohlstetter, Amoretta Hoerber, Fred Hoffman, and David McGarvey; also, drawn from this work, Albert Wohlstetter, "Is There a Strategic Arms Race?" *Foreign Policy*, no. 15, Summer 1974, and "Rivals but No 'Race,'" *Foreign Policy*, no. 16, Fall 1974.

2. This article is an outgrowth of the joint work cited in note 1. It was presented in modified form at the Military Operations Research Society meeting at West Point in June 1974. I am indebted to the critiques of Albert Wohlstetter and David McGarvey and the comments of Donald Brennan.

3. Barry Carter, "Nuclear Strategy and Nuclear Weapons," *Scientific American*, vol. 230, no. 5, May 1974.

4. Maxwell D. Taylor, "The Legitimate Claims of National Security,"

*Foreign Affairs*, vol. 52, no. 3, April 1974.

5. Herbert York, "Deterrence by Means of Mass Destruction," *Pacem in Terris III*, September 6, 1973.

6. *The Military Balance 1971-1972*, The International Institute for Strategic Studies, London.

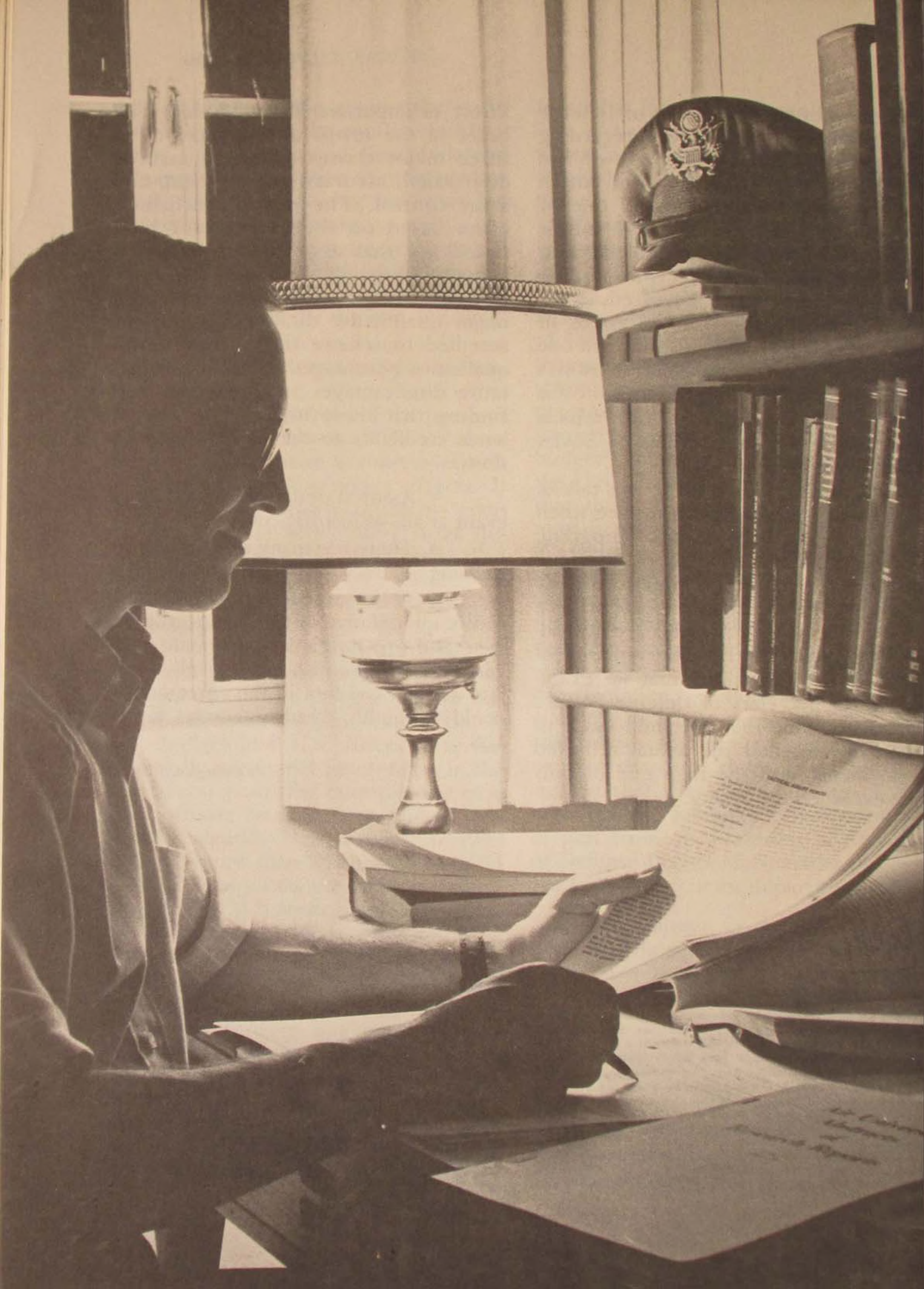
7. Wolfgang K. H. Panofsky, "The Mutual-Hostage Relationship between America and Russia," *Foreign Affairs*, vol. 52, no. 1, October 1973.

8. John Warner of Science Applications, Inc., has also done some detailed analysis of this question. I draw on his analysis here as well as that of David McGarvey and myself.

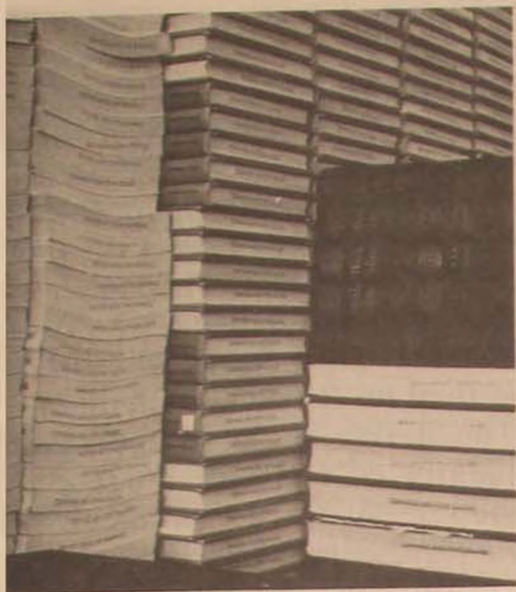
9. John Després of the RAND Corporation has done considerable work on correlations of Soviet defense budgets with many factors. This conclusion is drawn from his work.

10. Albert Wohlstetter, "Is There a Strategic Arms Race?" *Foreign Policy*, no. 15, Summer 1974.









*To every man there comes in his lifetime that special moment when he is figuratively tapped on the shoulder and offered that chance to do a very special thing, unique to him and his talents. What a tragedy if that moment finds him unprepared or unqualified for that work.*

—WINSTON CHURCHILL

## ROLES OF PME IN OFFICER DEVELOPMENT

MAJOR DAVID R. DENT

OFFICER professional military education has received much attention recently. In the Air Force it has taken the form of a visit by the Secretary of the Air Force to review the operation of PME; a conference of major air command vice commanders to review the roles of PME; a re-examination of the need for PME; a change in the curriculum emphasis of both Squadron Officer School and Air Command and Staff College; and studies on the structure of PME in the Air Force. Most of this activity stems from difficult decisions that must be made concerning the allocation of scarce Air Force resources. Faced with severe budgetary constraints, a need to modernize weapon systems, and a reduction in officer strength, Air Force decision-makers have to re-examine organizational priorities and roles. According to some critics, PME is a prime target for reduction. After thoughtful evaluation, this may turn out to be true;

however, there are several questions that should be answered before the cuts are made.

We need to recognize how PME helps the Air Force develop professional officers. How does it contribute to the Air Force? This article will outline some of the ways in which PME helps the Air Force maintain a more viable officer corps. First, we will examine how PME stimulates an officer's professional growth; second, how PME stimulates personal growth, which results in greater commitment to our profession; and last, how PME contributes to an officer's professional advancement. The core of this discussion lies with three words: professional, military, and education.

Traditionally, professional military education has focused on professional growth, preparing officers for future command and staff duties.<sup>1</sup> These duties may range from the "nuts and bolts" of



commanding a squadron or scheduling flying hours to the staff job of visualizing future worlds in which the Air Force must survive. However, certain subject areas relate to all students, regardless of future specialties. These subjects are common to our professional group as United States Air Force officers. Professional education, rather than providing skills for a specialist, provides preparation for the generalist. It is an education that increases the knowledge and understanding of attitudes and abilities common to all officers.

By simply looking at who we are—Air Force officers—we can identify areas for our professional growth and, therefore, our education. For instance, we need supervisory and managerial abilities, coupled with the personal skills of leadership. We need to increase our understanding of our own organization, how it operates, achieves its objectives, solves its problems, and integrates with the rest of the military establishment. We need to sensitize ourselves to our roles within our governmental structure and become aware of the economic, social, political, technological, and military aspects of national security. In other words, we need to grow professionally by learning more about the United States, the Air Force, and the skills of being an officer.

To grow efficiently, we need a place where growth itself becomes our daily objective. We need a school. In a school, our primary job is to learn; our energy is no longer consumed by duties such as scheduling flying hours, counseling subordinates, responding to short suspense dates, searching for spare parts, or training others to do a job. We can concentrate on gaining the knowledge, skills, and attitudes that will sharpen the abilities we already possess. We can achieve the maximum growth of which each of

us is capable<sup>2</sup> and prepare to assume new responsibilities.

Part of our preparation is an increased awareness of how the Air Force is organized and operates. We have all participated in Air Force operations, but few of us have had a chance to reflect on how the "system" fits together. Through PME we have this chance. We learn who does what, whom they do it with, when they do it, how they do it, and—sometimes—why they do it. We begin to appreciate the complexity of the Air Force and some of the reasons for the problems we confronted during our previous assignments. We also see problems that are new to us.

We are vicariously exposed to Air Force problems, either through the structure of the curriculum or the experiences of our fellow students. Our peers bring a wealth of knowledge, perceptions, attitudes, and firsthand experiences. They have seen problems from various levels within the Air Force. They have worked the problems. They temper conceptual idealism with the cold, analytical pragmatism of experience. Through discussions with them, the school faculty, and senior guest speakers, we balance theory with the events of our world. In this manner we learn to appreciate our environment, people, and problems.

In today's environment of fewer dollars, fewer people, and unchanged missions, our ability to manage our resources and solve problems is critical. Management problems are further exacerbated by our increasing dependence on technology. In the words of Morris Janowitz: "As the military establishment becomes progressively dependent on more complex technology, the importance of the military manager increases."<sup>3</sup> Advances in technology allow us to do more with less and do it faster, but our



management systems are becoming increasingly complex. We have computer systems, personnel systems, security systems, operational systems, and planning, programming, and budgeting systems. We must have at least a basic awareness of what these systems can do for us.

An awareness of management concepts, coupled with an understanding of people, helps us apply common sense as we make decisions. The concepts of decision theory, economic analysis, and cost effectiveness help us analyze problems more logically and rationally. By combining these management tools with an understanding of ourselves and other human beings, we will make better decisions. And, after all, we are measured by the quality of our decisions.

But we must communicate our decisions. What good is the best answer to a problem if we are unable to help others visualize our answer? To grow professionally, we must continually practice speaking and writing, as we prepare to communicate with groups of various sizes, inside and outside the Air Force. What better place to practice these skills than in PME? The evaluation threat to our careers is minimal, and the time exists for a helpful analysis of our strengths and weaknesses. Such time would be a luxury in an operational unit.

In summary, PME does help us grow professionally. It is "dedicated to the proposition that the career of an Air Force officer is a profession requiring certain knowledge, skills, and attitudes. . . ." <sup>4</sup> We broaden our professional knowledge and acquire skills and attitudes that help improve our managerial and communicative abilities. We prepare for more complex and comprehensive duties by acquiring cognitive information. We gain information about our organization, our systems, our profes-

sional group, our problems, and our skills. But this is only one aspect of contemporary professional military education. PME also plays a role in the area of personal growth. It helps us become more mature human beings.

There is more to education than simply academic excellence. <sup>5</sup> Intuitively, most of us realize that a truly educated person is more than just a disembodied brain. He incorporates his technical competence into his total personality and recognizes that facts exist primarily for use. His capability to use constructively the data that professional education provides will depend on his maturity. Maturity, by itself, does not solve problems, but it opens alternative ways of applying facts that we have accumulated. In this sense, the ability to use information, an officer's education is never complete.

Our personal growth is a continuing process. It is a process of constant change, re-evaluation, and reassessment of ourselves and the way in which we view the people and the world around us. Psychologist Carl R. Rogers discusses "significant learning" and some of the changes involved in personal growth:

The person comes to see himself differently. He accepts himself and his feelings more fully. He becomes more self-confident and self-directing. He becomes more the person he would like to be. He becomes more flexible, less rigid, in his perceptions. He adopts more realistic goals for himself. . . . He becomes more acceptant of others. He become more open to the evidence, both to what is going on outside of himself, and to what is going on inside of himself. He changes his basic personality characteristics, in constructive ways. <sup>6</sup>

These "significant learnings" can occur anywhere. When viewed as a lifelong, continuing process, personal growth does not require formal education.



Personal growth can be enhanced, however, by formal education. This is illustrated by Dr. Douglas Heath, professor of psychology at Haverford College, in his "maturing model." He outlines how people grow on interdependent dimensions and describes growth in terms of changes in cognitive skills, self-concept, values, and personal relationships. Because "growth is an organismic process," a person who extends development in one dimension of his personality will begin to resist growth on that dimension until he has grown in other sectors of his personality.<sup>7</sup> Formal education, then, can facilitate personal growth by stimulating neglected cognitive skills or by guiding a re-examination of values or personal relationships.

In fact, some educational philosophers view personal growth as the main goal of education. Whitehead describes the goal of education as developing the self; in Van Doren's terms, the development of the skills of being.<sup>8</sup> Whether viewed as the ultimate goal or not, personal growth certainly can be considered one of the functions of professional education.

PME provides opportunities, both structured and unstructured, for this growth. Most of the structured opportunities, such as research papers and elective courses, are designed to interface with the school curriculum. But they also provide a chance to investigate subjects of personal interest, thereby contributing to personal growth. Opportunities to obtain a graduate degree, in addition to helping prospects for promotions, provide many people with a chance to renew feelings of academic competence, satisfy esteem needs, and explore contemporary issues of personal and professional concern. By obtaining these degrees from civilian institutions, we are exposed to the perception of people in the civilian

educational community. These new perspectives may make us uncomfortable, but they can help us understand the attitudes of other segments of our society. In other words, as we gain professional knowledge, we re-examine our self-concepts and values.

One of the most significant influences on our personal growth, however, is the unstructured contact with our peers. The members of a PME class have a wide variety of social and cultural backgrounds. We have different military and civilian experiences, different values, habits, biases, and different knowledge. We are from different races, religions, and sexes. In short, we represent a particular cross section of American society.

As we begin to exchange our opinions and ideas, we are challenged. This process occurs in seminar discussions, informal "bull sessions," planning meetings, or at social engagements. It is a dynamic process. It is stimulated by questioning people who refuse to accept something that has no other rationale than "It has always been that way" or who refuse to adopt an idea simply because "I say so!" It is a process through which we can confirm or change previously held ideas or attitudes.

Through this process we gain insight into ourselves. We identify, evaluate, and refine our values. We learn that we are imperfect human beings who can reinforce and capitalize upon our strengths while working to accept, minimize, or eliminate our weaknesses. Gaining this insight can be pleasurable or excruciatingly painful, but it is invariably rewarding. We learn that despite our differing personal methods, strategies, and levels of maturity, most of us are striving to achieve the same goals for the Air Force and our country. With this realization of



common personal goals comes a sense of unity, a fraternal bond with our fellow officers. This bond does not just happen; it grows as we share common experiences and develop our cognitive skills, self-concept, values, and interpersonal relationships. By helping us mature in these four areas, PME provides true education, creates a more professional officer corps, and develops the "whole person."

The concept of the whole person is one of the links between PME and our professional advancement. PME, through its dual service of providing professional and personal growth, strives to develop the whole person. USAF promotion boards use the whole person concept to evaluate our potential for promotion. There should be a relationship between PME and professional advancement—as measured by promotion or more responsible jobs. Examination of the meaning of the whole person concept makes this relationship apparent. One key element of this concept—as viewed by promotion boards—is job experience and performance. Experience, then, is one of the major criteria for professional advancement.

One way to obtain experience is to actually perform the duty. But, since the number of manpower authorizations for a particular type of job—such as squadron commander—is limited, there is a limit to the number of people who can obtain on-the-job experience. If Air Staff experience were the only valid type of experience for selection to the Air Staff, then the Air Force's pool of experienced people would be relatively small. Without "new blood" from the field, the Air Staff would become a stagnant organization with little creativity or responsiveness. Also, the question arises, "If everyone must have on-the-job experience in a

particular duty, who will be the first job-holder or replacement?" Obviously, for the Air Force to operate most effectively and still place a premium on an individual's experience, there must be surrogates for that experience.

To use surrogates is to recognize the commonality of various experiences. The surrogate experiences can be substituted for actual on-the-job performance. They provide some measure of experience relevant to the job to be performed. They make the transition into the primary job and the assumption of associated duties less traumatic for both the Air Force and the individual. Some "surrogate jobs" are well known: the squadron operations officer who becomes the squadron commander, the wing-level staff officer who moves to the major air command staff and then to the Air Staff. But these types of experiences are not the only surrogates.

PME also provides surrogate experience, which is just another phrase for a particular type of professional and personal growth. Through exposure to the various areas of the school curriculum, exercises, and discussions, we accumulate a series of experiences. Therefore, through PME, we become qualified, in varying degrees, for a much larger number of jobs. We become more eligible for jobs of increased responsibility and the professional advancement that results from such assignments. But providing surrogate experience is not the only way in which PME helps us obtain jobs that foster our professional advancement.

Sometimes our PME classmates participate in the process of selecting people for particular jobs. This process can be agonizing, particularly when someone is trying to choose between two or three records that are apparently equal. In this case it is only natural for the selector to



rely on his personal knowledge of the people. If one of the nominees for the assignment happens to be a PME classmate whom the selector remembers favorably, he will likely choose his classmate for the job.

This choice is a natural result of the friendships and feeling of unity that occur during a PME class. A fraternal spirit exists between the members of a particular class. This is similar to the feeling that exists between the members of any college class. It may be one of the reasons for the large number of service academy graduates among the general officer corps.

Becoming a general officer is certainly a measure of professional advancement in the Air Force and may be used to correlate PME with the promotion board results. As of 30 September 1974, there were 394 generals in the Air Force. Three hundred fifty-eight (358) of these officers, or 90.9 percent, have completed PME in residence. Specifically, 317 general officers are graduates of senior service schools; 34 Air Force generals list intermediate service schools as their

highest PME in residence; while 7 list Squadron Officer School as their highest level of PME in residence. Additionally, 19 generals list PME by correspondence as being higher than the residence PME they completed.<sup>9</sup> Certainly, PME is not the only reason these people advanced so far in their careers. However, since such a high percentage of them have graduated from PME in residence, it can at least be inferred that PME helped qualify them for their professional advancement.

Does all this discussion mean that we will become generals by attending PME? Obviously not. But we can be assured that we will have an excellent opportunity for professional growth, for personal growth, and for professional advancement. PME does not make us wing commanders or general officers. It does not make us more mature individuals. It does not advance us professionally. PME does provide the opportunity for us to do these things *for ourselves*. It provides us with another chance to make ourselves more capable United States Air Force officers.

*Air Command and Staff College*

#### Notes

1. Deputy Chief of Staff Education, Director of Curriculum, "Data on Senior and Intermediate PME for all Services," Air University, Maxwell AFB, AL, 11 September 1974.

2. Air Command and Staff College, *Curriculum Catalog, Class ACSC-75, 19 August 1974-6 June 1975*, Air University, Maxwell AFB, AL (hereafter cited as *Catalog ACSC-75*).

3. As quoted in J. J. Palen's "Education of the Senior Military Decision Maker," *The Sociological Quarterly*, Spring 1972.

4. *Catalog ACSC-75*.

5. Carl R. Rogers, *On Becoming a Person* (Boston: Houghton Mifflin Co., 1961); Douglas Heath, "Educating for Maturity," *College and University Journal*, March 1974, pp. 15-16, 21-22.

6. Rogers, pp. 280-81.

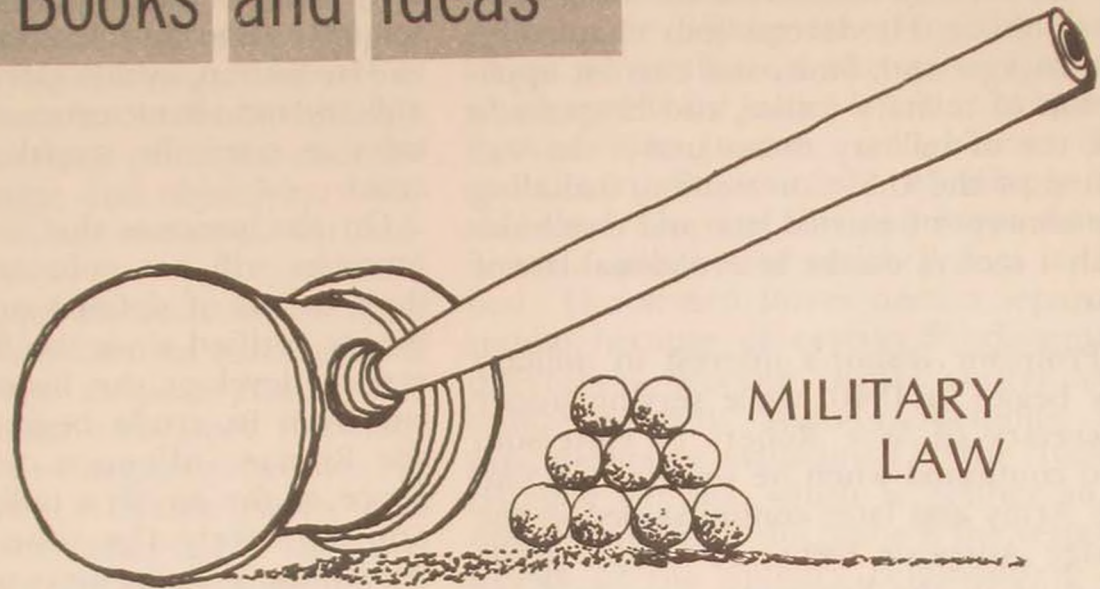
7. Heath, p. 15.

8. *Ibid.*

9. Dr. Farnham G. Pope, Office of the Deputy Chief of Staff for Personnel/Education (AF/DPPE), Headquarters USAF, Washington, D.C., telephone interview on 7 March 1975.



## Books and Ideas



LIEUTENANT COLONEL GEORGE D. SCHRADER

**D**URING the past ten years, the military justice system has undergone extensive revisions. The Military Justice Act of 1968 and various decisions of the Supreme Court of the United States and the Court of Military Appeals have introduced a number of significant changes. Although these and other changes resulted from methods and procedures acknowledged as the democratic process, many people still consider military justice primarily as an instrument of discipline, not justice, administered by martinets with blind obedience to a commander. Not so, states Yale Law Professor Joseph W. Bishop, Jr., in his timely and candid evaluation of military justice in 1974.

For a decade, the military justice system has been subjected to the criticism of people who either did not want to distort their established views with accurate knowledge of the subject or



were devoid of all criteria except bad taste. However, now a new and different light is beginning to shine on this system, which for so many years has been the whipping boy of antiestablishment critics. In his book *Justice under Fire: A Study of Military Law*,<sup>†</sup> Professor Bishop presents a knowledgeable, objective, humorous, and scholarly evaluation of the military justice system. The title of the work is misleading because he has actually consolidated a trilogy into one volume. He devotes four chapters to the background, basis, and current application of military justice, two chapters to the use of military forces under the war clause of the U.S. Constitution, including the concept of martial law, and concludes with a section on the international law of war.

Professor Bishop's interest in military law began in 1940, while serving under Secretary of War Robert P. Patterson, and continued when he was drafted into the Army and later commissioned in the Judge Advocate General's Corps. While on duty in the European Theater from March 1944 to June 1946, he gained experience in dealing with war crimes as a legal adviser to a board of inquiry appointed by General Dwight Eisenhower to investigate the murder of British and Canadian prisoners of war by members of a German ss division. In 1952 and 1953 he was Deputy General Counsel and Acting General Counsel of the Army and was involved in the Army-McCarthy controversy. Mr. Bishop has been a professor of law at Yale since 1957.

Professor Bishop states that his purpose in writing the book is "to give to general readers, and to many lawyers who lack familiarity with military law, a

concise account of that law—its origins, its procedures, its peculiarities, and its defects and virtues . . . ." He begins the book by explaining why critics of military justice have found such receptive audiences. He notes that military service has never been popular among Americans except in times of national or international crises when the nation's survival is jeopardized. Unlike the writings of Kipling, who at times glorified the armed services, American literature, according to Mr. Bishop, avoids glorification of the military and characterizes military institutions as comically stupid or brutal and cruel.

On the premise that organized communities will not voluntarily renounce their means of defense or aggression, a theory verified since the Stone Age, the author develops the history of military law from its crude beginnings through the Roman influence until the emergence of the modern judicial process at approximately the time of Gustavus Adolphus. Turning next to the development of military law in England, the author provides an excellent discussion of the forerunner of the military law adopted by the Second Continental Congress in 1775. Much to the anguish of many pious liberals, he points out that the United States is not afflicted with pathological militarism. Instead, the history and traditions that have shaped the development of military law in the United States reflect strict civilian control of the military establishment.

The critics of military justice fail to recognize three very simple principles acknowledged by Congress, the President, and the Supreme Court. First, the court-martial system has the same basis in the Constitution and statutes as other

<sup>†</sup> Joseph W. Bishop, Jr., *Justice under Fire: A Study of Military Law* (New York: Charterhouse, 1974, \$8.95), xvi and 304 pages.



court systems. Second, the military justice system was designed to operate in a society apart from civilian society, and military law is a jurisprudence that exists separate and apart from the law that governs the remainder of the federal judicial establishment. Third, military service involves the maintenance of discipline because a military organization without discipline is nothing more than a disorganized rabble. It is somewhat of a mystery why these very simple principles seem to escape the thinking of numerous critics of the system. Professor Bishop's work recognizes these principles and also reflects knowledge and objectivity, traits seldom found in current works on military justice.

The author quickly rises to the challenge of such "scholars" of constitutional and military law as Jane Fonda, the Berrigan brothers, and other bleeding-heart conveyors of negative rhetoric. He points out "with tolerable clarity and brevity" that every issue has at least two sides, and some are even multidimensional. In his evaluation of the military justice system, Professor Bishop discusses constitutional and procedural methods concerning the system, the relationship between the soldier and his constitutional rights, and the military justice system as compared with civilian criminal justice systems. Throughout his evaluation, the author discusses specific cases as examples to familiarize the reader with his subject. The supporting documentation and reference material are extremely helpful. If a fault can be found with the book, it is probably the absence of a complete text or selected portions of the Uniform Code of Military Justice. This inclusion, of course, would have required additional pages, but it also would have provided appropriate references for the reader in relating statutory language to the text.

With a spirit of good humor not generally found in books concerning the law, Professor Bishop's words flow smoothly over his established course. Many who take issue with his thesis and others who played a role in the development of the subject matter are accorded a touché by a master of the foil. The author makes his comments, descriptions, and characterizations with the finesse of a skilled swordsman.

Professor Bishop takes up the challenge of critics on the questions of whether military justice is better or worse than civilian justice and whether the court-martial system should simply be abolished. He very ably points out that it is not a question of which system is the best. The armed forces need a separate system because of certain fundamental differences between civilian society and military society. Military discipline, he says, cannot be maintained by the civilian criminal process, which is neither swift nor certain; since discipline is the responsibility of the military commander, he should have some control over the machinery by which it is enforced; many offenses in military society have no civilian analogues; and, with regard to offenses committed by American servicemen outside the United States, the ends of justice are better served if the trial can be held in the place where the crime is committed.

By acknowledging these basic differences, Professor Bishop establishes the essential element of credibility, the lack of which is so evident in other current publications on military justice. If they choose to recognize these differences, perhaps the critics should consider the fact that *speedy justice* is not the most outstanding attribute of civilian judicial systems. In this regard it must be noted that a major deterrent to crime is swift



and certain justice, something which society either fails to understand or refuses to acknowledge.

In support of the commander's having some control over the system is the undeniable fact that, because of the very basic differences between military and civilian societies, not only commanders but officers and airmen who serve on military courts are better equipped to understand and respond to the problems involved in military offenses. Those who are responsible for the administration of the military justice system must be sensitive to potential ramifications of such actions in relationship to the organizational mission, and it cannot be forgotten that military service involves the maintenance of discipline.

The fact that many military offenses have no civilian counterpart supports the conclusion that, in dealing with these offenses, civilian judges and juries may lack required experience and knowledge. Since Congress is extremely reluctant to give federal courts jurisdiction over crimes committed by American servicemen outside the United States, it seems best to retain the status quo. The only alternative is to permit servicemen to be tried in foreign civilian courts. Even the most severe critic of military justice, if he were familiar with foreign judicial systems, would not approve of such jurisdiction in lieu of American military courts.<sup>1</sup>

Professor Bishop compares the military and civilian systems in selected areas where obvious differences or similarities occur in procedure and practice. Although he selected the Army system for his military model, the reader should be aware that there are major differences between the Army, Navy, Air Force, and Coast Guard in certain methods, policies, and practices. He discusses the operation of the military justice system in court/jury

selection, judges, convening authority, counsel, command influence, pretrial investigation, rules of evidence, and appellate review. In a tell-it-like-it-is fashion, he relates facts to refute or support identifiable challenges against the system.

His conclusions indicate that any differences between the rights of military defendants and civilian defendants in their relationships with their respective systems are likely to be resolved in favor of military defendants. A more caustic rebuff to demands for "civilianization" of military courts is to note that military justice is a model with imperfections but that civilian systems cannot even find a model.

Professor Bishop traces the issue of military jurisdiction as it applies to both civilian and military personnel. He notes that Congress, over the years, had consistently expanded the scope of military jurisdiction until it reached its zenith in 1950. In a series of judicial decisions after 1950, the Supreme Court began to remove the bricks from the constitutional foundation that Congress had built. The author comments specifically on the *Toth v. Quarles* case (discharge terminates jurisdiction), the *Reid v. Covert* case (civilians cannot be court-martialed in time of peace), and the *O'Callahan v. Parker* case (offense must be "service connected"). He describes the opinion in the *O'Callahan* case as ". . . filled with maddening muddle and obscurity, whose basis and reasoning, if any, are nearly impossible to decipher." The author's evaluation and conclusions on the *O'Callahan* situation are extremely interesting as he points out that this particular jurisdictional issue will be troublesome for years to come. The jurisdictional question as it relates to civilians, reservists, retired regulars, and others is also discussed.



In considering the applicability of the Bill of Rights to the serviceman, Professor Bishop examines selected cases reflecting abuse of those rights prior to 1951. He submits that public opinion since the Korean War has caused the three branches of government to address this issue, even if perhaps in a confusing and uncertain way. The Military Justice Act of 1968, a comprehensive revision of the Uniform Code of Military Justice, and the Manual for Courts-Martial 1969 (revised edition) reflect the contributions of the legislative and executive branches. The judicial branch has projected its influence through the popular concept of "collateral review." This uncertain but expanding concept has given the federal courts the opportunity to second-guess the armed forces and the courts created by the Uniform Code of Military Justice with regard to questions of constitutional due process. The federal courts apply the same concept in reviewing state court decisions to insure constitutional due process to the accused. The author concludes that a soldier tried by court-martial has some constitutional rights, however ill-defined, and that those rights can be enforced by federal courts if the military courts fail to recognize them.

With the exception of those rights explicitly denied servicemen by the Fifth Amendment, which exempts cases arising in the land or naval forces from the requirement of a presentment or indictment of a grand jury, are not all the rights conferred by the Bill of Rights applicable to military personnel? If not, why did the framers of the Bill of Rights think it necessary to make that one exception? Since 1951, decisions of the Court of Military Appeals and the Supreme Court of the United States, Congressional legislation, and policy decisions by the various services reflect that

the rights guaranteed by the Bill of Rights are, with limited exceptions, equally as applicable to military personnel as to civilians. In some respects, decisions by the Court of Military Appeals reflect a somewhat broader application of constitutional rights to military personnel than interpretations of the Constitution by the Supreme Court. The Court of Military Appeals has also reiterated on several occasions that the rights contained in the first eight amendments, as interpreted by the Supreme Court, apply to servicemen as well as civilians, except those that are expressly or by necessary implication inapplicable.

In an excellent discussion of various constitutional safeguards and their application to military personnel, particularly the First Amendment freedom-of-speech provision, Professor Bishop questions whether the process due a soldier is necessarily the same as that due a civilian. In his opinion, the Supreme Court must someday determine whether military tribunals should not be subject to the same quality of constitutional policing as state criminal courts. But it should also recognize that the rights of men in the armed forces must be conditioned by certain overriding demands of discipline and duty. The least that the Supreme Court could do in this area is to recognize that a "perfect" system of justice in an imperfect society is impossible. The best that anyone can hope for is a "fair" system of justice based on standards established by the Supreme Court unless military conditions require different rules.

Unfortunately, this book was published prior to June 1974, when the Supreme Court rendered its decision in the case of *Parker v. Levy*. Professor Bishop describes this case as the most litigated case in U.S. history. His comments and conclusions



regarding this decision would have benefited from the court's final disposition of the case, particularly since the Supreme Court upheld the constitutionality of the general Articles 133 and 134, a status which Professor Bishop questioned. The majority opinion quite emphatically supported the need for a separate system of military justice apart from civilian systems. Professor Bishop and others concur on the need for a separate system of military justice, but he suggests that Congress should be more explicit concerning identifiable criminal conduct under Articles 133 and 134 of the Uniform Code of Military Justice.

The author also gives the My Lai massacre a full treatment from the standpoint of the laws of war. He is very careful in drawing analogies concerning that situation, particularly in terms of the Calley trial and war crimes. This, in itself, is a major accomplishment.

If anything positive results from war, it is the general tendency of the U.S. Congress to reform the military justice system. This occurred in the periods following World War I and World War II and during the war in Vietnam. With the conclusion of U.S. military action in the Vietnamese war and the draft, treat-

ment of military justice as a popular whipping boy will probably abate, and changes, if any, will be few. This should insure the timeliness of Professor Bishop's work for several years to come.

Professor Bishop's conclusions are classic in the sense that he blends reality with theory in supporting his proposals. He is no fuzzy-thinking self-appointed opinion-maker but supports his proposals in a knowledgeable and factual manner. In essence, the book is well written, well documented, and extremely timely. Although certain conclusions and proposals are controversial, the author's comments may be the laws of tomorrow. *Justice under Fire: A Study of Military Law* is a valuable text for military lawyers, a study in reality for active and reserve personnel, a reference to satisfy the curiosity of nonmilitary readers, and an effective challenge to the critic. The author remarks: "I see no convincing sign that the Millennium is at hand. Now is a good time to think about the problems of the future." A reading of this book should generate concern for those future problems and serve as a reminder that the future is now.

*AU Institute for Professional Development*

#### Note

1. For a pertinent discussion of this subject, see "The Military Decision-Maker and Foreign Trials" by Captain Richard J. Erickson in *Air University Review*, May-June 1975.



## ODYSSEY TO OBLIVION

COLONEL GLENN E. WASSON

*It is to be remembered, moreover, that almost all the present leaders held posts under Stalin.<sup>†</sup>*

ROBERT CONQUEST

AN overwhelmed bibliophile once lamented that the greatest bibliography in the world was that list of books he had meant to read but had never found time for. Unfortunately, many suggested lists of professional military reading fall into this category. To add another book of formidable proportions—over 600 pages of small print in the paperback edition—to the “must read” list is not the intent of this review.

But not all books need be read in their entirety for one to grasp the essential message. Solzhenitsyn's *Gulag Archipelago* cries aloud for the world to know of the



incredible consumption of human life by the Soviet regime, and he buries his readers in an avalanche of gruesome detail, as though to make effective refutation by the Soviet government impossible.† The impact of the book is implicit in the first three chapters; the remaining 500 pages comprehensively document the original themes and may be either sampled or read in entirety.

The title describes a chain of prisons, labor camps, and prison mines scattered across the breadth of the Soviet Union.

† Aleksandr I. Solzhenitsyn, *The Gulag Archipelago, 1918–1956: An Experiment in Literary Investigation*, Parts I and II, translated from the Russian by Thomas P. Whitney (New York: Harper & Row, 1973–1974, \$12.50, paperback \$1.95), xii and 660 pages.



The existence of that system of slave labor camps has never been a secret; the significance of Solzhenitsyn's book lies in its revelation of the magnitude of the system and the wealth of detail supplied in documenting how these prison camps were supplied with human raw material. By a gradual distortion and perversion of Soviet law, government interrogators and magistrates arrogated whatever extrajudicial measures they needed for convictions. Accurate records were not kept, but there can be no doubt that millions of Soviet citizens were terrorized and driven into slave labor camps under living and working conditions that normally resulted in death before their sentences could be served.<sup>2</sup> As a rabbit caught in this trap, Solzhenitsyn details every step of the process from personal experience, and he recalls the circumstances of hundreds of other zeks (prisoners) he met along the way.

Examples of injustice and atrocities can be found in the annals of most countries. But the appalling impression of *The Gulag Archipelago* derives from the universal nature of the regime's inhumane treatment of its own people. Instances of terror and repression were not the isolated acts of a few misguided or sadistic minor officials. Solzhenitsyn makes it clear that the policy of terror was rooted in the deliberate policies of the founding father of the Soviet Union, Lenin, and was developed into a universal practice under Stalin. The lives snuffed out during the Stalin regime greatly exceed the combined deaths by government repression in all previous Russian history. Not since the armies of Genghis Khan built pyramids of human skulls has the world witnessed deliberate killing on such an awesome scale.

Even readers familiar with Arthur Koestler's *Darkness at Noon*, Robert Con-

quest's *The Great Terror*, and other accounts of the Stalin purges may be unprepared to accept the extent of the human carnage. Certainly it is beyond the competence of Western reviewers who have sampled the literature or visited the country briefly to authenticate the terrible message of Solzhenitsyn's book. In an effort to arrive at a judgment, I have questioned people of all ages who have lived a significant portion of their lives behind the Iron Curtain. These refugees from the system were unanimous in agreeing that this book does not distort the legal or prison system in the Soviet Union. Many of them had firsthand knowledge of incidents that would have fit nicely into the book.

In the chapter entitled "The History of Our Sewage Disposal System" Solzhenitsyn compares the apparatus of Soviet security organs to a sewage system that received waves of human waste. The categories of people considered dangerous to the state included intellectuals, workers malingering at their work, parasites, monks and nuns, Mensheviks, Social Revolutionaries, independent peasants (Kulaks), students, capitalists, persons guilty of concealing their social origin, "wreckers" of industry, owners of gold, Esperantists, various ethnic groups, and finally anyone guilty of anti-Soviet agitation. The author recounts an incident in which a streetcar motorwoman of Krasnodar was returning on foot late at night from the car depot. On the outskirts of the city she stopped to help some people who were working to free a truck stuck in the mud. She could not avoid noticing that it was full of corpses—hands and legs protruded from beneath the canvas. The security agents in charge recorded her name, and the next day she was arrested. The interro-



gator asked her what she had seen, and she told him truthfully. Result: anti-Soviet agitation—ten years.

Returned war prisoners and citizens who had traveled abroad were considered especially "socially dangerous elements." In contrast to the honor we accord our returned prisoners of war (POW's) and their unrestrained joy in reunion with family and friends, the Soviets rewarded their returned veterans with prison sentences or executions. This policy applied not only to POW's of the Finnish War and World War II but also to Soviet sailors who were interned in neutral countries. Solzhenitsyn reserved bitter condemnation for the British and American betrayal of 90,000 Cossacks who were tricked into surrendering to the Red Army. Although these Vlasovites had previously accepted German arms, it was becoming obvious that they constituted an independent force, and they were hopeful of winning status from the Western Allies by saving Prague from certain destruction by the Germans. (pp. 258-62) The gallant contribution of this independent group of Russians in preserving one of the great monuments of Slavic culture was rewarded by Western disavowal and certain death.

Soviet girls who went out with foreigners were sentenced under a specific article of Soviet law that designated them as "Socially Dangerous Elements." (p. 86) In 1945 one of the leading Soviet actresses fell in love with an American Naval officer stationed in Moscow. After he was transferred, the actress gave birth to his child, who was taken from her when she was arrested and sentenced to twenty-five years in a hard-labor camp in Central Asia. In a current sequel to this episode, the daughter born of this liaison became a beautiful movie star in her own right. After being reunited with her

mother, she learned of her American patrimony and eventually confirmed through Western journalists that her father was still alive in Florida. Her efforts to obtain a travel visa to visit him were initially denied, and her photograph was deleted from its customary place at the official Soviet film export offices. (In similar fashion, her mother's pictures had been removed in 1945 shortly before she was sent to prison camp.) Only the glare of international publicity ultimately forced Soviet authorities to grant a visa and perhaps prevented a modern re-enactment of her mother's fate.<sup>3</sup> As this is written, it is reported that father and daughter are together in Florida.

Solzhenitsyn devotes a chapter to the description of interrogation techniques that reverted to the tortures practiced in the dungeons of the Dark Ages. However, modern refinements were developed that left fewer external telltale marks. Sometimes a totally fearless man could be broken by the threat of locking his daughter in a cell with syphilitics.

While I was reading this book, the thought inevitably arose that no people, however downtrodden and terrorized, could possibly submit indefinitely to the horrors Solzhenitsyn describes. In attempting to explain this phenomenon, I consider much of the book is an apologia for the sheeplike submission of the Russian people. Most of the arrests occurred at night, when they would attract little attention. Generally the zeks were isolated in transit from the general population and dispatched to the most desolate areas of the country. But the controlling element was fear, which is underscored by the author in a grotesque incident:

A district Party conference was under way in Moscow Province. It was presided over



by a new secretary of the District Party Committee, replacing one recently *arrested*. At the conclusion of the conference, a tribute to Comrade Stalin was called for. Of course, everyone stood up (just as everyone had leaped to his feet during the conference at every mention of his name). The small hall echoed with "stormy applause, rising to an ovation." For three minutes, four minutes, five minutes, the "stormy applause, rising to an ovation" continued. But palms were getting sore and raised arms were already aching. And the older people were panting from exhaustion. It was becoming insufferably silly even to those who really adored Stalin. However, who would dare be the *first* to stop? The secretary of the District Party Committee could have done it. He was standing on the platform, and it was he who had just called for the ovation. But he was a newcomer. He had taken the place of a man who'd been arrested. He was afraid! After all, NKVD men were standing in the hall applauding and watching to see *who* quit first! And in that obscure, small hall, unknown to the Leader, the applause went on—six, seven, eight minutes! They were done for! Their goose was cooked! They couldn't stop now till they collapsed with heart attacks! At the rear of the hall, which was crowded, they could of course cheat a bit, clap less frequently, less vigorously, not so eagerly—but up there with the presidium where everyone could see them? The director of the local paper factory, an independent and strong-minded man, stood with the presidium. Aware of all the falsity and all the impossibility of the situation, he still kept on applauding! Nine minutes! Ten! In anguish he watched the secretary of the District Party Committee, but the latter dared not stop. Insanity! To the last man! With make-believe enthusiasm on their faces, looking at each other with faint hope, the district leaders were just going to go on and on applauding till they fell where they stood, till they were carried out of the hall on stretchers! And

even then those who were left would not falter. . . . Then after eleven minutes, the director of the paper factory assumed a businesslike expression and sat down in his seat. And, oh, a miracle took place! Where had the universal, uninhibited, indescribable enthusiasm gone? To a man, everyone else stopped dead and sat down. They had been saved! The squirrel had been smart enough to jump off his revolving wheel.

That, however, was how they discovered who the independent people were. And that was how they went about eliminating them. That same night the factory director was arrested. They easily pasted ten years on him on the pretext of something quite different. But after he had signed Form 206, the final document of the interrogation, his interrogator reminded him: "Don't ever be the first to stop applauding!" (pp. 69-70)

Although every page of this book rings with condemnation of the system, Solzhenitsyn confides how closely he came to becoming a part of it. As a member of the party youth organization, Komsomol, he was approached to join the NKVD. Only an intuitive, deep-seated dislike for all police service narrowly prevented him from joining. In retrospect, he confesses that he probably would have become a member of the state security system had the pressures on him been slightly greater.

Shortly after, Solzhenitsyn describes how he became an army officer and in the process assumed many of the same arrogant, unfeeling traits of the secret police. The training regimen of the Red Army at that time produced the classic "military mind."

I experienced the *happiness of simplification*, of being a military man and *not having to think things through*; the *happiness of being immersed in the life everyone else lived*, that was *accepted* in our military milieu; the



happiness of forgetting some of the spiritual subtleties inculcated since childhood. (p. 162)

Solzhenitsyn confesses how easily, with his new-found authority, he was corrupted and how natural it seemed to brutalize men of inferior position. The line between good and evil runs through the heart of every man, and none of us is immune from crossing that line.

In later years, after both wielding power and having been victimized by it, he could philosophize that "power is a poison well known for thousands of years. If only no one were ever to acquire material power over others! But to the human being who has faith in some force that holds dominion over all of us, and who is therefore conscious of his own limitations, power is not necessarily fatal." (p. 147)

Solzhenitsyn's criticism of the Soviet legal and penal system flows from his basic humanism and slavophilic longing for past values and is patently evident throughout the book. The critic who

fulminated in *Pravda* that "the author of this work is literally choking with pathological hatred for the country where he was born and grew up . . ." either had not read the book or was confident that his readers would not have access to it.<sup>4</sup> Fortunately, we do have access to it, and judging by the torrent of abuse heaped on the book in the official press of the Soviet Union, it strikes a raw nerve there.

As pointed out by Robert Conquest, most of the present leadership of the Soviet Union survived and ultimately prospered in a system that destroyed any suspicion of domestic opposition. It would be naïve to suppose that these same people would be more benevolent to foreigners. Since the U.S. is pursuing a policy of détente, disarmament, and increased trade agreements with the Soviet Union, it would be reassuring to know that our policy-makers have some familiarity with this book.

Maxwell Air Force Base, Alabama

#### Notes

1. "Evolution of an Exile," *Saturday Review/World*, April 20, 1974, p. 30.
2. Winston Churchill, *The Hinge of Fate* (Boston: Houghton Mifflin Co., 1950), pp. 498-99. Churchill, among others, recounts how Stalin described the collectivization of Russian farms and the elimination of nearly ten million Kulaks. Loss of life was obviously of little concern to Stalin in his pursuit of Soviet goals.
3. For more details of this poignant story, see *Time*, February 10, 1975, p. 36, or *People*, February 17, 1975, pp. 12-13.
4. *The Current Digest of the Soviet Press*, vol. XXVI, no. 2, p. 2, quotes an

article by I. Solovyev entitled "Path of Treason" in *Pravda*, January 14, 1974. Solovyev made no attempt to examine the book but used his forum to issue a lengthy and repetitious diatribe. Typical examples of his review included: "The loathsomeness and worthlessness of this figure is already quite apparent—in both a moral and political sense. . . ." "The reactionary nature of Solzhenitsyn's scribbles and his hostility toward the cause of peace, socialism, mutual understanding and friendship among peoples is arousing indignation of the public in the fraternal socialist countries, whose press is exposing the widespread speculation in the West around the name of this lamponist." Ad infinitum.



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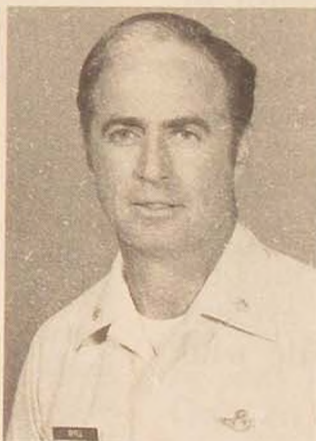
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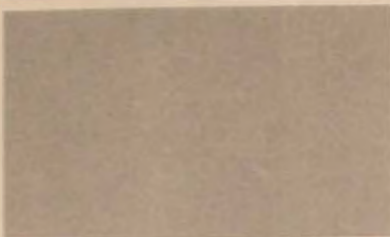


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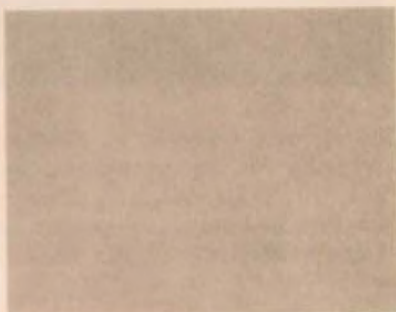
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The Air University Review Awards Committee has selected "The Military Decision-Maker and Foreign Trials" by Captain Richard J. Erickson, USAF, as the outstanding article in the May-June 1975 issue of *Air University Review*.





Lieutenant General F. Michael Rogers, Commander, Air University, congratulates Dr. Kenneth R. Whiting for having written the outstanding article to appear in *Air University Review* during fiscal year 1975. Dr. Whiting, Director of the Documentary Research Directorate, Air University Institute for Professional Development, won the award for his article entitled "The Role of the Chinese People's Liberation Army in the Last Decade," which appeared in the *Review* for September-October 1974.

## AIR UNIVERSITY REVIEW AWARDS PROGRAM

Dr. Kenneth R. Whiting, of Air University, has been selected by the Air University Review Awards Committee to receive the annual award for writing the outstanding article to appear in the *Review* during fiscal year 1975. His article, "The Role of the Chinese People's Liberation Army in the Last Decade," was previously designated "outstanding" in the September-October 1974 issue.

The bimonthly winners for the past year were Major Bard E. O'Neill, USAF, "The October War: A Political-Military Assessment," July-August 1974; Dr. Kenneth R. Whiting, September-October 1974; Colonel James H. Kasler, USAF, "The Hanoi POL Strike," November-December 1974; Major John D. Howard, USA, "They Were Good Ol' Boys! An Infantryman Remembers An Loc," January-February 1975; Captain Donald J. Alberts, USAF, "Counterforce in an Era of Essential Equivalence," March-April 1975; Captain Richard J. Erickson, USAF, "The Military Decision-Maker and Foreign Trials," May-June 1975.



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# AIR UNIVERSITY **review**

SEPTEMBER/OCTOBER 1975



Liddell Hart  
and Tactical Air Power