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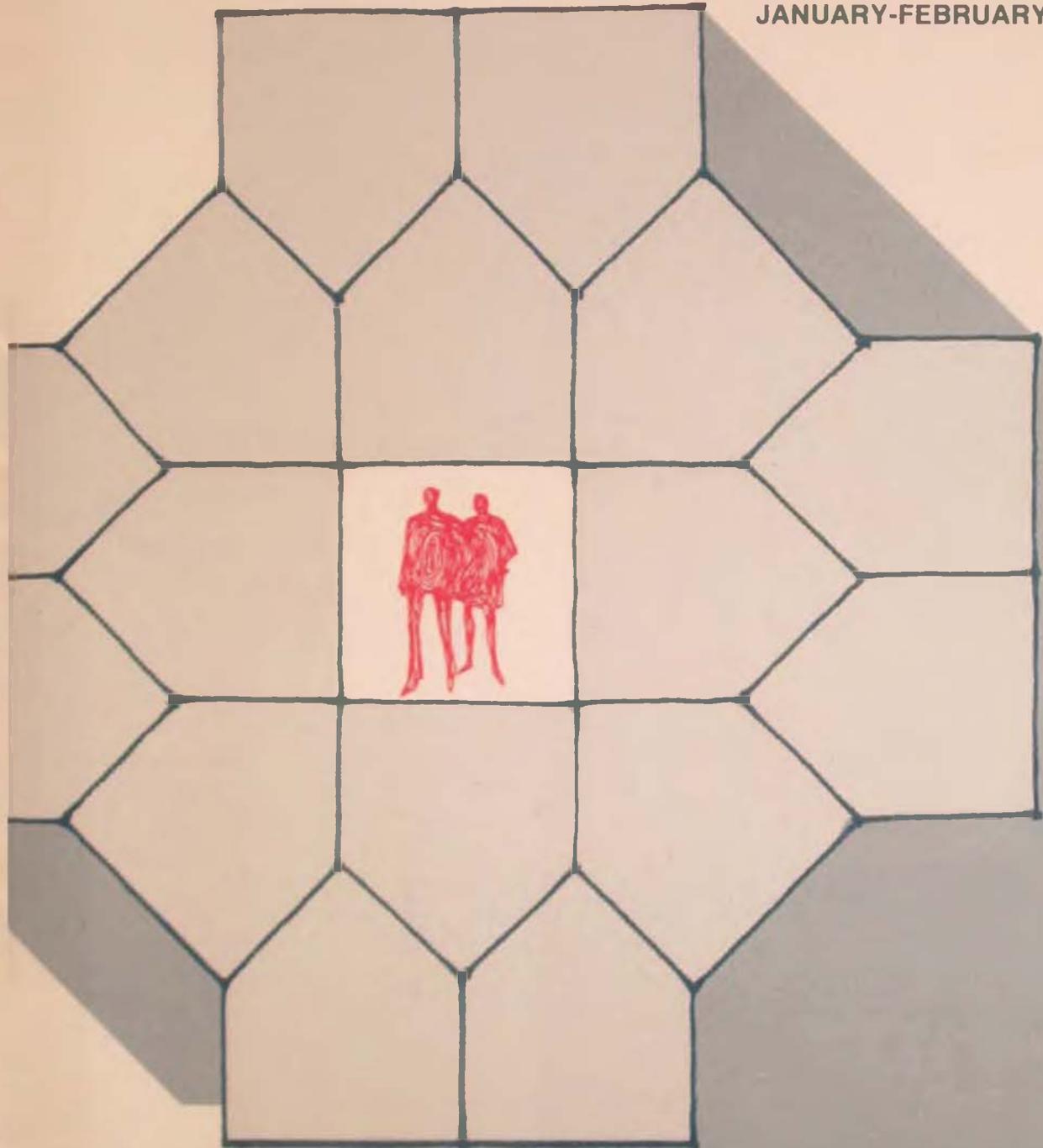# UNIVERSITY
review

The Professional Journal of the United States Air Force

from the editor's aerie

It is with no little astonishment that we receive frequent queries from Air Force personnel asking how they might regularly receive *Air University Review*. Of course, the cognoscenti know that the Basis of Issue, which we reprint annually, establishes distribution to assure reasonable access for all Air Force personnel. Colonels and above as well as civil service grades GS-16–18 are authorized personal copies. All organizations down to detachment level are authorized distribution on the basis of one copy for each 20 officers. In case of organizations having fewer than 20 officers, any lesser number would qualify, including detachments with as few as one officer.

The essential point to remember is that distribution is not automatically accomplished solely on the basis of your eligibility. If you are not already receiving the *Review*, you must establish your requirement with your servicing Publications Distribution Officer.

Our published contributors are, of course, aware that they receive a complimentary subscription for one year, in addition to a cash award that is somewhat more munificent than in past years. And certainly no one is discouraged from subscribing directly to the Government Printing Office, as outlined on the inside back cover.

We are presently revising the Basis of Issue with the object of increasing its availability, particularly for individuals engaged in scholarly pursuits and for noncommissioned officers. If we are successful in this revision, we promise to make it known promptly.
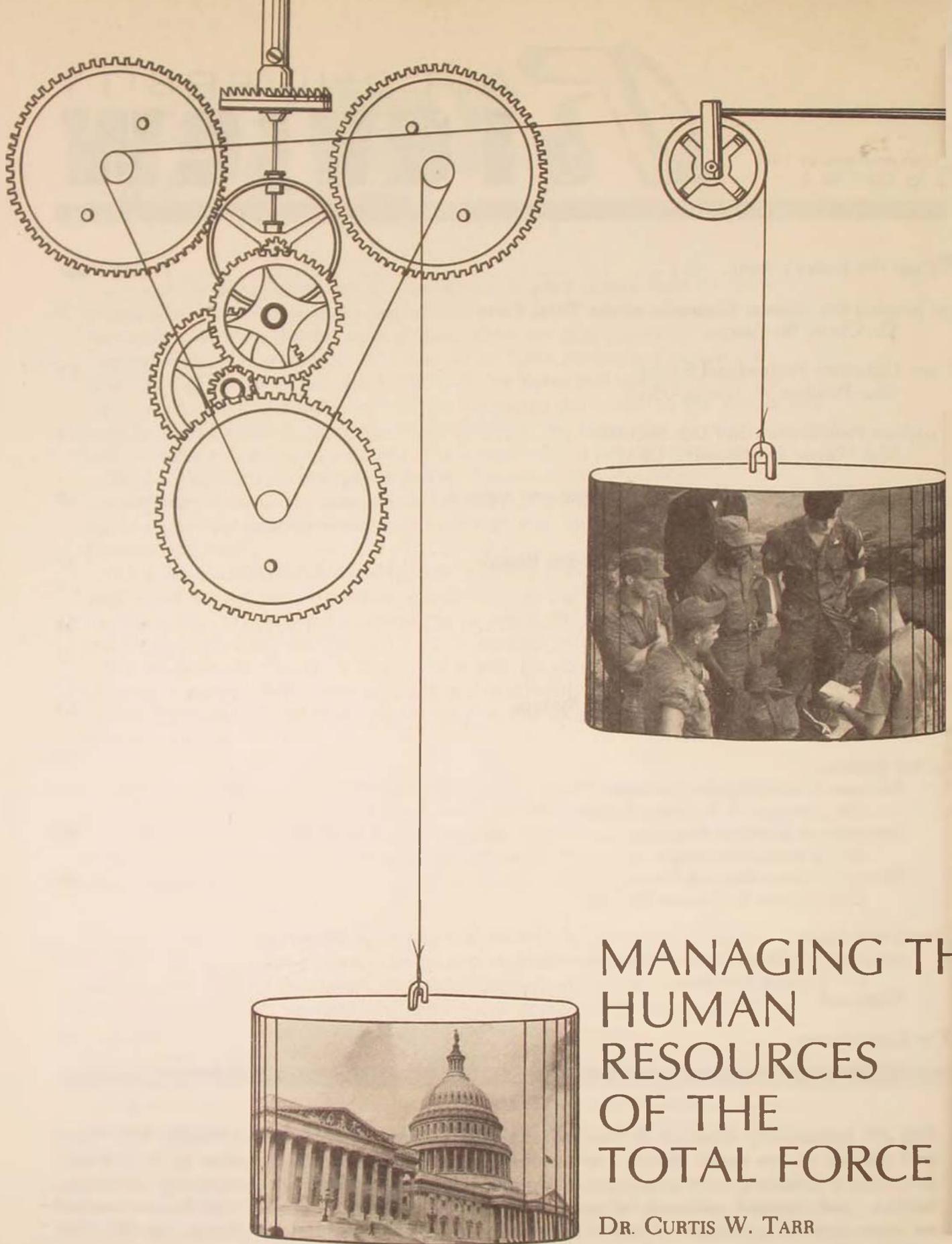
Our cover suggests the keystone position of our prime resource and the complex considerations involved in attracting and retaining what used to be called "manpower," an outmoded term in our changing society. Dr. Curtis Tarr, in the lead article, discusses present problems and future trends in the management of this most important resource.

Occasionally, we receive the suggestion that we offer a "Letters to the Editor" department. Our present practice is to act as a clearinghouse between correspondents offering comment and the authors involved. However, we reiterate the offer made in a recent issue to publish separately any letter that is of general interest. As stated in a recent letter from one of our regular contributors, Jerome Peppers, "Somehow it doesn't seem right that the content of a professional journal must generally reflect that all is right with the world and that all the 'professionals' are pleased and happy with events and things." If the volume of letters and their relevance to significant issues justify a separate forum, we will be more than willing to make room for it in future issues.

ATTENTION

MANAGING THE HUMAN RESOURCES OF THE TOTAL FORCE

Dr. Curtis W. Tarr

HUMAN RESOURCES now cost considerably more than all other defense expenditures combined. Will this growing share of the budget eventually cripple the nation's ability to acquire new weapon systems and carry out the research and development to help the United States maintain a competitive edge? If so, how can we hope to gain an advantage over the forces of other nations or alliances, or match the advancing sophistication of the weaponry they employ? At the same time, what will be our defense capability in the All Volunteer Force (AVF) environment?

These questions worried members of the United States Senate as they debated the Department of Defense (DOD) authorizations for fiscal year 1974. Senators Lloyd Bentsen and Howard H. Baker, Jr., thereupon suggested that an independent commission be formed to consider the problems related to defense manpower. As the Senate weighed this possibility, other members suggested additional concerns worthy of investigation: What are the socioeconomic effects of volunteerism? How many people will we require within the next decade? How well do we utilize people? Do we pay them adequately and fairly? Can our present forces carry out their missions?

Convinced that a study could prove helpful, the Senate wrote into the authorization bill the language to create an investigative group; House members concurred in conference. Thus the Defense Manpower Commission, consisting of seven members (four appointed by the Congress, three by the President), was established on 19 April 1974 with the broadest charter ever devised for such an undertaking: to consider all of the human problems in the Department of Defense and the armed forces, including the entire life cycle of manpower and personnel matters, for active and Reserve forces, civilians in DOD, and private contractor personnel.

Two years later, after studying these subjects in cooperation with a professional staff of about twenty, holding hearings and meetings in Washington and elsewhere in the nation, and making numerous trips to visit the armed forces, the commissioners submitted their comprehensive report. Although it is difficult to condense over four hundred pages of argument and recommendations into a short article, readers of the *Air University Review* may wish to know some of the key recommendations of the report, particularly as they relate to the United States Air Force.

Commissioners reached the general conclusion that manpower can be studied rationally only as one system, not as a series of systems. The parts of the manpower system relate so closely that it is seldom possible to make a change to one without affecting the others, sometimes adversely. When someone alters one segment, he may improve it, but he also may cause burdens elsewhere that exceed the gain he has effected. The Commission attempted to study manpower as a whole, although to do so requires a discipline that vastly complicates the approach to specific problems. Let us look at the major inquiries of the report.

projected manpower needs

Although it has become a vital element in our defense planning, the total force still is far from a reality. Many Army National Guard and Reserve units cannot be ready for deployment overseas within ninety days; twice that time would be more realistic. Air National Guard and Reserve units, with high levels of support, usually have excellent readiness ratings. But ground units too often have been plagued by inadequate equipment and training time, the latter particularly in the larger units that require more time for readiness than possibly can be available to them. Despite gratifying progress recently, the Navy does not yet adequately utilize its surface Reserve.

The logic of a total force policy implies a mix of active, Reserve, and civilian manpower to accomplish the missions of each service. That mix cannot be as cost effective as we might wish, however, unless a manager knows the actual costs of manpower types, including the entire life-cycle costs from recruitment to retirement. Such cost data do not now exist, and many estimates are grossly misleading. The tendency is to calculate only the immediate out-of-pocket expenses of a person's salary, disregarding the supporting benefits provided, the investment in training and professional development, and ultimately, also, the retirement benefits that will be supplied. With adequate cost data, each service probably could develop a better manpower mix than the one presently used, particularly if the manager had more flexibility in the choice of manpower to accomplish the mission.

A case in point is the cost of Reserve forces. Although too often we deal with rules of thumb for guidance, such as "a Reserve component costs only one-fifth as much as an active one," the Commis-

sion staff has estimated that a National Guard infantry battalion (with a low readiness rating) costs 12 to 15 percent of an active one while an Air National Guard A-7 unit (with a high readiness rating) costs 65 percent of an active one. Obviously, both readiness and capital investment influence substantially the total cost of the unit.

Looking at the combatant force structure of the Air Force, the Commission concurred in the expansion of the tactical forces from 22 to 26 wings. To accommodate these units within the existing force structure, the Air Force must economize in the use of military personnel. It is possible to do so in a number of ways. Probably these four new wings can be accommodated on existing bases to reduce support costs. In addition, some facilities could be closed if it becomes politically feasible to do so. Commissioners believe that more civilians could be utilized in support organizations, only a portion of which are ever deployed. Many of the Air Force industrial facilities could make more extensive use of labor-saving equipment if the constraints on acquisition were eased. The Air Force should use contract personnel more frequently; the test at Vance Air Force Base, Oklahoma, may provide insight that can be useful at other installations. Furthermore, in using contractors, the Air Force should determine the job to be done, not how to do it, in order to encourage an imaginative approach by the firm making the bid. Commissioners believe that contracting can be expanded substantially without hindering the deployment of fighting units. When assessing contractor costs, the services must compare them with life-cycle military or civilian costs, not merely those immediately out of pocket.

The Reserve Associate Program,

which has brought so much credit to the Air Force for imaginative use of Reserve personnel, should be expanded to include other missions, particularly where it is desirable to improve the wartime surge capability. Commissioners speculated particularly upon the use of associate personnel with active-duty tactical fighter and reconnaissance squadrons. Where possible, support functions should be consolidated so that one facility could accommodate several Reserve units. As with the active units, deployment should determine the numbers of military personnel required in a unit, thereby opening possibilities for both civilian employment and contracting. When a Reserve unit has a rating of C-3 or better, then only one active force advisor is needed, a change that would reduce the number of advisors without curbing effectiveness.

Certainly an important and probably an indispensable element in Reserve force readiness has been the use of technicians. But this program is more costly than need be, owing to the dual role of the technician. The Commission recommended the use of National Guard and Reserve personnel on active duty, replacing the technician who is both a civil servant and a military reservist. This change, one that certainly would have to be phased into operation to protect the rights of those presently employed, would preserve the concept of the citizen-soldier, improve command relationships, and eliminate dual pay and retirement.

To determine the numbers of personnel required by 1985, the Commission made several assumptions: that the United States would avoid hostilities, that we would maintain our relative defense capabilities, and that the present international situation would not change.

These are bold assumptions that probably will not prevail for a decade. But if they do, then the Commission believes that our active military forces should be maintained at approximately their present strength of 2.1 million personnel. Civilian personnel could be reduced somewhat, perhaps by seventy or eighty thousand to a level of one million, assuming base closures, the use of more labor-saving equipment, and the employment of more contract personnel. The Selected Reserve should continue at about 890,000, provided the Navy finds a use for its surface reserve. Private contract personnel could increase.

recruiting recommendations

Although the Air Force can be proud of its success in attracting volunteers throughout the period of conscription, the All Volunteer Force has imposed some strains on recruiting efforts. But largely these have fallen on the other services, particularly the Army and the Marines, which must attract men into ground combat jobs where the technical training opens few employment opportunities in civilian life. For the most part, the services all have made an excellent transition to the AVF.

Commission staff members, on the basis of data collected, conclude that the quality of the active forces, both in educational level and mental category, has improved over the draft years. But the opposite is true of the Reserve forces. The number of blacks has grown, without any indication that this has affected the ability of units to carry out their missions as some had suspected. The participation of women has increased, but the Commission detected a continuing lack of acceptance of them. There is little evidence that volunteerism has changed

the geographic or economic composition of the forces; the services still draw their numbers from the middle class.

The Commission considered carefully whether the services should adopt a representational policy. To write such a statement that would encourage rather than inhibit improvement would require the skills of a poet laureate, the experience of a statesman, and the wisdom of Solomon. The Commission concluded that the armed forces should recruit and assign personnel without regard to representation, except for women where the case is special and requires exceptional handling. To make certain that institutional discrimination does not continue in career patterns and assignments, the leadership from the Secretary of Defense downward must take a personal interest in equal opportunities for women and members of racial minority groups. In particular more women and minority officers must be attracted and then encouraged to advance through the ranks.

The Commission made many specific recommendations on recruiting operations that merit the consideration of those actively engaged in the responsibility. Of general interest was the suggestion that the services be given flexibility in the use of incentives and options so that the amount offered is commensurate with the need at a particular time. For instance, in those months where larger numbers of people must be attracted to fill training programs or to make up for retirements, perhaps incentives should be increased, with corresponding reductions during months when fewer people are required. Likewise, the state of the economy and the time of year will determine to some degree the recruiting competitiveness of the armed forces, thereby making a poli-

cy of varying rather than rigid incentive all the more attractive.

Flexibility in the use of quotas would make it possible for recruiting managers to weigh the propensity of young people in one area to enlist or to assess local economic conditions. Likewise, recruiters should be measured on the success or failure of those they recruit, based upon job performance. A single mental test should be employed by all of the services and administered by joint teams independent of the recruiting forces. The tests should be changed frequently to avoid compromising them.

Selection tests should measure the likelihood that a recruit will complete his enlistment satisfactorily rather than predict his success in training. By using a least-cost analysis, the Air Force probably could improve its assignment of personnel to augment the success of its recruits. Study of this section of the report could provoke a healthy discussion of Air Force assignment methods.

A most important charge to the Commission was to explore the future of the All Volunteer Force. To do so, one must look at the supply of men during the next decade, the period of study assigned to the Commission, and the alternatives for employment that will be available to young people during that time. The supply will diminish between now and 1985 (and more sharply after that). Employment will depend upon the vigor of the economy. Members of the Commission staff calculated the success of recruitment, assuming the continuing competitiveness of financial incentives, for an economy that grows rapidly, moderately, or slowly.

The study concluded that the active forces will not encounter difficulty attracting volunteers during the next decade if the economy grows slowly or

moderately. But in a time of rapid economic growth, the armed forces must change their methods to attract youth; the staff suggested revising physical and mental standards, utilizing more women, offering more tempting bonuses, or providing more competitive salaries. Some combination of these alternatives should attract sufficient numbers of qualified people to make the AVF viable during periods of rapid growth until 1985. For the Reserve forces, present methods probably will attract the necessary volunteers during slow or moderate periods, but they will not avert significant shortfalls during rapid economic growth. Major revisions and possibly a change in the locations of units might be necessary in a spirited economy.

Commissioners were disturbed by current mobilization planning. In the event of major hostilities, the armed forces, particularly those in ground combat, will depend upon the Individual Ready Reserve and the Standby Reserve to replace casualty losses, until new men are provided by enlistment or conscription and trained by the services. The Commission staff concluded that DOD estimates of the size of this replacement pool were too optimistic. The staff also judged that plans for reinstating conscription from a small Selective Service headquarters—making necessary the establishment of boards to carry out registration, appeals, and induction, and the delivery of men to the armed forces—would require a substantially longer time period than present mobilization estimates. Accordingly the Commission recommended that the Selective Service System be reconstituted to conduct annual registration and classification of young men to make possible inductions within thirty days of the declaration of an emergency.

development and use of manpower

In the area of development and use, the Commission determined how the services select the person with appropriate education and motivation to do a job, train him, and make certain that he is available at an appropriate time. Obviously no organization does this perfectly; usually the services perform well.

The Commission recommended that the Air Force not place undue emphasis on postgraduate work, illustrating that point by saying that except for scientific and technical assignments the baccalaureate degree should be a sufficient level of formal education to attain four-star rank. The services should not establish education and training facilities where civilian institutions already are doing this work satisfactorily. Better uniformity in classifying civilian and military jobs would make possible the utilization of civilian training by the armed forces, thus reducing military training costs.

Instead of requiring advanced degrees by those assigned to certain positions, the Air Force should determine the percentage of people holding similar positions who need the degree. For example, the Air Force might want 40 percent of those filling certain management positions in the Logistics Command to hold a master's degree in business administration, rather than designating particular positions, amounting to 40 percent of the total, to be occupied by officers holding the M.B.A. The former system would probably provide equally effective management with far fewer assignment problems.

The services should encourage officers to improve themselves through voluntary education programs related to their occupational assignments but not at the

expense of professional education. Either professional education is vital to the military person's preparation for advancement, and thus professional education should be linked to promotion, or the nation should avoid the expense of professional education. The Commission affirms the former.

the future career force

One of the boldest recommendations of the Defense Manpower Commission relates to the military career force of the future. Considering the increasing liability of the nation to pay retirement benefits, one may conclude that this pattern cannot continue without seriously affecting the ability of the nation to maintain adequate defense activities in the future.

The military career force may be sized to provide the leadership for the armed services, or it may be sized to provide opportunities for advancement under an "up or out" system. The Commission recommends the former, tempered by personnel management considerations, rather than the latter which is now employed. Under this recommendation, the career force would include all officers and NCOs who had served ten years or longer. Coming to the ten-year point, a person would be chosen for the career force or separated. Only those who are needed to manage the total professional force would be selected. Once chosen, a person would not be required to advance in rank to remain in the force; a person would be separated only for failure to meet professional standards of performance or for a reduction in service strength.

Career force personnel would be grouped into broad categories, such as combat, technical, administrative, and professional. Promotion would be based upon years of service, time in grade, and performance. Normal retirement would not come before thirty years, except for those engaged in combat jobs where retirement could be earned at a faster rate. The elimination of the failure-oriented "up or out" system should improve both morale and performance.

The retirement system would reinforce this concept. Present annuities payable after twenty years of service would be phased out, replaced by annuities payable when normal retirement under the new program was reached. Increasing the length of service would reduce the numbers actually retired and thus those trained and educated. It probably would make possible somewhat longer tours as well. If a member of the career force departed voluntarily, he would be offered an annuity payable at age 65. Involuntary separatees would receive the annuity at age 65 plus a separation readjustment, or they could elect to receive a double readjustment payment.

The Commission staff tested this requirements-based concept on a USAF officer force of 97,841 people, the objective of the Defense Officer Personnel Management Act (DOPMA). It is possible that in a requirements-based system a smaller career force would provide appropriate leadership, but no attempt was made to determine these possible savings. Comparing the costs of the DOPMA force against a requirements-based one, calculating personnel flows by computer simulation, the staff calculated that the DOPMA force, including retirement, would cost $3.3 billion annually, compared to the requirements-based force of less than $3.1 billion, or a saving each year of more than $200 million. A similar study of the Army enlisted force indicated savings of

more than twice that amount, indicating the magnitude of cost reductions possible (provided that Commission staff assumptions are valid) if this approach were taken throughout DOD. The matter obviously merits thoughtful consideration.

pay and benefits

Commission recommendations on compensation were as varied as the elements of this baffling, complicated subject. The staff looked carefully at the various components of compensation, making in the process a detailed study of the military estate program. The Commission recommended that the services be given flexibility in the management of bonuses and special payments to military personnel so that these could be employed only when they are required to encourage that for which they were intended: enlistment, re-enlistment, acceptance of hazardous or unwelcome duty, or a variety of situations that may or may not exist throughout the services. In order to eliminate differences in compensation between married and single persons, the Commission recommended that the items of regular military compensation be converted into a fully taxable military salary. It is understood that doing so would only eliminate the monetary disadvantage single persons now have; it would not save money because the salary would be augmented to compensate for the increased taxes. The Commission reported that institutional benefits, particularly commissary and post exchange privileges and medical care, are considered by military personnel to be much more important than their cost to the government and thus should be maintained.

One of the most difficult problems fac-

ing the Commission was to determine how the level of military and civilian salaries should be set. Presently, military compensation is geared to civil service salary levels through the linkage established by the Rivers Amendment. Introduced as a temporary expedient many years ago, that legislation continues to do imperfectly what various Administrations and the Congress have not otherwise determined: how to compensate military people in a manner that is both competitive and equitable.

The imperfection of the present system has at least two major causes. Civil service salaries now are set by determining comparability between government jobs and those in private enterprise. Although appearing straightforward, the actual process of finding comparable jobs is difficult and in many cases not possible; the process of soliciting information necessarily involves flaws; and the application of this information usually favors the civil servant. The Commission accordingly accepted the concept of comparability as a guide to judgment, but not in the way it currently is being used.

The second cause for doubt is that military jobs often have little connection with those in civil service. The assumption that the relationship between ranks and grades for military purposes will be nearly the same as for civilian purposes has serious limitations.

But finding an alternative to this procedure is likewise perplexing. To abandon the Rivers Amendment could threaten the orderly advance of military compensation during periods of inflation, whereas linking military and civilian compensation brings together an impressive variety of interests in the Congress. Thus any approach should be one that continues to view the total problem of Federal compensation rather

than military salaries alone.

Accordingly, the Commission recommended the establishment of a permanent and independent Federal Compensation Board, composed of full-time members charged with the responsibility of studying and recommending levels of compensation for those in all major Federal pay systems. The Board should be authorized to employ a staff large enough to study the circumstances related to recruitment and retention of personnel in each of these systems, establishing equity between various occupations and conditions of service. The Board would report both to the President and to the Congress under appropriate procedures for publication and implementation, providing an opportunity to either the President or the Congress to set aside recommendations within a specified time before they would take effect. Establishing such a board would be a major departure from present methods. But the Commission concluded that the immediate system for determining military compensation needs major revision, and this means of doing so should be assessed.

human considerations

The leadership of the Air Force impressed the Commission. Commanders usually are responsible, imaginative, and competent. Morale of the people of the Air Force seems good; it appears that units can carry out their missions, as they did with such skill in Southeast Asia.

But that is not to say that there are no problems. Many young people, and sometimes career personnel, believe that the nation has failed to keep its implied promises to them. When they hear national leaders speak against the military, they often take that criticism per-

sonally. It is difficult to maintain pride in a force that is pilloried as wasteful, lazy, corrupt, gluttonous, or lawless. Although most of us realize that the balance of judgment in the nation lauds our military forces, a few comments by candidates, Congressmen, or other national leaders can disillusion some of our most patriotic military people.

Who represents us, they question? The Commission answered that the Chief of Staff should do so, and that to serve this function he must have the freedom to speak. No one questions the necessity for military personnel, including the Chief of Staff, to take orders. But until the order is given, the Chief of Staff should be permitted to express concern. This has been possible less frequently as the roles of the National Security Advisor, the Secretary of State, the Secretary of Defense, and the Director of the Office of Management and Budget have grown more prominent in the determination of national policy.

Without an effective spokesman, young people in the ranks will think more about the apparent advantages of inviting unions to represent them. If this occurs, then command authority and union membership will vie for the primary allegiance of the military person, all to the confusion of operations and the ultimate detriment of the nation's defense. This issue presently demands the attention of the President, the Secretary of Defense, and the Congress.

In the AVF, human considerations eventually will help to determine what weapons we can employ and where we can employ them. As options increase for young people in a growing economy, military personnel will have less interest in unaccompanied tours, isolated posts, demanding hours, and harsh conditions of life and service. By this I do not imply

that the youth of America will not accept the challenge of the difficult, the unusual, the dangerous: a glance at what they face in athletics dismisses that fear. But the services cannot assume dedication to a professional life that involves too much drudgery or misery, or too many lonely hours plagued by concern for loved ones. Thus human considerations must be assessed in the determination of what the nation should undertake and how it should do so.

The real test of Air Force is performance when the nation needs air power. This may be during an emergency or a demonstration of force or a war. We maintain costly forces to prevent their use as well as to employ them if need be. In either case, flawless performance is the means to success.

Too often we think in terms of superior design, or better manufacturing, or larger numbers, or more skillful deployments. But behind all of these concepts, people will determine success, just as they always have in all human enterprise. Agamemnon's warriors before Troy or Alexander's forces at Arbela have their modern counterparts. We remember how the Luftwaffe collapsed in World War II after the best German pilots had been lost, and those who replaced them were not trained well enough to match Allied airmen. Today the individual in the cockpit remains, although with a much different assignment than in former days. But behind him are other heroes, crucial to success and in greater numbers: those who design, procure, and maintain complicated weapon systems.

Thus the management of human resources will be an important determinant of Air Force success in America's future. To affirm that, for the Air Force and the other services as well, the Commission concluded that Defense Manpower management truly is the keystone of national security.

Moline, Illinois

Manpower costs are high, but the trend in constant dollars over the past 13 years is about steady. In fact, manpower costs as a percentage of the federal budget and the Gross National Product (GNP) have been declining since fiscal 1973. . . .

LT. GEN. HAROLD G. MOORE
U.S. Army

THE
UNKNOWN
PROFESSIONAL
SOLDIER

Major Pember W. Rocap

ASK any military leader to give an after-dinner speech to or about NCOs, and everyone worth the salt on the meal preceding his remarks will, like Kipling, refer at least once to the NCO as "the backbone of the Army," or the Air Force, or whatever the appropriate service. Such predictable conduct at the speaker's podium, like behavior under fire or in any other stressful situation, is primarily a matter of past experience and conditioning. Those with a full military career have had enough personal experience confirm the importance of the NCO to the success of any military organization that making the "backbone" analogy is almost instinctive.

The Air Force considers its NCO corps so valuable that it has recently made and is still making an extensive effort to improve the NCO's status. Despite these recent efforts and the long-recognized importance of the NCO to the military, one key question has not been satisfactorily answered: Is the NCO a member of the military "profession" or simply a government worker in uniform in contrast to certain commissioned officers who are professional military men?

The purpose of the article is to address this question. Whether or not it provides an acceptable answer is another matter. Finding such an answer depends on understanding that:

1) Reputable outside observers of military affairs have not considered the NCO a member of the military profession.

2) The Air Force NCO has perceived and reacted to this exclusion in several ways.

3) Recent Air Force efforts to improve the NCO corps, though extensive, needed, and effective, will not be complete until the NCO's status *in the profession* is adequately examined.

4) Continued disregard of the issue could have potentially serious consequences.

5) An adequate examination of this issue is not possible until at least three inhibiting attitudes within the military are recognized and removed.

These five points indicate both the essence and the broad outline of the discussion that follows. The underlying theme is that some of the most serious personnel problems facing the Air Force and the military cannot be fully understood, much less solved, outside the context of this issue. Although the specifics of the discussion are primarily Air Force oriented, the issue is probably not restricted to the Air Force. In fact, it may be a source of even greater aggravation to career Army and Marine Corps NCOs responsible for leading troops in combat.

The most commonly accepted view of

the NCO's "professional" status has come from outside the military. This is not surprising, considering the relatively restricted professional autonomy of the American military profession (especially when compared to the military in other countries and other professions in this country). Civilian theoreticians determine much of the American military's guiding strategy; politicians select its senior leaders and can specify its membership qualifications and composition; and men in mufti have written the most comprehensive descriptions of the nature of the profession and its relation to the state.

The major authorities in the latter group, of course, are Samuel P. Huntington and Morris Janowitz. Differing in their disciplinary approaches to the study of the military and in their conclusions about the degree of basic conservatism within the military, both place the NCO outside the "real" military profession. The expertise-responsibility-corporateness conceptualization of the military profession in Huntington's *The Soldier and the State* explicitly excludes the NCO. Right from the beginning, Huntington addresses the sloppy and confusing use of "professional," which has "obscured the difference between the career enlisted man who is professional in the sense of one who works for monetary gain and the career officer who is professional in the very different sense of one who pursues a 'higher calling' in the service of society." The difference is so obvious to Janowitz in *The Professional Soldier* that it is not even discussed. The professional soldier is an officer. Period.

In fairness to both scholars, it should be noted that their interest is focused on professional military elites, a group excluding not only NCOs but most officers

as well. In the process, however, they debar the NCO from the profession at large: Huntington by direct statement, Janowitz more by assumption. Even those studies that have concentrated exclusively on the enlisted man, such as *American Enlisted Man: The Rank & File in Today's Military* by Charles C. Moskos, Jr., and the earlier *The American Soldier* by Samuel A. Stouffer et al., viewed the enlisted man and NCOs as sociological phenomena in uniform rather than members of the military profession. The latter possibility is not even seriously considered.

This theoretical exclusion of the NCO from the military profession by the academics has been experienced and acted upon in actuality by the Air Force NCO in several ways. The establishment and, in recent years, the phenomenal growth of the Air Force Sergeants Association (AFSA) have occurred not least because of a perceived lack of adequate attention to enlisted concerns by the longer established and much larger Air Force Association (AFA). Although the AFA opens its membership to all ranks, spells "air power" as one word (with power inseparable from air), and speaks with unequaled eloquence on its behalf to anyone who will listen, AFSA membership (enlisted and former enlisted only) has grown from about 8000 in 1971 to more than 51,000 today. Within the Air Force, the exclusion of the subject of the NCO from the deliberations of the professional mainstream has also been noticed and commented on by NCOs. In a 1973 study for the Air Force Senior NCO Academy, "The Air Force NCO, Motivation or Complacency," Senior Master Sergeant Michael L. Farino and Chief Master Sergeant Carroll E. Vaughn wrote that "professional military publications such as the *Air University Review* and the *Air*

Force Magazine have largely ignored the NCO." They also indicated that their attempts to collect authoritative background for their study were "fruitless."

The growth of the AFSA and the observations of Sergeants Farino and Vaughn are specific reactions directly attributable to the "professional" exclusion of the NCO. In a more general sense, the exclusion has also been partly responsible for the long-term dissatisfaction within the Air Force NCO corps about its status and prestige. Unfortunately, this source of that dissatisfaction has never been openly identified. As a result, recent and ongoing efforts by the Air Force to improve NCO status are still incomplete. In no way should this detract from either the laudable motives behind or the effectiveness of many of these efforts. In fact, they may be the most important internally generated Air Force personnel actions of the past five years. In a military institution already deserving its reputation for progressive personnel policies, this would be no small accomplishment.

Yet, when one considers the debatable status of the NCO in the profession, the total impact of the efforts becomes somewhat paradoxical. Some unintentionally reflect a move toward, and thus support for, inclusion of the NCO in the corporate profession. Others reveal a serious disregard of the NCO's professional exclusion as an important, if not central, factor in the status and prestige problem. A brief review of recent activity in this area will make these conflicting aspects more apparent.

M ANY of the frustrations, problems, gripes, misconceptions, and positive suggestions for improvement that had existed in and about the NCO corps for at least the previous fifteen years crystallized at the highest levels of Air Force thinking during the summer of 1975. At that time, the Air Force Management Improvement Group, as part of its primary goal of enhancing the quality of Air Force life, concentrated on possible measures to improve the status and abilities of Air Force NCOs. A cross section of ranks, specialties, and commands participated, including several representatives from the areas most concerned with personnel perceptions and policies: information and personnel. Meanwhile, many major commands and nonpersonnel specialties were already finding ways to provide NCOs, especially senior NCOs, more challenging and responsible duties.

As a result of these efforts, existing NCO grade structure and titles have undergone a thorough examination and transformation to a three-tier force for management purposes; skill descriptions and codes have been reworked and combined, with a trend toward the emergence of the so-called generalist supervisor/manager over the technician in the upper NCO ranks; senior NCOs are being systematically assigned to positions previously filled by commissioned officers; and the leadership and managerial abilities of the entire NCO corps are being extensively developed in resident NCO academies, at specific bases selected to test a realignment of education responsibilities in this area under a single local manager, and across the Air Force by traveling teams from the USAF Leadership and Management Development Center.

On the one hand, some of these changes effectively erase many former distinctions between officers and NCOs

in terms of responsibility and position. As such, they inadvertently provide support for the incorporation of the NCO in the military's professional concept. On the other hand, not only has there been no mention of this possibility, the primary reasons given for instituting many of the changes indicate that all of us in the Air Force, officers and NCOs, may have been Homerically nodding on this particular issue. According to a recent Air Force News Service editorial, "NCO Prestige and the Three-Tier Enlisted Force":

> For the past several years, noncommissioned officers (NCOs) have expressed the feeling of losing their rank and job prestige. One reason is a perceived confusion over roles and responsibilities and a feeling that NCO talent is being underutilized. A contributing factor is that AFR 39–6, "Duties and Responsibilities of the Noncommissioned Officer," specifies just one all-inclusive role description for grades E-4 through E-9.
>
> Also, questions have continually arisen over whether the E-4 is an NCO. The feeling exists that "everyone is a sergeant," therefore lessening the prestige of holding NCO status.
>
> Along with this, similar questions exist as to whether the E-7 is considered a senior NCO. The end result was a clear indication that the Air Force needed to face the NCO issues if they were going to insure a quality, productive force for the future.

Obviously, the possibility that the more fundamental issue may be the NCO in relation to the basic corporate concept of the military profession provides a different perspective on the above reasons. From this· perspective, NCO prestige depends not on whether an E-4 is an NCO or an E-7 a senior NCO but on whether an NCO of any rank can be a corporate member of the military profession. If he can be, then regardless of whatever other duty differences exist among various ranks, there *is* one all-inclusive role description that not only all NCOs but all NCOs and officers share as military professionals. Professional responsibility varies only in degree, never in kind, within the profession.

Overall, one of the most important results of recent Air Force efforts to improve NCO status may be the clear indication given of what else needs to be done. Identifying the missing piece in a 1000-piece puzzle is much easier after the other 999 pieces have been assembled. The missing piece in this case indicates what basis, if any, exists for including the NCO in the military profession proper. When completed, this puzzle should portray a satisfactory working concept of the profession.

By far the greatest pressure for finding that piece and re-examining the military's entire professional concept currently comes from outside the military. It is generated by the spectre of military unionization. As in other issues examined earlier, most of the debate over unionization has not even acknowledged much less seriously considered perhaps the most important factor involved, that is, the NCO-military profession question. Military unionization, above all else, depends on equating the officer-enlisted relation to a management versus labor basis, with all the divergent interests inherent to that view. Such a distinction within the military is false. The previous brief description of changing NCO roles should have made this apparent. The only meaningful distinction in the military is between the professional and the nonprofessional. It is to the everlasting credit of the professionalism of many NCOs that they have recognized the disaster unionization would be for the military. If any doubt exists about the

ability of NCOs, as a group, to accept and place the essence of the military profession above self, the unequivocal statement of the AFSA against unionization should help dispel it. All of which seems to indicate that the exclusion of the NCO from the corporate concept of the profession may actually be more theoretical than real. It certainly is not very practical.

To recommend, at this point, that as of 0800 tomorrow the professional concept of the American military should incorporate eligible NCOs would be easy, irresponsible, presumptuous, and quite possibly wrong. No single member of the military has the authority, the wisdom, or even the right to make such a recommendation. Clearly, however, it is necessary now for that professional concept to be re-examined with the prospect of including the NCO. There are valid points to be made on both sides of the issue. To ensure that an objective and thorough examination of the NCO-military profession issue can occur, the existence of at least three attitudes that could inhibit such an examination must be recognized. Once recognized, these inhibiters can be discarded and a truly "professional" debate can occur.

Conceivably, any debate on this issue could be inhibited on both the pro and the con side and by doubts that there should even be a debate. Some NCOs who could contribute valid support for professional incorporation might hesitate to do so to avoid appearing self-serving. In a similar way, those with equally valid reasons for maintaining the older, more theoretically tidy concept of the profession might not put them forth in order to avoid appearance of elitism. In the interest of thorough consideration on all sides, such emotionalism must be excluded from the outset. The major inhibiter of all is probably the notion that the entire exercise is improper because it *does* violate the traditional concept of the profession as best articulated by Huntington. Anyone arguing from this position should consider the following.

First of all, as one respected military leader pointed out in these pages only last year, even the term "military professionalism" has only recently become widely known and used. In fact, anyone who has served in the military long enough to be eligible for twenty-year retirement benefits signed up before most people were aware there was a military profession—a military, yes; a career force, yes; but a profession, no. The parameters, characteristics, and essential nature of the American military profession are still being determined. Moreover, those best able to define any profession are the members of that profession, including the military. While certain attributes, such as a long-term commitment to the higher ideals and ethos of the military, may be agreed on as basic to the definition of a professional, other distinctions, such as that made between "managers of violence" and other specially skilled military members, are not necessarily the final or only basis for identifying the military professional.

Finally, in the absence of conscription, the all-voluntary membership of the American armed forces can be placed in four concentric groups: at the outer edge and leaving as soon as possible are the noncareerists whose commitment goes no further than the end of their current enlistment; one ring in are those who plan to stay long enough to qualify for retirement benefits but who see their

service as a job, nothing more; next are those other careerists whose sense of service and dedication remains with them on and off duty, in and out of uniform; finally, at the nucleus, are the careerists, relatively few in number, who are the innovators, pacesetters, and leaders. The members of this last group are a part of the military profession just as clearly as the members of the first are not. It is within the middle two groups that the boundaries of the profession are ill-defined.

CLEARLY, this issue must be confronted and thoroughly examined. If it is not, many recent advances by and for NCOs, including the three-tier approach to managing the force, could degenerate into a bureaucratic shell game.

Air Force Logistics Management Center

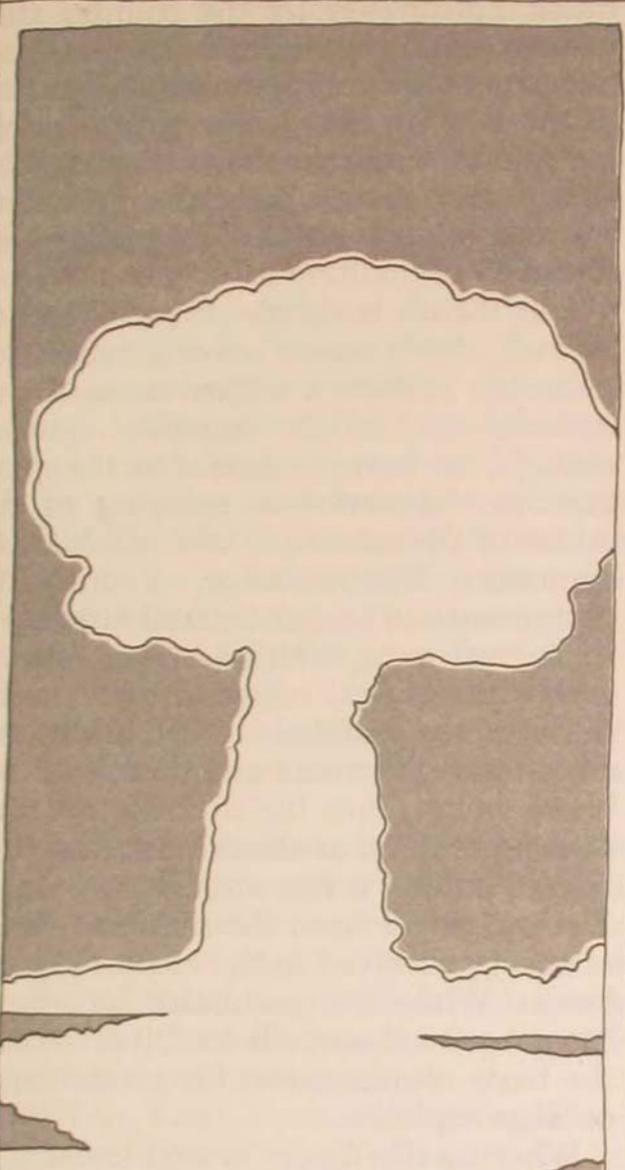## Basis of Issue of *Air University Review*
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THE EDITOR

NUCLEAR PROLIFERATION AND U.S. SECURITY

MAJOR WAYNE L. MORAWITZ

INDIA'S DETONATION of her "peaceful nuclear explosive" in May 1974 was held by some to be a non-event, while others saw it as epoch-making. For the first time a country other than one of the five permanent members of the United Nations Security Council had demonstrated a nuclear explosives capability.[1] While no additional members have publicly joined the nuclear weapons club since that initial jumping of the firebreak, world events give little encouragement to hopes that membership will be held to six. Informed sources have charged that Israel has already constructed six to ten atomic weapons;[2] an Argentine legislator recently called for the construction of a nuclear weapon as a means of gaining prestige for Argentina;[3] and the world's energy crisis will make it progressively easier for countries to indulge in nuclear weaponry as nuclear power stations produce more and more reactor by-products that can be processed into weapons-grade fuel.

Nations might wish to construct nuclear weapons for any number of specific reasons, but these reasons can be generalized into a few broad categories: to increase military power to counter an immediate military threat; as an extra measure of insurance against the capriciousness of an unpredictable future, such as situations in which a more powerful nation would attempt coercion; or to display the capability to the world solely for its prestige value in order to increase the country's status in subjects not necessarily related to military matters.

Lincoln Bloomfield has estimated that the construction of new nuclear power stations will give present nonnuclear weapons countries a potential by the early 1980s to make 50 atomic bombs per week.[4] The prospects of such a widespread proliferation of nuclear weapons

have resulted in an extensive body of literature concerned with general disruption in the world order and dangers to world peace resulting from such proliferation.[5] Herman Kahn has estimated that 50 small nations could have impressive nuclear arsenals by the year 2000 and predicts that under such conditions the international system would be in a virtual state of anarchy.[6]

Although such dire predictions may eventually prove true, they also may have obscured the need to give more attention to what can be expected in the immediate future: the future toward which we must develop plans, against which we must allocate resources, and in which we must deploy weapon systems. While it may be theoretically possible for 50 more nations to have constructed atomic bombs within the next 25 years, our immediate concern must be what can be expected to take place over the next few years. Only in a more restricted time frame can useful predictions be made and practical measures taken to counter perceived threats. Therefore, ten years into the future will be the far horizon of this study. Any attempt to forecast beyond that is too speculative to be useful when examining specific countries' capabilities. The discussion will be further restricted by limiting it to the direct military threat of nuclear proliferation to the security and vital interests of the United States during that period.

THE NUCLEAR powers have shown an understandable reluctance to share control or give away their atomic weapons. With the exceptions of the United States toward Britain and Russia toward China prior to 1961, the nuclear powers have shown a similar reserve in sharing the secrets of weapons develop-

ment. Fortunately for the country that wants to build an atomic device, however, there are very few secrets standing in the way. In fact a newspaper article has told of a young college student who designed an atomic bomb, using technical data widely available in unclassified sources.[7]

The theory is simple: bring together enough of any one of several fissionable materials to form a critical mass. If this material is brought together quickly enough, the energy released by the spontaneous chain-reaction splitting of the atoms of the substance will result in an explosion. For instance, a mass of plutonium can be constructed just below its critical mass, which is from four to seven kilograms,[8] depending on the purity of the material, and an additional amount of plutonium can then be fired, like a bullet, into the first. If the total mass is greater than the critical mass, and if the "bullet" is fast enough, an explosion will result from the sudden release of energy involved in the chain-reaction fission. While this particular technique has not proved very efficient, it illustrates the basic requirements for producing a nuclear explosion.

Whereas the theory is well known, in practice several problems arise. The first is getting the fissionable material. Since two of the materials that can be used are isotopes of uranium, U_{233} and U_{235}, it is possible to make atomic bombs out of uranium. Naturally occurring uranium, however, has very little of the fissionable isotopes.* For instance, only 0.71 percent of natural uranium is U_{235}.[9] Natural uranium can be enriched; through physical separation techniques, the percentage of fissionable isotopes can be

*Isotopes of a given element have the same number of nuclear protons but differing numbers of neutrons. Naturally occurring chemical elements are usually mixtures of isotopes so that observed atomic weights are average values for the mixture.

increased. It is possible to enrich uranium until it is of weapons-grade quality, but this is, at present, a very expensive undertaking.

Another fissionable isotope is the plutonium isotope Pu_{239}. This isotope is a by-product of virtually every nuclear reactor now in operation. Thus, while reactors may be designated in a variety of ways, such as "military" or "power" reactors, even the peaceful electrical power station reactors produce plutonium that can be extracted from other waste products and transformed into bombs. This method is not inexpensive either; but it is less expensive than enriching uranium to a weapons-grade quality, and the growing number of nuclear power reactors in the world is increasing the available supply of plutonium from which nuclear weapons can be made.

If a country embarks on a program to deploy a nuclear weapon system, the first obstacle to be overcome is the research that would be required to develop the final configuration as well as a delivery system for the weapons. Another significant factor, of course, is cost.

William Van Cleave and Leonard Beaton have attempted to place a cost on programs necessary to develop a nuclear weapons capability. Beaton estimated in 1966 that a $450 million investment over a ten-year period could support a minimal nuclear force of five bombs a year. This sum included the costs of modifying its existing commercial or military aircraft, for delivering nuclear bombs. His estimates included $100 million for refining uranium to fuel grade, a reactor, and a plutonium separation plant. He allotted another $75 million for constructing and instrumenting a test range. Twenty million dollars per year went for production costs for the bombs after a $25 mil-

lion research and development (R&D) effort to develop the first one. He estimated $5 million per year to adapt and maintain a rudimentary, nonspecialized delivery system.[10] His estimate for a modest program of more sophisticated smaller bombs and a specialized delivery system was between $230 and $310 million per year over a ten-year period. Finally, Beaton also analyzed the well documented British and French programs to establish the cost of a small force of superpower quality. He found that the British program cost $300 million per year and the French $336 million per year over a twenty-year period.[11] These estimates are for programs starting from scratch. Further, the annual costs are averages for the respective ten- and twenty-year totals, but a few of the yearly figures are very much higher than the average while others are lower.

Nearly a decade later, in 1974, Van Cleave noted that "non-electrical generating reactors capable of producing enough plutonium for a half dozen to a couple of dozen bombs per year are available on the open market for prices ranging from about $15 million to $75 million, perhaps including the initial fuel loading."[12] He estimated the cost of a fuel fabrication plant at $3 million and pointed out that India's plutonium separation plant cost $7 million. He put the cost of a weapons laboratory at $3 million.[13]

Many countries have decided to build nuclear reactors for power production. If they later decide to use the plutonium waste products for weapons, additional funding will be required only for separation plants, weapons laboratories, initial R&D costs, and delivery systems. A rudimentary system, assuming the reactor is already available, should be on the order

of $350 to $400 million over a ten-year period. The percentage of the costs associated with offshoots of peaceful nuclear technology can be expected to account for less of the total costs as the military programs get more ambitious. Thus, even discounting the costs of nuclear power reactors, the total costs of a modest or a superpower-quality force would be approximately $3 billion or $6 billion respectively, over ten- and twenty-year periods.

As Beaton pointed out, both Britain and France spent approximately $6 billion over a twenty-year period to reach the level of sophistication that he termed "superpower quality." Since there are no nations other than the existing five major powers presently committed to a goal of building a superpower-quality force, it is highly unlikely, and probably impossible, that any present nonnuclear weapons country could, under any set of circumstances, develop a force of that quality within the next decade. The possibility that even one could do it is so remote that the question will be pursued no further; therefore, only the possibilities of minimal rudimentary or modest nuclear programs will be considered.

T HE PROBABILITY of a specific country's embarking on a nuclear weapons program is dependent on several factors, the most important being whether it can afford such a program. The sacrifices that a country will undergo to support a program are, in turn, dependent upon its motivation for desiring nuclear weapons. A very poor country may desire nuclear weapons but not be able to afford them, while a country that could easily afford them may have no need. Political and geographic factors could drive one country to expend a large amount of its gross national product (GNP) on developing nuclear weapons; another country with the same economic capability and GNP might opt for a very small conventional military force.

The Nuclear Proliferation Treaty (NPT) is a useful analytic tool that gives a rough indication of which countries do not wish to pursue a nuclear weapons program and those that might wish to do so. The very act of signing and ratifying the NPT is strong indication of an intent not to build a nuclear force. While signing and ratifying the NPT could be a subterfuge, the difficulty of keeping such a program secret would make such deviousness impractical. It is also possible that a nation may have signed the NPT with every intention of abiding by it, yet a future change of government, widespread proliferation, or some other unforeseen event could cause that country to renege on the agreement. Nevertheless, since there is no logical way to take such random events into consideration, it will be assumed that a signature on the treaty plus its ratification removes that country from contention for nuclear weapons status in the near future. Even so, this still leaves the rather large number of 61 nations that have not signed the document or ratified it.[14]

Walter Hahn has identified 26 of these as countries that he considers potential nuclear weapons candidates. The 25—in addition to India, which has already demonstrated the capability—are listed in Table 1.[15] These are the countries that either have significant natural uranium deposits or own, or soon will own, operational nuclear reactors that could provide adequate amounts of fissionable uranium or plutonium for bombs if enough money and national commitment were to be applied.

Of the several general reasons for a

	defense budget $ million	% of GNP for defense	% increase for minimum program	%increase for modest program
Algeria	285	3.2	12.3	105.3
Argentina	1,031	1.2	3.4	29.1
Bangladesh	65	1.2	53.8	461.5
Belgium	1,821	3.4	1.9	16.5
Brazil	1,283	1.4	2.7	23.4
Chile	213	1.2	16.4	140.8
Colombia	102	0.8	34.3	294.1
Egypt	6,103	34.1	0.57	4.9
India	2,660	3.1	1.3	11.3
Indonesia	1,108	7.4	3.2	27.1
Israel	3,503	29.9	1.0	8.6
Italy	3,891	2.6	0.90	7.7
Japan	4,484	0.93	0.78	6.7
Libya	203	3.4	17.2	147.8
Netherlands	2,936	4.2	1.2	10.2
North Korea	770	22.0	4.5	39.0
Pakistan	722	9.5	4.8	41.6
Portugal	701	5.7	5.0	42.8
Saudi Arabia	6,343	52.9	0.55	4.7
South Africa	1,332	4.1	2.6	22.5
South Korea	719	4.1	4.9	41.7
Spain	1,372	2.1	2.6	21.9
Switzerland	1,041	2.2	3.4	28.8
Turkey	2,174	6.8	1.6	13.8
Venezuela	494	2.6	7.1	60.7
West Germany	12,669	3.6	0.28	2.4

Table 1. Defense Budgets and Nuclear Force programs[16]

country to initiate a nuclear weapons program, the need to counter an immediate threat may be identifiably related to existing defense programs. If a country feels immediately threatened or extremely vulnerable, a significant percentage of that country's GNP should already be going toward conventional forces. Such a country should then be considered a prime candidate for a nuclear weapons program in the next few years. The large percentage of the GNP's devoted to defense (Table 1) do appear to the author to reflect an approximate relationship to known trouble spots in the world. Egypt, Indonesia, Israel, North Korea, Pakistan, Saudi Arabia, and Turkey are countries that seem to have the prerequisite motivation for pursuing a nuclear weapons program. Another nine nations (Algeria, Belgium, India, Libya, Netherlands, Portugal, South Africa, South Korea, and West Germany) are in a lower category, which may imply a definite concern with military security but to a lesser degree than the top seven. Of the nine, India's 3.1 percent appears low when compared to the adversary Pakistan because her GNP is so much larger. South Korea's 4.1 percent would probably be much larger except for the military aid being provided by the United States. Bangladesh's percentage would probably be much larger also if not for

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her unfortunate economic situation.

Another reason for a country to go nuclear could be to gain prestige and serve as a status symbol. Any country acting on such an ambiguous impulse would probably not be willing to spend as much on a nuclear program as it would to counter an immediate threat, but if it could become a nuclear power at a relatively insignificant cost, the temptation would be very great. As already indicated, a country would be facing an average annual increase to its defense budget of $35 million for a minimum nuclear force, or $300 million for a modest nuclear force in order to achieve its objective within ten years. The last two columns of Table 1 are the percentages by which the annual defense budgets must be increased to accommodate additional $35 million and $300 million programs respectively.

It must be noted that these cost figures are only estimates. World inflation would almost surely have increased the expenses delineated by Van Cleave and Beaton. On the other hand, new technology may have reduced others or may do so in the next few years. The estimates are probably as reasonable as any.

Argentina was mentioned as one country that is at least discussing the possibility of developing a rudimentary nuclear weapons program for prestige purposes. If Argentina can contemplate such a program, other countries with comparable or bigger defense budgets should also be considered potential status seekers; specifically, those countries which could develop a program with the same, or a lesser, percentage increase in their defense budgets as Argentina's 3.4 percent must be considered candidates, from an economic standpoint, for small status-seeking programs. Only Algeria, Bangladesh, Chile, Colombia, and Libya would require more than a rather modest five

percent increase in their defense budgets to develop a minimum nuclear force. On the other hand, only Egypt, Israel, Italy, Japan, Saudi Arabia, and West Germany could develop modest programs for less than a ten percent increase. Thus, for only a five percent increase in their annual defense budgets, most of these countries could develop a minimum program, and a few could develop a modest program for less than ten percent. Even a ten percent increase might come at great sacrifice, however, where the defense budget already constitutes a large percentage of the GNP (e.g., Egypt, Israel, and Saudi Arabia); Israel is a special case since it may already have developed nuclear weapons and included the cost in its present and several previous budgets.

One of the requirements for developing a delivery system for a minimum program is an existing conventional delivery system that can be modified for nuclear warheads or bombs. "The Military Balance," compiled by the International Institute for Strategic Studies, London, and published by *Air Force Magazine,* was used to determine which countries have operational weapon systems that could conceivably be used as a nucleus for developing a nuclear capable delivery system. At this point, those countries that could deploy a tactical delivery system will be discriminated from those that conceivably could deploy a delivery system capable of placing nuclear weapons on American targets.

Although an atomic bomb delivered by an F-4 might be quite spectacular, it is of little military significance within the context of this discussion. To engage a nuclear power in nuclear warfare without the capability even to threaten the enemy's homeland would be foolish to say the least. Such a scenario may not be

completely beyond the realm of possibility, but common sense seems to dictate a capability to reach American sovereign territory in order for another nuclear power to be considered a direct military threat to the U.S. None of these countries possess missiles with intercontinental capability. None of them possess long-range bombers, and only Israel owns air refueling tankers, so the threat to the U.S. from long-range air or space attack is nonexistent at this time and into the foreseeable future, unless Japan should embark on a program to develop military ICBM's and, at the same time, turn hostile toward us. Many of these coun-

tries do have oceangoing naval vessels, however, which could be used to carry surface-to-surface missiles, cruise missiles, or, in two cases, jet aircraft. The Argentine and Indian navies both have a single aircraft carrier.

Table 2 is a summary of these military capabilities as well as a summary of the naval capabilities of each country. An X in the first column indicates the country may feel a need for more than a minimum military establishment because of critical regional hostilities or some other undefined fear about security reflected in substantial military budgets. An X in the second column indicates the country could develop a nuclear force with less than a five percent increase in the defense budget. An XX indicates the country could develop a modest force with less than a ten percent increase. An X in the third column indicates the country possesses at least three oceangoing naval ships such as cruisers, destroyers, frigates, or submarines. A conventional force of such ships implies the existence of the critical infrastructure of harbors, dry docks, refueling ships or friendly ports, and fuel supplies, as well as trained personnel and training facilities.

Table 2 shows that some of the countries do not have the military weapon systems available for reconfiguration into nuclear-capable delivery systems. While this does not completely rule out the possibility of a country building a navy or air force with intercontinental capabilities, to do so would be both costly and time consuming. This means that out of the twenty-two countries which might be tempted to build nuclear weapons for either military security or prestige, only fourteen—Argentina, Brazil, Egypt, India, Italy, Japan, Netherlands, Pakistan, Portugal, South Africa, South Korea, Spain, Turkey, and West Germany—

Table 2. Nuclear needs and capabilities [17]

	Threat	Status	Naval Capability
Algeria	X		
Argentina		X	X
Bangladesh			
Belgium	X	X	
Brazil		X	X
Chile			X
Colombia			X
Egypt	X	XX	X
India	X	X	X
Indonesia	X	X	
Israel	X	XX	
Italy		XX	X
Japan		XX	X
Libya	X		
Netherlands	X	X	X
North Korea	X	X	
Pakistan	X	X	X
Portugal	X	X	X
Saudi Arabia	X	XX	
South Africa	X	X	X
South Korea	X	X	X
Spain		X	X
Switzerland		X	
Turkey	X	X	X
Venezuela			X
West Germany	X	XX	X

do so at the price of its very existence as a sovereign nation. Any attempt at a clandestine or anonymous action would be to risk everything if discovered.

Second, military intelligence-gathering activities must include the capability to detect newly acquired nuclear capabilities and to identify anonymous delivery systems such as unmarked submarines, ships, or aircraft anywhere in the world. The technique and equipment needed to perform this type of surveillance for everything except the submarines are probably available but would require additional funds for expansion of existing programs. Positive identification and constant tracking of all nuclear-weapons-carrying vessels combined with our present 474N submarine-launched ballistic missile (SLBM) detection and warning net and our satellite-based early warning system should give credence to a policy of assured retaliation. Lack of an extremely reliable and accurate method of tracking all nuclear-weapons-carrying vessels could even invite catalytic and anonymous attacks.

Missile-carrying submarines obviously present the greatest challenge, and submarine detection R&D must receive more and more emphasis if additional nations achieve a capability for submerged missile-launching platforms.

IN SUMMARY, any nation wishing to join the ranks of the nuclear powers must be forced to observe the same ground rules that have ostensibly governed the strategic relations between the U.S. and the U.S.S.R. for the past 25 years. Each adversary must be made to believe that a nuclear attack on another will result in a retaliatory blow. Each nation must realize that a decision to use a nuclear weapon must be taken with the understanding that it has done so in the face of the very gravest danger to itself. If this holds true for future nuclear powers, the chances for nuclear attacks against the U.S. will be minimized, which may be the best that can be expected in a world of nuclear proliferation.

March Air Force Base, California

Notes

1. Lincoln P. Bloomfield, "Nuclear Spread and World Order," *Foreign Affairs*, July 1975, p. 751.
2. *Los Angeles Times*, October 19, 1975, Part 1-A, p. 1.
3. Bloomfield, p. 747.
4. Ibid., p. 750.
5. For instance, see *A World of Nuclear Powrs?* edited by Alastair Buchan (Englewood Cliffs, New Jersey: Prentice-Hall, 1966); and *The Future of the International Strategic System* edited by Richard Rosecrance (San Francisco: Chandler Publishing Company, 1972).
6. Herman Kahn, *Thinking about the Unthinkable* (New York: Horizon Press, 1962), pp. 210, 212.
7. *Los Angeles Herald-Examiner*, November 18, 1975.
8. Leonard Beaton, "Capabilities of Non-nuclear Powers," *A World of Nuclear Powers?* edited by Alastair Buchan, p. 17.
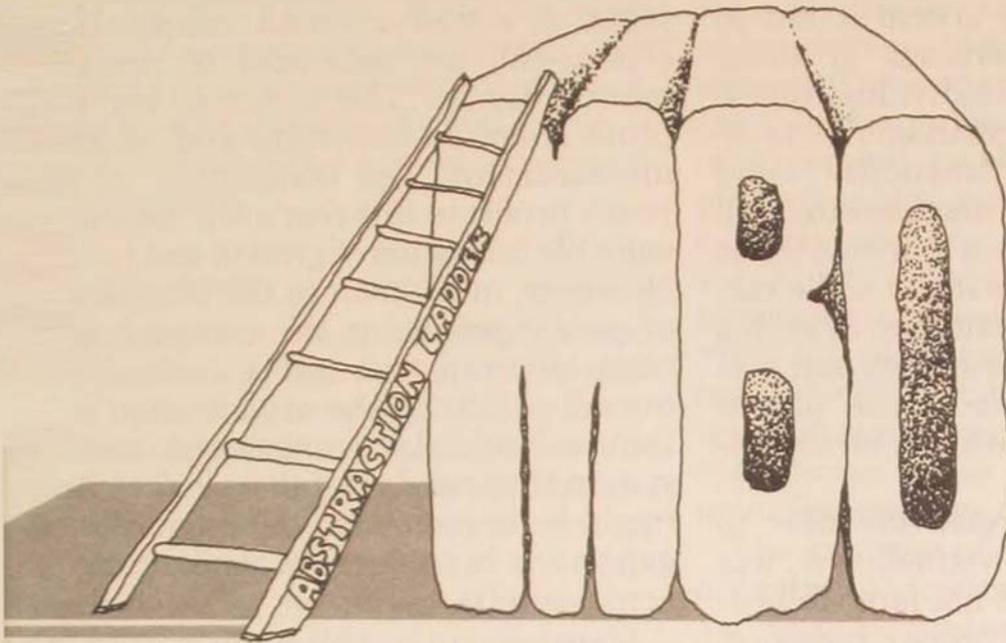9. William Van Cleave, "Nuclear Technology and Weapons," *Nuclear*

Proliferation Phase II, edited by Robert M. Lawrence and Joel Larus (Lawrence: University Press of Kansas, 1974), p. 35.
10. Beaton, p. 32.
11. Ibid., pp. 33–36.
12. Van Cleave, p. 57.
13. Ibid.
14. Walter F. Hahn, "Nuclear Proliferation," *Strategic Review*, Winter 1975, pp. 17–18.
15. Ibid.
16. The GNP's and defense budgets are given for each country in the December 1975 issue of *Air Force Magazine*, which presents "The Military Balance" compiled by the International Institute for Strategic Studies, London, pp. 43–104. The percentages were calculated from these figures.
17. Ibid.
18. Ibid.

MBO

Experiences in a Nonprofit Government Agency

MAJOR JOSEPH M. SYSLO

MILLIONS of words have been written about management concepts. After twenty years or so one concept still remains controversial. It appears periodically in the management world, with successful results in some cases and disaster in others. The unique feature of this one theory is that it resurrects and starts over in another location despite its spectacular failure elsewhere. The name of this management concept changes with each rebirth. It has been called "management by objectives," "managing for results," "management by commitment," "goals management," and other variations. In spite of the name changes, it is still basically the same management concept that Peter Drucker wrote of in the early sixties. It was actually Dr. Kurt Lewin who coined the name "management by objectives" in the forties.[1] The changing of names is not arbitrary, nor is an attempt to disguise the

system for a new try. The title change is usually indicative of a change in the overall system for that particular instance. That, perhaps, is the reason for the overall success of management by objectives (MBO). In order to succeed, each program must be fitted to the organization it is to serve.

The purpose of this article is not to explain the inner workings of these many programs, their individual differences, or the general managerial technique itself. Explanations and interpretations of the mechanisms will be inevitable. The main purpose is to share some observations made while taking part in the implementation of such a system in a government agency and possibly demonstrate some of the pitfalls that might lie in the path of a newly implemented program.

MBO programs are relatively new to the general public. Originally, it was thought that MBO would not fare well because of the lack of a proper measurement system, namely profit.[2] It seems that MBO was initially predicated on the profit-loss statement as the best measurement of success or failure. In some cases this was the best measurement; in others it was inconsequential. Drucker concluded very early in his writings that a business should not be inbeing entirely for the profit motive. A business concern was also in operation to make a contribution to the society.[3] If his thought on the matter has merit, then the profit-loss statement does not have to be the sole indicator of success or failure of the enterprise or of the management system that guides it. In keeping with this line of reasoning, the absence of profit-loss measurement, or even some form of cost-benefit measurement, would be inconsequential to assessing the progress of an MBO system.

There are other methods of measuring the success of management. The successful, timely accomplishment of routine tasks, the successful implementation of an innovative system, the successful completion, or, better yet, the start of a developmental program brought out of the conceptual phase because of the impetus of a goal oriented management system—all are indicators of management's success. This is not to say that profit is not an important and effective measurement. The comparison of last year's profits to this year's is a necessary, valuable indication of growth and health. However, in addition to the comparison of yearly profits, or the comparison of costs incurred to benefits derived, the overall results of the organization's activities should also be measured. MBO is a system that can do just that. In fact, MBO might be better suited to a nonprofit organization because it can concentrate on actual results.

Management by objectives started as a government-wide effort in 1973 by the Office of Management and Budget, in reaction to a presidential memorandum.[4] Some twenty-five or more government agencies have instituted MBO in one form or another, and they have had tentative success in some of the systems.

In the published literature on the subject, there are numerous ways listed of "how not to" achieve program success. Dale McConkey lists twenty ways to kill MBO. John Humble, the leading British management expert and a staunch proponent of MBO, has also outlined a number of ways that MBO can fail.[5] The list inevitably grows—things to do, things not to do—as more and more organizations try MBO. This is good! Critical analysis provides for a healthy attitude and a way to further perfect the concept. Judging from experience gained in the

involvement of the field implementation of the Management by Objectives/Results (MBO/R) program by the Air Force Contract Management Division (AFCMD) of the Air Force Systems Command, one realizes that the list can be amplified. The MBO/R program evolved as a result of the development and test by the headquarters staff of a system fitting the organization's environments and needs.[6] The program has now completed two years, and an overall promise of good things is indicated, if care is taken to avoid certain obvious pitfalls.

top level support

Of the many woes that can beset an MBO program, lack of top management support is by far the leading killer. Top management support is the first requirement levied by most MBO proponents. This requirement was also stated to be one of the primary concerns with the implementation of the AFCMD program:

> The first step in implementing MBO is the attainment of top level support. If there is one significant element that can cause MBO programs to fail, it is lack of full commitment by the head of the organization.[7]

This is not a new or profound analysis. Then why reiterate it? Because allowing this support to falter under any circumstance or guise will result in the rapid demise of the program. It is very true that in the implementation phase of MBO, much time must be devoted by key personnel to ensure the proper beginnings. It is also true that top level management has limited time, and the key man's time is extremely valuable. There are many facets of the MBO system that are entirely new to an organization and therefore time-consuming. Training each participant takes time. Writing objectives, defining key result areas, meeting with

subordinates to negotiate objectives and the plans to achieve them—all take time. There is also a requirement to meet periodically during the MBO cycle to determine the status of these plans. This process consumes a large amount of the key man's time. Once the program is off and running, the temptation is to back away and reduce time commitments because of the evidence of initial program success. Time constraints should not be used as the rationale for lessening top management involvement. The factors of geographical remoteness, travel time, expense, and key personnel availability should not dictate any lessening of top management involvement. An MBO program will place hardship on key personnel and will place heavy demands on the time of managers. The point that MBO was chosen to be the main method of management can easily be overlooked.

The purpose of MBO is to change the organization from an activity-oriented to a results-oriented operation.[8] Implementation of such a system indicates that management wants to:

1. identify the command's direction,
2. prioritize resource allocation, and
3. measure effectiveness.

These improvements cannot be made unless management support is indicated and perceived by subordinates.

Management has made the commitment to this program for the long run, but management in military and government organizations changes frequently. MBO can tie this transience together. Top management must support the continuing program, not only the initial phases. The MBO system does provide a vehicle for continuing management support, the review cycle.

Most experts agree with the idea of total management involvement, including frequent review. John Lasagna

makes the proposal that "an ideal review date seems to fall between two and six months, preferably closer to the former period the first year or two in an MBO effort."[9] Humble writes, "Review is not an isolated event once a year, but rather an additional occasion for taking a total view of results and resetting objectives. This total review supports an ongoing day to day, week to week management review."[10] Any lessening of the review sessions, which allow face-to-face contact between superior and subordinate, is debilitating. Using another medium for determining the status of objectives would have the same effect. It would be perceived by the subordinates that top management is no longer concerned with the program. They will perceive a program started and left to run on its own momentum.

The inherent quality of an MBO program is to give management more time to concentrate on the future because through this MBO tool the short term is more efficiently managed at the proper lower echelon. This is not to say that MBO will eliminate all the fires needing to be fought, but it will eliminate those that are fought unnecessarily due to misguided planning.

problems of measurement

Perhaps the most difficult problem of a new MBO program is that of measurement. Even in the private sector (which has an obvious return on investment-measurement capability) some objectives can only be subjectively measured. The majority of goals in the public sector are beyond quantification because there is no product involved. Cost-benefit analysis, another method of objective measurement, is also very difficult, if not impossible, in the public sector. Trying to measure dollars spent per value gained in the realm of public service is a nebulous concept. What then can a manager or commander do to ascertain whether or not the newly instituted MBO program is achieving success?

Actually, this measurement is contingent on the objectives that are originally written and agreed upon by the subordinate and his boss. The more specific and understandable an objective, the easier it is to evaluate its progress. An objective that pinpoints a singularly responsible manager to a measurable result, within available resources, will allow for unbiased evaluation.[11] Remember, the subordinate manager and his superior have to agree on all of the objectives written.

The training manual used for the AFC MD MBO/R program lists five levels of quantifiable objectives. In descending order of abstraction, they are hard numbers, ratios, scales, verbal descriptors, and condition descriptors. An example of the concreteness of hard numbers would be an objective that stated, "to recruit five people within ninety days." This demonstration of hard numbers leaves no room for confusion as to what the outcome should be. The more vague verbal descriptor might read, "to write a report during the next fiscal quarter." An example of a condition descriptor might be, "to improve the morale of the organization."

Keeping the objectives in the higher levels of abstraction eases the problem of measurement but does not solve it entirely. Continuous review of the objectives and the progress made along the plans to achieve them assist in the solution of the measurement problem. Progress can be analyzed, plans altered, and objectives can be further refined (moving up on the abstraction ladder).

These actions further ease the problems of measurement and also provide a yet stronger case for frequent review.

performance appraisal

Another problem not quite so easy to contend with is the difficulty of measuring personal success and performance appraisal. George Strauss, in a critical view of MBO, stated, "MBO is not very realistic if looked upon entirely or primarily as a method of performance appraisal or subordinate goal setting . . . goals mesh with those of the organization."[12] The system must be able to succeed first, leaving appraisal to a later date if not ignoring it totally. There is a superficially easy link between the accomplishment of goals and the performance appraisal. It would appear that a manager's success or failure in achieving mutually acceptable goals should be reflected in his performance rating. Perhaps so, but then the question comes to mind, "If these are mutually acceptable goals, shouldn't the performance appraisal be mutually 'shared' between the subordinate and his boss?"

A more pertinent consideration is the fact that for the first three to five years of program implementation, a too-close relationship with the performance appraisal can lead to the establishing of mediocre objectives. It can ultimately lead to the failure of the entire program because of the fear of poor appraisal, or because of the bias and overobjectivity of the appraiser. Implementing a new management system, especially MBO, necessitates a wholesale change in attitudes and perceptions. For the first time in the careers of many involved, the subordinate is displaying to his boss exactly how much he thinks he can perform, in what manner, and within what time constraints. This also may be the first time the supervisor is mutually setting the course of his organization. MBO will be, for many, the first experience in participative management. Many traditionally set ways have to be rethought.

Only after the supervisor and subordinate are comfortable with the relationship can an MBO system flourish and an honest objective appraisal be made. This can come about only after an adequate period of implementation. Even after this honeymoon period, linking the MBO program directly to performance appraisal can seriously affect the overall outcome.

line and staff

In a well functioning management system, there is the temptation to integrate line and staff MBO programs. On the surface it appears to be a reasonable, expeditious choice to streamline the program. This choice, however, could result in an overintegration of functions. MBO can work for a staff function. It has worked successfully for line organizations. Yet it cannot work successfully as a totally integrated system in which the staff participates between command and line—especially where the line organizations are separate entities with command and staff functions of their own. An example would be a corporate body made up of several divisions or separate companies.

Traditionally, staff departments do not work in the mainstream of activity. Line departments do mainstream work. Even in the public sector there is the distinction where activities usually are not associated with generating a product. Staff serves, advises, and solves problems for the commander. AFCMD'S MBO/R program started with staff implementation in Feb-

ruary 1974. The staff was the test bed for the program. Line implementation followed a year later and has just completed the first cycle.[13] The program was probably divided this way for ease of implementation because of the geographical dispersion of the operating locations of the command. The mission statement and command objectives were transmitted to both line and staff organizations at the start of the cycle to provide direction.[14] Each function determined objectives from its perception of the mission statement and negotiated its objectives with the command section. One of the policies stated in the field implementation was, "the command section will only review objectives of field organizations."[15]

Whether it was done to facilitate implementation or in recognition of possible conflict of command lines, separate line and staff program implementation was the proper choice. Line-staff coordination of objectives is of no value if the mutual objective negotiations between the subordinate and his boss are done properly. Objectives of both line and staff functions are presented to and analyzed by command. Any actual or potential conflict between line and staff objectives should be identified and resolved by the command section. Likewise, any potential windfalls found in the mutual negotiations or review sessions should be transmitted by the command section to both line and staff functions. There is no need for direct line-staff coordination which could result in the disastrous short-circuiting of command communications.

continuing education

An MBO program can be put into effect without outside consultants. This consid-

eration is very important, keeping in mind the limited availability of funds and the extremely ambitious, innovative program. It was done at AFCMD through a thorough training scheme that utilized MBO advisors from within the organization. The usual criteria of competence (e.g., motivation, confidence, etc.) were sought, but the most important qualification was that the candidate be not presently serving in a management position.[16] Thus a nonmanager was chosen to educate and advise higher levels of management. It was a very innovative way to go, to provide an outside consultant. There was no chance for interdepartmental conflict because one manager was being chosen over another.

The results were good. Advisors, trained by the command section, passed on the ground rules of the program to their organizations. Clear air, unbiased, mutual-objective setting sessions among the supervisor, subordinate, and advisor resulted because of the expertise and the "special" status of the advisor. Original implementation plans were to educate one advisor in the MBO/R process.[17] Continuing education was to take place on a periodic basis, providing the advisor with up-to-date direction in new MBO systems and ideal situations to be used in the advisory process. This procedure would serve to build a better framework of managerial knowledge throughout the organization. Of course, feedback was a very important by-product. The command section would get some general idea (more specific as the number of continuing education sessions increased) as to the overall status of the new system.

Continuing education is a basic necessity in an MBO program. Any neglect in this area could rapidly stagnate the program and cause it to fail. This education process must not be limited to MBO but

should include management skill enhancement as well, particularly in the public sector where job and skill rotation are not as easily achieved as in a private corporation. Any organization needs a sound management development program to go hand-in-hand with the rather different MBO approach.

As stated previously, there are many set ways to overcome. The best way to do it is through a thorough educational process. The matter of resources comes to mind when considering this. Funds as well as productive personnel time are limited.

There are, however, alternatives to costly formal resident education programs. On-the-job training may well be the primary method. One of the best examples is the education of the AFCMD MBO/R advisor. The education this non-manager is getting, just viewing the mutual negotiations, is invaluable to his understanding of the management process. Conferences of managers to exchange ideas rather than to discuss daily problem areas could also be extremely effective. Using the experience on hand to teach and train each other not only improves the skill of managers but also increases rapport as a side benefit.

There are other alternatives. The point to be made, however, is that management development, a recurring MBO educational process, and a medium for allowing command collection of feedback are necessities of a successful program.

The MBO/R program at AFCMD is a little over two years old and appears to have had a very successful start. There is possibility for improvement, but to their credit, the responsible managers have made an interim assessment and suggested alternative directions. Some of the approaches are in concert with this article; others are not. Yet the purpose of this article is not to judge. Rather it is to share a viewpoint generated while taking part in the field implementation of the MBO/R program. At the working level, where the inertia is strongest and disagreement can be insidious and terminal, the potential pitfalls seem to be more apparent.
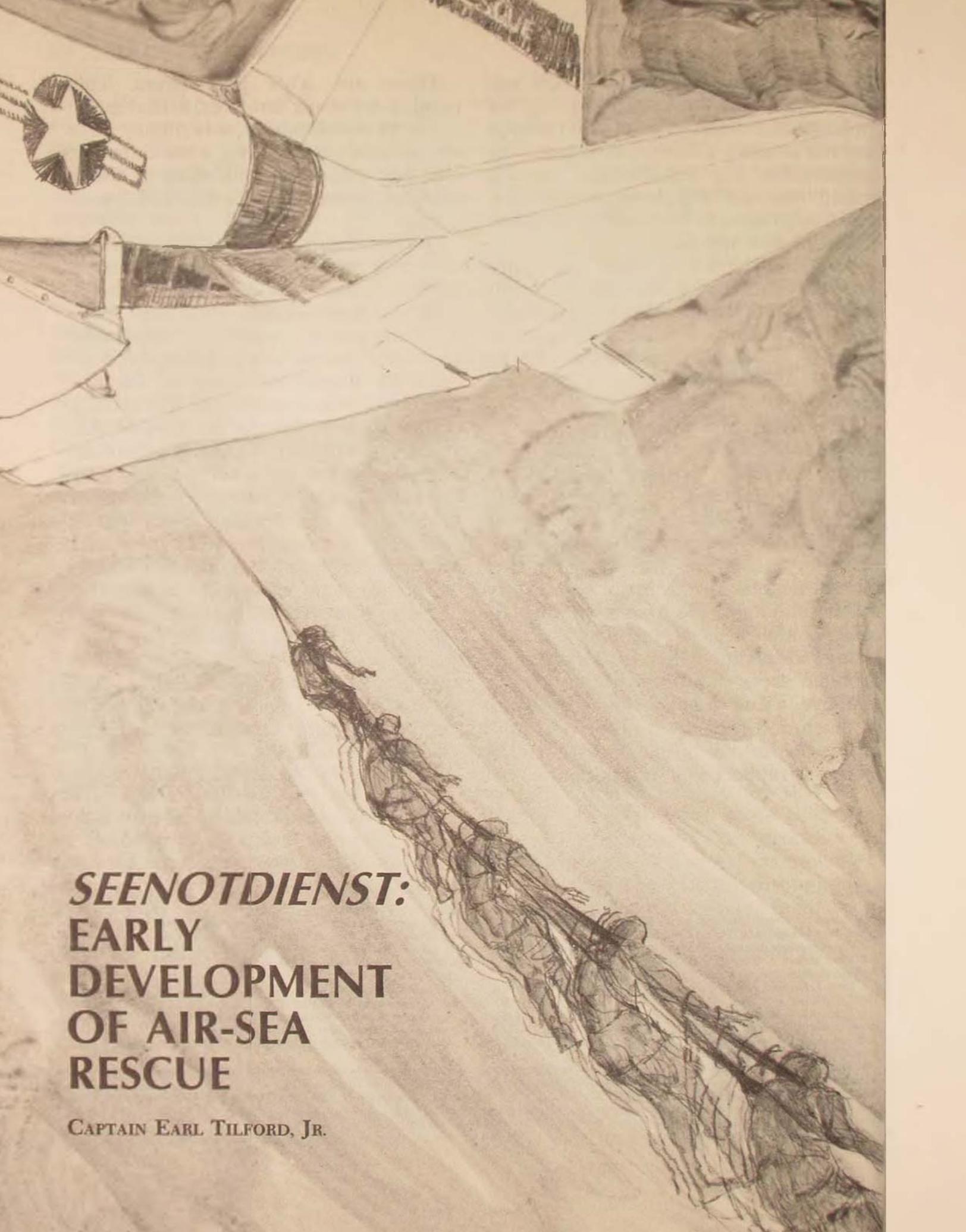
The program is good, and it could very well serve as an MBO model for any other government agency. But remember that any spinoff program will have to be fitted to the specific organization. Probably some of the points brought out here will assist in that tailoring.

Armed Forces Staff College

Notes

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6. *Management by Objectives/Results Status Report*, Air Force Contract Management Division, Kirtland AFB, New Mexico, 21 August 1974, p. 2.

7. Letter, Director of Research, AFCMD to staff and field organizations, Kirtland AFB, New Mexico, 23 October 1973.
8. *Management by Objectives/Results Training Manual*, Air Force Contract Management Division, n.d.
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13. *Hq AFCMD MBO/R Status Report*, AFCMD, 21 August 1974, p. 5.
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SEENOTDIENST: EARLY DEVELOPMENT OF AIR-SEA RESCUE

CAPTAIN EARL TILFORD, JR.

THE sky over the northwestern Soviet Union between Murmansk and Petsamo was clear and cold on a winter day in 1942. For the German war correspondent in the back of the twin-engine Messerschmitt 110 (Bf 110), an actual combat patrol flight was exciting and unusual. Neither he, the gunner, nor the pilot saw the Soviet Yakovlev fighter until the bullets slammed into the fuselage, ruptured hydraulic lines, and severed control cables. The German fighter rolled out of control and plummeted toward the arctic tundra.

The correspondent and gunner parachuted from the falling aircraft. They became separated in the descent, and, to further complicate the situation, the newspaperman lost his eyeglasses. He soon found himself alone and half-blind on the snow-covered tundra, well behind enemy lines.

Shortly after landing, however, a German airplane spotted him and circled overhead. The correspondent managed to make his myopic condition known to the flyers, and soon another plane dropped him a new pair of spectacles along with precise instructions on how to reach a nearby lake, where he would be picked up. On reaching it the reporter found the gunner, and together they anxiously awaited their rescue. An Arado 199 (Ar 199) rescue plane fitted out with skis, landed on the frozen lake, and soon the two weary men were strapped in and ready for takeoff. The Arado was almost airborne when Soviet fighters attacked and sent it sliding into a snowbank. The pilot and his two passengers climbed from the disabled craft and scrambled for cover. Fearing further losses, the *Seenotdienst* (Air-Sea Rescue Service) commander at Kirkenes in northern Norway suspended further recovery efforts. However, the three Germans reached friendly lines after avoiding Soviet patrols for four days.[1]

IT WAS during the Franco-Prussian War of 1870–71 that the first aerial rescue occurred. While the Prussians besieged the city of Paris, the French used observation balloons to airlift 164 wounded soldiers and some important bags of mail from the beleaguered city.[2]

During World War I there were several attempts to use airplanes as ambulances. The French Air Service evacuated sick soldiers from Serbia by air as early as 1915.[3] Two years later, as the United States proceeded with an all-out mobilization for war, thousands of new pilots were trained at temporary fields all over America. Many inexperienced pilots suffered accidents and injuries. Since most training fields were isolated, overland transportation by ambulance took hours. Early in 1918 Captain William C. Ocker, a training officer at a remote field in Louisiana, converted a standard JN-4 "Jenny" to accommodate a patient in a semirecumbent litter in the rear cockpit, thus initiating the world's first military aerial ambulance service.[4]

Britain, France, and Germany made advances in the use of the airplane for humanitarian purposes during the interwar period. In April 1923 an epidemic of dysentery afflicted British soldiers on garrison duty at isolated posts in Kurdistan. The Royal Air Force (RAF) units stationed in Iraq had a few Vickers-Vernon troop carrier aircraft which were quickly dispatched from Baghdad to Kirkuk and then on to a forward landing field near Serkhuma in the Adghir Dagh Mountains. Two hundred stricken troops were then quickly evacuated to hospitals in Baghdad.[5] Three years later, during the

Flying Ambulances

American ingenuity was responsible for the first airborne ambulance, JN-4 "Jenny," modified by Captain William C. Ocker to carry a litter patient semirecumbent in the rear cockpit. A JN-4 H type "hospital ship" (below, left) was on display at Love Field, Dallas, Texas, late in 1918. . . . A later model, the DH-4 airplane ambulance, (below right), is seen preparing to take off from Langley Field, Virginia. . . . By World War II air-evacuation capability was rather more sophisticated, as seen (bottom) in the practice run at Bowman Field, Kentucky, in March 1943.

Riffian War in Morocco, the French improvised ambulance planes and evacuated a number of wounded.[6]

The Death and Resurrection of German Air Power

The Treaty of Versailles, 28 June 1919, limited the size of the German military to a defensive force of 115,000 men and prohibited an air force and armored units.[7] Article 202 specified that Germany must surrender, " . . . all her land and water aircraft, including any which may be in the process of manufacture, development, or construction." Neither was Germany permitted to retain " . . . aircraft engines, ballonets, and wings, armaments, ammunition, airborne instruments... and photographic equipment."[8]

The Allied Control Commission oversaw the dismantling of the German Air Force. Although arbitrary deadlines and force cuts hampered its efficiency, the Control Commission effectively clipped the wings of German air power by January 1922.[9] However, interest in aviation continued in both civilian and military sectors of German society. Glider clubs and gliding became popular around German universities. A sport flying club *(Sportflug G.m.b.H.)* was funded by the *Reichswehrministerium* (Ministry of Defense); it operated ten flying schools where former military pilots could use their flying experience and civilians were trained as aviators.[10]

While publicly abiding by the terms of the Versailles Treaty, the German government moved secretly to circumvent its provisions. Germany and the U.S.S.R. signed the Treaty of Rapallo on 17 April 1922. In addition to the political and economic provisions, the Treaty included a number of mutually beneficial secret military agreements.[11] Under the far-

sighted guidance of *Generaloberst* (Colonel General) Hans von Seeckt, Chief of the *Reichswehr,* the diplomats obtained a provision whereby a number of German pilots and engineers were placed at the disposal of the fledgling Red Air Force. In 1924 the Germans and the Soviets established a flying school at Lipetsk, about 300 miles southeast of Moscow, and Junkers *Flugzeugwerke* obtained a concession from the Soviet government to build aircraft in an old factory at Fili, near the capital.[12] Lipetsk proved to be not only a flying school but also a testing ground for prototype Heinkel and Fokker airplanes, built in Germany and Holland to comply carefully with Allied restrictions, then shipped to Russia and made combat-ready at Lipetsk.[13]
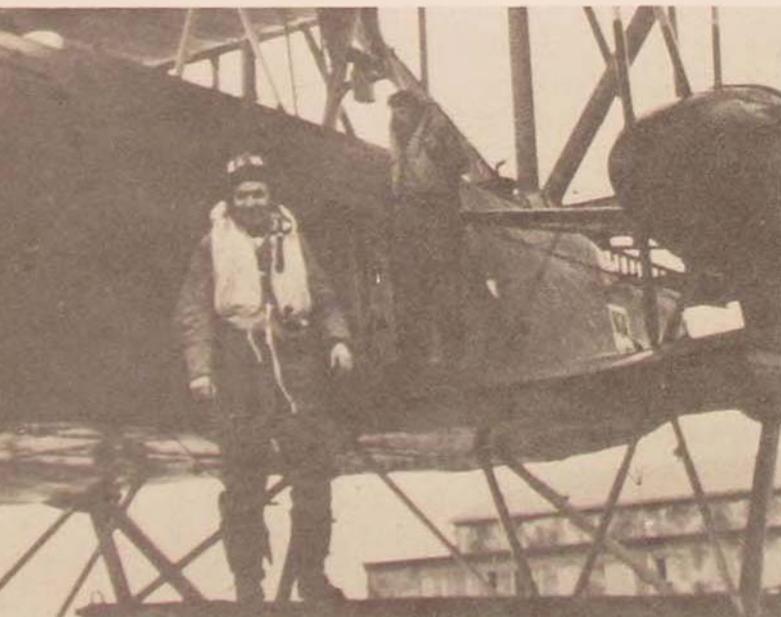
Reichspräsident (Reichs President) Field Marshal Paul von Hindenburg appointed National Socialist Party Führer Adolf Hitler to the post of *Reichskanzler* (Reichs Chancellor) on 30 January 1933. Hitler arranged for his friend Hermann Göring to succeed *Generalleutnant* (Major-General) Helmut Wilberg as *Der Reichsminister der Luftfahrt* (Reichs Air Commissioner). (Wilberg, a Jew, became Chief of the Air War College.)[14] The rebuilding of German air power began immediately, and two years later, on 10 March 1935, Göring revealed the existence of the new Luftwaffe which then had a force of five reconnaissance and eleven fighter and bomber squadrons.[15]

The Luftwaffe developed as a tactical air arm for use in supporting the Wehrmacht, and in its early years operations were oriented to combat over land mass areas. As the Luftwaffe expanded quickly, it could ill afford the unnecessary loss of a single trained aircrew member. If a plane encountered problems over land, the crewmen could ultimately parachute

German air-sea rescue

Air-sea rescue had its beginnings in Germany early in World War II. A Seenotdienst officer (right, reading clockwise) briefs a rescue crew for rescuing the survivors of a sinking ship. . . . Air-sea rescue personnel demonstrate the uses and kinds of rescue equipment for fighter and bomber crews. . . . An air-sea rescue aircraft is ready to undertake a mission.
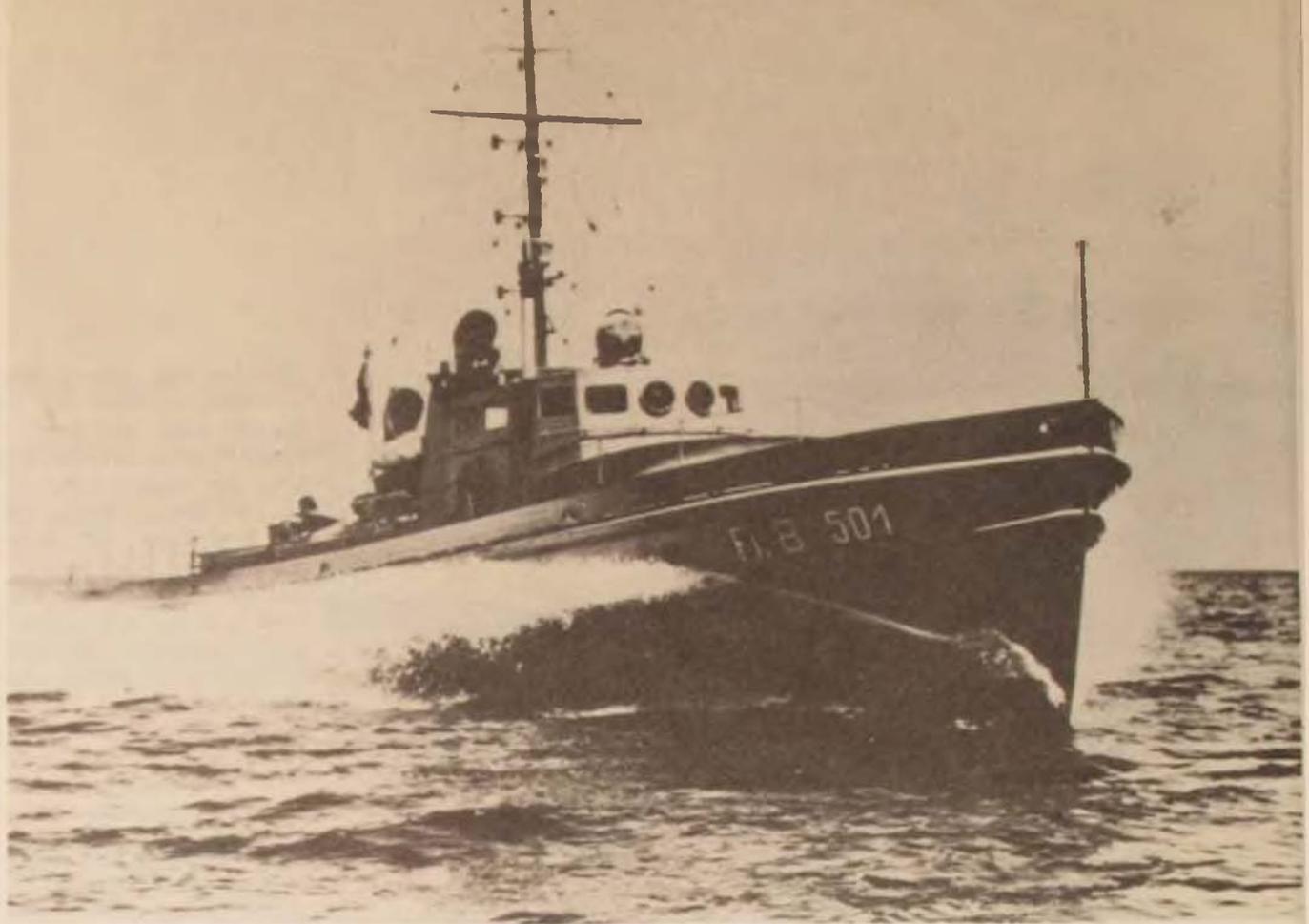
to safety. However, if a seaplane was forced down, the crewmen had to be picked up by boat. In the spring of 1935 *Luftkreis-Kommando VI (See)* (Air Regional Command VI, Naval), headquartered at Kiel, assumed the responsibility of developing a system for recovering downed seaplanes and their crews. Lieutenant Colonel Konrad Goltz, a supply officer, was given, as an added duty, the administrative responsibility for some boats to be used in picking up downed airmen.

Initially Goltz had very little equipment with which to accomplish his mission. The pride of his Luftwaffe seagoing fleet was an old Air Traffic Control Boat, the *Krischen*. He rigged the leaky old vessel with a boom and tackle sufficient for hoisting smaller types of seaplanes on board. Additionally, he commanded a small number of barely seaworthy boats of various sizes and descriptions, none over 50 feet in length.[16]

Goltz issued regulations that provided for six rescue zones—two in the North
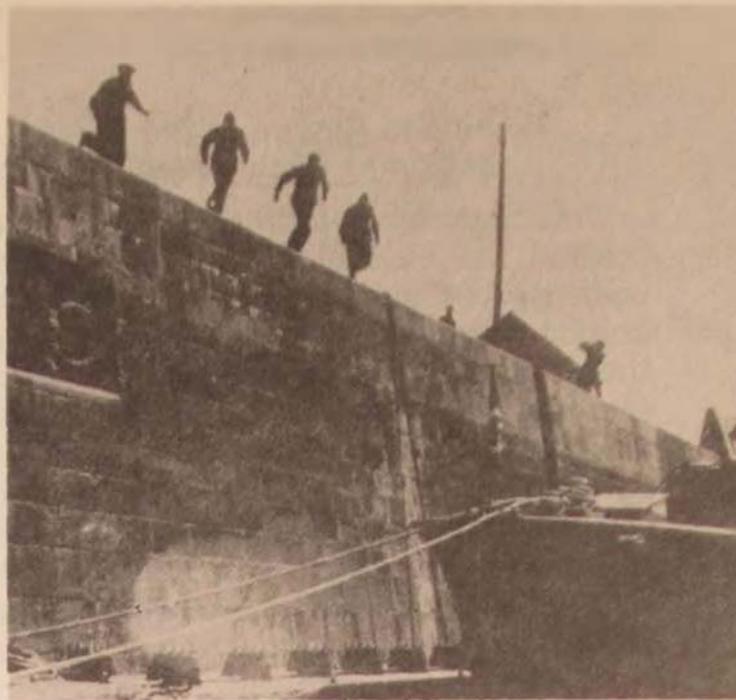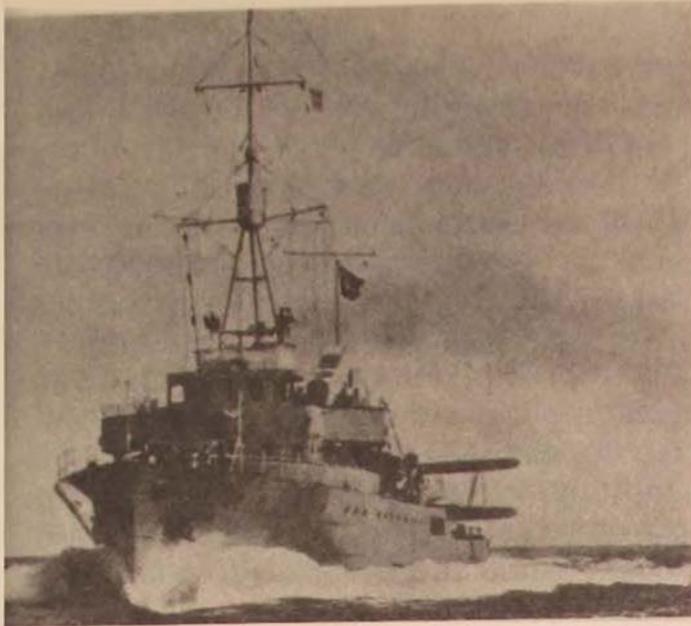
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Sea and four in the Baltic. Each zone was assigned a rescue boat for retrieval purposes, and each zone commander was given the authority to request the use of *Kriegsmarine* (Navy) aircraft for search purposes. Support from naval units could be obtained through German Naval Headquarters at Kiel and Wilhelmshaven. German lifeboat societies also rendered aid whenever possible.[17]

In response to the increased danger of war with Great Britain following the Munich Crisis of 1938, the Luftwaffe conducted exercises early in 1939 that included its first large-scale, over-water operations. The bombers then available to the Luftwaffe proved grossly inadequate in range. As a result numerous airfields were established along the coast,

and large numbers of airplanes incapable of landing on water began operating over the North Sea and along the Baltic coast. Until this time there had been only a few instances of airmen in distress at sea. In such cases rescue units involved used any available naval seaplanes to assist in recovery efforts. Only after the Luftwaffe commenced operations over water on a regular basis was the decision made to acquire a seaplane specifically modified for air-sea rescue operations.[18]

Colonel Goltz selected the Heinkel 59 (He 59), a large, twin-engine biplane fitted with floats, as the first Luftwaffe aircraft dedicated for air-sea rescue duties. The Rescue Service acquired 14 of these planes and awarded the firm of Walter, Bachman, and Ribnitz of Meck-

The German Sea-Rescue Boat 501 (opposite) races against time to save a downed aircrew. . . . A rescue ship (above, left) makes for port with a salvaged aircraft aboard. . . . A German sea-rescue crew (right) scrambles to start a mission in a confiscated French boat, in harbor at Cherbourg.

lenburg, a contract for refitting the machines to the specifications outlined by the *Luftwaffen-inspektion des Sanitätswesens* (Medical Inspectorate of the Luftwaffe). Accordingly, first aid equipment, electrically heated sleeping bags, and artificial respiration machines were installed. The rescue experts ordered the planes refitted with a floor hatch, a collapsible ladder long enough to reach through the hatch to the surface of the water, a hoist, and lockers to hold life belts, signaling devices, as well as other survival paraphernalia.[19]

By February 1939, the growth of the Luftwaffe, its reorientation resulting from the exercises, and its increased area of activity prompted a large-scale reorganization of its command structure.

Political as well as military considerations motivated these changes. First, the Office of Secretary of State for Air, under Field Marshal Erhard Milch, absorbed the title and functions of the Office of Inspectorate-General of the Luftwaffe. Second, to better prepare for war against potential enemies in the West as well as in the East, flying units were subordinated to four operational commands, known as *Luftflotten* (Air-Fleets), headquartered in Berlin, Brunswick, Munich, and Vienna.[20] This reorganization placed the rescue function under the Office of General of the Luftwaffe with the Commander-in-Chief of the Navy and Commander of Naval Units.[21]*

*Name of one office under *Der Reichsminister der Luftfahrt und Oberbefehlshaber der Luftwaffe* (Reichminister of Aviation and Commander in Chief of the Luftwaffe).

Air-Sea Rescue at the Beginning of the War

On 1 September 1939, German forces crossed the Polish frontier. The Luftwaffe proved to be a potent attack force as it first demolished the Polish Air Force then demoralized the Polish Army with seemingly endless strafing attacks. Britain and France declared war on Germany on 3 September. However, since combat operations in the first months of the war were limited primarily to the Polish theater and therefore took place almost entirely over land areas, rescue was not much involved. A different phase of humanitarian endeavor played a part in the fighting in Poland. Drawing on their aeromedical evacuation experience gained in the civil war in Spain, the Luftwaffe used Ju 52s to evacuate over 2500 wounded from Poland during the four weeks of fighting.[22]

Late in September 1939, Luftwaffe fighters shot down five Royal Air Force Hampden bombers of a group that was attacking two German destroyers near Heligoland Bight, an arm of the North Sea off the port of Wilhelmshaven. These early losses made Bomber Command hesitant to send planes too close to Germany during daylight hours. As German U-boats and mines claimed ever more British shipping, the War Cabinet put increasing pressure for action on Bomber Command. In early December twin-engine Vickers Wellingtons, flying in tight formations, resumed armed reconnaissance flights over the North Sea.[23] Their task was to seek out and attack German naval vessels operating in the Heligoland Bight and off Wilhelmshaven. During the first two missions, on 3 and 14 December, the bombers held their tight formations and successfully repelled German fighter attacks.

On 18 December, 24 Wellingtons took off for Heligoland in their tight formation. A low ceiling prevented the bombers from releasing on their targets at Wilhelmshaven, so still holding formation, the pilots turned for home. Bf 109s and Bf 110s picked up the bombers soon after they departed the German coast. The fighters attacked the formation from the top, firing diagonally across the wing and upper portions of the fuselage. With no upper fuselage gun turrets, the Wellingtons were defenseless against this new tactic. Over half the formation went down while the Germans lost only one Messerschmitt.[24]

Seenotdienst (Air-Sea Rescue Service) boats and newly acquired He 59 rescue planes responded from their base at Hörnum. They saved a score of British airmen in this first wartime air-sea rescue operation of any appreciable size.[25]

Conversely, the British could hardly have responded to save their own downed airmen. The RAF had only a few crash boats and no rescue planes in 1939. Back in 1935, the Air Ministry approved the building of an experimental high-speed rescue launch. Coastal Command subsequently ordered 15 of these boats following successful testing in 1936. An order for 13 additional boats was placed in 1939, about the time that the entire force was called in from Aden, Singapore, Malta, and Malaysia and stationed in home waters. These actions marked the extent of British preparations for search and rescue (SAR). Locating a downed pilot remained the primary responsibility of the parent unit throughout the first two years of the war.[26]

The *Seenotdienst* Moves North

After smashing Poland, Hitler turned his attention to the West. On 9 April

1940, 2 hours and 29 minutes after the first German paratrooper landed outside Copenhagen, the King of Denmark surrendered. At a cost of twenty dead and wounded the territory of the Reich grew by 16,000 square miles.[27]

On that same day Germany began air and sea operations against Norway. The Norwegians, aided by the British and French, offered stiffer resistance. Their small air force, elements of the Royal Air Force, and the Royal Navy combined with the unpredictable northern weather to exact a price for the Luftwaffe's victory in the North.[28]

Generaloberst Hans Jeschonnek, Chief of the Luftwaffe General Staff, revealed the details of Hitler's plan to attack in the North to only a handful of staff officers. The *Seenotdienst* was, therefore, unaware of the details of Hitler's Directive Number 1, and consequently made no preparations for large-scale rescue operations. On the first day of operations, when a number of Junkers transports crashed into the Norwegian Sea, no rescue forces were available to save their drowning crews.

Upon learning of the invasion, Goltz ordered several He 59 seaplanes transferred from the Isle of Sylt to Aalborg in northern Denmark, and within two days rescue planes and boats began operating in support of the Norwegian campaign.[29] Rescue operations responded to meet the requirements as fighting in Norway expanded and intensified. Heinkels and rescue boats moved from Listafjord to Stavanger, Bergen, and Trondheim. Following the fall of Norway, rescue units deployed to Tromsö and Kirkenes in the far north. Units of the German Air-Sea Rescue Service remained in Norway throughout the war to provide valuable rescue service along the bitterly contested Arctic sea lanes into the Soviet Union

and to perform aircrew recoveries throughout *Luftflotte* V (Air-Fleet V).[30]

As the fighting in Norway drew to a close, the General Staff assessed the Luftwaffe's performance. Colonel Goltz was ordered to Berlin where he presented a detailed list of complaints and recommendations to Jeschonnek, who as a result, ordered the establishment of *Der Inspektion des Seenotdienstes* (Inspectorate of Air-Sea Rescue Services). Goltz was appointed Chief of the Inspectorate and promoted to the rank of *Generalmajor* (brigadier general).[31]

Early Summer, 1940

On 10 May 1940 Hitler's forces opened their attack in the West. Three days later the panzers of General Heinz Guderian crossed the Meuse at Sedan. Within a week German forces reached the English Channel, cutting off and trapping the Allied armies in Belgium.[32]

In spite of the lessons learned in Norway, the General Staff again failed to preposition search and rescue forces prior to Luftwaffe operations in Holland, Belgium, and France. Though the greater weight of air operations was concentrated in eliminating the French Air Force, the Luftwaffe had a secondary mission of keeping the Channel under observation and attacking British ships bringing reinforcements to the continent.[33]

During May, rescue operations were conducted on a shoestring as the *Seenotdienst* depended on interim solutions while trying to expand to meet the needs of the approaching confrontation over the Channel. General Goltz prevailed on *Generalmajor* Hans-George von Seidel, *Generalquartiermeister der Luftwaffe* (Quartermaster General of the Luftwaffe), to transfer 12 Heinkel He 59s from his resources to the rescue invento-
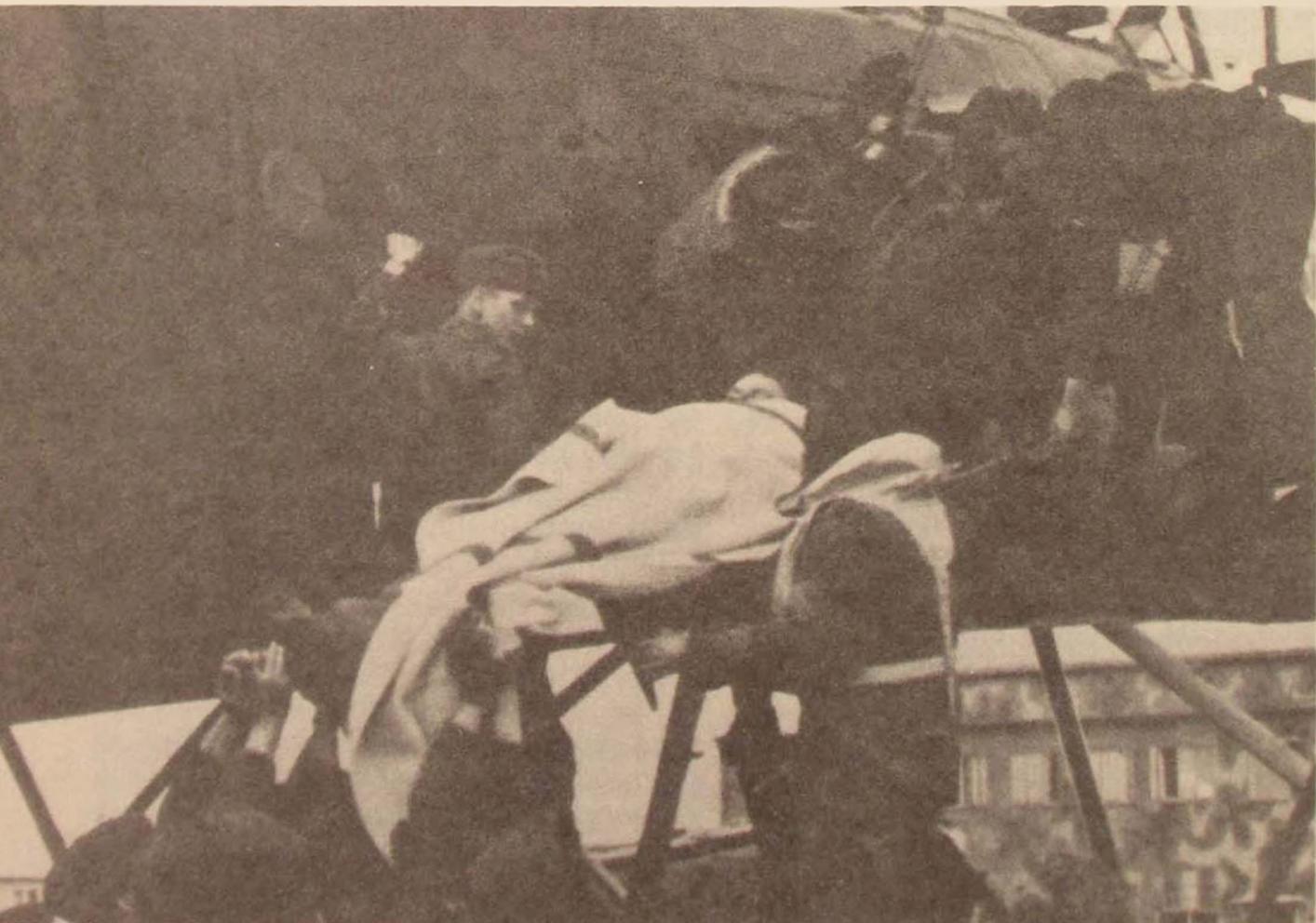
A downed German flyer climbs out of his rubber lifeboat into a Dornier 24 rescue plane.

An unconscious airman is hoisted aboard a German air-sea rescue aircraft.

A rescued airman is returned to safety and medical care.

ry. The Heinkels were flown to Kiel, where, following rapid conversion to white-painted rescue models, they joined the Air-Sea Rescue Service late in July.[34]

The Luftwaffe bombed Dover on 22 May and carried out its first attacks on RAF airfields three days later.[35] In spite of the fighting over the Channel, *Seenotdienst* units did not move into France until after the armistice was signed on 22 June 1940. Goltz toured the French and Belgian coasts in late June and decided to establish three centers for air-sea rescue. He selected Boulogne as the center for northern Channel rescue operations, Cherbourg for the south Channel, and Brest for the Atlantic. In Holland, an Air-Sea Rescue Service Center was attached to the Naval Command Hague, and a base was established at Schellingwoude to monitor North Sea activities.[36]

Two Heinkels and two rescue boats were assigned to each of these bases. Since the 12 He 59s procured from the quartermaster had not been delivered,

Goltz used his ingenuity to acquire and jury-rig French seaplanes for rescue duties. The army discovered two three-engine Breguet-Bizerte seaplanes on a lake near Bordeaux.* Mechanics repaired these planes, and they were soon active in support of German SAR efforts. When, in late July, the additional Heinkels became available, *Seenotdienst* units were established at Le Havre, Saint-Nazaire, and Royan.[37]

The Luftwaffe mauled the Royal Air Force during the Battle of France. During May and June 1940, the RAF, by official British accounts, lost 959 aircraft, including 477 fighters.[38] On 4 June, Fighter Command's inventory totaled only 466 operational machines, of which 331 were Supermarine Spitfires and Hawker Hurricanes. The British aircraft industry provided replacements for most of these losses by mid-July; nevertheless, combat attrition continued. The absence of an effective SAR capability aggravated

*Later the Vichy government provided six additional Breguets for the German Air-Sea Rescue Service.

the situation since the downing of an aircraft in the Channel or North Sea usually meant the loss of its aircrew.[39]

The *Seenotdienst* deployed with the Luftwaffe as the Germans massed along the English Channel in late June and early July. Luftflotten 2 and 3 established an operational boundary by drawing an arbitrary line north from the mouth of the Seine through the center of England into Scotland. By British estimates, the German air order of battle (AOB) stood at 1200 light bombers, 280 Ju 87 Stuka dive bombers, 760 single-engine and 220 twin-engine fighters.[40]

At the end of June, German troops were poised at Pas-de-Calais, prepared to initiate Operation *Seelöwe* (sea lion), the invasion of Britain. Both Hitler and Goering agreed on the necessity of achieving air superiority before conducting the Channel crossing. The Battle of Britain began with the Luftwaffe attempting to engage and destroy the RAF. It was during this phase of operations, when much of the fighting centered over the Channel, that the German Air-Sea Rescue Service proved its value.

Adolf Galland, one of Germany's top fighter aces, emphasized the importance of survival in the water following shootdown. According to Galland, since even single-engine German fighters carried inflatable rubber dinghies, it was preferable to ditch rather than bail out over the water. The Bf 109 and the Bf 110 usually floated for up to 60 seconds after first touching the water. A cool-headed pilot had plenty of time to unstrap, scramble out, inflate his collapsible dinghy, and clear the aircraft.[41]

British fighter pilots were not so fortunate. Cockpit space in both the Spitfire and the Hurricane was not sufficient to accommodate an inflatable dinghy. British pilots preferred to bail out rather than ditch their mangled machines, and after hitting the water they could rely only on their Mae West life jackets.

*K*RIEGSMARINE and Luftwaffe He 59 operations in the Channel were less humanitarian than those of the *Seenotdienst*. Navy Heinkels laid mines along British shipping lanes and at the entrances to ports and harbors. At night Luftwaffe Heinkels flew to selected locations along the English coast to drop off spies and saboteurs. No wonder the British became wary of the intentions of white-painted rescue planes operating near their coast.[42]

The flight log of Group Captain A. C. Deere recorded that on 11 July 1940, "...we had just crossed the coast at Deal where I spotted a silver-colored seaplane with Red Cross markings . . . behind it were a dozen Me 109s."[43] A fight ensued in which the seaplane was forced down. The Heinkel and its crew were captured. Entries in the pilot's log noted positions and movements of British convoys. Reconnaissance being definitely a military and not a humanitarian function, the British decided to take repressive measures. On 13 July the Air Ministry released Bulletin 1254 which stated that as of 20 July air-sea rescue planes would be shot down.[44]

Sir Winston Churchill presented a somewhat less legalistic and more sanguine interpretation of the issue when he wrote, "We did not recognize this means of rescuing enemy pilots so they could come and bomb our civil population again . . . all German air ambulances were forced down or shot down by our fighters on definite orders approved by the War Cabinet."[45] It was Churchill's contention that since the 1929 Geneva

Convention made no specific mention of rescue airplanes, such aircraft were not entitled to its protection.

The Germans claimed that their rescue aircraft were protected by Articles 3, 6, and 17 of the Convention. According to Article 3, " . . . the belligerent who remains in possession of the field of battle shall take measures to search for the wounded." Article 6 provided that, "Mobile sanitary formations, i.e., those which are intended to accompany armies in the field, and the fixed establishments belonging to the sanitary service shall be protected and respected by the belligerents." Article 17 claimed that, "Vehicles equipped for sanitary evacuation, traveling singly or in convoy, shall be treated as mobile sanitary formations. . . . "[46]

After 20 July, British attacks on *Seenotdienst* aircraft increased in frequency and ferocity. Colonel Otto Dreyer, squadron commander of the rescue unit at Cherbourg, reported that a British bomber machine-gunned his white-painted, red cross-marked, unarmed Heinkel as it taxied toward a downed aircrew. Dreyer's Heinkel caught fire and sank, but the crew escaped on their life rafts and floated ashore on the Isle of Alderney the next day.[47]

In the light of the British actions, the General Staff ordered all rescue aircraft armed and painted to match the camouflage schemes in use in their area of operations. Though armed, the slow and cumbersome Heinkels and Breguet-Bizertes were no match for Spitfires and Hurricanes. In August, fighters began escorting rescue aircraft whenever mission requirements entailed operations in proximity to the English coast. Adolf Galland spoke of the gallantry of rescue crews that, with fighter escort, flew into the Thames estuary to pick up German and even English flyers.[48]

Still another aspect of the German Air-Sea Rescue Service was the use of air-rescue buoys. EA 5 (below) floated in the English Channel. Another (bottom) awaited launching on the beach at Lessay.

By autumn, the primary focus of the air war had shifted to the interior of England as the Luftwaffe began bombing cities. The rescue forces varied their tactics according to the needs of the Luftwaffe and the policies of the British. Since fighter operations no longer centered on massive sweeps at specific times and places to draw the RAF into combat, rescue patrols were no longer needed. In October 1940, the Germans introduced the Sea Rescue Float as one remedy for the changing needs of the air war. These buoy-type floats contained bunks, blankets, dry clothes, food, water, and distress signals. Their distinctive yellow paint made them visible for many miles. Periodically, rescue boats as well as Heinkels checked the buoys. Since they attracted any distressed aviator, British and German alike, the RAF also sent launches to make occasional checks. The hapless airmen who made it to one of these floats never knew if they might be rescued by their own forces or picked up by the enemy and interned for the rest of the war.[49]

During the Battle of Britain the *Seenotdienst* performed a valuable service because German pilots who were shot down over the sea stood a good chance of being rescued. The actions of the Air-Sea Rescue Service crews drew high praise from fighter pilots like Adolf Galland. But, in a way, it was the British who paid the highest compliments to the effectiveness of the German rescue efforts. In the summer of 1940 the Air Ministry decided to destroy the *Seenotdienst* through military action, but, when Coastal Command sought to improve its almost nonexistent SAR program in 1941, they drew heavily on their enemy's model.

Losses suffered by the RAF in the Channel and North Sea made it evident that an improved rescue capability was

Cramped cockpits precluded dinghies in Hurricanes (top of page) and Spitfires. British pilots forced to bail out over water had only their Mae West jackets for survival . . . . Me 109s and Me 110s (opposite) became the primary escorts for rescue missions.

Me 110

The Me 109 had room for a dinghy. Since the plane floated for as much as 60 seconds after ditching, German pilots had time to inflate and move away from their sinking aircraft.

Me 109

urgently needed. In late July 1940, Air Vice Marshal Keith R. Park, Air Officer Commanding No. 11 Group of Fighter Command, borrowed 12 Lysander single-engine patrol aircraft from Army Cooperation Command. These planes worked in coordinated rescue efforts with launches and Royal Navy ships to locate and retrieve downed airmen.[50] Air Vice Marshal Sir Arthur T. Harris, Air Officer Commanding No. 5 Group of Bomber Command, called a meeting at the Air Ministry in London to draft a plan for coordinating rescue efforts. The result was the establishment of a joint RAF/Royal Navy rescue apparatus, with the RAF responsible for organizing and performing aerial search and the Navy for making the actual pickup.[51]

The growing British awareness of rescue needs was reflected in an improved record. While the rescue of a flyer downed off the coast in the summer of 1940 was a rarity, between February and August 1941, of the 1200 aircrew members who went down in the Channel or North Sea, 444 were saved.[52] During the same period the *Seenotdienst* picked up 78 other downed British flyers.[53]

The United States, like Great Britain, entered World War II with almost no air-sea rescue capability. As American aircrew casualties climbed, General Henry H. "Hap" Arnold, Commanding General, United States Army Air Forces, became concerned with the need for rescue. In September 1942, the Royal Air Force and the USAAF held a conference that led to an agreement on coordination of SAR efforts in the North Sea and English Channel.[54]

American rescue pioneers learned from the *Seenotdienst,* and by 1945 air-sea rescue had improved to the point where chances of rescue were good, given adequate planning and pre-positioning of forces. Rescue equipment, much of it patterned on German models, developed as the war progressed. Throughout the war nearly 5000 USAAF aircrew members were rescued, testifying to the improved conditions in air-sea rescue. By the end of the war, combat crews could reasonably expect to be picked up if they were shot down.[55]

In World War II a number of German, British, and American airmen dedicated themselves to the saving of human lives. These men resolved that their comrades were not to be abandoned—not to death, or suffering, or captivity. This spirit soared above the carnage of war to proclaim a credo of rescue that has survived up to the present.

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TERRORISM AS A MILITARY WEAPON

JAY MALLIN

TERRORISM is a disease of modern society. It is a virus growing in an ill body. The effects of the virus can sometimes be ameliorated, but there is no certain cure.

The causes of terrorism are diverse; often one cause overlaps another or several causes. There is the social cause: Uruguayan young people denied their rightful place in a society that was stagnating. There is the racial cause: black and Indian militant groups in the United States. And, of course, there is the political cause: Israelis seeking independence from Great Britain; Cubans seeking freedom from Dictator Batista and then from Dictator Castro; Algerians seeking independence from France; northern Irish Catholics seeking to destroy British rule, and, conversely, Irish Protestants seeking to neutralize the Catholics.

Each instance was or is one of armed conflict—in a word, of war. Whether the cause be social discontent or national as-

It is a dress which is justly supposed to carry no small terror to the enemy, who think every such person a complete marksman.

General George Washington[1]

pirations, a larger or smaller segment of a population wars on another segment or on a foreign adversary. The feasible weapon is terrorism. A military observer, Colonel William D. Neale, noted, "Terror, it is obvious, is a legitimate instrument of national policy."[2]

The complexity of causes of terrorism, the diverse ideologies that have employed terrorism, the multitudinous arms and tactics available to terrorists—all these factors have made terrorism one of the most complicated problems of the times. Certainly the scope of the problem defies understanding by any single discipline. Terrorism is a tangled skein of varied human motivations, actions, hopes, emotions, and goals.

A conference on terrorism and political crimes held in 1973 made the following conclusion, among others:

The problem of the prevention and suppression of "terrorism" arises in part because there is no clear understanding of the causes leading to conduct constituting "terrorism." The International Community has been unable to arrive at a universally accepted definition of "terrorism" and has so far failed to control such activity.[3]

Terrorism cannot be explained by psychologists who construct facile theories. It cannot be countered by police who view terrorism as simply one more type of criminal activity: identify the criminals, arrest them, throw them in prison or perhaps shoot them, and the problem is solved. Terrorism cannot be handled by conventional military men who scoff at it as being beneath their notice.

The academician who wishes to study terrorism with academic dispassionateness finds theories, explanations, and chronological statistics but little else. Penetrating interviews with genuine terrorists, for example, are of minimal availability.

Terrorism *is* a tangled skein, and any observer attempting to unravel and separate one thread leaves himself open to criticism, justified criticism. "You say terrorism is a military weapon. What about the kidnappings solely for financial gain in Italy and the brigandage in Argentina motivated by monetary profit?"

Precisely. The skein is a mess of threads; it may not be possible to separate any one of them cleanly. Nevertheless, the effort is worth attempting if it contributes a pinpoint of light in what is certainly a long, dark tunnel. This article will attempt to focus on one thread: terrorism as a military weapon.

In September 1972 the world was stunned to learn that the Twentieth Olympic Games, a symbol of international harmony, had been attacked by political terrorists. A group of urban guerrillas belonging to the Palestinian Black September movement had forced their way into the Israeli quarters at the Olympic Village and seized nine hostages. The guerrillas issued a number of demands, including one for the release of 200 Palestinian prisoners in Israel. Day-long negotiations took place between the guerrillas and the West German government, and eventually the government appeared to accede to the Palestinian demands. An accord was reached whereby the terrorists, together with their hostages, were to be taken to an airport and there provided with air transportation to Egypt. At Fürstenfeldbruck Airport, however, German snipers opened fire on the terrorists, and in the resulting battle all Israeli hostages died, as did four guerrillas, a police officer, and a helicopter pilot.

Thanks to the sophistication of modern communication systems, people in many lands were kept abreast of developments minute by minute. Americans

watched television in fascination as events unfolded before their eyes. When the final holocaust occurred at the German airport, shock, horror, and revulsion swept the civilized world.

The question was repeatedly asked, what did the Palestinians hope to gain by their action? Did not the kidnappings—and the resulting killings—do their cause far more harm than good? The actions of terrorists, however, cannot be measured in the way other acts of war or revolution are appraised. Urban guerrillas do not march to the same drum that regular soldiers or even rural guerrillas march to. Colonel Neale stated:

> Terroristic violence must be totally ruthless, for moral scruples and terror do not mix and one or the other must be rejected. There can be no such thing as a weak dose of terror. The hand that controls the whip must be firm and implacable.[4]

Although not generally viewed as such, the Olympic action was nevertheless fundamentally a military move. Having failed in three conventional wars to defeat the Israelis, the Arabs and Palestinians resorted to unconventional tactics: specifically, terrorism in the border zones and against Israeli installations in foreign lands. If the Arab leaders had not themselves been conventional, they might have utilized unconventional tactics much earlier—perhaps more successfully than were their efforts to defeat the Israelis in "regular" warfare.

Basically, terrorism is a form of psychological warfare (frighten your enemy; publicize your cause). Seen within this context, the Olympic attack achieved its purpose. Kidnapping the Israeli athletes did no military harm to Israel. As a psychological blow, however, it probably boosted Palestinian morale, and it certainly spotlighted worldwide the Pales-

tinian cause. It encouraged future moves by Palestinian terrorists—the historical record attests to this. As a psychological blow the Olympic attack demonstrated that wherever Israeli figures of prominence went abroad, whether they be diplomats or athletes or whatever, they were susceptible to terrorist attack.

War is armed conflict, and armed conflict is the province of the military. Terrorism is a form of armed conflict; it is therefore within the military sphere. When diplomats fail, soldiers take over. When soldiers fail, terrorists take over. The political terrorist, however, is a soldier, too. He wears no uniform, he may have received little or no training, he may accept minimal discipline, his organization may be ephemeral—but he is a soldier. He engages in armed conflict in pursuit of a cause. His weapons are the gun and the explosive. His battlefield is the city street, and his targets are the vulnerable points of modern society.

Certainly not all terrorists are soldiers. Not all terrorism is military. For purposes of this article, it is postulated that terrorism is military when:

- It is utilized as a substitute for "regular" warfare, as in the case of the Palestinians against the Israelis.
- It is used in conjunction with other military activities, as in the cases of Cuba (against Batista) and Vietnam (against the Saigon administrations).
- It is used as the chosen weapon of conflict by a population segment against another segment and/or a foreign power, as in Northern Ireland.

Terrorism is sometimes believed to be synonymous with urban guerrilla warfare. Urban guerrilla warfare, however, is a broader term: it encompasses urban terrorism but other actions as well, i.e., ambushes, street skirmishes, assaults on official installations, and other types of

hit-and-run urban combat. Also, it may be noted that terrorism is not confined to urban zones: it can be conducted in rural areas as well, as was notably the case in South Vietnam.

Thus, terrorism in certain circumstances is conducted as a military tactic. The purpose of military action is often to achieve political goals. "For political aims are the end and war is the means . . . " stated Clausewitz.[5] In some instances terrorism is a part of the means, or is *the* means.

Terrorism as a tactic can be traced back to ancient times. Today's terrorists take human hostages; Incas of old seized the idols of the people they had conquered and held these as hostages to ensure that the defeated would not rebel. Terrorism as a tactic of urban guerrilla warfare dates back to the struggles in the past century and in this century to Russian revolutionaries against the czars. The concept of terrorism as a military instrument, however, is comparatively new. One of the papers developed at the first National Security Affairs Conference, held at the National War College in 1974, noted:

> Despite Mao's emphasis on the relationship between guerrilla warfare and the rural peasant, despite the doctrinaire vision of armed, revolutionary conflict culminating on the open battlefield, and despite the role of rural warfare in the most important revolutions of the past half-century, the rapid urbanization of much of the world now suggests new opportunities, and hence new strategies for revolutionary warfare, and, in particular, a new attitude toward the role of the city as the ultimate revolutionary battlefield.[6]

For the political militant, urban guerrilla warfare offers clear advantages over rural guerrilla warfare. If he is a city youth, he can remain in the cities and need not meet the rugged demands of rural and hill fighting. In the cities there is an abundance of potential targets. The countryside offers few targets. In the cities there are opportunities for militant actions (such as the placing of bombs) that do not necessarily entail direct personal conflict with the police. In the countryside guerrillas must eventually prove themselves by combat with units of the regular army. Rural guerrilla warfare requires a great deal of physical exertion with few gratifying results over a long period. In urban areas guerrillas can commit spectacular acts that garner great publicity and, then, if they have not been identified by the authorities, can return to "normal" lives until the time comes for their next violent action.

The growing technological complexity of our times increases the vulnerability of modern life. Not only does technology engender vulnerability, it also develops more sophisticated weapons that can kill or endanger more people and do more damage. Professor Zbigniew Brzezinski aptly referred to "the global nervous system";[7] Swedish Premier Olof Palme, at the United Nations, discussed "technology's multiplication of the power to destroy."[8]

One has but to look about a modern city and he will see a plethora of targets. Aqueduct pumping stations and conduits, power stations and lines, telephone exchanges, post offices, airport control towers, radio and television stations—all these form part of a city's nervous system. Terrorists can shoot at policemen, rob banks, sabotage industrial machinery, kill government officials, incapacitate vehicles, and set bombs in theaters and other public localities. Destruction of an enemy's cities is an accepted strategy of modern warfare; whether it be accomplished by aerial

bombers or by land-bound terrorists is merely a matter of means. The National War College paper previously noted also pointed out:

> The destruction of a hydroelectric system, the crippling of a central computer bank, the acceleration of a social disorder by racist and counterracist assassination, the undermining of an economy by the pollution of an entire wheat crop . . . all these are but mere samples of the kind of violence which would lend itself to strategic manipulation. Although disguised in the name of revolution or rebellion, such violence could be decisive in terms of distracting a nation, or isolating it, or even paralyzing it. It would be, in effect, a new form of war.[9]

As postulated, terrorism could be used in conjunction with "regular" military activities. Or it could be used as a substitute. Colonel Seale R. Doss sets forth in the aforementioned paper that, "with the rapidly shifting alliances and animosities of the modern world, no nation could be quite sure in any case just which foreign power had (or even *if* some foreign power had) sponsored its disasters, for such violence would lend itself, like underworld money, to political laundering."[10]

Because terrorism as an instrument of war is a relatively new concept, there has been little doctrinal categorization or interpretation of, or doctrinal direction for, this type of warfare specifically. The three foremost warrior-theoreticians of guerrilla warfare, Mao Tse-tung, Vo Nguyen Giap, and Ernesto "Che" Guevara, virtually ignored this method of combat. Giap has said only that "*to the counter-revolutionary violence of the enemy, our people must definitely oppose [place in opposition] revolutionary violence*," and that "*the most correct path to be followed by the peoples to liberate themselves is revolutionary violence and revolutionary war.*"[11] (Emphasis is Giap's.) By "revolutionary violence" Giap probably meant all available means of warfare, including terrorism.

Guevara alone approached the subject of urban guerrilla warfare as a specific type of combat, and then he did so only in brief. In his book *La Guerra de Guerrillas* he provided limited recognition to what he called "sub-urban warfare." The sub-urban guerrilla group, he stated, should not carry out "independent actions" but rather should "second the action of the larger groups in another area." As for terrorism itself, Guevara said, "We sincerely believe that that is a negative weapon, that it does not produce in any way the effects desired, that it can turn a people against a determinate revolutionary movement and that it brings with it a loss of life among those who carry it out far greater than the benefits it renders." Guevara separated terrorism from assassination, which he felt was "licit" although only in "very selective circumstances," namely, against "a leader of the oppression."[12]

La Guerra de Guerrillas has served as a basic instructional book for Latin American guerrillas. It has, however, no instructions for urban guerrilla warfare. This is especially interesting in view of the fact that the urban guerrilla movement played as important a role, perhaps a more decisive role, than did the rural guerrillas in the 1956–1958 Cuban civil war. Fidel Castro and Guevara preferred, however, to promote the mystique of the rural guerrilla. They had been rural guerrilla captains, and it did not suit the historic position they envisioned for themselves to grant recognition to the urban clandestine movement that participated so significantly in the conflict.[13]

There was a practical consideration as well in the Castro-Guevara effort to develop the mystique of the rural guerrilla. Almost as soon as Castro came to power in Cuba, that small country launched an extensive program of subversion, with most of the effort concentrated on creating *fidelista* guerrilla movements in rural areas of Latin America. Castro and Guevara sought to duplicate their own guerrilla operation: launched from abroad, it had functioned in isolated rural areas. Guerrilla warfare, declared Guevara, is "the central axis of the struggle" in Latin America.[14] So deeply did Guevara believe in the guerrilla mystique that eventually it led him to his death in Bolivia. It was only after repeated failures, including Guevara's death, that Castro turned his attention to urban movements.

A perusal of other military instructional literature reveals a similar dearth of attention to urban guerrilla warfare. North Vietnamese Lieutenant General Hoang Van Thai's *Some Aspects of Guerrilla Warfare in Vietnam*[15] deals entirely with rural combat. The *Handbook for Volunteers of the Irish Republican Army*[16] is a fine basic book on rural guerrilla warfare, and much that it says is applicable to urban guerrilla combat, but it does not touch on this specifically despite the long utilization of urban terrorist tactics by the Irish Republican Army (IRA). Bert "Yank" Levy's *Guerrilla Warfare*[17] has a brief chapter on "the city guerrilla," but the book is primarily about rural guerrilla warfare. Spanish General Alberto Bayo's *One Hundred and Fifty Questions to a Guerrilla*[18] and Swiss Major H. von Dach Bern's *Total Resistance*[19] also have material useful to an urban guerrilla, particularly in regard to sabotage activities, but again the books are concerned mainly with rural guerrillas.

The only document specifically dealing with urban guerrilla warfare that has received international recognition was written by a Brazilian politician-turned-terrorist, Carlos Marighella. Marighella wrote the *Minimanual of the Urban Guerrilla* for use by Brazilian terrorists, but its instructional contents are valid for guerrillas in any city in the world. Marighella stated:

> The urban guerrilla is an implacable enemy of the government and systematically inflicts damage on the authorities and on the men who dominate the country and exercise power. The principal task of the urban guerrilla is to distract, to wear out, to demoralize the militarists, the military dictatorship and its repressive forces, and also to attack and destroy the wealth and property of the North Americans, the foreign managers, and the Brazilian upperclass.[20]

Marighella declared: "The urban guerrilla is a man who fights the military dictatorship with arms, using unconventional methods. . . . The urban guerrilla follows a political goal . . . "[21]

It is interesting to note that just as Mao, prophet of rural guerrilla warfare, believed that type of combat was secondary to "regular" warfare,[22] Marighella, prophet of urban guerrilla warfare, envisioned urban combat as supplementary to rural guerrilla combat. He stated that the function of urban guerrilla warfare was "to wear out, demoralize, and distract the enemy forces, permitting the emergence and survival of rural guerrilla warfare which is destined to play the decisive role in the revolutionary war."[23]

As for terrorism specifically, Marighella said, "Terrorism is an arm the revolutionary can never relinquish."[24] It is also a weapon the military cannot ignore.

ANYONE writing about terrorism labors under the difficulty that it

has not been possible for anyone to develop an entirely satisfactory definition of terrorism. Mainly this is due to the fact that there is no precise understanding of what the term "terrorism" encompasses. There are too many grey areas of violence and of intimidation that may or may not be labeled as terroristic. Whether any particular area of activity or specific act is indeed terroristic largely depends on the circumstances within which this is undertaken. Example: Is sabotage a form of terrorism? Seeking an answer, we go full circle, for whether sabotage is terroristic depends on the definition of terrorism.

Therefore, in this article the following working definition is offered:

Political terrorism is the threat of violence or an act or series of acts of violence effected through surreptitious means by an individual, an organization, or a people to further his or their political goals.

Under this definition sabotage committed for political purposes is indeed a form of terrorism.

Perhaps there is no such thing as "military terrorism." Or perhaps this is merely a semantic lack. At any rate, terrorism is one form of military activity that can be utilized by an organization or a people in pursuit of their political goals. Terrorism is a military weapon.

(Most often, terrorism consists of a series of acts of violence. All terrorism is criminal in the eyes of the government that is assailed. But there may be "criminal terrorism" in which the violence is committed purely for monetary, not political gain. Frequently this type of terrorism will disguise itself as political terrorism, especially in situations wherein genuine political terrorism is rampant, e.g., the Argentine situation.)

Terrorism as a military arm is a weapon of psychological warfare. The purpose, as the very word indicates, is to engender terror in the foe. The terror thrust encompasses the following ingredients:

- Terrorism publicizes the terrorists' political cause.
- Terrorism demonstrates the capability of the terrorists to strike blows.
- Terrorism heartens sympathizers of the terrorists' cause.
- Terrorism disconcerts the enemy.
- Terrorism eventually—the ultimate goal—demoralizes the enemy and paralyzes him.
- Conceivably, in certain circumstances, terrorism could deter potential allies of the terrorists' target country from assisting that country. ("If you provide aid to our enemy, we will unleash our terror tactics against you, too.")
- Sabotage causes material damage to an enemy's vital installations; the damage, in turn, has a psychological effect on the foe and on the populace. It frightens the foe and emboldens the ally.

Terrorists function within an area controlled by the enemy whether it be a metropolis or an airliner in flight. The terrorists either:

- Represent a significant portion of the population (as in the case of a struggle against an unpopular dictator), and their actions are applauded, even when they cause discomfort to the population (as when rebels knocked out a substantial portion of Havana's electric and water systems during the Cuban civil war).[25]
- Do not receive any significant amount of popular support and are generally condemned as outlaws (the minuscule ethnic militant groups in the United States are an example).
- Or, are foreign or foreign-supported and are seeking to destroy the

enemy's control structure or to achieve some other political result (as in the case of the IRA bombs in restaurants and other public places in London).

Whereas in Case One the terrorist may try to minimize civilian casualties in order not to turn the population against him, in Case Three the more casualties there are the better the terrorist feels his goals are served: he is applying ruthless pressure against his enemy, and the number of casualties is a measure of his success. In Case Two, whether the terrorist concerns himself over civilian casualties is largely determined by whether his fanaticism is tempered by mercy.

At what point does terrorism become the concern of the "regular" military? For a military establishment that is *attacking,* terrorism can be used as a substitute for conventional warfare or in conjunction with conventional warfare and/or rural guerrilla warfare. For a military establishment that is responsible for *defending* an area or a country, the military role in the handling of a terrorist problem is determined by local circumstances: Is the government of the country under attack run by civilians or by the military? What constitutional and other legal responsibilities and restrictions are placed on the military? What useful capabilities do the military have that the police do not have?

The level of intensity of terrorist activity appears to be a determinant of military response more than any other factor. In most national cases military activity has been largely limited to guard and military intelligence duties in support of the police authorities. In other cases, however—notably in pre-Israel Palestine, Cyprus, Algeria, Uruguay, Argentina, and Northern Ireland—the military took over primary responsibility for combating terrorists because the police were overwhelmed.[26] In those cases cited where the military sought to maintain foreign control over populations, it is significant that the independence struggles were nevertheless successful (except in Ireland, where the conflict continues). In the two countries where indigenous military have sought to suppress major terrorist movements, the military were successful in one instance (Uruguay), and the outcome is as yet inconclusive in the other (Argentina). One may reasonably gather from this that terrorism is an effective weapon when used by a substantial portion of a population against foreign occupation troops. As a weapon against indigenous authorities supported by a military establishment, its efficacy is open to question. Terrorism appears to have succeeded only in such cases wherein it was used in conjunction with other military tactics (Cuba, South Vietnam).

There appear to be three fundamental functions of terrorism as a military weapon:

- Psychological warfare—Demoralize the enemy (his government, armed forces, police, even the civilian population) through assassinations, bomb explosions, agitation, and so on. The Viet Cong utilized the entire arsenal of violence in their campaign in South Vietnam.

- Material destruction—Destroy or damage the enemy's utilities, communications, and industries. Destruction by sabotage, particularly against specific targets limited in size, can be as effective as destruction by air raid.

- Economic damage—Engender a state of psychological unease and uncertainty in a city or a country and com-

merce dries up, investment funds vanish. The deterioration of the Cuban economy during the 1956–58 revolution was a major factor in the downfall of the Batista regime.

Terrorism utilized as a military weapon, whether by a foreign power or by domestic insurgents, is somewhat akin to air raids: it is warfare conducted in the enemy's rear. In both cases the tactic aims at destroying the foe's installations, killing his officials, and battering his morale. Lamentably, in both cases the deaths of civilians are an additional result, unacknowledged as a goal but nevertheless often deliberately sought.

I F, THEN, terrorism is a military weapon—a weapon to be used for a military goal: the defeat of an enemy—how much recognition of this weapon has been extended by "regular" military establishments? Traditionally the regular military have looked askance at any type of unconventional warfare. This remains true today even though the line of differentiation between conventional and unconventional warfare grows increasingly blurred. In the cases of the British, Israeli, Argentine, and Uruguayan armies, the military have been forced by circumstances to recognize their responsibility in dealing with terrorism. Reality has legitimatized the bastard, military terrorism, in fact if not in name. The daring Israeli commando rescue of 102 airline-hijack hostages at Entebbe, Uganda, in July 1976 was a dramatic example of the utilization of military power in a counterterror endeavor.

In South Vietnam terrorism was a major problem facing the American and South Vietnamese forces. Nevertheless the main responsibility for combating it was turned over to civilian intelligence organizations, such as the Central Intelligence Agency. In general, of the military branches only the U.S. Marines recognized the military importance of Viet Cong terrorism and sought not only to conquer territory but to hold it and to provide security for its inhabitants.[27] It is interesting to note that the U.S. Joint Chiefs of Staff's *Dictionary of Military and Associated Terms* finds no place for the words "terror" or "terrorism."[28]

U.S. military interest in terrorism appears to be minimal. The fact that one of the panels at the National War College's National Security Affairs Conference dealt with "'New' Forms of Violence in the International Milieu" was encouraging. There have been lectures and panels at the Institute for Military Assistance at Fort Bragg, North Carolina, and a protection-against-terrorism manual for U.S. military personnel being sent overseas has been written there. The *Air University Review* has published a number of relevant articles. This attention, however, must be considered inadequate in view of the enormity of the problem. Major General Edward G. Lansdale, USAF (Ret) has warned:

We live in a revolutionary era. My hunch is that history is waiting to play a deadly joke on us. It did so on recent graduates of the Imperial Defence College in London, who now find themselves facing the savagery of revolutionary warfare in Northern Ireland. It did so on Pakistani officers under General Niazi, who undoubtedly wish now that they had learned better ways of coping with the Mukti Bahini guerrillas. It is starting to do so on Argentine graduates of the Escuela Nacional de Guerra in Buenos Aires, who are waking up to the fact that Marxist ERP guerrillas intend to win themselves a country with the methods of the Tupamaros next door.[29]

There are existing situations and pos-

sible situations which counsel greater understanding of terrorism by the U.S. military. American military personnel have already been subjected to terrorist attacks in countries as diverse and far apart as Iran and Guatemala. It is not inconceivable that an international terrorist organization might decide, for tactical and ideological reasons, to strike at U.S. military personnel and even installations in a number of countries. (NATO, concerned over the spread of terrorism, conducted through the intelligence agencies of its member states a study of an international terrorist organization that is believed to operate globally.)[30]

The United States provides military equipment and guidance to a substantial number of friendly countries. Of what use is tank warfare doctrine to an army confronted with a major terrorist problem? Are U.S. Military Advisory Groups prepared to provide the assistance needed? Another scenario: U.S. forces are stationed in a foreign country, perhaps as part of an international peacekeeping force, and the local rebels resort to terror tactics. Are the U.S. military prepared to cope with such a situation?

There are additional scenarios that might require military involvement in terror situations within the United States itself, much as troops were required at critical moments during the civil rights struggle of the sixties. Recognizing the constitutional and historical limitations on the military and recognizing that a terror level akin to those in Argentina and Northern Ireland is not likely to develop in the United States within the foreseeable future, one can, nevertheless, postulate situations in which the military would have to exercise counterterror capabilities. Two possibilities:

• Terrorists seize the Capitol in Washington while Congress is in session.

Or they take another major edifice in an American city. Handling the crisis is beyond the means of the police.

• Terrorists have a nuclear weapon or a major bacterial weapon. They hold the weapon in a heavily guarded building in the center of a city, and they threaten to devastate the city if their demands are not met. Again the situation is beyond the capability of the police.

Hypothetical situations, yes. But terrorists have seized buildings in other countries, and the U.S. government is concerned over the possibility of terrorists obtaining a nuclear bomb. These situations could occur within the United States. The U.S. military would do well to prepare to assist if they are called upon to do so.

BEYOND THAT is the necessity of recognizing that in today's world terrorism is often a military weapon. General Robert E. Lee said of the Confederacy's own guerrillas, "I regard the whole system as an unmixed evil."[31] Evil or not, guerrilla warfare has been employed by innumerable combatants down through the ages, always bedeviling the regulars. Disdaining it will not make it go away. Disdaining terrorism will not make it go away, either. Unhappy though it may make the graduate of the Imperial Defence College, or of the Escuela Nacional de Guerra, or of the U.S. Military Academy, it is a tactic that must be dealt with. Far better that the U.S. military be prepared than that they, too, be caught by surprise. Tactics must be studied, doctrines must be developed, defenses must be constructed. For, as one writer stated, "Step by step, almost imperceptibly, without anyone being aware that a fatal watershed has been crossed, mankind has descended into the age of terror."[32]
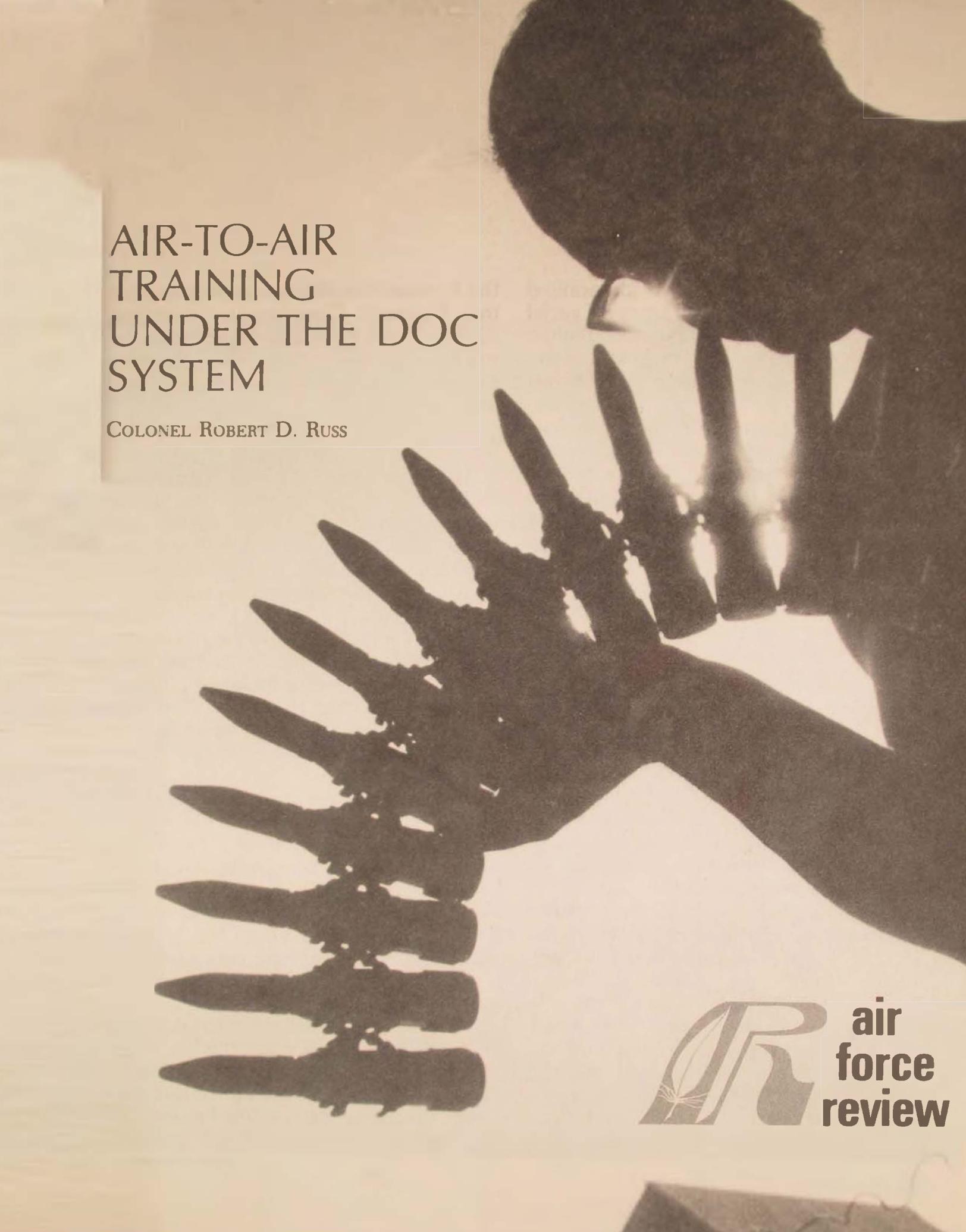
Coral Gables, Florida

Notes

1. Richard M. Ketchum, *The Winter Soldiers* (New York, 1973). Washington prescribed the "rifle dress" for his troops because it was associated in the minds of the British with the apparel worn by skilled riflemen.

2. Colonel William D. Neale, USA (Ret), "Terror—Oldest Weapon in the Arsenal," *Army*, August 1973.

3. M. Cherif Bassiouni, editor, *International Terrorism and Political Crimes* (Springfield, Illinois, 1975).

4. Neale, op. cit.

5. H. Rothfels in *Makers of Modern Strategy*, Edward Mead Earle, editor (New York, 1970).

6. Colonel Seale R. Doss in *Defense Planning for the 1980's & the Changing International Environment* (Washington, D.C., 1975).

7. "The U.S. and the Skyjackers: Where Power Is Vulnerable," *Time*, 21 September 1971.

8. "The City as Battlefield: A Global Concern," *Time*, 2 November 1970.

9. Doss, op. cit.

10. Ibid.

11. Vo Nguyen Giap, *The South Vietnam People Will Win* (Hanoi, 1965).

12. Ernesto Cuevara, *La Guerra de Guerrillas* (Havana, 1960).

13. See Jaime Suchlicki's *University Students and Revolution in Cuba, 1920–1968* (Coral Gables, Florida, 1969); Ruby Hart Phillips's *Cuba, Island of Paradox* (New York, 1959); Jay Mallin's *Fortress Cuba* (Chicago, 1965).

14. Guevara, "Guerrilla Warfare: A Method," *Cuba Socialista*, September 1962.

15. Foreign Languages Publishing House (Hanoi, 1965).

16. Issued by General Headquarters, 1965.

17. Panther Publications (Boulder, Colorado, 1964).

18. Twenty-eighth edition (Havana, 1961).

19. Panther Publications (Boulder, 1965).

20. Carlos Marighella, "Minimanual of the Urban Guerrilla," *Tricontinental* (Havana, November 1970).

21. Ibid.

22. "When we say that in the entire war [against Japan] mobile warfare is primary and guerrilla warfare supplementary, we mean that the outcome of the war depends mainly on regular warfare, especially in its mobile form, and that guerrilla warfare cannot shoulder the main responsibility in deciding the outcome." From "On Protracted War" in *Selected Military Writings of Mao Tse-tung* (Peking, 1963).

23. Marighella, op. cit.

24. Ibid.

25. Mallin, op. cit.

26. Robert Taber, *The War of the Flea* (New York, 1965); *Challenge and Response in Internal Conflict* (three volumes, Washington, D.C., 1967, 1968).

27. William R. Corson, *The Betrayal* (New York, 1968).

28. Washington, D.C., 1972.

29. Major General Edward G. Lansdale, USAF (Ret), "The Opposite Number," *Air University Review*, July–August 1972.

30. "Radical Nations Aid, Finance Global Terror, NATO Thinks," *Miami Herald*, 6 February 1976.

31. Bruce Catton, *A Stillness at Appomattox* (New York, 1953).

32. Paul Johnson, quoted in David Fromkin's "The Strategy of Terrorism," *Foreign Affairs*, July 1975.

We deplore the visible assertion of military power when it breaks the peace but we praise the quiet assertion of military power when it keeps the peace.

GEOFFREY BLAINEY

AIR-TO-AIR TRAINING UNDER THE DOC SYSTEM

Colonel Robert D. Russ

PROBABLY the most glamorized and least understood aspect of aerial warfare has been air-to-air combat. Victories usually go to the best weapon system—an amalgamation of aircraft performance, aerial weapons, and aircrew skills. During the Korean War, sweptwing F-86 Sabres were pitted against MiG-15 jets. At the end of the war the Sabre pilots had established a ten-to-one margin of victory over the best in the Communist inventory, the MiG-15. From its growth and experience during the Korean hostilities, the USAF emerged with a powerful counterair force. However, the intervening years between 1953 and the start of the Southeast Asia conflict saw a gradual deterioration in the air-to-air capability of tactical air forces. Aircraft development emphasized the nuclear role; the air-to-air gun was considered anachronistic, and aircrew training was fragmented.

At the start of the Southeast Asia conflict, the capability of tactical air power to engage in air-to-air fighting was, at best, less than optimum. Early aerial engagements over North Vietnam made this evident, and it was much later in the conflict before this trend was reversed. Concentrated training, improved weapons development, and aircrew specialization allowed this reversal. The lesson was not to be forgotten, and major efforts within Tactical Air Command and the Air Staff were initiated. A training system was needed that would prevent a loss in capability such as occurred after

the Korean War. This article will discuss the Designed Operational Capability (DOC) training system—its genesis, its implementation in the 4th Tactical Fighter Wing, and the degree of its success.

genesis

In 1972, the Tactical Fighter Symposium addressed two of the most vital issues confronting tactical aviation: tactics and training. The symposium concluded that both areas required a thorough review in light of Air Force combat experience in Southeast Asia. Two primary recommendations concerning training were made. First, training should be optimized; and second, training should be more realistic. Optimized training was to be based on reducing the number of roles required in multipurpose tactical aircraft. Aircrews would concentrate primarily on either the air-to-air or air-to-surface role, but not on both. They would maintain a secondary but less-demanding capability in the other role. Sorties and events rather than flying hours were to be used as a measure of merit. Realism was to be enhanced by providing an authentic warlike environment during exercises and upgrading the facilities in which training was to be conducted.

The program remained in the conceptual stage until 1973, when the fuel crisis provided the catalyst necessary to transform talk into action. An important meeting was held to review tactical requirements in the late fall of 1973 at

F-4E armed with Sparrow missiles and bombs

Tactical Air Command's 4th Tactical Fighter Wing trains in F-4Es to achieve its air-to-air and air-to-surface Designed Operational Capability (DOC). Here F-4s are armed with AIM-7 Sparrow missiles (below) and AIM-9 Sidewinders (opposite), both used in the training program.

Headquarters USAF. Representatives from all commands that employ tactical air power were in attendance. As a result of this meeting, the entire training system for operational units was realigned. The operational capability of each tactical fighter squadron was designed to optimize training in either a primary air-to-air role or a primary air-to-surface role. Those units with multipurpose fighter aircraft (e.g., the F-4) would be assigned a primary and a secondary Designed Operational Capability.* Further delineation was provided in terms of sorties required versus aircrew proficiency level.

The program was structured within

*Each DOC entails specialization in either air-to-surface or air-to-air weapons employment. The air-to-air DOC encompasses two segments: air superiority, which involves offensive air-to-air weapons employment; and air defense, which involves area or boundary defense. The air-to-surface DOCs are divided into conventional and nuclear weapons employment.

three levels of aircrew proficiency: (1) *Basic proficiency* aircrews were those that would maintain basic flying skills in the aircraft, including instrument and night proficiency. They would not be required to maintain weapons delivery qualification nor meet formal training requirements for weapons employment systems. (2) *Mission capable* aircrews were those that would require a minimum of additional training before introduction into combat. These aircrews were expected to complete formal training in both air-to-air and air-to-surface weapons employment but at a reduced level. Staff and/or supervisory personnel were included in this category. (3) *Mission ready* was the designation applied to those aircrews that could be introduced directly into combat in the event of war. They would maintain the full

The academic program emphasizes weapons employment.

complement of formal training requirements in both air-to-air and/or air-to-surface roles.

Concurrent with the new DOC training system, a major effort was exerted to add realism to the program by upgrading the air-to-surface ranges, improving exercise scenarios, and providing realistic air-to-air targets. Thus, a generalized training program was transformed into a specialized program—one designed to enable the fighter force to gain a high degree of proficiency and combat capability and maintain this capability as a visible deterrent to aggression. Implementation of this program was the next step.

stair-step approach

Within the Tactical Air Command the 4th Tactical Fighter Wing was assigned a primary DOC of air-to-air superiority and a secondary DOC of air-to-surface. Equipped with three squadrons of the latest models of the F-4E, the wing prepared to implement the training program on 1 July 1974. For an air-to-air unit, that meant providing sufficient training to ensure that tactical maneuvers to achieve missile- and gun-firing parameters were second nature to every mission ready aircrew in the wing. To accomplish this, a carefully structured stair-step approach was developed.
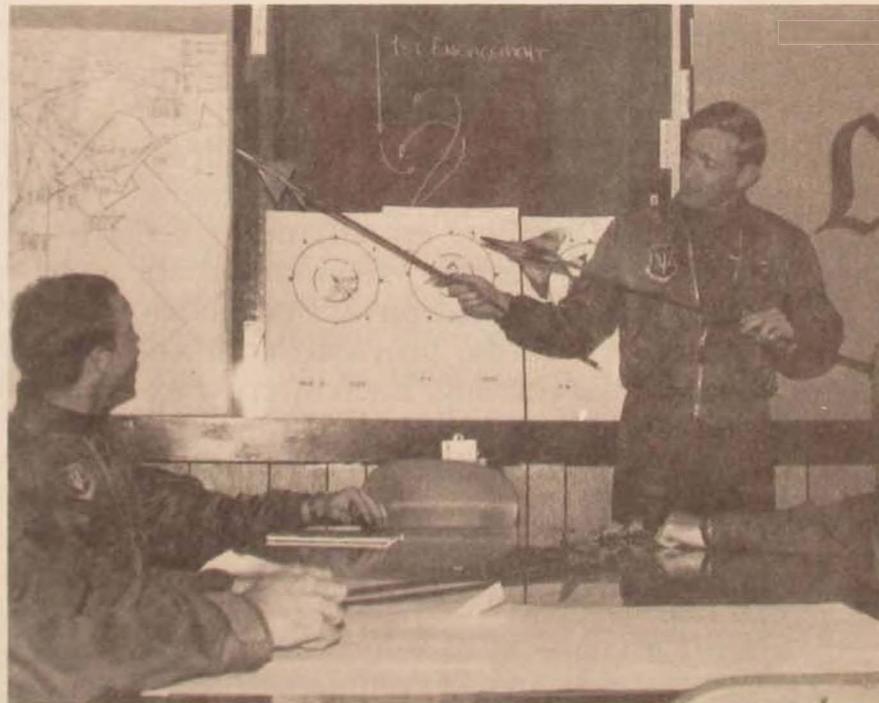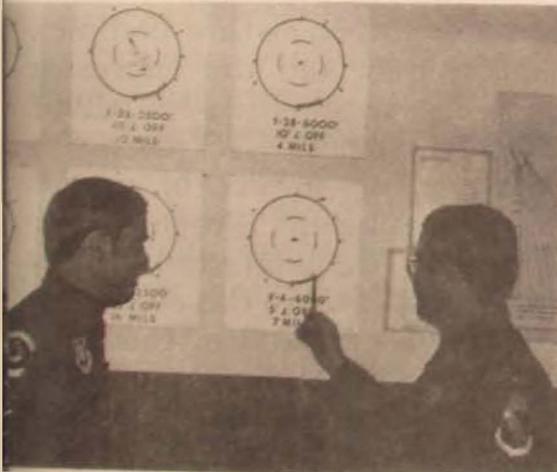
Air combat tactics

Air combat maneuvers

Basic fighter maneuvers

The academic program

Southeast Asia experience

SEA experience. The program was based on lessons learned in Southeast Asia. The majority of the aircrews were combat veterans and had, in varying degrees, some form of air-to-air experience. Some had MiG kills to their credit while many others had MiG engagements. All were eager to use their experience to develop an air-to-air capability second to none. Further, the introduction of new equipment and improved hardware capabilities dictated a look at fighter tactics from a new vantage point. Major modifications were required in how we fight. For example, the TISEO,* which was introduced into combat during the waning days of the war, caused a minor revolution in fighter formations and employment. With Southeast Asia expertise as a basis, a review of current tactics, procedures, and employment formations was undertaken. The result was improved training scenarios, new proficiency exercises, and an expanded academic program. The foundation was laid, and the program commenced.

Academic training. The academic program was structured to provide a concentrated initial block of instruction followed by yearlong continuation training. Three major areas of ground training received emphasis: enemy threat capabilities, employment environment, and weapon systems employment. Experts from the Fighter Weapons School and Aggressor Squadron at Nellis Air Force Base, Nevada, provided comprehensive initial training. Each aircrew experienced in condensed form the same air-to-air syllabus training that is used in the USAF Fighter Weapons Instructor Course. Subsequently, extensive sessions on the entire gamut of enemy threats,

including information on man and machine, were provided each time the aggressor squadron deployed to Seymour Johnson Air Force Base, North Carolina. Air defense networks were covered in detail, with emphasis on the European theater. However, the single most important aspect of the program was thorough and detailed training in the employment of F-4 weapon systems. Delivery and employment envelopes, switchology, and techniques were emphasized for each weapon system. The AIM-7 Sparrow, AIM-9 Sidewinder, and the 20-mm cannon were the heart of academic training. Thus, the perennial problem of missed switches and improper ordnance release parameters was addressed and emphasized. Weapons employment was the forte of the academic training.

Basic fighter maneuvers. The third level on the stairsteps, basic fighter maneuvers (BFM), enabled the aircrews to practice in the air what they had learned on the ground. Basic fighter maneuvers were practiced single ship against a cooperative target. The cooperative target need not be equipped with a complex fire control system, and the aggressor squadron T-38s became an excellent vehicle for this purpose. The saving in fuel by using a T-38 instead of an F-4 provided an added benefit. Proper weapons employment parameters and switchology, emphasized during the academic sessions, were evaluated during the BFM and subsequent phases. Trigger squeeze, missile tone, and frames on target were all evaluated and compared against standards.

A maneuver called "cine track" was introduced into the BFM phase. This maneuver requires the fighter to track an adversary through a predetermined maneuver. The aircrew must ensure coor-

dinated tracking with proper switchology and trigger discipline. Simulated bullets fired and gun camera frames on target are counted and must meet a definitive standard to be awarded a "kill." Cine track is a good example of the well ordered and structured phase which is BFM.

Congeneric with that exercise was another useful tool called "agility exercises." As the name implies, the maneuver requires agile thought as well as coordination. These one-versus-one exercises tested the aircrews' skill at interpreting the opposing aircraft's maneuver as well as applying a countermaneuver to achieve a missile or cannon tracking solution. Time criteria were specified for each distinct maneuver; ammunition expended and frames on target were evaluated. The same type of structured and controlled environment was maintained that characterized the cine track. Both maneuvers have specific training objectives, and even the best aircrews benefited from frequent practice of these exercises.

Air combat maneuvers. The final two stairsteps are closely related. The air combat maneuvers (ACM) phase is, in a word, structured. Innovative tactics were not the objective; rather, canned practice in offensive and defensive maneuvering was required. Aircrew coordination and precise radio transmissions, two areas which pose continuous problems, were especially emphasized. Again, dissimilar sorties were especially valuable, and ideas were crossfed from other fighter units by the aggressor pilots. Missions ranged from defensive two-ship patrol formation, practicing initial moves, to offensive sequential attack.*

*A minimum of two aircraft maneuvering with the objective of bringing continual pressure on the enemy aircraft. Pauses are planned in the attack to facilitate repositioning by the fighter aircraft.

Air combat tactics. At the top of the stairs were the air combat tactics (ACT) missions. All the lessons learned and practiced in the preceding steps were integrated into this phase. Good procedures, strong supervision, and strict aircrew discipline are the guts of ACT training. Emphasis was shifted from aircrew coordination to the tactical partnership. Formed elements were utilized insofar as possible, so that a higher level of coordination and understanding could evolve among the tactical partners. The tactical partnership became the new watchword in air-to-air circles. It is more flexible and has replaced the fighting wing formation, which was sacrosanct during the salad days of rigid "fluid four" tactics.

The heresy of a wingman taking a shot is now considered antiquated. Each member of the flight is considered a potential shooter, but strict flight discipline is observed. Nothing has been taken away from the leader; he has more resources now at his disposal, namely, one or two aircraft with good ordnance and fire control systems, depending upon the formation. On the attack, confusion is avoided by a set of "free or engaged fighter responsibilities," which are as familiar to the aircrews as the checklist. The engaged fighter still has the responsibility of killing the bandits, while the free fighter checks six, monitors fuel, and directs the fight to bring continuous pressure on the enemy aircraft. Lookout responsibilities have changed somewhat although doctrine is the same.

While ACT is the apex, it is not all-inclusive. It is open-ended, allowing for growth and refinement of tactics. It is the area in which overall air-to-air capability should be measured. When aircrews can effectively employ their weapon system in this arena, they are mission ready.

MORE THAN two years have passed since the 4th Tactical Fighter Wing implemented an air-to-air training program under the Designed Operational Capability system. Specialization has enabled the standards and the realism of the training to be raised. The stair-step approach has permitted real growth in effectiveness. The overall readiness of the command has increased significantly. The glamor of air-to-air combat remains undiminished, but the DOC system has provided a method to prevent the valleys in experience that have occurred in the past. Air-to-air training has been transformed from its previous rocky course to one that is optimized and realistic. This method has been accomplished without compromising safety; indeed, its cause has been promoted by the structured nature of the training and the increase in proficiency of the aircrews. We may expect that changes will continue to occur; however, the system has demonstrated the latitude to be accommodating.

In summary, the DOC system of training has enabled the fighter force to gain and maintain that high degree of proficiency and combat capability so essential in maintaining our deterrent posture. Baron Manfred von Richthofen is credited with the words: "Fighter pilots have to rove in the area allotted them in any way they like. And when they spot an enemy they attack and shoot them down . . . anything else is rubbish." The DOC training system cannot add anything to his message. It can and does permit us to train the way we should fight.

Seymour Johnson AFB, North Carolina

The real armaments race is in one sense a substitute for war. It may seem a very expensive substitute, but compared to war it is cheap. It is commonly seen as an intentional preparation for war, a competition which brings war closer, but it may be rather a deliberate postponing of war, an attempt to use stronger threats in preference to war. Whether it ends in war depends not on accidents and misunderstandings; it depends ultimately on the rival nations' perceptions of their power to defeat one another.

GEOFFREY BLAINEY

in my opinion

NATIONAL MILITARY SPACE DOCTRINE

Colonel Morgan W. Sanborn

S PACE DOCTRINE within the United States Department of Defense is evolving slowly. It is being born with all the pains that attended the birth of air doctrine in the 1930s. It is a controversial subject.

The best summary of what our national military space doctrine consists of today is contained in one sentence: "Space is not a mission; it's a medium."[1] This essentially negative comment falls considerably short of delineating a positive doctrine or approach to a military potential of inestimable value. Military space needs a very positive direction, a direction of utmost foresight and imagi-

nation to ensure that it is developed speedily and intelligently. Space could be a vital factor in military confrontations of the future.

According to recent official speeches and writings on space doctrine, there are four basic reasons for using space systems for various military support functions.[2]

Uniqueness —Some functions essentially can be done only from space; for example, a near real-time warning of a ballistic missile attack.

Economics —Some functions, such as long-haul communications, are done more economically from space.

Functional effectiveness —Some functions, like meteorology, are done more effectively from space.

Force effectiveness enhancement — Some space functions can greatly enhance the effectiveness of terrestrial forces.

These four principles shed some light on the basic utility of space systems. However, even this expanded rationale only gives superficial understanding to a subject of great importance and complexity. These principles all apply to existing space systems to varying degrees. No space system can be pigeonholed into just one of the four principles to the exclusion of the others. In sum they lead one to view space as a medium which is used primarily, if not exclusively, for the enhancement of terrestrial forces. This leads us right back to the thinking of the 1930s when the roles and missions of the Air Corps were to provide direct support to the ground troops and direct support only.

Historians painfully recall that on the eve of the Second World War the top military leadership still held that strategic bombers (the B-17) were not required per the existing and sanctioned air doctrine. Only the grim and immedi-

ate realization of the inevitability of World War II forced a change to this unimaginative, "not invented here" official party line, where doctrine was overtaken by events. Not until the Air Force had been created as a separate service was air doctrine properly recognized and allowed to grow.

The parallels between our approach to space today and our approach to air power yesterday are too obvious to ignore. Perhaps the most surprising part is that neither Department of Defense (DOD) directives nor Joint Chiefs of Staff (JCS) publications address space doctrine. The formal mission statements for the Air Force in DOD Directive 5100.1 and JCS Publication #2 do not mention space or aerospace. They state in summary that the Air Force mission is to organize, train, and equip forces for combat operations in the air. There have been attempts to change this mission statement to include the space mission, but apparently such changes are hard to effect.

The Air Force was the executive agent for DOD space efforts prior to the September 1970 revision of DOD Directive 5160.32. This directive establishes policies and assigns responsibilities for the research, development, test, and evaluation (RDT&E) of space systems. DOD Directive 5160.32, prior to September 1970, made the Air Force responsible for the research, development, production, and deployment of space systems for all three services. The Air Force is still responsible for all space booster launch vehicles including the conduct of launch operations and providing most orbital support services. The existing DOD Directive 5160.32 essentially makes the medium of space the preserve of all three services with their efforts supported by the Air Force as required and/or requested.

Unfortunately, the total rationale for this change in DOD direction is not documented, and one can only speculate on the reasons why.

If one uses precedent for an argument, then surely the basic rationale for a separate army, navy, and air force should be as compelling an argument for a separate space command. All three existing services are built around the requirement to exploit to the fullest the ground, water, and air media. It is recognized that the technologies and operational procedures required to operate effectively in each medium are unique. It requires a separate, unique, and dedicated effort to ensure that each is used most effectively. The services' roles and mission in space have become obscure, creating overlaps and allowing certain other potentials to be ignored.

Despite the lack of overall DOD direction on space, the Air Force has recognized that its vital role in this fourth medium is a logical extension of air operations, and it has led the way in exploiting the perceived potentials in space.

Air Force Manual 1–1 does address the space mission. In spite of the lack of direction from DOD or the JCS regarding the medium of space, AFM 1–1 includes both air power and space power. In chapter 1 the essence of paragraph 1–7, "The Space Environment," holds that the underlying goal of the United States national space policy is that the medium of space must be preserved for peaceful use for the benefit of all mankind. It further states that there is a need to ensure that no other nation gains a strategic military advantage in space. This is "tender treatment" of what admittedly is a sensitive question.

In chapter 2, "Characteristics, Capabilities and Employment Principles," the treatment of space is limited to a brief reference to surveillance systems. Chapter 3, "Aerospace Forces in Modern Conflict," addresses space in more detail. "Space Defense," paragraph 3-5, e(2), is an excellent one-paragraph statement of the space mission.

B EYOND these directives, publications, and manuals, there are still unanswered doctrinal questions, however.

First is the question of organization. The Space Shuttle is only three years away from its first launch, and no real organization or employment doctrine has been developed. At present, the Air Force Systems Command (AFSC) is responsible for the checkout and launch of DOD satellites. AFSC also operates specific space systems and provides the orbital command and control capabilities for other "users." The Aerospace Defense Command operates a large, sophisticated space detection and tracking system. The Strategic Air Command operates a meteorological satellite program of very advanced capabilities. The Navy, with the Air Force, is developing the Fleet Satellite Communications System (FLTSATCOM) that in fact will support all three services. The NAVSTAR Global Positioning Satellite (GPS) program is designed to provide tremendously improved navigation support to all three services as well as to certain civilian users. GPS is an Air Force program. The Space Shuttle, among other uses, is designed to support literally all space programs.

The point is that space has become an amalgam of systems and users. The interrelationships of the systems from a technical standpoint are complex as are the interrelationships of the developers and users. These relationships are at present

developed on an ad hoc basis, there being no overall organizational fabric to hold them together.

The need for a separate space command within the Air Force, then, seems obvious. This command could well develop into a space force when future requirements demand such a specialized and large-scale effort.

The space command would resolve two glaring problems. It would bring some coherence to the organization and operation of current and projected space systems such as the Space Shuttle. Second, it would allow the Air Force Systems Command to return to its primary mission of research and development. R&D funding and effort within DOD have suffered during the Southeast Asia conflict and continue to need more emphasis. The Air Force Systems Command should not have to expend money on what essentially are operational systems. This practice only blurs and diffuses its primary mission of R&D and the development of new systems.

The same line of thought is evidenced in recent congressional hearings concerning the National Aeronautics and Space Administration (NASA). The National Academy of Sciences National Research Council has recommended that Congress establish a space applications council to direct the applications of space flight and space technology to the domestic needs of the country. This council concluded that "there exists at present no institutional mechanism that permits the large body of the potential users of space to express their needs and to have a voice in matters leading to the definition of new systems."[3]

NASA has also recently recognized the need to get out of the communications satellite business and let private enterprise step in and continue systems devel-

opment deployment and operation of more advanced systems. NASA feels that its more basic R&D mission is being compromised by continued efforts in systems that have been well developed.

Finally, with the present organizational approach to space, one of the most important potentials is being nearly ignored. The present approach requires that any new space system be economically and operationally justified by one of the existing services or service commands. This is in line with the earlier argument that space has been constrained to support existing and/or terrestrial missions.

What this approach negates is the proposition of military man in space and the recognition of the need for space superiority analogous to today's air superiority mission. There is little doubt in the minds of those familiar with the potentials of space that manned military systems, over and above the Space Shuttle, will be an indispensable part of our nation's defense.

Former Secretary of Defense James R. Schlesinger, while with the Rand Corporation, wrote:

> If the only way to justify advanced developments is to link them with specific requirements or objectives, then some worthwhile projects are certain to be eliminated. Insistence that missions be specified prior to developmental work will lead to too narrow an R&D menu. As others have noted, prior to the use of the wheel people might have been hard-pressed to spell out important requirements for it. We could appropriately tie R&D proposals to recognized missions, if missions could be fully spelled out. But given an ignorance of the future, two missions that ought to be recognized are (1) acquiring information and (2) hedging against contingencies. Both should be written in every cost effectiveness study in

capital letters, because in real life they are among the most important military requirements or objectives.[4]

I T IS an interesting and valuable exercise for all of us to imagine ourselves watching the first flights of the Wright brothers. How well would we have predicted the future of military air at that time? The first request by the Army to purchase aircraft was almost refused because of the lack of a well-defined mission. Perhaps Benjamin Franklin put it best when in 1783 he witnessed the first public launching, in Paris, of a hydrogen balloon. A skeptic asked Franklin, "Of what possible use is this new invention?" and he replied, "What is the use of a new-born child?"

Our nation needs to start developing a real military-manned space capability soon. The astronauts of Skylab have testified to the synergistic effect man has in operating space systems. Man's powers of observation in a surveillance role are superior in many respects to automated systems. Satellite inspection appears to be a manned role as well as the repair and refurbishment of space systems. The need to be able to construct larger systems in orbit appears to be essential. The ability to erect larger antennas or simply to mate modular space systems into larger units of greater capability is also a certain eventuality.

A final note on the organization of our military space efforts is provided by General Jacob E. Smart, USAF (Retired). He says:

> . . . presently there are multiple agencies of the U.S. government engaged in space related activities, each pursuing programs to fulfill its own missions. This of course is proper but points up the question: Does the sum of the individual agency's perceived roles adequately fulfill the total national need? There is no central policy coming from the top, guiding and coordinating these efforts.[5]

The only way that our nation will aggressively pursue the development of a manned military-space operational capability is to assign the space mission to an operating command. The Air Defense Command could realistically expand and assume the DOD space operations responsibilities, or a separate space command could be formed to integrate this fractured effort.

In any event I would like to leave the reader with the thought that "Space is a mission and not simply another medium only to be used to augment existing military roles and responsibilities." Greater foresight is required in space doctrine, and the first essential is a reorganization of Air Force command responsibilities to give proper recognition to the potentials of military space, manned and unmanned.

Air War College

Notes

1. This statement is often heard in conversations within the Pentagon.
2. Remarks by Brigadier General Henry B. Stelling, Jr., Director of Space, DCS/R&D, Hq USAF, at the twenty-first annual meeting of the American Astronautical Society, Denver, Colorado, 26 August 1975.
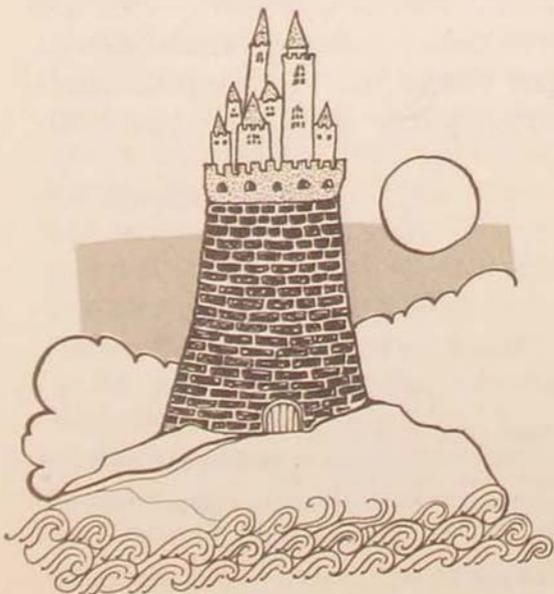3. *Aerospace Daily*, 24 July 1975, p. 129.
4. James R. Schlesinger, "Defense Planning and Budgeting, The Issue of Centralized Control," Rand Corporation, 1964.
5. General Jacob E. Smart, "Strategic Implications of Space Activities," *Strategic Review*, Fall 1974, p. 21.

DETERRENCE: RECKLESS PRUDENCE

Dr. James A. Stegenga

SHOULD we buy more or less of gadget A? Should we reduce deployment B by a few percentage points or not? Most current articles on defense policy stay at the level of asking such questions as these. What is missing in nearly all of the contributions to the debate is an examination of some fundamental assumptions and implications of the cornerstone of American defense policies, nuclear deterrence: hoping and confidently expecting to persuade the Soviet Union not to attack us by threatening thermonuclear counterattack. Most public officials, writers, and ordinary folk deem deterrence to be reliable and proper. Deterrence is widely accepted as one of the few "givens" in contemporary affairs.

But if a principal function of the intellectual is—almost by definition—to subject society's "given" operating assumptions to continuous scrutiny, then surely few topics are more in need of this ongoing critical examination than deterrence doctrine.

According to this doctrine, the government in Moscow can be counted on to behave like a rational individual. It will value survival more than any other goal. It will be well-informed. It will carefully calculate all the consequences and all the pros and cons of each option in every crisis. It will be sensible. And it will cautiously adopt limited objectives in the international arena so as not to incur American wrath and revenge.

flawed mortals

But the Soviet government is run by a collection of people. And most of what we know about both human behavior and governmental decision-making should make us skeptical about the rosy picture the confident proponents of deterrence paint.

People can be counted on to behave rationally only part of the time, nonrationally and even irrationally the rest. Frequently throughout history they have held some things more dear than "mere" survival—honor and glory come to mind. To some extent people are also usually captive of habit or ideology or public opinion. And they may be poorly informed, especially about secrecy-shrouded military capabilities and intentions. They are clearly capable of evil and folly, error and accident, misperception and delusion, incompetence and passion.

The problem may be compounded when such decisions are made by small groups of people rather than by single individuals. What psychologist Irving Janis calls "groupthink" sets in, with all the members of the group so anxious to get along with each other, maintain their power positions, appease the group leader, and push the interests of their respective bureaucracies that they suspend the critical thinking required for rational decision-making.

The problem is certainly further aggravated in a crisis situation when time pressures, poorer information, fear, exhaustion, higher risks, and a tendency toward belligerent machismo all cause a deterioration in the already low level of rationality we can expect from the flawed mortals hovering over the buttons.

Can we really count on the Soviet system always to work so well, producing wise leadership groups that will behave so rationally on into the 1980s and beyond even in the gravest crises? Most of us know too much history to have that kind of confidence in the performance of any political system, perhaps especially highly personalistic authoritarian regimes lacking institutionalized controls on executive discretion. Paradoxically, those in our society most critical and suspicious of the Soviet government —call them conservatives or hawks— who ought to have the gravest doubts about Kremlin dependability are, nonetheless, the staunchest and most confident supporters of deterrence doctrines and attendant weapon systems and budgets.

"But," someone is sure to say, "deterrence has worked pretty well these past thirty years, hasn't it?" Can we really be sure, though? Perhaps, like the fellow standing on the corner waving his arms and blowing a whistle who had managed to convince himself that he was thereby successfully keeping the elephants from attacking, we have convinced ourselves that the only reason the Russians have not conquered Europe is because we have frightened them into restraint. They, of course, have likewise managed to convince themselves that the only reason their system has not been overthrown by angry Westerners is that they have frightened us into abandoning such goals. Historians may well conclude that neither side ever had the intentions the other feared and thought it had discouraged with threats of nuclear retaliation.

And, anyway, even if it could somehow be proved that nuclear deterrence has kept the peace for the past thirty years, these same historians would be quick to point out that thirty years is not a very long time, that devices for keeping the peace in other times have worked as long only to fail later.

It ought to be clear to all of us that deterrence—really a form of applied psychology—is historically, psychologically, and politically naïve to a dangerous degree, our confidence in it quite unwarranted. One of these days—if, alas, the

balloon goes up—I suspect the survivors will say: "Of course deterrence was bound to fail; how silly that we ever had any faith in it!"

ethical doubts

Since government policies also ought to be judged on ethical as well as practical grounds, we should look, too, at some of the more troublesome ethical implications of nuclear deterrence policies.

Our government openly and unabashedly contemplates the deliberate killing of tens of millions of people, most of them noncombatants. In the authoritarian countries of Eastern Europe and Asia against which the United States would retaliate, the people we hold hostage have so little to say about their governments' decisions that they could hardly be deemed culpable of aggression and thus deserving of annihilation. And in neighboring countries not even parties to the quarrel, the citizens and ecological support systems would notwithstanding suffer permanent radioactive poisoning. Could this undiscriminating genocidal and ecological destruction even conceivably be deemed justifiable vengeance? For that matter, is vengeance of any kind consistent with our deepest moral convictions?

Second, if decisions to retaliate must be virtually automatic and instantaneous, how can the decisions of our President and his associates possibly be based on moral choice which requires time-consuming reflection and consideration of alternatives, as well as—under our democratic system—at least some role for public opinion?

Finally, might society's values that deterrence is designed to protect be endangered by the nuclear deterrent itself? Can a constitutional polity governed by elected civilians endure even as military men and military thinking gain in political influence during a time of continuous national insecurity? Can a traditionally liberal and humane society survive as such even as its people and their leaders become calloused by their acceptance of nuclear holocaust as an instrument of national policy? And, if deterrence fails (as it has, of course, countless times throughout history), whatever Americans survive the catastrophe will surely not enjoy the blessings of liberty and democracy during the extended, harsh recuperative period. Of what moral character is a means which itself endangers or surrenders the end?

beyond nation states

If deterrence, then, is not only unreliable but also morally bankrupt, what shall we do, now that we realize our predicament? Or, you might say, "OK, suppose nuclear deterrence *is* dangerous and repugnant; what alternative do you suggest?" Well, less reliance on threats and other negative sanctions and more reliance on positive incentives would be a start; people ordinarily seem to react better to offers of mutually beneficial deals than to scare tactics. We are now betting our lives that the Soviet leaders are ordinary and sensible enough to be dependable custodians of nuclear weapons and advanced delivery systems. Presumably, they are thus likewise sensible enough to be manipulable with inducements. So let us have less self-righteousness and more détente, arms control, expanded trade, and improved diplomacy—the usual liberal approaches that have finally caught on even with conservative administrations. Shifting our emphasis increasingly away from negative and toward positive approaches may

help. Developing and relying increasingly on programs with a positive cast and moving the violent tools back into their proper place of final resort would be an improvement over the present threat system in global relations. Such a shift of emphasis would also, of course, result in more ethically agreeable policies.

But maybe one day soon we will have to concede that there is no way to reconcile continued national sovereignties on the one hand and the nuclear weapons that have rendered governments unable to perform their key function of protecting their citizens on the other. Just as gunpowder, revolutionary ideals, and industrial commerce spelled doom for the feudal system of castles and moats 400 years ago, thermonuclear weapons and ICBMs may force the replacement of obsolescent national states and governments. If deterrence is no defense, perhaps there is none to be found. The whole effort to "improve" deterrence may be just as doomed as were the efforts that I suppose were made by sixteenth century defense intellectuals and military planners to "improve" their moats and castle walls to protect against threats that they could not quite see were undermining the entire social and political order. We are probably now living in the transition period between the age of nation states and whatever era is around the corner.

Purdue University

Ours is a strategy of deterrence; theirs is a strategy of warfighting.

DR. MALCOLM R. CURRIE
Director of Defense Research and Engineering
Commander's Digest, *June 17, 1976*

NEVER AWAKE
A SLEEPING GIANT

Captain James O. Younts III, USA

> So Gideon, and the hundred men that were with him, came unto the outside of the camp in the beginning of the middle watch; and they had but newly set the watch: and they blew the trumpets, and brake the pitchers that were in their hands.
>
> And the three companies blew the trumpets, and brake the pitchers, and held the lamps in their left hands, and the trumpets in their right hands to blow withal: and they cried, The sword of the Lord, and of Gideon.
>
> And they stood every man in his place round about the camp: and all the host ran, and cried, and fled.
>
> JUDGES 7:19–21

ONE OF the earliest recorded examples of psychological warfare occurred three millenniums ago. Outnumbered and in a tactically inferior position, Gideon was about to take it on the chin. Well aware that the table of organization and equipment for a standard night attack called for one light carrier and one trumpeter per 100 men, he used this same awareness on the part of his enemy, the Midianites, to rout them. Each of his 300 Israelites was equipped with torches, vases, and trumpets. The vases were used to conceal the torches until the propitious moment, when the vases were deliberately shattered.

The Midianites, sleeping blissfully in a valley (Judges 7:1), were suddenly subjected to a deafening blare of trumpets. The noise, in combination with 300 lights, was perceived by them to represent a force of some 30,000 men. The confusion and fear were so general that those Midianites who were not fleeing were killing each other. (Judges 7:22)

This combination of deception and surprise used to assist the tactician is but one facet of an esoteric type of warfare. On a strategic level it has caused the shifting of divisions and the saving of thousands of lives.

"Operation Mincemeat," popularly known from the book *The Man Who Never Was*,[1] was a spectacular deception that facilitated the Allied invasion of Sicily. The corpse of a fictional Major William Martin of Britain's Royal Marines was "buried" at the mouth of the Huelva River in Spain. The incoming tide deposited him on the beach, where it ap-

peared that he had been in a plane crash. Documents he carried were designed to convince the Germans that the attack on Sicily would only be a feint while the main attacks would be in Greece and Sardinia. The deception was so effective that Hitler continued to believe it for two weeks after the invasion of Sicily, sent Rommel to Greece, and moved many of the torpedo boats from Sicily to Greece.[2]

The impact of this alternative weapon system has been recognized by some of the greatest strategists—military and civilian—throughout history.

> Hence to fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting.
>
> Sun Tzu[3]

Sun Tzu was a famous general of China (ca. 500 B.C.) whose writings are described by B. H. Liddell Hart as unsurpassed in their comprehensiveness and depth of understanding of strategy and tactics. Sun Tzu expresses the belief that it is the moral and intellectual components of man which are decisive in war, and only when they are properly applied can war be waged successfully. War as a construct is to be thoroughly studied in advance; the enemy's plans frustrated, his alliances broken up. Cleavages are to be created between commanders and subordinates, the enemy demoralized, his will to fight broken before actual hostilities begin. Sun Tzu considers national unity an essential prerequisite for victory while the corollary is to cause disunity within the opposing state. He writes that an indispensable preliminary to battle is to attack the mind of the enemy.

Although we are dealing in generalities, it appears that another lesser known but brilliant strategist refined the con-

cepts and extracted the following principle:

> In preparing for armed insurrection, propaganda is *the* essential task to be performed. During the insurrection, propaganda is even more important than fighting.
>
> General Vo Nguyen Giap[4]

Giap is apparently referring to local propaganda, but he is clearly aware of the impact of actions and their interpretation on the international community. In his book *People's War, People's Army,* he makes reference to "world opinion" and the press as if the effect of North Vietnamese actions on these groups were more crucial than the realities of the battlefield. At the risk of seeming simplistic, one finds in retrospect that he appears to have a superlative grasp of political realities. Was it not Clausewitz who said. "War is politics continued by other means"? If war is politics, then the principal objective of war is to cause the opponent to change his government to one with which we can live and work in peace. An enemy is not a people, perhaps not even an army, but a government. Inescapably, then, a goal of war ultimately involves manipulation in the internal affairs of another nation. Our real targets, therefore, are the minds of the enemy—perceptions and attitudes, not bodies.

There is a widely held view that psychological operations (PSYOP) and its wartime component, psychological warfare, are something a nation or its armed forces can elect to do or not to do. This view is based on the concept that PSYOP is an independent activity of specialists or that there is something inherently evil embodied in the concept. Such views ignore the fact that whatever this nation, including the military, does or does not

do, the international community will interpret or perceive as evidence of U.S. intentions or policies.

If programs are explained, they are less subject to misinterpretation. If there is no direct explanation, then the action will be interpreted by others. One implication is that although actions might speak louder than words, the action is subject to several interpretations, and it is in our best interest to provide meaning to the action.

Psychological efforts conducted to effect a desired international result before a war must be continued with greater emphasis in support of hostilities until national objectives are achieved. As Sun Tzu makes explicit, success is predicated on a strong national resolve. Alternatively, strategists must take full advantage of all internal vulnerabilities in the mental resolve of an enemy.

The psychological ramifications of a combat action must be taken into consideration. Just as the planning staff will prepare psychological advantages and disadvantages of each course of action for the commander, as do the intelligence and the training and operations personnel, so this same type of analysis at the strategic level might have dissuaded the Japanese from attacking Pearl Harbor. The failure to take a wholistic perspective and the concomitant lack of coordination were causal agents in the eventual Japanese decision. Taken in the context of prevailing American public opinion in November 1941, the failure becomes aggravated. The manifestation of this opinion—Congress—had retained a selective service capability by the slender margin of one vote. The mood of the country was clear. It would take an extraordinary event to arouse and unite the American public. Essentially, the prevailing attitude of tens of millions of

Americans was ignored, which is to say that a long-term psychological overview was not included in the Japanese planning, at least not in the military planning. Although a great military success in the short run, the attack was self-defeating in the long run. It was a sensational defeat for the United States and instrumental in paving the way for American entry into World War II. General Yamamoto is quoted as saying that "Pearl Harbor awoke a sleeping giant."

As an instrument of national power, the PSYOP role supports, complements, or amplifies diplomatic, political, economic, and military actions. At all levels there are two requirements for PSYOP effectiveness: a voice in the policy planning process and coordination among the various agencies involved.

The PSYOP planner must participate in the policy planning process at its inception. Too frequently, especially at lower levels, he is approached either incidentally or as a last resort. Policy guidelines have already been established, and implementation has started. Without a coordinated national policy directing the different aspects of a comprehensive psychological operations effort, PSYOP has only a latent capability. Its characteristics of economy, flexibility, and minimal loss of life make it a highly attractive addition to our strategic arsenal.

In spite of these apparent advantages, psychological operations and psychological warfare remain misunderstood, maligned, and generally ignored until a war comes along. Then an ad hoc psychological operations committee is quickly created at the national level, frequently evolving into a permanent committee with significant responsibility for policy as well as operational decisions. Unfortunately, the metamorphosis is usually not complete until the middle of a war so the

system does not become fruitful for months or even years after a war begins. Because there is no separate standing committee during peacetime to perform this function, the ad hoc committee makes the same mistakes that were made by the ad hoc committee at the beginning of the previous war. There is no institutional memory to provide continuity and avoid repetition of mistakes. While it functions, the committee performs one more essential activity in addition to shaping policy—coordination. This ensures that varied, seemingly unrelated programs are directed toward the same national objective. Viewed independently, they appear autonomous. In fact, these programs are different means used to achieve that end deemed appropriate by the Commander-in-Chief. Coordination ensures unity of effort with either minimum redundancy or planned redundancy. Reinforcement of a particular message is not left to

chance. It follows that coordination must be conducted prior to implementation and continued throughout the duration of a program.

IN AN age of increasing budget consciousness, perhaps the story of Gideon has increasing relevance. As his costs were negligible (clay vases and candles), so, of all weapon support systems, PSYOP is clearly the least expensive. As a flexible instrument it provides options in situations short of war and in every level of conflict. The lack of association between bloodshed and effectiveness is illustrated by the "mopping up" operations in the South Pacific. Local PSYOP teams with the 1st Cavalry Division on Leyte were able to "clean out caves in which isolated but desperate enemy soldiers were holed up. Often this was accomplished without the loss of a single American life."[5]

Fort Bragg, North Carolina

Notes

1. Ewen Montagu, *The Man Who Never Was* (London: Evans Brothers Limited, 1953).
2. William E. Dougherty and Morris Janowitz, *A Psychological Warfare Casebook* (Baltimore: Johns Hopkins Press, 1956), p. 384. Hereafter cited as *Casebook*.

3. Sun Tzu Wu, *The Art of War*, translated by Lionel Giles (Harrisburg, Pennsylvania: The Military Service Publishing Company, 1944), p. 48.
4. General Vo Nguyen Giap, *People's War, People's Army* (New York: Frederick A. Praeger, 1962), pp. 77, 79.
5. *Casebook*, pp. 213–14.

ZUMWALT, AN INTELLECTUAL ADMIRAL

Dr. Paolo E. Coletta

If there's one thing I can't stand it's an intellectual admiral.

Henry Kissinger

THE FIRST thought that flashed into my mind on receiving Admiral Elmo R. Zumwalt's *On Watch* † was that it contained the author's platform for his campaign for the U.S. Senate. In view of the election results, perhaps I was wrong. Next question: Did the author seek to immortalize himself in an autobiography highlighting his strengths and accomplishments and hiding his weaknesses and failures? Answer: Yes and no; for although he stresses his successes, he also honestly acknowledges where he failed to change "the system" either in the Navy or in the foreign policy decision-making process. What we find, then, are the memoirs of a sailor who rose to the top leadership post in the Navy and who is not afraid to name names.

The story concentrates on the years 1970–74, while the Admiral was on watch as Chief of Naval Operations. It

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†Admiral Elmo R. Zumwalt, Jr., USN (Ret), *On Watch: A Memoir* (New York: Quadrangle, 1976, $12.50), xv and 511 pages, chronology, appendixes, maps, charts, glossary, index.

tells how he tried to reform the Navy and bring it "up to speed" in various ways. In addition it details his relations with many agencies at the highest levels of government: the Joint Chiefs of Staff, the National Security Council, the White House Office, the Presidency itself.

Following his graduation from the Naval Academy in 1943, Zumwalt continued his education in billets both at sea and ashore. At sea he realized that the demand for very expensive and relatively defenseless nuclear-powered surface warships emanating from the politically powerful potentate Admiral Hyman G. Rickover precluded the acquisition of less expensive yet vitally necessary ships that could exercise sea control, that is, protect America's overseas lines of communication. Second, he saw that the Navy suffered from Mickey Mouse, traditions outmoded by social change. Third, such were the defense budgets of the Nixon administration and the comparative growth of the Soviet Navy that the U.S. Navy verged on becoming second rate and thus unable to support American interests worldwide, as the Nixon Doctrine posited. Fourth, he noted that the administration would accept a secondary position in strategic arms limitations merely in order to reach an agreement with the Soviets. Last, he saw that administration decisions and the lack of correctly placed American naval power, as in the Indian Ocean, enabled the Soviets to further their interests at the expense of American objectives.

In three delightful opening chapters, Zumwalt traces the history of his World War II service in the Western Pacific; how he met the girl he then married and who bore him four children; and how he would have preferred to become a physician like both his parents yet remained in the Navy because of the Soviet threat

to the United States, a threat emphasized to him by General George C. Marshall and by the lowering of America's defense posture by Secretary of Defense Louis A. Johnson. For three years, 1962–65, he learned much, as an assistant in the billet of Director of the Arms Control Division, International Security Affairs, from that great public servant, Paul H. Nitze. He acquired what he says was the equivalent of a Ph.D. in politico-military affairs that later stood him in good stead when he became Chief of Naval Operations, thus a member of the Joint Chiefs of Staff and principal naval adviser to the President. As Commander U.S. Naval Forces Vietnam, he faced not only "the fire of the enemy in the field but the indifference or even the contempt of an all too large segment of the public at home." (p. 34) He decried the massive American involvement in Vietnam because it consumed resources better used to support American interests elsewhere. Thus, he applauded the Vietnamization program and then cheered America's withdrawal. It was from what appeared to be a dead-end tour with the "brown water" (riverine) navy that he was called to be CNO—a surface sailor following nine years in that billet of naval aviators—and began his battles with such administration favorites as Henry Kissinger and Alexander Haig and the redoubtable leaders of the congressional armed services and appropriations committees.

The remaining almost 500 pages of *On Watch* deal with high-low, or the mix of nuclear-powered and conventional ships, aircraft, and weapons the Navy should have, including a penetrating description of the political machinations of Rickover (chapters 5–6); the drive to open the Navy to minorities (not without such problems as the flareups on the

Constellation, Hassayampa, and *Kitty Hawk);* the various Z-grams that eradicated Mickey Mouse regulations (chapters 7–10); and almost 200 pages (chapters 12–20) mostly on failure to convince the administration to adopt courses of action that would make and keep America strong in face of the Soviet threat. Extremely useful are the chronology and the appendixes, the latter of which deal with comparative U.S.–U.S.S.R. naval and mercantile capabilities.

How does Zumwalt appear in historical perspective? He is like the Perrys and Isherwoods who wanted steam-powered rather than sailing ships; like Stephen B. Luce and Alfred Thayer Mahan who would teach the meaning of sea power; and most like Bradley A. Fiske, who served as the equivalent of CNO during the early years of Woodrow Wilson's administration and who was not listened to when he demanded that America prepare for a war he saw coming.

Specifically, how can a CNO influence administration policy? Zumwalt found that his recommendations for the kind of Navy he thought the nation should have were not generally accepted by the administration, especially by Rickover and such Congressmen as William Proxmire and Les Aspin. Nor were these three much concerned about maintaining parity with the Russians. Rather they seemed to accept Kissinger's fatalistic belief that the U.S. is a decadent power and would be well-advised to grasp any

agreement on the limitation of strategic arms offered by the Russians. He found that the unification of the armed forces provided for in the National Security Act of 1947 as amended still has not eradicated single service viewpoints and that the administration did not furnish him necessary information.

Zumwalt's watch, of course, occurred during the Watergate mess, when governmental matters were largely handled by either Kissinger or Haig. As CNO he found much opposition within his service when he changed the Navy's social order to match that of society as a whole. When he wanted to say unpleasant things to the administration, he was threatened by Kissinger and others that his budget would be cut or that he would be fired. Paranoia and duplicity rather than candor and honesty prevailed. He, therefore, decided not to accept the cushy job offered him as head of the Veterans Administration and, after his watch ended, to appeal to the people. He has done so, with verve and the best instincts of a patriot who knows that the United States will only be as militarily strong as the people want it to be.

While the full story cannot appear until Nixon, Rickover, Kissinger, Haig, and former Secretary of the Navy John W. Warner, among others, tell their side of it—if they ever do— *On Watch* remains a terrifying tale of an administration so involved in escaping from the moral morass it had created and so dependent on a Lone Ranger to decide its foreign policies that the primary rule of national life, security, was neglected.

U.S. Naval Academy

POTPOURRI

Asia and the Road Ahead: Issues for the Major Powers by Robert A. Scalapino. Berkeley: University of California Press, 1975, index, x + 337 pages, $10.95, $3.95 paper.

Any work by Professor Scalapino, a leading scholar among American students of Asia, is worth reading. This particular book deserves special attention because it reviews the Pacific-Asian area following the failure of U.S. policy in Indochina. Scalapino's message is stated explicitly in the Preface, " . . . if the trauma of America's first major political-military defeat, that in Indochina, leads to a triumph of isolationism, new or old, we shall, in my opinion, face grave problems in the not distant future." (p. x) Scalapino's concern, then, is to chart and interpret the course of international relations in Asia since World War II and discuss the alternatives available to the major powers in the region.

The analysis takes place on two levels. The Pacific-Asian area is divided into five strategic regions (the Pacific Ocean, Northeast Asia, the Continental Center, Southeast Asia, and South Asia); this is followed by a review of the foreign policies of six selected "major powers" in their domestic settings within a transregional, regional, and bilateral context. The six countries selected consist of three global powers: the United States, the U.S.S.R., and Japan; China, a regional power with some global influence; and India and Indonesia as major regional powers. One could quibble with the selection of Indonesia as the major Southeast Asian power, but it is difficult to refute the argument that Djakarta is *potentially* the power center of the region.

The great strength of Scalapino's analysis is the scope of the issues he covers and the balance he establishes between his discussion of global and regional politics and the particular policies pursued by the nations that form the core of his work. The reader unfamiliar with the course of world politics in Asia or one who is not familiar with the domestic and foreign affairs of the nations surveyed will find the historical analysis more than sufficient to supply a basic understanding of the succeeding discussion. The Asian specialist will find the discussion sound if not innovative. Undoubtedly, readers will find some analytical points debatable and will argue with some of Scalapino's conclusions, although believers in realpolitik will find this volume to their taste.

In short, Professor Scalapino has produced a book that should be read by Air Force officers with an interest in Asia or world politics. As a bonus, the study concludes with a valuable bibliographic essay containing some twenty-two pages of source material.

Dr. Paul H. B. Godwin
Documentary Research Division
Air University

The Lessons of Vietnam by W. Scott Thompson and Donaldson D. Frizzell. New York: Crane, Russak & Co., Inc., 1976, 277 pages, $16.50.

"There were many ways of winning the Vietnam War; there was only one way of losing it, and we figured out that one possible way." This statement, attributed to Herman Kahn, probably only slightly overstates the thesis of this most interesting and stimulating book by Colonel Frizzell and Dr. Thompson.

The work is the result of a colloquium, "The Military Lessons of the Vietnamese War," held at Tufts University's Fletcher School of Law and Diplomacy in 1973–74 and later broadened to a study of the politico-military lessons at a conference in May 1974. The list of participants in these conferences reads like a who's who of the U.S. participation in the conflict, and their most candid comments offer the serious student of military planning or history much food for serious thought.

The authors have taken excerpts from the papers presented and the panel discussions

of these two gatherings and woven them with their own comments into a vivid and revealing account of the attitudes, decisions, actions, successes, and failures of the American effort in Vietnam. In so doing, they have written a book of considerable value not only to those who will be responsible for future U.S. political and military decisions but to the historians who will analyze this conflict further.

It has often been charged that the losers in a war are the ones most capable of determining the mistakes of that war and avoiding them during the next conflict. For the first time in its history, the United States finds itself occupying the position of loser. It is imperative, then, that we learn the lessons of this past conflict and avoid them in the future. Just as important is the need to avoid the *mis*-lessons. This book, properly used, should be a good starting point for the study necessary to accomplish these goals.

Beginning with the Strategic Background, the book progresses through such topics as the Evolution of National Security Policy and the Vietnam War, the French Experience, the American Approach to the War, the Military War of Attrition, Psychological Factors, and almost every major facet of the conflict. Each subject is analyzed from several viewpoints, some conclusions are drawn, and individual opinions of lessons to be learned are listed. Thus, the reader who still harbors emotional ties with the conflict will find the adrenalin flowing and his ire at his own personal prejudice of the war being revived.

U.S. participation—long on technological innovation/short on institutional innovation, long on good intent/short on ability to carry out that intent because of bureaucratic inertia—is clearly laid out in this most interesting and informative text.

Lieutenant Colonel Edward H. Turek
Maxwell AFB, Alabama

The Great War and Modern Memory by Paul Fussell. London: Oxford University Press, 1975, index, notes + 363 pages, $13.95.

Every one of us, whether we call ourselves officers, educators, or simply human beings, should read this book. It is the only book that I have read in recent years that leads me to complete and extended praise. Why? Because it is an absorbing, enriching, and entertaining experience. Because it is sheer delight—ebullient, exuberant, and uncompromising.

To begin with, *The Great War* is a scholarly work that engages both the intellect and the emotions. It impacts the mind and gut, evoking the awful experience of war; and yet, at the same time, it is often so funny that I laughed out loud.

When Fussell tells us how the soldiers in the trenches could be sure they would receive their cigarettes and cakes if their packages were stamped "Army Temperance Society Publications" and then turns and discusses the "Principle of Threes" in literature and life, we can readily sense the range of his enterprise.

He proves again and again that he is not only a fine researcher but a writer nonpareil. His skills are manifestly sharp and deep. While definitively describing the blood and mud of trench warfare, he interlaces his language with cuts and quotes from other sources in such a splendid way that he turns the whole exercise into a magnificent journey through the literary world of "the war to end all wars." In doing so, he walks us along the beauty-roads of nineteenth-century idealism and well into the jagged rubble of modern skepticism. Poetry, myth, and narration are explored like caves and haunted houses.

His meticulous discussion of the literature before, during, and after "The Doughboy Years" clarifies the germinal aspects of those ideas, postures, and feelings about our world which we have come to possess—or which have come to possess us. His concept of memory and that which causes the content of memory is magnificently developed. His explanation of how and why many of us have realized the world as absurd, teetering on the cutting-edge of irony, is the most powerful and persuasive that I have discovered.

Fussell makes it quite clear that war is conceptual, an awesome game that any number can play. He shows how inventions and understandings, poetry or bullets, are impossible without previously known types and models and that the imaginative leap to the new cannot be realized without them: Content-of-mind is all-important to that leap. These themes are illustrated with detail, range, and sensitive humanity, covering a wide horizon of sources, with analyses of the contributions of Siegfried Sassoon, Robert Graves, Wilfred Owen, Edmund Blunden, Anthony Burgess, and dozens of others.

There are so many fine aspects of *The Great War* that it is difficult to cover even a fraction of them, but Fussell's diversity of perceptions, his poetic rendering of communication, his clarification of mind-set, and his shaping of iconic forms are just a few that make every chapter continuously exciting and stimulating. Headings like "A Satire of Circumstance," "The Troglodyte World," "Oh What a Literary War," and "Persistence and Memory" are mere indicators of what awaits the reader of this richly rewarding book. It is all so right, so compassionate, so share-able!

By guiding us into an understanding of how we infused that first quarter of the twentieth century into the bloodstream of our lives, Fussell may have helped us survive this final quarter. For that notion, I thank him and highly recommend his *Great War and Modern Memory.**

Dr. Porter J. Crow
Educational Advisor to the Commandant
Air Command and Staff College

*Editor's Note: Fussell's book received the 1976 National Book Award in the Arts and Letters category.

Isolation or Interdependence? Today's Choices for Tomorrow's World edited by Morton A. Kaplan. New York: Free Press, 1975, 254 pages, $10.00.

Generally, essay collections on significant topics suffer from articles of uneven quality.

Thus, the question is whether individual essays warrant our examining the whole text.

From the perspective of national security, the essays by only a hypothetical question Morton A. Kaplan ("Uncertainty and Security") and Donald Brennan ("National Security in Fortress America") are provocative and incisive, and they merit study. The ageless question of the American withdrawal from Europe and the impact of a severance of the U.S.–Japanese security treaty are subjects of a risk analysis by University of Chicago Professor Kaplan. Brennan, of the Hudson Institute, posits a military policy of nonintervention and asks how the consequent reductions in general purpose forces might adversely affect us. Would Japan occupy Hawaii or the Soviets assert that Alaska was "legitimate" Soviet territory? Other essays examine the fundamental importance of economics, technological and scientific advancement, raw materials, and they are well-developed presentations. However, the remaining essays on how "isolation" might affect America's position and societal development (the theme of the 1974 conference) are less satisfactory.

Readers will, however, be pleased to see little of the redundancy so common to such joint enterprises. In addition, a second Kaplan essay would be useful to those unfamiliar with the basics of alliance politics.

Collectively, the authors succeed in reminding us that such great questions of our age as monetary reform, raw materials, trade, and alliance cohesion necessitate solutions that will assuredly alter the prevailing conceptions of national security policy. This book, then, is a sketch map to our future.

Roy A. Werner
Washington, D.C.

The United States Air Force: A Turbulent History by Herbert Molloy Mason, Jr. New York: Mason/Charter, 1976, 284 pages, $12.95.

Old wine in old bottles. There is absolutely

nothing new in this book, and it is not a history in the scholarly sense. An attempt is made to cram 70 years of history into 284 pages: the work does not have the technical features required to qualify as serious scholarship; it is based wholly on common, printed sources; and its interpretations are so conventional that they do not bear repeating. In short, the work is "drum and trumpet" history written for the popular market.

Mason, a professional writer specializing in aviation, makes fewer errors of fact than one usually associates with a book of this kind: the *Hornet* was sunk in the Battle of the Coral Sea, and the Tactical Air Command conducted the air war in Vietnam. *A Turbulent History* is mainly a narrative description of events, not an interpretation. Where the author does wander into the realm of ideas, he is more Popish than the Pope, more hawkish than the hawk. He goes further than does the U.S. Army Air Forces official history in claiming victory for the B-29s over Japan, leaving one little line to the submarines. He explicitly credits Linebacker II for bringing North Vietnam back to the conference table; of course, we of the Air Force establishment would like to have some incontrovertible proof that that was so. But Mason does not do much for his case when, in the next paragraph, he quotes a Britisher as saying: ". . .North Vietnam requires at least a million tons of grain a year from outside sources, and they were really tight for food in January of 1973. They had to sign then."

Herbert Molloy Mason has a very good writing style, and no air power enthusiast will be much inclined to contest the tone of the author's ideas. Yet, the book is so superficial and travels such a well-worn path that there could be very few professional officers who would learn much from it.

Lieutenant Colonel David R. Mets
Air University Review
Maxwell AFB, Alabama

the contributors

Dr. Curtis W. Tarr (Ph.D., Stanford University) is a Vice President of Deere & Company, Moline, Illinois. Dr. Tarr spent five years in the federal government as Assistant Secretary of the Air Force, Manpower and Reserve Affairs; Director, Selective Service System; and Under Secretary of State for Security Assistance and Acting Deputy Under Secretary of State for Management. Before going to Washington, he was President of Lawrence University at Appleton, Wisconsin.

Major Wayne L. Morawitz (M.A., University of Southern California) is assigned to the telecommunications branch, SAMTEC, Vandenberg AFB, California. A distinguished graduate of Officer Training School in 1963, he served as communications chief of maintenance at Ellington AFB and Ramstein AFB and as a base wire officer at Tan Son Nhut. Prior to his present assignment, he was Chief, Operations Division, Directorate of Communications-Electronics, Headquarters Fifteenth Air Force, March AFB, California. Major Morawitz is a graduate of the Communications-Electronics Staff Officer Course.

Captain Earl H. Tilford, Jr. (M.A., University of Alabama) is assigned to the Office of Air Force History, Hq USAF, where he is researching and writing a history of search and rescue in Southeast Asia. Additionally, he is studying for his Ph.D. in military history at George Washington University. Previous assignments have included tours as an intelligence analyst in Thailand and at Hq Strategic Air Command.

Major Pember W. Rocap (M.A., Texas Tech) is assigned to the Air Force Logistics Management Center, Gunter Air Force Station, Alabama. He enlisted as an airman third class, attended Officer Training School, and has been assigned to a variety of duties, from aircraft maintenance officer in tactical fighter wings in TAC and PACAF to Special Assistant to the Chief of Staff. Major Rocap is a graduate of Squadron Officer School and Air Command and Staff College and author of other published articles.

Major Joseph M. Syslo (B.S., The Citadel; M.B.A., Samford University) is a Systems Program Staff Officer, Hq USAF. He has been a C-124, C-97, and C-123 pilot in MAC, DSA, and TAC. He has served in contract administration as Detachment Commander at Fairchild Industries, Florida, and Deputy Commander of the AFPRO at Rocketdyne, California. Major Syslo is a graduate of Squadron Officer School, the Armed Forces Staff College, and the Industrial College of the Armed Forces.

Jay Mallin (A.B., Florida Southern College), journalist, has been a witness at firsthand of terrorism in Cuba, Vietnam, Uruguay, Argentina, and elsewhere. He is the author of six books, two of which deal entirely with terrorism, and has lectured on the subject at the Pentagon, Fort Bragg, North Carolina, and the Air Force Special Operations School, as well as at civilian seminars, and college conferences. Mr. Mallin is a regular contributor to the *Review;* his "Terrorism as a Political Weapon" was published in the July–August 1971 issue.

COLONEL ROBERT D. RUSS (M.B.A., George Washington University) is Commander, 4th Tactical Fighter Wing, Seymour Johnson AFB, North Carolina, where he previously served as Vice Commander. Following pilot training, he attended gunnery school and was then assigned to RAF Bentwaters and stateside flying slots. He is a command pilot with more than 4000 flying hours and 242 combat missions in Southeast Asia. At the Pentagon he served as Plans Officer on the Air Staff and the Joint Chiefs of Staff. Colonel Russ is a Distinguished Graduate of Air Command and Staff College and National War College.

COLONEL MORGAN W. SANBORN (M.S., Louisiana Tech University) is assigned to the Office of the Director of Space, Hq USAF. Commissioned in 1955, he has flown the F-86D, F-102, T-33, T-29, T-39 and an OV-10 flying tour in Southeast Asia. Other assignments were with the Aerospace Test Wing, Vandenberg AFB, California, and as Chief, Space Transportation System Division, Space Test Group, Patrick AFB, Florida. Colonel Sanborn is a graduate of Air War College.

DR. JAMES A. STEGENGA (Ph.D., UCLA) is Professor of Political Science at Purdue University. A specialist in international relations and military affairs, his writings include *The Politics of Military Policy*, *The United Nations Force in Cyprus*, and *The Global Community* as well as articles and reviews in professional and popular periodicals. As an Army enlisted man, he spent 1960–61 in Korea, a news writer and TV announcer with the Armed Forces network.

CAPTAIN JAMES O. YOUNTS III, U.S. Army, (USMA; M.A., Texas Christian University) is an instructor in the Psychological Operations Department of the School of International Studies, Institute for Military Assistance, Fort Bragg, North Carolina. He is a graduate of the Army and Air Force psychological operations courses and of the Infantry Officer Advanced Course. He served as company commander with a mechanized batallion in Vietnam. Captain Younts has published in *Infantry* magazine.

DR. PAOLO E. COLETTA (Ph.D., University of Missouri) is in the History Department, United States Naval Academy, Annapolis, Maryland. He served with a Naval Reserve surface division from 1951 to 1955 and then taught strategy and tactics at Naval Reserve Officers School. His publications include a three-volume biography of W. J. Bryan, a book of essays on the foreign policies of William McKinley (editor), *The Presidency of William Howard Taft*, and, forthcoming, *The U.S. Navy and Defense Unification, 1947–1953*. Dr. Coletta spent three wartime years in the Navy and retired after 30 years of Naval Reserve service.

AWARD

The Air University Review Awards Committee has selected "A Call from the Wilderness" by Major Donald J. Alberts, USAF, as the outstanding article in the November-December 1976 issue of *Air University Review*.

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