AIR UNIVERSITY review

JANUARY-FEBRUARY 1985

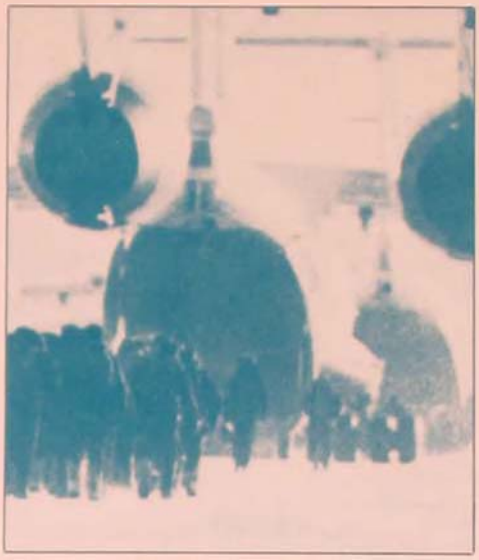
AIR
UNIVERSITY
review
MAXWELL AFB, AL 36112

SPECIAL FOURTH CLASS MAIL
CALCULATED POSTAGE
PERMIT G-1
USAF-ECI
GUNTER AFB, AL 36118

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300
RETURN POSTAGE GUARANTEED

The Professional Journal of the United States Air Force

re we prepared for low-intensity ars?—*page 4 and page 45*



Soviet air power versus the Afghan rebels—*page 30*

Why the Air Force needs V STO aircraft—*page 72*

Attention

Since modern warfare is continuously changing, Air Force leaders must be constantly alert for new ideas that might be the key to the successful application of aerospace power in the future. The *Air University Review* is the professional journal of the United States Air Force and is designed to serve as an open forum for exploratory discussion of professional issues and the presentation of new ideas. As an open forum, the *Review* aims to present new ideas and stimulate innovative thinking on military doctrine, strategy, tactics, professionalism, and related national defense matters. The views and opinions expressed or implied in this journal are those of the individual authors and are not to be construed as carrying the official sanction of the Department of Defense, the Air Force, Air University, or other agencies and departments of the U.S. government. Thoughtful and informed contributions are always welcomed.

Address manuscripts to Editor, *Air University Review*, Bldg. 1211, Maxwell AFB, AL 36112. *Review* telephone listings are AUTOVON 875-2773 and commercial 205-293-2773. Manuscripts should be typed, double-spaced, and submitted in duplicate. Military authors should enclose a short biographical sketch, including present and previous assignments, academic and professional military education; nonmilitary writers should indicate comparable information.

AIR UNIVERSITY
review

January-February 1985 Vol. XXXVI No. 2

AIR POWER AND THE ART OF WAR

OUR military heritage is rich and varied, including everything from insurgency and counterinsurgency to civil war and total war. Despite this rich heritage, the American defense establishment seems fixed too narrowly on the resource-oriented war of attrition typified by the Second World War. In the sweep of American history, this kind of war is more anomalous than typical. Perhaps we ought to be paying more attention to our Vietnam experience, which many experts believe is typical of wars we are most likely to fight during the next half century. But regardless of the kind of war Americans might have to fight, a mastery of the art of war is paramount to success.

If we find ourselves in a conflict like the Second World War, it will in all probability be with the Soviet Union. We cannot hope to prevail against the Soviets by outproducing and overwhelming them with superior resources. Victory can be attained only through a superior strategy, which will emerge only if our leaders are truly masters of the art of war.

At the lower end of the spectrum of warfare, the Vietnam experience should teach us that the application of technologically advanced weaponry and vastly superior firepower, however necessary, will not always be sufficient for victory. Modern military technology can provide the most humble enemies with weapons comparable to our own. This weaponry, combined with revolutionary zeal and a genuine understanding of the nature of the war at hand, can give the enemy superiority at decisive points on the battlefield. To better prepare ourselves for such a conflict, we must look to yesterday.

In the Vietnam War, we used air power in a variety of ways. Sometimes we used it superbly, as when we sustained our greatly extended and dispersed forces at fire support bases and airfields throughout the country. Our special operations units performed many tasks innovatively. Aerial reconnaissance, both strategic and tactical, provided information that is vital to fighting an unconventional war.

One of the best examples of the proper use of air power in support of broad military strategy occurred during Linebacker One, the interdiction campaign conducted in the spring of 1972 in response to the massive invasion of South Vietnam by the North Vietnamese Army. In that campaign, our objective was to stop the North Vietnamese Army from making substantial gains inside the Republic of Vietnam while American forces continued to withdraw. The aerial strategy was to reduce substantially the flow of supplies to the twelve divisions of enemy troops engaged in a massive offensive against South Vietnamese forces that were stubbornly defending their country. The strategy of using aerial interdiction to defeat an enemy force that was consuming supplies at an acceler-

ated rate at the end of ever extending supply lines was a sound one—and it worked.

Unfortunately, not every bombing campaign was as firmly based in solid strategy. Operation Rolling Thunder was the longest single bombing campaign ever conducted by the U.S. Air Force. Throughout the three years and nine months of the campaign, the Air Force sought to stem the flow of men and supplies moving from the North into the Republic of Vietnam and to force the North Vietnamese to desist in their support for the insurgency in the South.

While Rolling Thunder did, in fact, wreak considerable damage on North Vietnam's relatively primitive industrial base and its rudimentary but durable transportation system, it failed to achieve its objectives. Hanoi's support for the war in the South continued, and the flow of men and material to the war zone increased substantially.

Rolling Thunder failed for a number of reasons. To begin with, conventional air power used in North Vietnam had little effect on the unconventional war in the South, given the conditions under which the war was being conducted in South Vietnam. From March 1965 until the end of 1968 (the period of Rolling Thunder), the war inside the Republic of Vietnam was stalemated. General William C. Westmoreland's strategy was to fight on the tactical offensive, to search out and destroy the enemy. The Vietcong and North Vietnamese, however, had opted for General Nguyen Chi Thanh's strategy of fighting on the tactical defensive in a war in which they controlled the terms of engagement, which allowed them to regulate their supply consumption in accordance with their ability to replenish expenditures and losses. Furthermore, because North Vietnam possessed few industries and did not produce its own war-making materials, it was not susceptible to the kind of bombing that helped to defeat Nazi Germany in World War II. Additionally, the North Vietnamese were extremely determined, and bombing at the level of Rolling Thunder did not shake—and, in fact, probably solidified—their national will and resolve. Finally, although we in the Air Force tend to make too much of the point, our mission planners and crews had to work within constricting rules of engagement imposed by civilians far removed from the realities of battle.

Added to these difficulties, an institutional problem emerged as Rolling Thunder continued. A managerial approach to the war evolved in which target selection passed for strategy and success came to be quantitatively measured by computing sortie rates, bomb damage assessments, and KBAs (killed-by-air). Destroying stuff became the end of our efforts rather than the means to achieve a political objective. The science of war superseded the art of war.

In the years since the end of the Vietnam War, conventional wisdom within the Air Force has held that if air power failed at all, it failed because "our hands were tied" by civilians and politicians. While there may be a grain of truth to this rationale for our failure, it is largely a myth and a dangerous one at that if it obstructs an objective search for the military reasons behind Rolling Thunder's failure. Civilians did set national goals and policy, and they did tinker with the target lists—something which is beyond their purview; but devising military strategy, then as now, was the responsibility of the commanders.

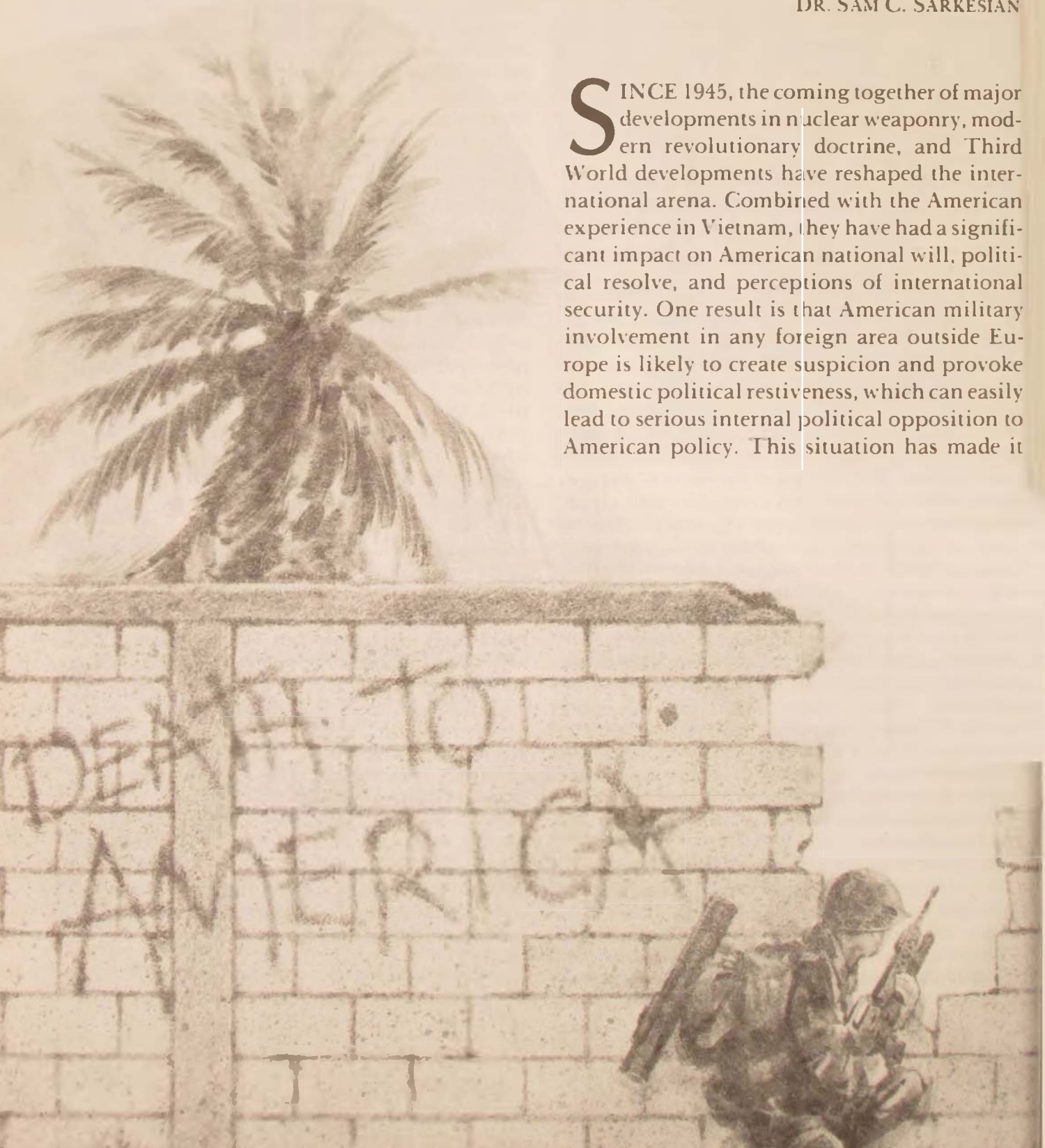
Air Force leaders of the 1980s might well be adept at the *science* of war. In the thirty-seven years since the Air Force gained its independence, good managers have emerged in an institutional Air Force that has evolved toward a technocratic bureaucracy. However, the emphasis on managerial skills and technological prowess threatens to eclipse the imperative for mastery of the *art* of war. Perhaps this development is to be expected in an organization employing highly complex and expensive machines: perhaps sophisticated hardware necessarily generates a managerial ethos in which the exactness of science surpasses the subjectivity of art. Nevertheless, if we are to win the next war, whether it is fought on the plains of Europe, in the jungles of Central America, or across the hills of Korea, we must effect an accommodation of science and art.

If we learn from our past experiences, we can begin to reconcile the art and the science of war. The dangers associated with a war between the Soviet Union and the United States make it far more likely that future wars will resemble the one we lost in Vietnam rather than the struggle we won in 1945. For that reason, it is vital that Air Force professionals understand what went on—and what went wrong—in Vietnam. Using what history can teach us to approach the problems of today and tomorrow is an important aspect of mastering the art of war. The ability to devise superior strategy comes from our knowledge of the dynamics of warfare. Professional reading, especially in history and philosophy, is vital to the kind of thinking that compels us to ask the difficult and often disturbing questions about our past and present so that we can better address the uncertainties of a dangerous future.

E.H.T.

LOW-INTENSITY CONFLICT: CONCEPTS, PRINCIPLES, AND POLICY GUIDELINES

DR. SAM C. SARKESIAN



SINCE 1945, the coming together of major developments in nuclear weaponry, modern revolutionary doctrine, and Third World developments have reshaped the international arena. Combined with the American experience in Vietnam, they have had a significant impact on American national will, political resolve, and perceptions of international security. One result is that American military involvement in any foreign area outside Europe is likely to create suspicion and provoke domestic political restiveness, which can easily lead to serious internal political opposition to American policy. This situation has made it

difficult for the United States to prepare for and deal with small, nonnuclear wars.

The difficulty of designing American strategy and political-military policy in response to nonnuclear wars of a lesser order is compounded by a lack of agreement regarding the character of such wars, their boundaries, and the rules of engagement. Some conceptual coherency is necessary even if only as a first step in developing realistic political-military policy.

Conceptual Considerations

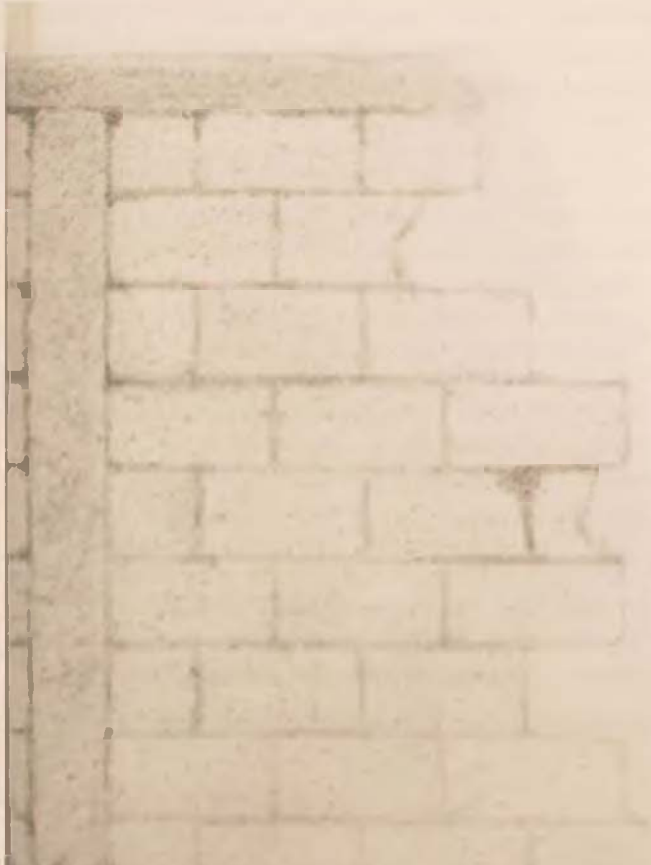
The term *low-intensity conflict* is in vogue in categorizing nonnuclear conflicts of a lesser order. Lacking a precise definition, this term has come to encompass every type of nonnuclear conflict ranging from the Korean War to terrorism. Earlier attempts at defining or explaining this term concept were, in the main, based on the size of the forces engaged and the purpose of the conflict.[1] The primary distinction however, rests more with the character of the conflict than with its level of intensity or the specific number of forces involved.

Although low-intensity conflict is perceived by some to include limited conventional wars and acts of terrorism, the substantive dimensions of such conflicts evolve primarily from revolutionary and counterrevolutionary strategy and causes. In brief, these include unconventional operations, protractedness, and high political-psychological content directly linked to the political-social milieu of the indigenous area. Limited conventional wars and acts of terrorism are outside the boundaries of low-intensity conflicts. Revolution and counterrevolution are the major categories.

There is considerable disagreement in the literature and in operational circles regarding the character of revolution and counterrevolution. A variety of terms tend to be used interchangeably: *revolt, revolution, rebellion, guerrilla war, people's war, peasant war,* and *insurgency.* This interchangeable use adds confusion to the disagreements.

A realistic and operationally relevant approach is suggested by Bernard Fall: "Just about anybody can start a 'little war' (which is what the Spanish word guerrilla literally means), even a New York street gang. . . . But all this has rarely produced the kind of revolutionary ground swell which simply swept away the existing government."[2] Fall goes on to note that ". . . guerrilla warfare is nothing but a tactical appendage of a far vaster political contest and that no matter how expertly it is fought by competent and dedicated professionals, it cannot possibly make up for the absence of a political rationale."[3]

From Fall's analysis, several observations emerge. Revolutions are a fundamental challenge to the existing political order and to those holding power in the system. The essence of such conflicts is in gaining control of the governing structure. Although all wars are political in nature, revolutionary wars are unique in that they center on the political-social system as the main battle arena, rather than on the armed forces. This focus is in sharp contrast to



the conventional and Clausewitzian notion that the center of gravity in war is the defeat and destruction of the enemy armed forces.[4] Revolutionary war is also quite distinct from nuclear war in that it does not attempt to destroy the political-social system but to capture it, and it limits itself to a particular geographic area.

Although armed conflict is an important part of revolution, it is not necessarily the most important for revolutionary success. As noted previously, the center of gravity in revolution is the political-social system and its psychological coherency. Thus, political cadre and psychological instruments are most important in determining the outcome of such conflicts.

In sum, revolutionary conflict is usually initiated by a competing political system which, at a minimum, consists of a cadre of leaders with an ideology (or cause) who are committed to overthrowing the existing system. Although this competing system may be rudimentary, its purposes, organization, and leadership pose a distinct challenge to the existing system. Further, revolutionary strategy and tactics usually combine all of the components of unconventional warfare with political mobilization to erode the legitimacy and effectiveness of the existing system. What makes revolution so complex is the fact that it usually occurs in Third World systems that are already struggling with serious problems of political change and economic modernization. Consequently, U.S. relationships and policy in Third World areas must deal not only with developmental issues but, in many instances, with low-intensity conflicts—particularly revolution and counterrevolution.

The U.S. Political-Military Posture

The irony of the U.S. position is that the challenges posed by low-intensity conflicts are largely separate and distinct from American perceptions of war. If the experience of the Vietnam War (and past similar conflicts) is any guide, the American political system and its instruments for carrying out political-military policy are placed in a highly disadvantageous position with respect to low-intensity conflicts. A number of factors contribute to this position.

In the American scheme of things, war tends to be viewed as a technological and managerial conflict in which face-to-face combat and conflict involving masses of troops engaged against each other is, in the main, subordinate to the ability to bring to bear sophisticated weapons on the battlefield through electronic commands and machine-oriented strategy and tactics to disrupt or destroy enemy formations.

> The process of rapid technological substitution has not only led to enhanced capabilities but has gradually turned Western armed forces into technocracies where a declining ratio of combat to support personnel has meant that, though firepower has increased, a decreasing number of individuals are actually involved in combat. This trend holds for forces of all nations, but it is most apparent in Western forces, particularly those of the United States.[5]

This process was reflected in the U.S. involvement in the Korean and Vietnamese wars. In his analysis of the Vietnam War, General Frederick Weyand notes the relationship between the technology of war and democratic values:

> As military professionals we must speak out. We must counsel our political leaders and alert the American public that there is no such thing as a "splendid little war." There is no such thing as a war fought on the cheap. War is death and destruction. The American way of war is particularly violent, deadly and dreadful. We believe in using "things"—artillery, bombs, massive firepower—in order to conserve our soldiers' lives. The enemy, on the other hand, made up for his lack of "things" by expending men instead of machines, and he suffered enormous casualties. The Army saw this happen in Korea, and we should have made the realities of war obvious to the American people before they witnessed it on their television screens. The Army must make the price of involvement clear before we get involved, so that America can weigh the probable costs of involvement against the dangers of noninvolvement . . . for there are worse things than war.[6]

Seeing conflicts through conventional lenses

heavily influenced by the Judeo-Christian heritage, Americans tend to categorize wars into good and evil protagonists. It follows that the character of the enemy must be clear and the threat to the United States must be immediate and challenging. U.S. involvement must be clearly purposeful and in accord with democratic norms. This "Pearl Harbor" mentality is more-or-less reflected in America's current posture.

Revolution and counterrevolution are asymmetrical with respect to their relationships with American involvement. For the revolutionary system, the conflict is a total war—one of survival. For the indigenous counterrevolutionary system, the conflict eventually evolves into a war for survival. For the United States engaged as a third (external) force in counterrevolution, the conflict is limited. Thus, commitments, morale, national will, and political resolve differ in degree and purposes between the protagonists. Moreover, the nature of revolution is such that it creates a morality and ethics of its own. These do not necessarily conform to democratic norms, nor do they follow the established rules of Western warfare. These are neither splendid little wars nor gentlemanly encounters. They are dirty, unconventional, no-holds-barred conflicts. Revolutionaries justify any means that contribute to their ends.

The center of gravity of such conflicts is not on the battlefield per se but in the political-social system of the indigenous state. Thus, the main battle lines are political and psychological rather than between opposing armed units. "Body counts," real estate, and prisoners taken are not true indicators of success or progress. Political and psychological factors are more important indicators, but they cannot be measured by conventional means. The most important elements for success in such conflicts are trained and committed political cadres and effective political-psychological machinery. In such conflicts, the U.S. military is postured on secondary issues.

Revolutionary conflicts are likely to be protracted and unconventional. The revolutionary system is unlikely to challenge directly either the existing system or U.S. forces in conventional settings. Rather, the revolutionary will pick a time and place when he can ensure an overwhelming superiority and when success is virtually assured—keeping in mind that success is perceived in political-psychological terms. (The Tet offensive in Vietnam in 1968 is a prime example of how total military defeat was turned into a major political-psychological victory by the Vietcong and North Vietnamese forces.) The nature of the conflict is likely to include a variety of tactics ranging from ambushes, assassinations, hit-and-run raids, sabotage, and terror, to periodic conventional operations. The revolutionary system is likely to follow a pattern of nibbling away at the counterrevolutionary forces, particularly American forces, in order to achieve a political-psychological victory over the long haul.

U.S. forces engaged in counterrevolutionary operations are likely to be involved in an alien culture, dealing with indigenous persons who have as little understanding of Americans as Americans have of them. The experience of one U.S. officer in Vietnam is a case in point. A Vietnamese counterpart said to him, ". . . you can't help it if you're an American, but you should always remember that very few of our people are capable of genuine positive feelings towards you. You must assume that you are not wholly liked and trusted, and not be deceived by the Asian smile."[7]

Differences between Third World and American cultures are particularly sharp in regard to the democratic socialization process. Democratic norms, based on justice and human rights, among other things, give most Americans a perspective on government and politics that is generally incompatible with most Third World systems. Americans operating in such areas are therefore not likely to sympathize greatly with the indigenous governing elite or with the goals and purposes of existing sys-

Operation Urgent Fury—the U.S. and Caribbean forces invasion of Grenada in October 1983—is an example of an offensive counterrevolutionary operation carried out to disestablish a Communist government and to offer the people the opportunity to restore democracy.

tems. Not only does this disparity negatively affect the American commitment to existing systems in the Third World, but it makes it difficult for Americans to shape the effectiveness and role of the indigenous military to conform to acceptable American standards.

Finally, revolutionary and counterrevolutionary conflicts are "labor"-intensive. Technology and modern weapons play an important role, to be sure. But the essence of success for revolutionary and counterrevolutionary systems is primarily contingent upon the commitment and skill of political cadre, political organization, and psychological warfare—that is, by people on the ground in face-to-face contact with the indigenous population. The nature of the conflict is such that mass destruction weapons likely to be used by counterrevolutionary systems are usually inappropriate except in rare instances where revolutionary armed forces are caught in the open and in mass formations or where revolutionary armed forces have developed a fortified area or base camp.

It is essential that once the United States is involved, it adopt a policy and posture that does not "Americanize" the conflict. The prime emphasis needs to be placed on maintaining the autonomy of the existing system. Among other things, this means that political-military

operations that are likely to project the United States into a dominant role over the existing system must be avoided.

In commenting on the Americanization of the Vietnamese conflict, one former high-ranking official of the South Vietnamese government said the following about American involvement:

> American support, even when it was militarily effective, was not an unmixed blessing. . . . The enemy, of course . . . was solidly dependent on foreign support, too. However, he had the advantage of having no foreign troops in his own ranks, and his allies . . . disguised their influence quite effectively, whereas the United States did not. . . .[8]

To be successful in accepting support and preventing Americanization of the conflict, the existing system must understand the requirements for successful counterrevolution, be flexible enough to make a serious attempt at redressing internal grievances, and develop the necessary leadership and cadre to govern effectively.

In brief, such conflicts require effective operations aimed at the political-social system with all of its political-psychological nuances. High-tech warfare and sophisticated weaponry cannot substitute for skillful political organizers who have penetrated deeply into the political-

In Grenada, U.S. forces accomplished their mission quickly and were withdrawn. Evidence found on Grenada indicated that Cuban and Grenadan Marxists intended to use the island as a base for supporting or spreading revolution elsewhere in the hemisphere.

social fabric of the indigenous system. The term *people's war* is a most appropriate label for such conflicts.

These characteristics of low-intensity conflicts make an effective U.S. response difficult, but the problem does not end here. The nature of counterrevolutionary conflict is such that it must be viewed in two dimensions: defense and offense. Each dimension necessitates a mix of political-military forces, a focus on differing political-social components of the revolutionary system, and a political psychological effort.

The Two Dimensions of Counterrevolutionary Operations

Much of the attention that has been given to low-intensity conflicts tends to focus on support of the existing system under attack (counterrevolution against the revolutionaries). The counterrevolutionary system is forced to start from a defensive posture, by and large, because the revolution has already penetrated the existing system. That is, the governing institutions have not proved effective enough and have provoked or failed to discourage the emergence of a competing system. In this respect, there may be some truth in the observation that revolution is one sign of the ineffectiveness of the existing system. On the other hand, there may be validity in the observation that revolution is endemic to Third World systems because of the character of the modernization process and the inherent instability generated by political change.

Starting from a defensive posture, the existing system faces difficult challenges if it is to be successful in shifting the momentum away from the revolutionaries. Initial counterrevolutionary operations must be aimed at restoring security in threatened areas and protecting installations, key individuals, and areas of importance to government control and order. Further, a reasonably firm counterrevolutionary policy must be based on the existing system's recognition of the seriousness of the challenge and a commitment to more effective governance and police-military operations. Proper engagement in the initial phase of defensive operations usually entails stationing a static force for guard duty and creating a mobile force for response to revolutionary threats. This necessitates large police and military forces, which must be both adequately trained and efficiently employed. More important, increasingly effective governing institutions must evolve. Unfortunately, in most instances, the existing system lacks in all of these areas. American support and assistance is usually necessary to shore up the existing system, establish some political and military leverage, and provide a training program to increase military effectiveness.

The most effective strategy for successful counterrevolution is the creating of a "revolution" against the revolutionary system. In brief, the existing system must take the revolution out of the hands of the revolutionaries. To do so requires success in the defensive phase of counterrevolution and taking the fight to the enemy. The enemy's political-social structure must be penetrated, key leaders must be identified and captured or eliminated, and the political and psychological instruments of the revolution must be destroyed. This strategy is not likely to be in accord with democratic norms or compatible with conventional military posture. Support and assistance for the offensive phase of counterrevolution are likely to create political and moral dilemmas for Americans, both in the domestic political sphere and in the military, particularly as Americans involved in the defensive phase are drawn into the offensive dimension of counterrevolution. Such American involvement is not only likely but dangerous, since only special units within the American military (Special Forces) are trained in and capable of conducting special operations. Moreover, American military personnel are in an extremely untenable moral and ethical position if they are engaged in offensive counterrevolutionary operations. While such actions may have some acceptance as part of covert opera-

tions conducted by U.S. intelligence agencies, political and military difficulties arise when they involve other agencies and institutions.

In sum, American involvement in the defensive phase of counterrevolution carries with it a number of difficulties and dangers. As the revolution progresses, a broader and increasingly intensive counterrevolutionary effort is required. American involvement is likely to expand accordingly. Moreover, an offensive posture must be adopted at some point if counterrevolution is to succeed. It is clear, therefore, that continued American involvement will require a policy that considers a number of contingencies and options. Equally important, the types of forces and their missions must be appropriate to the various phases. These latter considerations add a particularly complex dimension to American involvement in revolutionary and counterrevolutionary efforts.

Levels of American Involvement

A serious analysis of the scope, intensity, and implications of American involvement in counterrevolutionary conflict must begin with an operational categorization according to degree of involvement. Such involvement must be designed with an appropriate balance of force mix, including numbers, types of units, and nature of the deployment. Additionally, planning must include the probability that force mixes must be changed as the conflict passes through various phases. Equally important, the degree of involvement affects the conditions under which the United States can withdraw.[9]

defensive phase

During the defensive phase, standard U.S. policies of military and economic assistance may be appropriate, providing a mix of civilian and military personnel with the requisite financial and material wherewithal to support and assist the existing system. Revolutionary-counterrevolutionary conflicts require a well-designed and consistent effort. Any American involvement is likely to become broader and more pervasive as the conflict progresses. Beyond standard economic and military assistance, Special Forces personnel may be involved in both training and operations.

The final part of the defensive phase occurs when indigenous forces are unable to stop the revolution. If the United States continues its involvement, it must be prepared to inject ground forces into a combat role in conjunction with indigenous forces. This kind of operation requires capabilities beyond those of Special Forces units.

In the past, conventionally postured units have rarely been trained or mentally disposed for unconventional warfare. If history is any guide, conventionally postured forces will engage the "enemy" in accordance with standard tactical doctrine, conventional weaponry, and standard rules of engagement. This Clausewitzian notion of war with its center of gravity on enemy armed forces is unlikely to be effective in low-intensity conflicts.

Combined or joint operations with indigenous military forces places U.S. forces in difficult cultural and linguistic situations. Understanding the motivations and psychological world of indigenous forces of the existing system is almost as difficult as understanding those of the revolutionaries. In such circumstances, Americans are likely to engage in their own version of warfare regardless of the kind of war being conducted by the revolutionaries and the counterrevolutionaries.

The conventional posturing of U.S. ground forces makes them poor substitutes for indigenous groups. Moreover, the sophisticated weapons that are standard in American units may be inappropriate in unconventional conflicts. Indeed, the use of such weapons by Americans may create nationalistic sympathy for the revolutionaries. And finally, commitment of U.S. combat and support personnel in the quantity necessary can easily lead to "Ameri-

During the past two years, our capability for conducting limited or low-intensity conflicts has grown considerably. The enhancement of special operations forces is not always popular with many in the American defense establishment who prefer to concentrate on preparing for large-scale wars of attrition.

canization," seriously eroding the legitimacy of the existing system.

offensive phase

If the magnitude of the problems facing the United States in the defensive phase of counterrevolution is great, that in the offensive phase is greater. Implementation of the offensive phase cannot wait for culmination of the defensive phase. The sooner the offensive phase is begun, the more likely it will succeed. Most existing indigenous systems, however, will not be able to implement the offensive phase quickly because the defensive phase will demand most of their time and resources.

Regardless of when it is possible, an offensive posture must be assumed by counterrevolutionary forces if they are to be eventually successful. From the American perspective, it is likely that the offensive phase will require specially trained units and a mix of civilian and military forces (Special Forces units and other personnel trained in special operations). Such operations are generally covert, at least initially, and better suited for civilian agency operations.[10] Later offensive operations may require a visible military effort. Nevertheless, offensive operations cannot succeed without effective indigenous counterrevolutionary units

Although associated with guerrilla warfare in low-intensity or limited conflicts, Special Forces units can be used in larger conventional or even nuclear wars. Should the Soviets attack in Europe, Special Forces units might be sent into Eastern Europe and the Ukraine to attack bases, destroy supply lines, disrupt communications, and raise indigenous guerrilla forces.

capable of taking the fight to the enemy both politically and militarily. Actions must be accomplished in accord with policy and strategy aimed specifically at eroding and destroying the political-social system of the revolution—creating a revolution within the ranks and domain of the revolutionaries.

multiphased operations

The fact that the defensive and offensive phases of counterrevolution usually must be addressed simultaneously compounds the dilemmas facing the United States. As the revolution progresses, it becomes necessary for the counterrevolutionaries to carry out multidimensional operations that require a variety of force mixes. These political-military necessities make it unlikely that the U.S. forces can successfully engage in such operations beyond a certain point without threatening basic democratic norms.

In both defensive and offensive phases, there is a serious operational and capability gap; that is, there is no balanced mix of American military and civilian forces that can conduct operations beyond those envisioned by Special Forces. Thus, if indigenous forces are incapable of success with American assistance, the only remaining option (assuming no withdrawal) is commitment of conventional forces to ground combat operations.

withdrawal

One of the most important, albeit neglected, considerations governing U.S. involvement in

low-intensity conflicts has to do with withdrawal. Once there is a visible American commitment to an existing counterrevolutionary system, at what point does or can the United States withdraw? Withdrawal following a successful counterrevolution is one issue; withdrawal as a result of impending collapse of the existing system or because of a change in U.S. policy is another matter. In the first instance, withdrawal can be accomplished under the most favorable circumstances. In the latter case, withdrawal has to be carried out "under fire," when it is difficult to extract American personnel safely, while the withdrawal itself serves as a visible sign that the U.S. effort has failed. Given all of the domestic and international repercussions that are likely to result, timely withdrawal—withdrawal when experts and authorities recognize that the existing system is not performing effectively and that American effort will not be able to shift the tide in favor of that system—requires bold leadership. Only a strong and forceful U.S. administration is likely to have the necessary resolve to make such an important policy change.

Withdrawal under these latter circumstances is best undertaken before there is a deep U.S. involvement and while American presence is at a low visibility level. If withdrawal is to come in a later phase, American forces will be placed in an extremely dangerous position. Withdrawal under fire is a very difficult maneuver, even with the most experienced personnel. Losses are likely to be high, both militarily and politically.

Because the potential for serious problems exists, serious questions need to be addressed prior to U.S. involvement in counterrevolutionary conflicts. What kind of political-social system should be left in place? Is U.S. involvement designed to bolster the existing system without expectation of a changed political-social environment? Under what conditions can the United States presume that its involvement was a success?

An American decision to engage in low-intensity conflict must consider the character of the conflict, its costs and consequences, the system's political-military capability, and the conditions under which the United States will (and can) withdraw. Once committed, American forces are likely to become enmeshed in a "no withdrawal without honor" situation. Continuing commitment (and, indeed, incremental increases in that commitment) then may be rationalized in the name of achieving policy goals, even after the conflict has gone beyond repairability.[11]

U.S. Policy and Strategy: Guidelines for the Future

The general principles discussed thus far in this examination of low-intensity conflict lead to a number of guidelines for future U.S. policy and strategy. These guidelines are intended to point a direction, identify a perspective, and create an intellectual environment that may serve as a useful basis for analyzing and/or establishing U.S. policy for involvement (or noninvolvement) in low-intensity conflicts.

asymmetry

Low-intensity conflicts tend to be asymmetrical; and asymmetry pervades virtually every aspect of U.S. involvement, from the strategic to the operational, affecting morale, commitment, and staying power. While the revolutionaries and the indigenous counterrevolutionaries are involved in the conflict as a matter of survival, American involvement (indeed, any third-power involvement) is usually on a limited basis. For the United States, therefore, it is generally difficult to develop a firm and coherent response to sustain operations to the degree necessary to overcome revolutionary forces in the conflict area. U.S. commitments are global, and national survival is viewed primarily in terms of nuclear confrontation with the Soviet Union. For many Americans, involvement in low-intensity conflicts can hardly be justified.

American view of war

The American view of war is generally incompatible with the characteristics and demands of counterrevolution. Although the United States has a long history of counterrevolutionary involvement, the American Civil War and World Wars I and II are the cornerstones of the American view of war. The threat of nuclear conflict with the Soviet Union has given this view a particularly compelling dimension. In this context, while the morality of nuclear conflicts may be open to question, the issues of survival and challenges to the American system seem clear. Thus, in the debates over nuclear war, the major disagreements appear to be how to prevent war rather than what the outcome might be (although this latter consideration may also be argued). Policy goals tend to be viewed on a global scale by most U.S. policymakers and by most of the American public.

Refocusing U.S. perspectives to those associated with low-intensity conflicts requires major psychological shifts. The Judeo-Christian heritage and the American political system focus attention on values of human existence and behavior that are far removed from a revolutionary-counterrevolutionary environment. One result is that many Americans are convinced neither that low-intensity conflicts are threatening to the United States nor that U.S. involvement is essential.

The American difficulty in comprehending the fundamental issues of revolution and counterrevolution is magnified by the fact that revolution has a morality and ethics of its own, subordinating everything to revolutionary success. Any means that are effective are morally acceptable. Countering such measures (assassination, sabotage, terror, etc.) usually requires more than conventional military operations. Equally disconcerting for Americans, the counterrevolutionary system may also manifest "unusual" moral/ethical values of its own. Thus, neither revolutionaries nor counterrevolutionaries conduct war according to "acceptable norms"—at least from the American perspective.

The perception and policy gap between American support for major wars and lack of support for low-intensity conflicts is wide; and it has its political and psychological counterparts within the military. It can seriously affect America's military capability.

military capability

U.S. military capability is linked to American perceptions of war and to the American military heritage. These, in turn, are fashioned by the Clausewitzian notion of war, focusing on the defeat of enemy armed forces. The past is perceived primarily in terms of grand battles and major wars. Battles across the plains of Europe and combined operations such as the 1983 invasion of Grenada are elaborately planned. In general, American training, planning, and weaponry are designed to enhance capability in a conventional military environment or to deter nuclear attack.

Vietnam and a number of other similar experiences (e.g., the Seminole wars in Florida and the Philippine-American War at the turn of the century) seem to have been lost amidst efforts to establish a credible strategic posture and a conventional capability in Europe. To be sure, American military capability does extend to conventional conflicts on a smaller scale and in special environments. The Army's recent establishment of a Light Division is one attempt to respond to future security needs. Envisioned is a division of approximately 10,000 soldiers, with about 46 percent of them designated as the actual fighting force, available for commitment to less-developed areas. It will require less logistical support than other comparable-size units, will be highly mobile, and will be armed with modern light-infantry weapons.

Unless all personnel receive the requisite training to engage in unconventional conflicts, organizational innovations will have little impact, however. A Light Division may make it easier to engage in Grenada-type operations or in limited conventional wars in less-

developed areas, but revolution and counterrevolution remain outside the scope of conventionally organized military units.

The 1st Special Operations Command at Fort Bragg, North Carolina, is another attempt to respond to warfare in less-developed areas. More specifically focused on unconventional conflicts, this command includes Special Forces, Ranger units, psychological warfare and civic action units, and special units from other services designated to cooperate in joint ventures. This is a major step in the right direction, but it still reflects a conventional organizational wisdom. It links Special Forces operations, small-unit commando raids, and limited conventional war capabilities under one organizational structure suggesting the same posture for all "special" contingencies.

military professionalism

The full import of military capability includes the characteristics and effectiveness of the military profession. The American military profession is closely linked to American society in terms of skills and value orientation. Occupational and professional patterns in American society have influenced the military profession, shifting many of these bases of military leadership to technological and managerial skills. The "heroic" leadership role of the past has been overshadowed by the modern soldier-technician-manager.[12] Although there are a number of implications evolving from this development, two are of particular importance here: the technological thrust within the profession and its value linkage with society. These are intermingled with a number of other considerations within the profession, but they are important in their own right and need to be considered separately.

The technological or high-tech drive within the military has given birth to the electronic battlefield and increasingly sophisticated weaponry. The "Star Wars" or "high frontier" concept is only the latest in a long series of technological evolutions. In turn, military leadership must encompass the demands of a capital-intensive, machine-oriented environment. The traditional nature of leadership will, by necessity, focus more specifically on high-intensity wars—those that have the potential of an immediate direct threat to U.S. survival. Thus, nuclear war and major conventional conflicts with a foe similarly postured are likely to remain the primary focus of U.S. political-military efforts.

Although the focus on high tech and the electronic battlefield may seem new, there has been a consistent pattern incorporating new developments into the operational mode of the military establishment over the past two decades. This has also been the case with the military profession, where education and skill have integrated new weapons developments and high-tech concepts.

One danger of this orientation is that the need for human resources may seem secondary in the overall scheme of things. There is a commitment to fighting wars with "weaponry" and "things" in order to save the lives of military personnel. This is, to be sure, a necessary commitment: it is compatible with the democratic concerns for life, justice, and humanity, even in times of war. However, the very nature of this commitment erodes (at times, imperceptibly) the military's ability to engage in low-intensity conflicts.

Linkage between the American military and American society provides a psychological and philosophical support system for the military profession. This support system evolves from American perceptions that the Soviets and nuclear war are the most immediate and challenging threats. Thus, the prevailing environment inextricably meshes the concept of war with a "Pearl Harbor" mentality; and the military finds it less difficult philosophically, morally, and practically to posture itself for major war and the Soviet threat than for low-intensity conflict. This circumstance lessens the need to grapple with the serious ethical and opera-

tional dilemmas of low-intensity conflicts.

Of course, the military is concerned with its capability (or lack thereof) to respond across the conflict spectrum. Indeed, there is some uneasiness because low-intensity conflicts do not easily fit into traditional boundaries. This is reinforced by an underlying concern, probably produced by the Vietnam experience, that the military cannot long operate in a foreign area without substantial support from the American people—a necessary component of "staying power."

Nonetheless, the educational curricula in senior military schools are driven by grand battles, high-tech warfare, electronic battlefields, and the standard command and staff functions, with only a nod in the direction of low-intensity conflicts. Successful military career patterns are determined by command and staff assignments in traditional career fields even though Special Operations has been approved by the Army as a career field. Equally important, major parts of defense procurement are guided by strategic and general-purpose force requirements. While some of these improve U.S. capability to engage in low-intensity conflicts, their primary focus remains on "major war."

Finally, the military profession interacts with the military institution's planning, training, and weaponry; and these components reinforce each other. This reinforcement, conventional in nature, evolves from mind-sets rooted in an American system whose values are at odds with those necessary for success in low-intensity conflicts. All conflicts, by and large, are seen through conventional lenses.

Such an orientation militates against the evolution of special operations as a major component of the military profession. Indeed, the concept of special operations has historically fostered professional antagonism, as Colonel Francis J. Kelly has observed:

> An elite group has always appeared within the Army during every war in which the United States has been engaged. . . . As surely as such groups arose, there arose also the grievances of the normally conservative military men who rejected whatever was distinctive or different or special. . . . In the conduct of conservative military affairs, revisions of current military modes are frequently resisted with missionary zeal and emotional fervor simply because they mean change, they are different. . . . If a new military program or unit is being developed in order to meet new needs, new threats, or new tactics, consideration should be given to the use of elite US Army units despite the customary resistance to change or elitism usually found in conservative establishments.[15]

American military professionalism and capability, perceptions of war, and the value system of society must be in reasonable equilibrium if symmetry is to be maintained between the U.S. military and society. A symmetry is necessary if the military is to develop and maintain its effectiveness.

American ideology and democratic norms

If the U.S. military seems unprepared for successful participation in low-intensity wars, this lack of readiness appears at least partially due to the fact that the American political system is not prepared to engage in revolutionary and counterrevolutionary conflicts. The general perceptions justifying U.S. involvement in conflict must evolve from the American value system of democratic ideology and established behavioral norms. These values derive from Judeo-Christian principles and the philosophical principles expounded by the Declaration of Independence and the U.S. Constitution. The American democratic value system includes concern for or belief in the sacredness of life, individual autonomy, freedom of choice, justice, and a government that serves individuals. These values usually conflict with the character of revolutions and counterrevolutions.

A number of Americans, however, tend to view revolutions as either "glorious" affairs where a freedom-loving people rise up against tyrants (the American Revolution) or as essen-

From its regional military training center in Honduras, Special Forces advisors train Salvadoran and Honduran troops to fight insurgents in their respective countries. If local forces are successful in combating insurgency, future Grenada-type operations by U.S. troops can be avoided.

tially anticolonial affairs. While these views provide an implicit democratic rationalization and justification for revolution, a study of revolutions that have occurred over the past two decades reveals that most of these conflicts are complex and multidimensional affairs that do not generally conform to such conceptions. In many of these conflicts, in fact, it is difficult to delineate friend from foe and to identify political orientations.

The fact that revolution and counterrevolution can become internationalized quickly also

plays upon the sensitivity of the American people. For many, revolutions are perceived to be internal affairs that must be allowed to run their course. Simultaneously, various revolutionary spokesmen inject their views into the American media, playing on American idealized views of revolution, freedom, and justice and achieving sympathy or support from important, often vocal, segments of the American populace.

Whenever the United States becomes involved in low-intensity conflicts, political repercussions are likely to develop rather quickly. This phenomenon is a function of both democratic ideology and the American system of openness. Information regarding American politics and policy is readily transmitted to the public. Media access to the conflict area, the American freedom of information tradition, the public's right to know, and the technological capabilities of a wide variety of information sources make it extremely difficult to isolate American military operations from the outside world, even when official U.S. policy is deliberately designed to do so—the Grenada operation notwithstanding. It is likely, therefore, that any American involvement will be on television screens, on the radio, and in newspapers almost immediately.

The differences between a democracy, such as the United States, and a dictatorial system, such as the Soviet Union, are sharply drawn with respect to low-intensity conflicts—a fact well illustrated by the Soviet involvement in Afghanistan. According to an experienced French observer who was in Afghanistan during a part of the Soviet invasion, the Soviets' views of not only insurgency but counterinsurgent methods are quite different from those generally held by Americans:

> Guerrilla warfare has already demonstrated its effectiveness elsewhere, and until recently no one has known how to counter it. The scattering of population, the creation of village strongholds, and control and card-indexing of inhabitants have proved to be very useful means of restricting guerrilla advances, but the resistance fighters have always won out in the end. . . .The Soviets are not as naïve as the Westerners. They understood long ago . . . that a war involving guerrillas and anti-guerrilla fighters would never be won by either side if the emphasis was placed on being in the good graces of the population. On the contrary, the war would be won by the side that succeeded in making terror reign.[14]

The author explains in detail how Soviet counterrevolutionary warfare differs from the democratic West, pointing out, for example, that Soviet tactics include the deliberate destruction of villages to force Afghans to flee the country. The author also points out:

> The Soviet strategy involves two aspects that may make the outcome in Afghanistan differ from the Western experience; one, already mentioned, is the use of mass terror, completely unlike any of the more moderate types of intervention. The second is that the Soviets can afford a protracted war in the short term for the sake of a long-term victory. . . . The Russians do not need smashing victories to announce to their citizenry, as Soviet public opinion does not influence Soviet policy.[15]

Further, the Soviet system has the ability to prevent access to the conflict area. Control of the media and the nature of a "closed" society allow the Soviets to prevent internal and external dissemination of information about what is happening in Afghanistan except as determined by the Soviet state.

Democratic ideology and openness within the American system are the bases for shaping American public attitudes and for developing and sustaining national will; they also are the cornerstones for political resolve in responding to crises. In combination with the quality of national leadership, these factors determine the nature of U.S. political-military capability and the effectiveness of its response to low-intensity conflicts. As General Weyand pointed out with respect to Vietnam,

> Vietnam was a reaffirmation of the peculiar relationship between the American Army and the American people. The Army really is a people's army in the sense that it belongs to the American people who take a jealous and proprietary interest in its involvement. When the Army is commit-

> ted, the American people are committed; when the American people lose their commitment, it is futile to try to keep the Army committed. In the final analysis, the American Army is not so much an arm of the Executive Branch as it is an arm of the American people. The Army, therefore, cannot be committed lightly.[16]

In brief, American national will must be firm enough to accept the commitment of American forces to low-intensity conflicts. Equally important, the national will must be of such nature that it will sustain the established U.S. policy over a period of time, even under adverse conditions. American national will and political resolve are difficult to galvanize in response to low-intensity conflicts, however, and a firm American posture is not likely to develop without the emergence of a perspective that justifies support of a counterrevolutionary system. American involvement is likely to follow standard practice during the early defensive phase, providing economic and military assistance in modest amounts and stationing some American advisors in the conflict area. Beyond this, however, the national leadership must tread cautiously if it is to avoid a commitment that leads to negative public reaction.

The options for our leaders are limited. Once the United States decides to engage in low-intensity conflict, a critical limitation is the fact that the United States must operate through the existing indigenous system, regardless of that system's politics and ideology. Equally important, America's formal institutions and government agencies are usually limited to certain kinds of actions. The nature of the American commitment imposes the limitations.

For example, the United States might want to identify nonrevolutionary moderate groups that could replace an existing repressive governing elite and be a more effective barrier to revolutionary expansion. But such a course of action could destroy the fragile legitimacy of the existing system and project the United States into a policy position that is even more difficult to implement and maintain than offensive counterrevolutionary operations. On one hand, the United States would be trying to support the existing system. On the other hand, it would be trying to overthrow that very system. Regardless of any morality or ethics that might be involved, chaos is likely to result.

The nature of democracy also limits and constrains intelligence agencies. Congressional oversight and an inherent American fear of secret activities establish boundaries for the intelligence establishment, albeit these boundaries are at times unclear to both intelligence agencies and the public.[17] Pressures on the executive branch, as well as on Congress, tend to create political and legalistic guidelines for most intelligence activities. Moreover, many Americans are uncomfortable with the necessity for maintaining a wide-ranging intelligence establishment. As a result, U.S. intelligence agencies are bound by democratic perceptions of proper behavior and legal strictures even when dealing with a protagonist not similarly bound. This is not to deny "dirty tricks" by U.S. intelligence agencies; but regardless of the kind of activity, officials are held accountable.

The more important issue, however, is the ability of intelligence agencies to undertake activities in support of U.S. counterrevolutionary policy. Although the intelligence establishment has more leeway than other political-military instruments, it is not free to engage in certain kinds of activities that might be essential for successful counterrevolutionary operations. Further, even when intelligence agencies do an effective job, their information and analyses often are ignored by those in the field and those at the national command level.

Revolution and counterrevolution are characterized by purposes, protagonists, and patterns of struggle that are essentially alien to American democratic concepts. Furthermore, the American political system and its political-military and intelligence instruments are in a highly disadvantageous position with respect

to low-intensity conflicts. The question is, "What can be done to reduce the disadvantage?"

An important starting point is a philosophical and practical reassessment of American perceptions and perspectives. American national leaders, as well as the public in general, must develop a more realistic view of the nature of revolution and counterrevolution. An even more pressing need is to understand the limits and constraints of policy and capability in responding to such conflicts. Part of the education must focus on an understanding of the nature of the Third World—its nondemocratic character, its volatility, and, in many instances, its political instability. Americans must understand that certain systems are aggressively antithetical to democracy and Western interests. At the same time, they must recognize that American national security interests are directly linked with a number of Third World states because of their geopolitical importance and resources.

If American involvement is justified and necessary, then national leaders and the public must understand that low-intensity conflicts do not conform to democratic notions of strategy or tactics. Revolution and counterrevolution develop their own morality and ethics that justify any means to achieve success. Survival is the ultimate morality.

Americans must understand the dilemmas they face in supporting an existing counterrevolutionary system. Neither revolution nor counterrevolution is likely to be democratic. Neither is likely to conform to democratic ideals of just and humane behavior on the battlefield. The conflict is focused on political-psychological factors. All of the ingredients for a "dirty," ungentlemanly, terror-oriented conflict are there; and participation is likely to be protracted and increasingly costly.

American national will and political resolve must be rooted in the concept of democracy and in the moral and ethical expectations of the American people. It is difficult to establish and maintain national will and political resolve in response to low-intensity conflicts. A sophisticated understanding of both the nature of revolution and counterrevolution and the requirements for an effective American response must be developed. It will not be easy because such conflicts are complex, contradictory, and ambiguous in nature (American policy may support nondemocratic regimes in the name of democracy).

Making the matter even more confusing is the fact that segments of the media promote simplistic solutions and project distorted images of both the nature of low-intensity conflict and the U.S. response. Some elected officials and special groups advocate their own particular interpretations. Political biases and ideological orientations of various groups may distort and confuse the issues.

In such a context, it is difficult to develop a coherent American political-military posture. Coherency is achieved when U.S. national objectives are clearly stated and when policy, strategy, and operational doctrine are closely linked for the purpose of achieving these objectives. Americans must understand that not all of these factors may be in accord with democratic norms and with the American political system in morality and ethics.

Equally important, coherency cannot be achieved unless the instruments of policy are capable of effective implementation. The U.S. military must develop a capability beyond Special Operations units. If the Army's Light Division is to be charged with operations in less-developed areas, for example, it must be prepared to undertake counterrevolutionary and revolutionary operations. It must develop anti-terror operations and a political-military capability, and it must learn how to function in an alien environment. In addition, it must have the ability to melt into the background while supporting indigenous operations—a feature that may require an organizational structure based on teams and functions. Its personnel may need security clearances for access to top-level intelligence and may need to be selected as highly motivated individuals likely to be effec-

tive in the unique environment of low-intensity conflict. Finally, the Light Division must reflect a joint operational capability.

An organizational strategy that focuses specifically on low-intensity conflict must be developed. Based on goals from the highest levels (National Security Council), this strategy must be supported by other units within the Department of Defense and by civilian agencies. Further, the 1st Special Operations Command needs to function as a joint civilian-military command system under the direct control of a high political authority (an Assistant Secretary of State, for example). In addition, some degree of training in counterrevolutionary warfare should be provided to standard military line units.

This organizational and training thrust needs an efficient intelligence establishment. Operations in revolutionary-counterrevolutionary conflicts cannot be conducted successfully without the intelligence necessary to identify threats and specifics of the tactical situation, both militarily and in the political-social milieu (particularly during the offensive phase). Indeed, it is difficult to see how any American involvement can succeed absent an intelligence establishment attuned to the distinctive requirements of low-intensity conflict.

Finally, the U.S. military needs to give more than lip service to special operations. Although concern regarding their ability to respond across the entire conflict spectrum is growing among some military professionals, technological and managerial components allow little room for emphasis on special operations for low-intensity conflicts.

Developing political acumen, political-military sensitivity, and an understanding of the nature and requirements of low-intensity conflict requires, among other things, serious education in these matters at all levels of service schools. Equally important, the profession needs to integrate special operations career patterns realistically with standard command and staff patterns. That is, low-intensity conflict must become a standard component within the profession and in the training of line units. These steps are perhaps the most important initially, but even these will not be easy to implement nor will they be easily accepted.

Involvement in low-intensity conflict usually carries risk. Even the most coherent U.S. posture and policy, designed specifically for low-intensity conflict, may not bring expected results. Revolution and counterrevolution create an environment that is not easily influenced by American power. Indeed, in some instances, U.S. involvement may exacerbate the situation—and these matters cannot always be precisely assessed in advance. Further, many of the indigenous systems involved in low-intensity conflicts are nondemocratic; basing U.S. policy on the presumption that only democratic systems can be supported precludes American involvement in many parts of the Third World.

Finally, noninvolvement may be the best course. The democratic nature of the American system may prevent involvement even if the conflict has a potential to threaten American interests; or the conflict may be such that U.S. involvement would be irrelevant. Modern revolutions are not necessarily attempts by a downtrodden people to overthrow a dictatorship but may emanate from indigenous groups who are socioeconomically mobile. They may also be the strategy of an external power to overthrow an existing system for the prime purpose of extending its own interests. The United States must weigh the challenges to its own interests against the costs and consequences of involvement; and any involvement must be articulated in clear terms to the American people.

Loyola University of Chicago

A version of this article, together with related articles by other authors, will appear in *Low-Intensity Conflict and Modern Technology*, which will be published by the Center for Aerospace Doctrine, Research, and Education in 1985.

Notes

1. For a discussion of the meaning of low-intensity conflict, see Sam C. Sarkesian, "Introduction: American Policy and Low-Intensity Conflict: An Overview," in *U.S. Policy and Low-Intensity Conflict: Potentials for Military Struggles in the 1980s*, edited by Sam C. Sarkesian and William L. Scully (New Brunswick, New Jersey: Transaction Books, 1981), p. 4.

2. Bernard Fall, *Street without Joy: Insurgency in Indochina, 1946-63*, Third Revised Edition (Harrisburg, Pennsylvania: Stackpole, 1963), p. 356.

3. Ibid., p. 357.

4. Anatol Rapoport, editor, *Clausewitz on War* (Baltimore: Penguin Books, 1971). For a critique of classical military theory, see Alexander Atkinson, *Social Order and the General Theory of Strategy* (London: Routledge and Kegan Paul, 1981), especially chapter 3.

5. Richard Burt, "New Weapons Technologies: Debate and Directions," in *The Impact of New Military Technology*, edited by Jonathan Alford (Westmead, Farnborough, Hampshire, England: Gower, 1981), p. 46.

6. This is quoted in Harry G. Summers, Jr., *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pennsylvania: U.S. Army War College, 1981), p. 25. The author documents this as follows: "Vietnam Myths and Realities, *CDRS CALL* (July-August 1976); also reprinted in *Armor* (September-October 1976). General Weyand was the last commander of the Military Assistance Command Vietnam (MACV) and supervised the withdrawal of U.S. military forces in 1973."

7. Stuart A. Herrington, *Silence Was a Weapon: The Vietnam War in the Villages—A Personal Perspective* (Novato, California: Presidio Press, 1982), p. 23.

8. As quoted in Summers, p. 108. This is from Stephen T. Hosmer et al., *The Fall of South Vietnam: Statements by Vietnamese Military and Civilian Leaders* (Santa Monica, California: Rand Corporation, December 1978), p. 38.

9. A schematic depicting the conflict spectrum and American capability is contained in Sarkesian and Scully, p. 6.

10. See, for example, Theodore Shackley, *The Third Option: An American View of Counterinsurgency Operations* (New York: Reader's Digest Press, 1981) and *Intelligence Requirements for the 1980s: Covert Action*, edited by Roy Godson (Washington, D.C.: National Strategy Information Center, 1981).

11. See, for example, David Halberstam, *The Best and the Brightest* (New York: Fawcett, 1973).

12. See, for example, Morris Janowitz, *The Professional Soldier: A Social and Political Portrait* (New York: Free Press, 1971), especially pp. vii-lvi.

13. Colonel Francis J. Kelly, *Vietnam Studies: U.S. Army Special Forces, 1961-1971* (Washington, D.C.: Department of Defense, 1977), p. 160. See also Alfred H. Paddock, Jr., *U.S. Army Special Warfare: Its Origins* (Washington, D.C.: National Defense University Press, 1982).

14. Claude Malhuret, "Report from Afghanistan," *Foreign Affairs*, Winter 1983/84, pp. 426 and 428. See also Gerard Chaliand, *Report from Afghanistan* (New York: Penguin Books, 1982).

15. Ibid., pp. 434 and 435.

16. Summers, p. 7.

17. For an excellent discussion of intelligence requirements and the problems of the intelligence establishment, see *Intelligence Requirements for the 1980s: Elements of Intelligence*, edited by Roy Godson (Washington, D.C.: National Strategy Information Center, 1979) and Dr. Ray S. Cline, *The CIA under Reagan, Bush, and Casey* (Washington, D.C.: Acropolis Books, 1981), especially pp. 11-22, chapters 6 and 7.

coming . . .

in our March-April issue

- Fighting the Russians: A German Perspective
- Tactical Air Power in World War II
- NATO Attack Pilots versus a Soviet Offensive
- The Navigator: What Future?

IRA C. EAKER
FIRST-PRIZE ESSAY

A MATTER OF PRINCIPLES

expanding horizons beyond the battlefield

LIEUTENANT COLONEL DENNIS M. DREW

WAR is more than battle. War is more than the panoply of military and industrial actions that prepare and bring armed forces to battle. Rather, war is an all-encompassing struggle between societies, and battle is only its most obvious and deadly manifestation. America's experience in the Vietnam War illustrated that the impact of war on the fabric of society rivals the importance of events on the battlefield. In this sense, the Vietnam experience confirmed Clausewitz's most famous dictum that war is a continuation of political activity with the addition of other means.

Traditionally, Americans have had considerable difficulty in accepting that war was anything more than battle writ large. The American "principles of war" reflect this attitude. In theory, these principles are axiomatic doctrinal beliefs that offer fundamental guidance for the conduct of America's military crusades. In reality, they are principles of "battle" that present basic factors which military commanders should consider before sending or leading their forces into combat. Principles such as mass, maneuver, and surprise apply directly to battlefield situations but have only a tenuous relationship to the broader concept of a nation at war.

The American experience in Vietnam demonstrated that victory in battle does not necessarily lead to victory in war. Time and again, American forces defeated the enemy in battle. At the high point of our involvement, we could transport our troops anywhere in South Vietnam, engage any enemy force, and be confident of victory. We controlled the seas around Vietnam and the skies above. Nevertheless, we were unable to translate tactical victory into strategic victory. We were unable to win the war even though we won the battles. Thus one wonders if the Vietnam experience might indicate some higher order of principles that concern a nation at war rather than simply forces on the battlefield. This es-

say explores that possibility and focuses on four higher-order principles of war that are specifically related to the Vietnam experience. Other analysts may not agree with the formulation of these four principles. The important point, however, is that each of these principles offers evidence that factors far beyond the confines of battlefields affect the outcomes of wars. Taken as a group, these principles suggest that the American military establishment must expand its horizons beyond the blood and smoke of combat.

Expositions of the traditional principles of war make the point that the objective is the "master" principle. Folk wisdom about the Vietnam conflict holds that American objectives were ill-defined and thus formed the root cause of our problems. This assertion is debatable. Careful examination of the record indicates that broad American political objectives were clearly and consistently articulated from the late 1940s through the fall of Saigon in 1975. It is more accurate to state that the American military found it difficult to translate those political objectives into military objectives in the peculiar circumstances of the war. Worse, the American people found the political objectives unworthy of support in the face of the heavy costs of the war. All of this indicates that just as the objective is the master principle of battle, the *political objective* is the master principle of war.

The political objective is of paramount importance for at least three reasons. First, political objectives and enemy resistance to those objectives form the reasons for resorting to war. Political objectives define the goals of war and thus imply and circumscribe, but do not necessarily define, the objectives of military operations. In effect, political objectives assign broad roles and missions to the armed forces during hostilities. In the Vietnam conflict, political objectives controlled both the basic conduct of the war (e.g., North Vietnam would not be invaded) and many of the operational details of military operations (e.g., restrictions on the bombing of North Vietnam). Although many Americans prefer to believe that the restrictions imposed on the military in Vietnam by political objectives were unique to that war, the fact is that political objectives and politicians have had considerable control over military operations in virtually every American war.

One need only look to the Mexican War to find a president dictating strategy from the White House. In the Civil War, the political desire for quick victory played a part in the early Union disasters in northern Virginia. Lincoln personally hired and fired his generals as he sought decisive action on the battlefield. Later, in 1898, President William McKinley went so far as to establish a war room in the White House from which he directed military preparations with messages sent out via twenty-five telegraph lines installed specifically for that purpose. In World War II, the shape of the Allied effort (e.g., Europe first and the invasion of North Africa) was dictated as much by political considerations as by military exigencies. Finally, the political restrictions placed on military efforts in the Korean War offered an immediate foretaste of what would follow in Southeast Asia.

Political objectives affect the relationship among the various instruments of power and determine whether or not military actions are appropriate. In some cases, political objectives either cannot or should not be sought by military means. In crisis situations, the national leadership must determine not only whether successful military action will achieve the desired objective but also what nonmilitary actions are appropriate and how those actions can work in concert with military power. In the Vietnam conflict, it was clear that much more than military success was required if South Vietnam was to remain an independent state. A strong and independent South Vietnam required governmental reform, economic reform, military reform, and political stability, along with military success.

The third reason for the importance of political objectives has to do with motivation and morale. War is not to be undertaken lightly, for its consequences include the expenditure of human life and the destruction of things that mankind values. If the American people are to support such a costly undertaking, they must be presented with political objectives that they can support with both their blood and their treasure. To ensure this support, political objectives should meet three standards. First, they should be simple and straightforward. In the ideal case, they should be reducible to a short catch-phrase, such as "hang the Kaiser." Second, political objectives should be, or at least appear to be, morally and politically lofty. Americans wage crusades rather than wars and need objectives that fit the crusading image. Finally, political objectives must be perceived as vital to the interests of the United States. The American people will not and should not sacrifice their blood and treasure for trivial objectives.

In the Vietnam conflict, American political objectives failed to meet any of the three criteria. There was nothing simple and straightforward about the reasons for American involvement. The best catch-phrase for our objectives was "to contain communism," which somehow paled beside "hang the Kaiser," and other earlier war cries. Our objectives may have been morally lofty, but they were tarnished by the corruption and political infighting of those we were trying to assist. Finally, most Americans had a great deal of difficulty associating America's vital interests with a civil war in a small former French colony ten thousand miles across the Pacific.

The motivation and morale of society, which begins with well-conceived political objectives, can have a decisive effect on the nation's ability and will to prosecute a war successfully—particularly when the war spans a considerable length of time. In the Vietnam conflict, homefront morale crumbled as the war continued with no end in sight. In the final analysis, it was the American body politic, not the Vietcong or the North Vietnamese, that forced the withdrawal of American fighting forces from Vietnam.

Short of suffering an attack on Pearl Harbor, even the most carefully constructed political objectives will not result in unanimous American support for military action. Although Americans are fond of viewing the fractious political debate that surrounded our participation in the Vietnam conflict as something unique in American history, deeply divided political opinion has actually been the rule rather than the exception in the history of American warfare. Beginning with the Revolution in 1776, every major American war has caused great rifts in the citizenry, with the possible exceptions of the two world wars.

The problem is to maintain public support for the war effort. American popular support is contingent on the clear recognition that the sacrifices of the nation are leading, however slowly, to ultimate victory. For this reason, *perceived progress* becomes very important in a war of any significant length. It has been postulated that democratic societies cannot sustain long wars. However, this thesis has not been proved in the American experience. What has been demonstrated is that Americans have little patience with long struggles that seem to make little headway.

The first three years of the American Civil War caused terrible bloodshed but yielded few dramatic results. In Virginia, Union forces met with little but embarrassing defeat. In the West, Union forces had been very successful but still had not penetrated deeply into Dixie. War weariness swept the Union, and Lincoln's reelection was in some doubt. Finally, in 1864, Sherman was able to march on Atlanta and, after its capture, devastate the heart of Georgia. After three years, Union forces had finally attacked a vital center within the Confederacy, emerged as victors, perhaps ensured Lincoln's reelection, and kept the Union in the war. Progress could finally be clearly perceived.

In World War II, Americans faced an equally long and arduous struggle, but determination never seemed to wane. Progress was clear as battle maps showed Allied forces marching relentlessly toward the heart of both German and Japanese power. Three years after Pearl Harbor, American troops were on the Rhine and had returned to the Philippines. Progress was easily perceived.

Vietnam was a far different story. American forces won one battle after another, but the enemy never seemed defeated. Every area in Vietnam seemed to be contested year after year. After three years of continuous American victories, the enemy somehow managed to launch the massive Tet offensive in 1968, which was the final straw. It mattered little to the American people whether Tet was a victory or defeat. What mattered was that after three years of pounding by the world's foremost military superpower, the enemy was still able to launch such a massive and well-coordinated attack. American progress in the war was difficult to perceive, and the American withdrawal began in 1969.

To perceive progress, observers must have an accepted standard of measurement. The traditional military standard was conquered territory, which had the added convenience of being easily displayed on a map for the public. In Vietnam, the insurgent nature of the war (at least during some of its phases) made territorial claims an inaccurate barometer of success. The substitute for conquered territory was the number of dead enemy bodies. Unfortunately, body counts suffered from two crucial shortcomings as symbols of success. First, body-count accuracy was always suspect. When career advancement depended on success and success meant a large body count, many believed that the statistics were inflated. Second, high body counts could be interpreted as a lack of progress. In a war in which the enemy stood and fought only when he wanted to do so, high body counts indicated that the enemy was both able and willing to sacrifice its manpower against superior American firepower. In this sense, high body counts meant that the enemy recruiting and resupply program was continuing to succeed.

One could speculate that a much better measure of success would have been low body counts and a low level of enemy activity. Such a situation would indicate both success in destroying the Vietcong infrastructure that provided many recruits and success in interdicting the flow of men and material from North Vietnam. It appears that we chose the wrong threads from which to weave the fabric of success and that, in the eyes of the American people, the Tet offensive revealed that the emperor had no clothes.

The main point that this line of reasoning leads us to is that American strategy in the Vietnam War was seriously flawed. The decision-making process linking political ends with appropriate means somehow went awry. In the peculiar circumstances of the Vietnam War, the United States could not apply the various instruments of national power, including military power, in such a way as to translate battlefield victory into strategic victory. This inability suggests the critical importance of *understanding the circumstances* of the conflict.

The key to understanding the circumstances in the Vietnam War was to understand the motivation of the enemy. Our adversaries in Vietnam were organized by the harsh discipline of Communist ideology, but they were motivated by the passions of long-suppressed Vietnamese nationalism. Their objective was politically unlimited, as they sought nothing less than unification of Vietnam under Hanoi's leadership. Ho Chi Minh and his followers had been waging the struggle for more than two decades by the time American troops arrived in force, and they were willing to accept the challenge of American arms. They waged an unlimited war in virtually every respect. North Vietnamese society was mobilized for the long struggle. On the bat-

tlefield, their troops used every military means at their disposal. They were ready to endure, to sacrifice, and to persevere.

In retrospect, it would seem that the United States did not understand the circumstances of the Vietnam conflict and that the means we used were inappropriate as well as unsuccessful. Unlike our opponents, the United States fought a limited war in virtually every respect. Our strategy was based on the belief that gradually increased military pressure, coupled with obvious military restraint and the subtle threat of limited patience, would convince the North Vietnamese that they could not win and should negotiate a reasonable settlement. However, viewed through lenses colored by Vietnamese nationalistic passion, American restraint connoted both a reluctance to fight and something less than total commitment.

America's enemies in Vietnam understood the circumstances of the war. They understood that a guerrilla army wins when it is not defeated and that a conventional army loses when it does not win. They understood the problems faced by democratic governments when waging long foreign wars. Their answer, in these circumstances, was to continue the struggle and avoid decisive defeat until time, casualties, and frustration destroyed the American commitment altogether.

The misguided American strategy played directly into the enemy's strong suit. Gradual escalation and attrition warfare require considerable time and patience. They also can extract a high price in blood and treasure. The American body politic would not tolerate such slow results requiring such a high price. As the war dragged on, it became very clear that the United States did not have a clear vision of how the war would or should end and had no firm plan concerning the end of the American involvement. Rather than a deliberate and well-planned ending to the American effort, it was the American people who decided that they had suffered enough and that the United States must get out.

The United States spent four years, from 1969 through 1972, in a slow withdrawal while making feverish but belated attempts to prepare the South Vietnamese to defend themselves. In 1975, when the enemy armies were overrunning South Vietnam, the American people made it very clear that we would not become reinvolved. Thus, the American involvement in Vietnam ended not with a flourish but with a whimper and a sign of relief.

However, even the whimpering was full of confusion. As pressure mounted in the United States to end the bloodshed in 1972, the peace negotiations came to a head. But it was clear that we had not even come to an agreement with our principal ally, the South Vietnamese, on the shape of an acceptable settlement. The result, even after the intensive bombing campaign against Hanoi and its environs in December 1972, was a ceasefire unsatisfactory to the South Vietnamese and satisfactory to the United States only in the sense that the American travail was over.

The confusion that resulted in such an unsatisfactory conclusion to a long and costly struggle suggests the importance of considering *conditions of termination*. Termination should be considered "up front," preferably at the same time that a nation considers the option of going to war. Conditions of termination are particularly important in the current era of limited war—limited at least from the perspective of the United States. Limited wars for limited objectives are rarely fought to absolute and complete victory. Rather, these wars typically end with negotiations and compromises. An early consideration of termination conditions should clarify what is negotiable and what is not. Among allies, whose objectives will differ at least in some details, early consideration of acceptable outcomes should clarify those differences and make it possible to present a united front to the adversary during negotiations.

Understanding the desired conditions of termination is part of understanding the cir-

cumstances of the war and thus is also a critical step in determining strategy. Early consideration of termination conditions forces the objectives of the war into sharper focus, which, in turn, should help define the best means and methods to achieve those objectives.

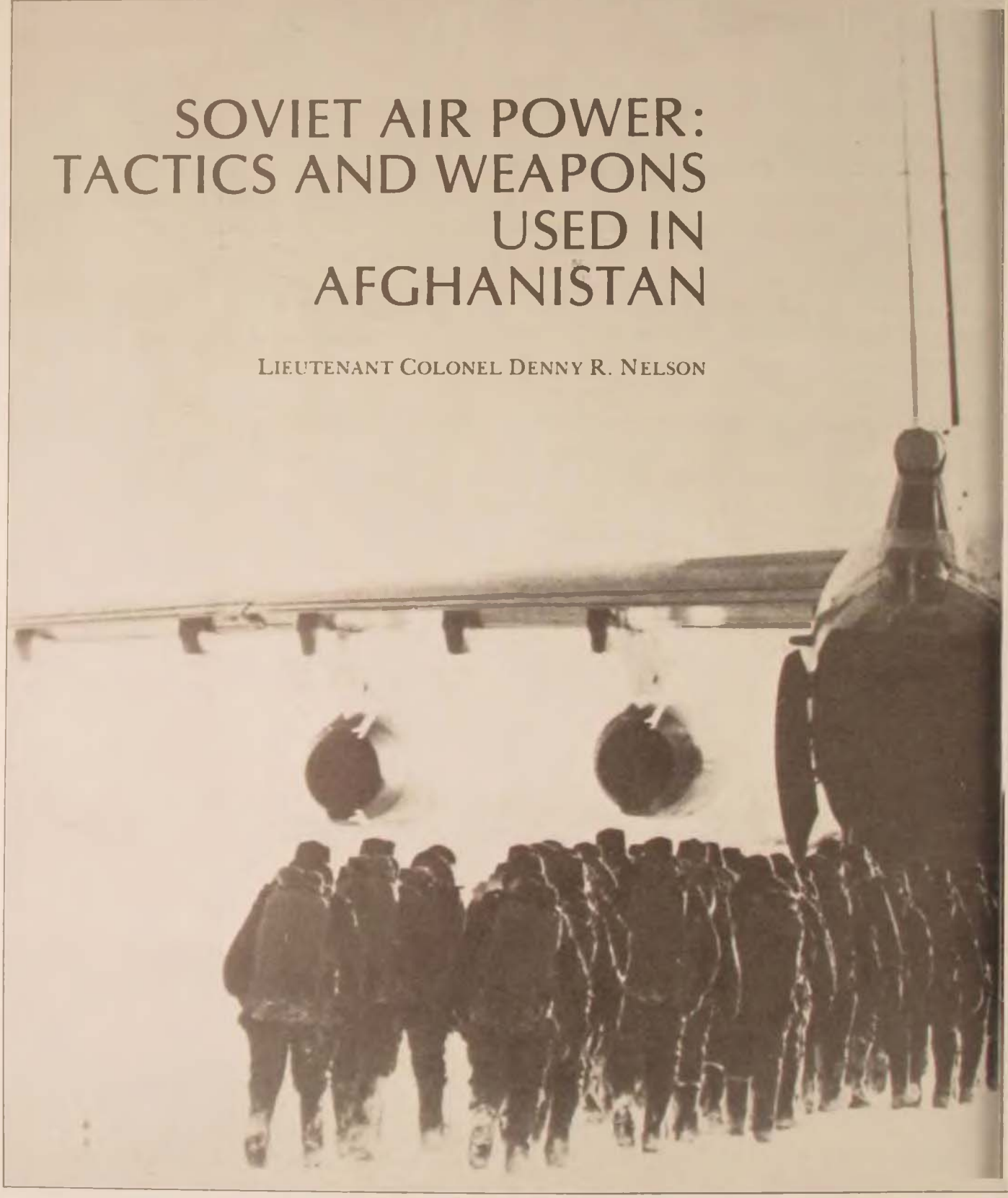
IT IS worth repeating that the importance of the four principles discussed in this essay lies not in the principles themselves. Rather, their importance lies in the realization that factors far removed from combat can determine success or failure in war. *Political objectives* set the stage for all other actions. *Understanding the circumstances* and defining the *conditions of termination* play key roles in shaping the course of the war. Finally, a war of any length requires the continuing public support generated by *perceived progress*. In essence, although these four principles have little to do with battle, they have everything to do with war.

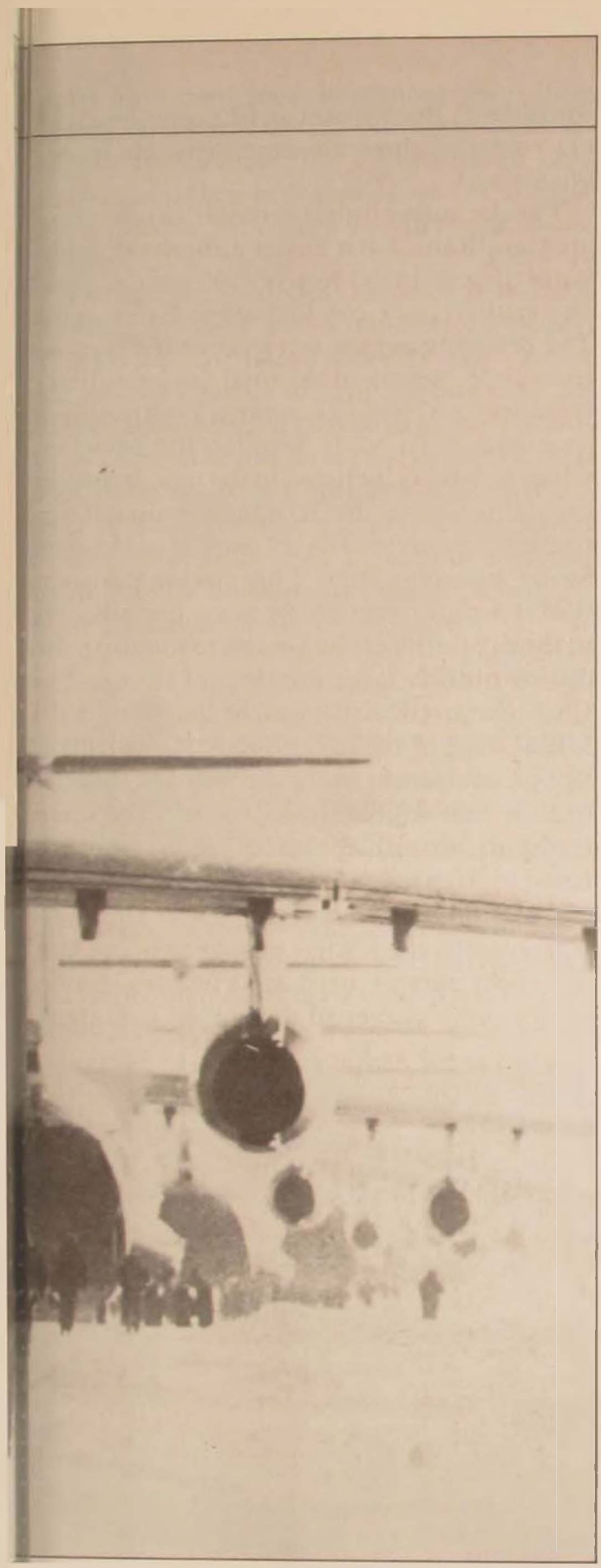
When we look back on the Vietnam conflict, it is clear that our vision of the war was limited to the battlefield. This narrow vision was evident in a president who personally selected individual bombing targets and in military professionals who still do not understand that winning the battles does not equate to winning the war. The price of our failure in Vietnam was paid in blood, treasure, prestige, and influence. America cannot afford more failures. We must expand our horizons beyond the bloody confines of the battlefield. We must learn, at long last, that war is more than battle.

Center for Aerospace Doctrine, Research, and Education
Maxwell AFB, Alabama

SOVIET AIR POWER: TACTICS AND WEAPONS USED IN AFGHANISTAN

LIEUTENANT COLONEL DENNY R. NELSON





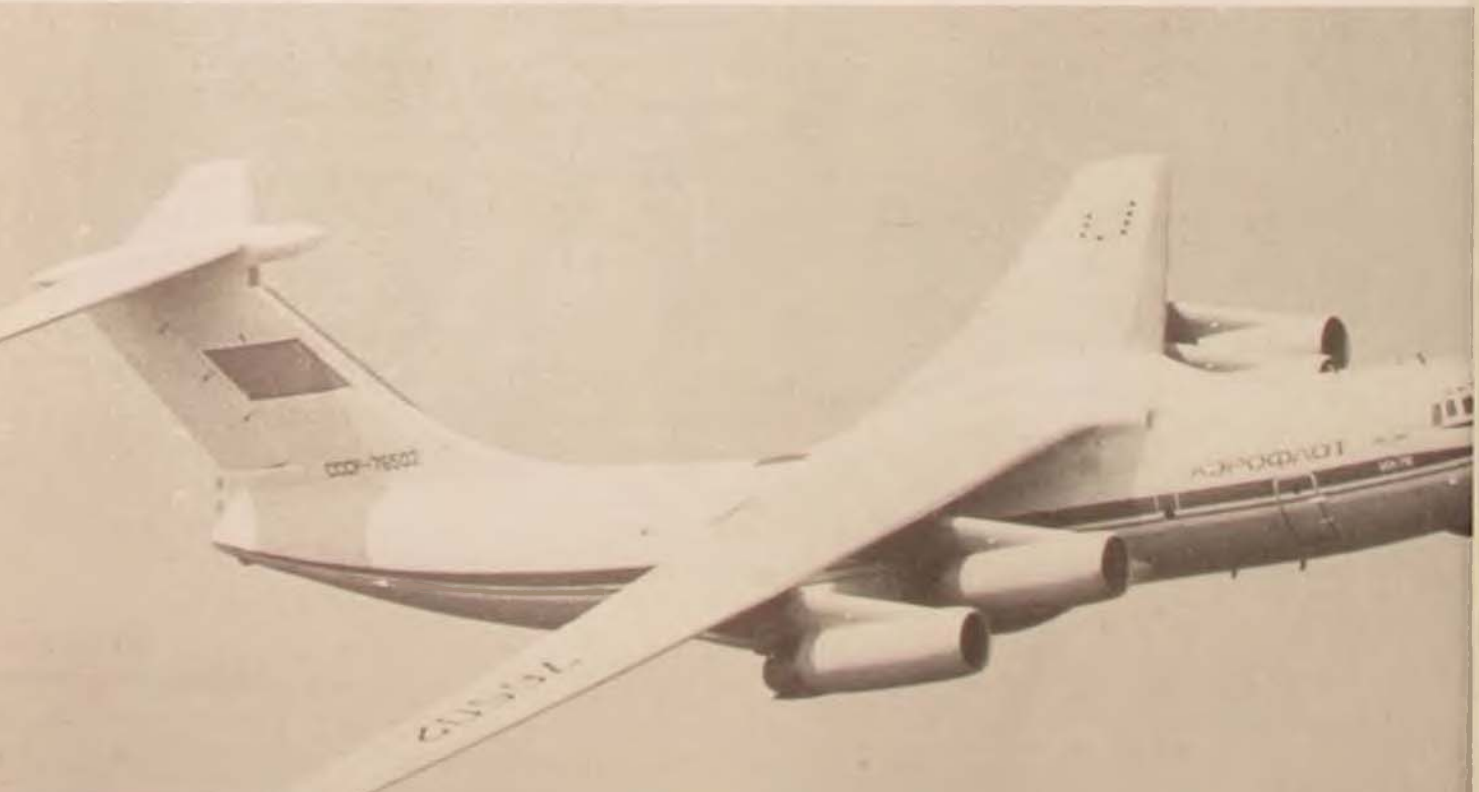
THE Soviet war in Afghanistan has provided a plethora of information about the Soviets and their use of military power. Additionally, the war has allowed the Soviets to learn many lessons and has offered them the opportunity to train, apply various tactics, and experiment with different weapons. Curiously, however, although the Soviets paralyzed the Afghan government initially with troops airlifted into the capital city of Kabul and since then have used helicopter, fighter-bomber, and bomber operations in the war, very little has been compiled heretofore in open U.S. sources regarding Soviet air power experiences and tactics. By studying Soviet use of air power in Afghanistan, we might gain a better understanding of Soviet air power doctrine and how the Soviets may employ air power in future conflicts.

Airlift

Soviet military doctrine stresses the primacy of offensive operations aimed at stunning and preventing organized resistance by opponents. In Afghanistan, as in Czechoslovakia in 1968, the Soviets used the surprise landing of airborne units at strategic centers, particularly around the capital, in conjunction with the speedy movement of ground units along strategic routes toward vital centers to gain the initiative.[1] The military invasion began on Christmas night, 1979, when the Soviets staged a massive, single-lift operation involving an estimated 280 transport aircraft packed with troops, munitions, and equipment. The aircraft were reported to be Il-76s (closely resembling the U.S. C-141), An-22s (a Soviet turboprop strategic transport), and An-12s (a C-130 equivalent). Subsequent airlifts completed the placement of three airborne divisions in Afghanistan.[2]

The size and swiftness of the airlift operation are significant. Each Soviet airborne division normally comprises nearly 8500 men, including artillery and combat support elements.[3] The 280 transport aircraft represented approximately 38 percent of the total Soviet military transport air force (*Voyenno-Tranportnaya Aviatsiya* or VTA). If Aeroflot, the Soviet civilian airline, is included in the total transport capability figures, the 280 transport aircraft represented approximately 29 percent of the total Soviet transport fleet. This sizable transport fleet is a significant Soviet asset, contributing to the capability of the Soviets to mobilize and deploy quickly large numbers of troops. The Christmas night airlift was, of course, only the initial stage of the invasion; massive airlift of troops, equipment, and supplies has continued to flow into Afghanistan. To date, no Soviet transport aircraft appear to be permanently based in Afghanistan; transports are rotated in and out from air bases in the Soviet Union.[4]

Ironically, the Soviets may be copying U.S. transport tactics used in Vietnam. Soviet sources have suggested that An-12 Cub trans-



The Christmas 1979 Soviet invasion of Afghanistan began with Il-76 Mainstays and other transports flying an airborne division into Kabul. Transports like the Il-76 provide the flexible mobility essential to conventional forces locked in an unconventional war.

ports have been used as bombers by rolling bombs down and off the tail ramp while in flight.[5] In Vietnam, the United States used 15,000-pound bombs dropped from C-130 transports to clear helicopter assault zones in the jungle.

Tactical airlift aircraft are used primarily, however, in their traditional role of supply. The Soviets have found that they often cannot use ground convoys to supply many outposts in the sparsely settled provinces along Afghanistan's eastern border with Pakistan. Even such significant bases as Khost and Gardez—each held by a battalion or regiment of the Kabul regime—normally must be supplied by air, while smaller outposts in these provinces require parachute drops for resupply.[6]

Helicopters

Perhaps the most widely used element of Soviet air power in the Afghan war is the helicopter. Helicopters have been used extensively in varied types of military missions. Estimates of helicopter strength range from 500 to 650 machines, of which up to 250 may be the Mi-24 Hind gunships.[7]

The Hind is an extremely lethal weapon, with machine guns or cannon in the nose turret and up to 192 unguided missiles under its stub wings. It has room for eight to twelve ground troops and their equipment in the fuselage, and it is widely used by the Soviets for punitive and search-and-destroy missions.[8] The Hind has also been used to provide close air support for ground troops, to strike Afghan villages (sometimes in conjunction with fixed-wing aircraft), and to conduct armed-reconnaissance missions to detect and attack guerrilla groups.[9]

Due to its heavy armor, the Hind is nearly impervious to guerrilla small arms unless the guerrillas can fire down at the helicopters using weapons positioned high on the sides of mountains.[10] The Hind has only three known vulnerable points: the turbine intakes, the tail rotor assembly, and an oil tank inexplicably but conveniently located beneath the red star on the fuselage.[11]

The terrain in Afghanistan has had considerable influence on the use of the Hind. Many of the narrow roads in Afghanistan snake through valleys overlooked by steep, tall mountains. Such terrain provides perfect ambush situations. As a result, whenever a Soviet troop column or supply convoy moves into guerrilla territory, it is accompanied by Hinds whose pilots have developed a standard escort tactic. Some Hinds hover over the ground convoy, watching for guerrilla activity, while others land troops on high ground ahead of the advancing column. These troops secure any potential ambush positions and provide flank security until the column has passed; they are themselves protected against guerrilla attack by the Hinds that inserted them and subsequently hover overhead. Once the convoy passes their position, the troops are picked up and reinserted farther along the route. Convoy protection is also provided by other Hinds that range ahead of the column to detect and strike guerrillas that may have concentrated along the route.[12]

Other information on Hind tactics indicate that a closer relationship between air and ground arms has been a major aim of the Soviet force development (the helicopter is a part of the Soviet Air Force). Hinds are the primary Soviet close air support weapon in Afghanistan. They not only strike enemy forces in contact with Soviet troops but sometimes carry out attacks as much as twenty to thirty kilometers forward of the forward edge of battle area. This tactic is apparently an attempt to increase responsiveness, tactical flexibility, and integration with ground forces.[13]

The Soviets have had some problems with their helicopters. In 1980, losses to SA-7 surface-

to-air missiles (a hand-held, heat-seeking missile) led to a change in tactics at the end of 1980 or early 1981. Since then, the Hinds have used nap-of-the-earth flight patterns, for which the machines were not designed nor their crews properly trained. There have been reports of Hind rotors striking the rear of their own helicopters during some of these nap-of-the-earth flights. The wear on airframes and systems caused by these lower-altitude flights has also greatly increased rates of operational attrition.[14]

These nap-of-the-earth tactics are a significant change from those employed in 1979-80. Hind crews then showed little fear of the opposition, attacking with machine guns, 57-mm rockets, or cluster and high-explosive 250-kg bombs normally during diving attacks from a 1000-meter altitude. After the firing pass, they would break away in a sharp evasive turn or terrain-hugging flight before repositioning for another firing pass. The Soviets used these tac-

A Mi-24 Hind helicopter can carry up to twelve troops and provide devastating fire support with its array of cannon and rocket weapons. The Soviets are thought to have more than 250 Hinds in Afghanistan.

Although aged, the Mi-4 Hound has found new life in the war against Afghan rebels. Often, a pair of Hounds will lead an attack mission. After an initial strafing run, the two will climb to a higher altitude to decoy SA-7s with flares while the more lethal Hinds attack rebel positions.

tics with several Hinds in a circular pattern, similar to the American "wagon wheel" used in Vietnam. Such tactics may still be used in some parts of Afghanistan, but by and large they have been changed.

Reportedly, new tactics that use scout helicopters for target acquisition have been adopted for both attack helicopters and fixed-wing aircraft. These scouts are usually Hinds (or, in some cases, Mi-8 Hips) rather than smaller, lighter helicopters. Normally, they stay high, out of range of the target, giving crews a better field of view while directing attacks. This tactic may become standard in future Soviet conflicts.[15]

Current reports say the Hind now begins an attack run 7000 to 8000 meters from the target, running in at low altitude and then rising 20 to 100 meters in altitude to fire. Firing usually commences at maximum range, and mutual support is emphasized. One tactic that has endured the war has been to send one helicopter in at high altitude to draw enemy fire, while wingmen remain low, behind a ridge, ready to attack anyone who opens fire.[16]

The Soviets are also using helicopters in mass formations (a standard Soviet tactic). Reports have helicopters in packs of four and six, hovering, firing their rockets and machine guns, circling, hunting, and then swooping down and firing again.[17]

While the Hind is the primary attack helicopter being used in Afghanistan, the Soviets have also made extensive use of the big multipurpose Mi-8 Hip in several different capacities. One of the major missions of the Hip is to serve as the main troop carrier.[18] In this role, the Hip is enhanced by its ability to provide its own fire support/suppression with 57-mm

rocket pods.[19] The Hip has also been used for aerial minelaying, which the Soviets have found is a good way to reinforce a defensive perimeter quickly. Furthermore, the Hip has been used as a heavily armed attack helicopter to complement the Hind.[20] As with the Hind, the Soviets have found problems with the Hip. These have come primarily in the areas of its exposed fuel system (a major hazard to crews in case of a crash), short rotor life, lack of engine quick-change capability, poor engine performance, and inadequate trim control. The engine and trim problems result from the low-density air conditions found in the high, mountainous terrain of Afghanistan, which force the engine to work harder and make hovering difficult.[21]

The Mi-4 Hound has also been employed in the war, often in concert with the Hind. Many helicopter airstrikes start with two Mi-4 Hounds, which attack with unguided rockets and machine gun fire, followed by four Hinds, which continue the strike with rockets and cannon. While the Hinds attack, the Hounds circle, ejecting heat decoy flares at regular intervals, apparently in an effort to protect the helicopters from hand-held SA-7s. The Hounds also have been reported to hover near villages being shelled, perhaps acting as air controllers for ground-based artillery.[22]

One other type of helicopter that the Soviets are using in Afghanistan is the big Mi-6 Hook. It has been used extensively to provide heavy lift support for Soviet forces.[23]

Observers report that Soviet helicopter roles in the war have varied from dropping Soviet parachutists, antipersonnel mines, bombs, and leaflets to providing close air support for Soviet armor. Yet, while significant tactical changes have occurred, the broad picture of Soviet Frontal Aviation tactics in Afghanistan has remained largely unchanged. Trends and concepts observed prior to the war have been reinforced. The Hips still carry troops for airmobile assaults and provide suppression; the Hind remains the Soviets' primary source of airborne firepower.[24]

Fighter-Bombers

Helicopters may be the main element of Soviet air power in Afghanistan, but evidence indicates that the Soviets are testing their fighter-bombers and associated weapons and tactics in the Afghan war as well. Compared to reports on their helicopter use, very little on the type of fighter-bomber tactics that the Soviets are using has appeared in the open press. However, enough has been published to provide a glimpse of Soviet fighter-bomber philosophy.

Soviet fighter-bombers have been employed exclusively in the air-to-ground role, since the Afghan guerrillas offer no air-to-air threat. They have been used for carpet bombing, terror bombing, and scorched-earth bombing in efforts to destroy the guerrillas or drive them from the country. Combined with helicopter attacks, Soviet fighter-bombers have pounded settlements throughout the country. Half of the city of Herat (Afghanistan's third largest city, with a population of 150,000) was leveled in an extremely heavy, brutal, and prolonged attack.[25]

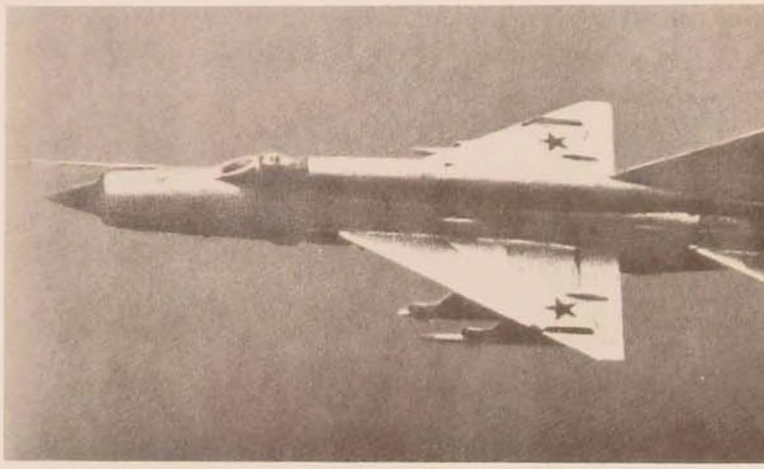
Most Soviet fighter-bomber crews are trained for close air support roles with ground troops in the European theater. In Afghanistan, they have also proved their value on sorties against targets deep inside guerrilla territory. Houses, crops, livestock, vineyards, and orchards in some areas have been systematically bombed and rocketed in what appears to be a scorched-earth campaign aimed at denying the guerrillas food and shelter. Terror bombings of villages, by both MiG aircraft and helicopters, have reportedly become commonplace in areas that are sympathetic to the guerrilla movement. To complete the destruction, ground troops often enter these areas after an air assault and shoot at anything alive, eventually turning

everything of value into rubble.[26]

Early in the war, the primary fighter-bomber used by Soviet forces was the MiG-21 Fishbed. The Fishbed has one twin-barrel 23-mm gun with 200 rounds of ammunition in a belly pack, and it can carry four 57-mm rocket packs, two 500-kg bombs, and two 250-kg bombs, or four 240-mm air-to-surface rockets in a typical ground attack configuration.[27] Tactically, the MiG-21s have generally operated in pairs,[28] but they attack individually, taking turns firing rockets at or bombing guerrilla positions. After releasing their ordnance, they each eject three sets of four heat decoy flares as they climb away. Again, the flares are an apparent attempt to negate any SA-7 threat. Reports also indicate that the MiG-21s often fire from a range of about 2000 meters, which makes their strikes somewhat inaccurate and ineffective. This tactic, combined with the failure of many bombs to explode on impact and the failure of some cluster bombs to deploy and scatter, has at times rendered the Soviet fighter-bombers ineffective.[29]

Still other reasons have been cited for the ineffectiveness of the MiG-21. All seem valid. First, the MiG-21 is best suited as an air-to-air platform. Second, the guerrillas are an elusive enemy, and any kind of early warning of an impending airstrike helps negate the effects of that strike. Third, the mountainous terrain, where most of the guerrilla resistance is located, tends to restrict the effectiveness of air-to-ground fire.[30] The steep, deep, winding ravines and valleys make the use of high-speed aircraft somewhat sporty, and Soviet pilots have often pushed the Fishbeds to their flight limitations. Like the helicopters, the fighter-bombers in Afghanistan are affected adversely by the high altitudes associated with terrain that includes 10,000-20,000-foot mountain peaks. The fourth major difficulty experienced by the Soviet air forces seems to be a lack of an adequate quick-reaction tactical fighter-bomber strike capability. The use of forward air controllers (FACs), especially in the mode in which the United States used them in Vietnam, has been conspicuously absent (although, as noted previously, some helicopter FACs apparently have been used). The fifth drawback appears to be the lack of any significant night or all-weather fighter-bomber capability.[31]

To counter some of these drawbacks, the Soviets have introduced their new Su-25 Frogfoot fighter-bomber into the war. The Frogfoot, designed as a close-support aircraft, is similar in performance to the USAF A-10. At least one squadron operates from Bagram airfield in Afghanistan. The Frogfoot can carry up to 10,000 pounds of ordnance on ten stations, making it a formidable weapon.[32] Tactically, the Frogfoot operates in loose pairs, going in



Although a consummate dogfighter, the MiG-21 (top) has been somewhat ineffective in air-to-ground operations in Afghanistan. . . . The new Su-25 Frogfoot (bottom), designed for close air support, carries a hefty weapons load that includes fragmentation bombs, napalm, and rockets.

separately and very low. Weapons accuracy has improved considerably, and the Frogfoot is used primarily to hit point targets in rough terrain. Delivery distances, from the weapons release point to the target impact point, have increased steadily, making the Frogfoot a much-feared weapon system.

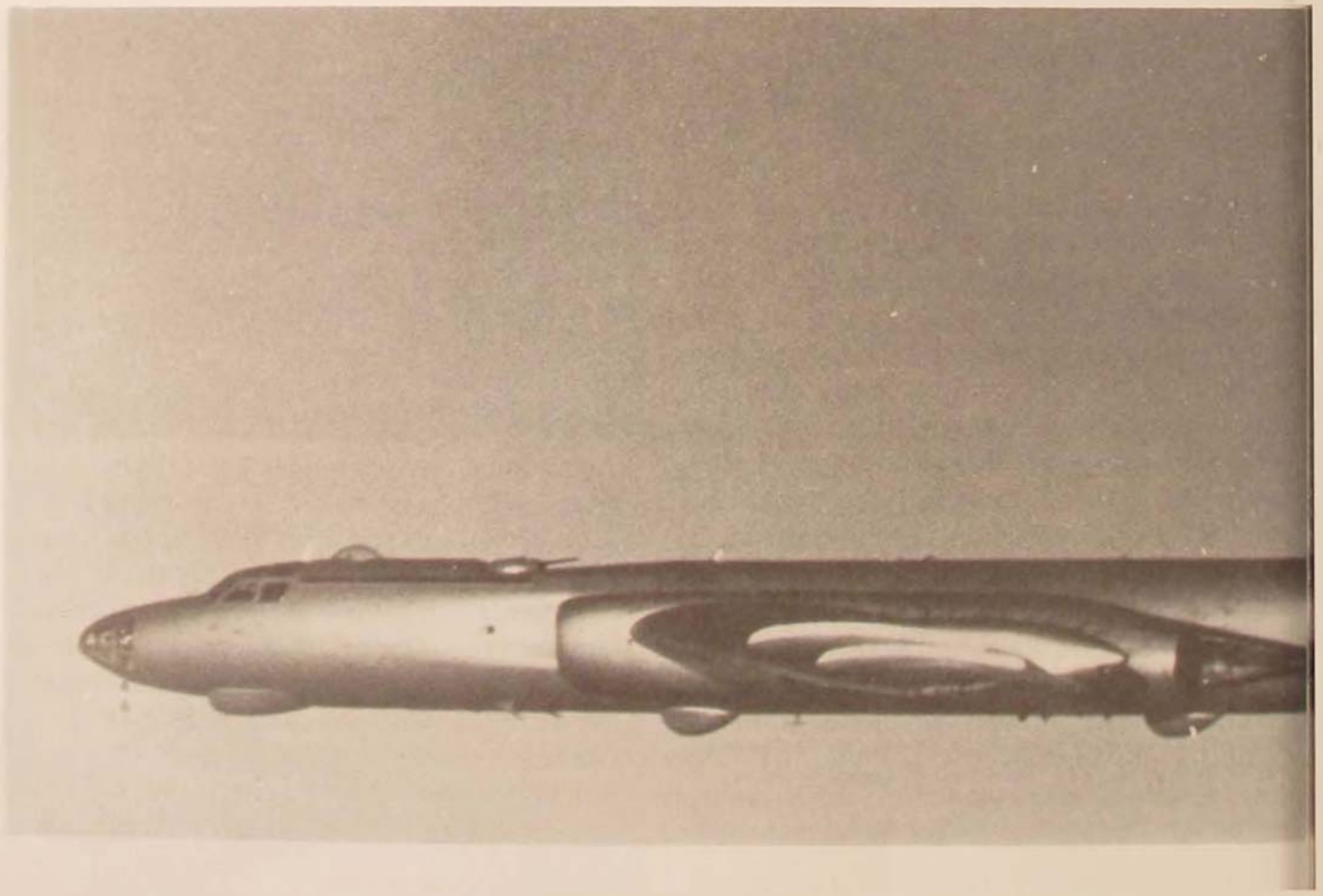
The Soviets have also employed the Su-17 Fitter, the Su-24 Fencer, and MiG-23 Flogger in the war. These aircraft engage in intensive bombings of known guerrilla concentrations and installations. In the April-May 1984 timeframe, their combined sortie generation was estimated to be more than 100 per day. During this period, the Fitters and Fishbeds were relegated primarily to missions requiring general accuracy, while the Fencer, the Flogger, and especially the Frogfoot were used more for direct air support against point targets.[33] Very little has been published about the tactics used or limitations incurred by these aircraft.

Bombers

Recently, the Soviet Union introduced the Tu-16 Badger into the aerial bombing campaign in Afghanistan. The Badger is a medium-range bomber that can carry bomb loads up to 19,800 pounds. Its service ceiling is listed as 40,350 feet above sea level.[34]

The Badgers, stationed inside the Soviet Union, were apparently first used in the bombing

Stationed inside the Soviet Union, Tu-16 Badgers are used for carpet-bombing missions targeted against rebel strongholds and villages in the Panjshir Valley. Such operations may involve as many as forty Tu-16 sorties.



campaign directed against the city of Herat.[35] Prior to 21 April 1984, the Soviets deployed numerous Badger bombers on their common border with Afghanistan. On 21 April, they began high-altitude carpet bombing against guerrilla villages and strongholds in the Panjshir Valley, which is located approximately seventy miles north of the capital city of Kabul. Reports indicate that thirty-six Badger[36] bombers were being used, and that thirty to forty airstrikes a day were being flown.[37]

With the service ceiling listed for the Badgers, they probably can bomb at a maximum of only 20,000 feet above the highest peaks in the mountain ranges. But since most of the targets are in the valley floor, bomb releases can still remain high above the target impact points. The bombers are relatively safe because the guerrillas apparently have no weaponry that can accurately reach the bombers' altitude. The Badger attacks are followed by close-in attacks from fighter-bombers, helicopters, and artillery shelling.[38] The bombing raids, flown in support of Soviet ground forces advancing into the valley, signal an apparent willingness on the part of the Soviets to use any conventional air power available to support their ground operations.

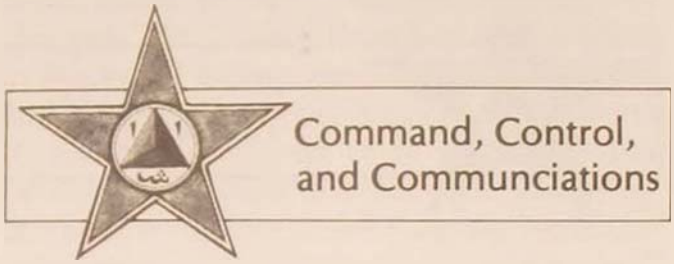
Weapons

Many other types of air-delivered weapons beyond those already mentioned have allegedly been employed by the Soviets in Afghanistan. The major headline grabber has been the alleged Soviet use of chemical warfare (CW). However, numerous conflicting reports surround this matter, with hearsay rather than hard evidence forming the basis for most conclusions.

A somewhat unique use of Soviet aircraft has been to lay down smoke screens. Smoke plays an important role in Soviet mountain fighting doctrine. By masking ground troop movements, it helps the Soviets achieve surprise. The Soviets also use air-delivered smoke to mark and direct artillery fire for their land forces.[39]

Other weapons employed by Soviet air forces include napalm[40] and various types of antipersonnel mines. The standard small antipersonnel mine explodes when stepped on. This weapon does not seem to be designed to kill, but rather to injure. The injured person helps demobilize the guerrillas because they have to transport casualties. Thus slowed, the guerrillas become more vulnerable to helicopter attacks. Reportedly, many Soviet antipersonnel mines are camouflaged as toys, watches, ballpoint pens, or even books, which explode when picked up, blowing off fingers, hands, arms, etc. According to some accounts, these weap-

ons have been aimed also at some of the civilian population in an effort to demoralize those who are pro-guerrilla.[41] In an apparent effort to eliminate as many guerrillas as possible, the Soviets also have dropped enhanced-blast bombs and large blockbuster bombs. These weapons explode in midair, sending out lethal shock waves in a large-radius kill zone.[42]



To complement the Soviet war effort, both in the air and on the ground, the Soviets have used a wide variety of command, control, and communications (C^3) equipment and procedures. A look at the Soviet C^3 system gives an insight into the complexities involved in the war and the Soviet ability to conduct such an undertaking.

The first two weeks of the invasion were an enviable demonstration of top level C^3 and coordination. The C^3 link went via satellite communications (Satcom) from the Army headquarters in Moscow to Termez, located in Soviet territory on the northern border of Afghanistan. Control of the complex and tightly scheduled initial airlift assault was impressive, with different aircraft types arriving from various routes. Radio command posts controlled the two motorized rifle divisions (MRDs) in their land invasion two days later, as well as the four MRDs that arrived within the next two weeks.

In mid-January 1980, the command post was relocated from Termez to Kabul, which has become the communications hub for the Soviet occupation force. Apparently, the antiaircraft, antitank, electronic countermeasures (ECM), and Frog missiles (a surface-to-surface missile) that normally accompany and comprise a Soviet C^3 network of this type have since been removed, leaving the Soviet Signal Troop section as the major electronic element in the war effort. Within the Signal Troop is a wire company, which has three platoons: one for line construction and two for radio relay. In addition to the Signal Troop, each Soviet airborne division has one signal company of 22 officers and 221 enlisted men, 30 jeep-type vehicles, 23 GAZ-66 trucks, 11 motorcycles, and 9 SA-7 portable SAMs. Communications between the headquarters and MRDs are usually via UHF or VHF radios and/or land lines.[43]

According to Soviet literature, the signal companies have C^3 survivability through concealment, dispersal, hardness, mobility, and redundancy. In addition to establishing various radio nets, the signal troops lay telephone and telegraph wire that provides communications via land lines. Thus, the Soviets use four systems to communicate:

- Line-of-sight—UHF, VHF, and microwave for twenty- to thirty-mile ranges.
- Troposcatter—set on vans or in fixed positions, with relays about 200 miles apart.
- Satcom—Malniya, Gorizont, and Kosmos series networks. The earlier Satcoms were in twelve-hour elliptical orbits; the newer ones are in synchronous twenty-four-hour orbits.
- Land lines—existing civilian lines or lines laid by Soviet forces. The Soviets favor secure underground land lines.[44]

Since the invasion, the Soviets have divided Afghanistan into seven military districts. The main army headquarters near Kabul may have Satcom and troposcatter links to some military districts or bases but not to all. Therefore, because of field command delays and the rigidity of the Soviet communications channels, it appears that each district commander has been given more than usual latitude to meet the combat needs of his area.[45]

Preplanned air support seems adequate in Afghanistan, but the Soviets seem to lack an

adequate quick-reaction airstrike capability in support of field troops. To receive an airstrike, a junior-grade infantry officer must send a request, which is forwarded up to the division level in the Army and then over to the Air Force; there are delays at each command level and communications point. Associated with these delays is the fact that the Soviet army has neither aviation helicopters nor forward air controllers (although recently helicopter scouts have been used to some degree). Soviet air force helicopters and support aircraft are at the division level for Army interface. The compound communications structure tends to hamper support for truck convoys or airborne operations unless events proceed strictly in accordance with the advanced plan. An example of the communications problems that stem from this system can be seen in a July 1981 battle with guerrilla forces that occurred twelve miles from Kabul; here Soviet close-air-support jets mistakenly strafed Soviet and Afghan army troops.[46]

All in all, Afghanistan presents a benign electronic environment to the Soviets, with minimal need for electronic counter-countermeasures (ECCM), jamming, or smart weapons to home on emissions. The guerrilla forces rely primarily on runners or civilian walkie-talkies for communications.[47]

Meanwhile, the Soviets are using long-range surveillance-type radars, which they have installed in Afghanistan, to observe air activities in the neighboring countries of the People's Republic of China, Pakistan, Iran, and other Persian Gulf states. It is highly probable that Soviet electronic intelligence and ECM troops are collocated with these surveillance radars to monitor electronic emissions in Iran, the People's Republic of China, Pakistan, etc., since that is a somewhat standard Soviet tactic.[48]

The Soviet army communications environment in Afghanistan has changed from mobile and temporary tent-city layouts to sites with permanent buildings, fixed communications sites, and fixed antenna arrays. According to reports, Soviet engineers have established elaborate communications centers at a headquarters north of Kabul (at Bagram), as well as elsewhere in the country. Yet, while probably enhancing Soviet communications, these sites also provide lucrative targets for the guerrillas; and attacks on various communications sites have been reported.[49]

A variety of other electronic equipment also is being used. These systems include ground control approach, surveillance radar, and precision approach radar to control aircraft into and out of air bases, plus various radars that control the different types of Soviet SAMs positioned in Afghanistan. The avionics in Soviet fighters, helicopters, and reconnaissance aircraft are probably being tested in a combat environment. Laser ranges, low-light TV and infrared sensors, radars, computers, and communications are installed in both the MiG-23 Flogger and the Su-25 Frogfoot. Earlier-model Su-17 Fitter and MiG-21 Fishbed fighters have moderate electronics on board. Due to limited forward maintenance support, Soviet aircraft are ferried to depots inside the Soviet Union for overhaul or repairs. It is probable that communications equipment is not adequately supported in the field except for simple module swapping.[50]

Lessons have been expensive but valuable for the Soviets in the electronic and communications arenas. Two examples stand out. The Soviet army is now replacing 1950s-vintage tactical field transceivers with newer, standard backpack and vehicle models. In addition, redundancy in Soviet command posts and the effectiveness of specific communication methods are being tested by guerrilla raids on garrisons and cities throughout the country. Overall, the Soviet communications personnel appear to be fulfilling their tasks even under adverse and primitive conditions, primarily because the new-technology troposcatters and Satcoms have reached the field level and are augmenting the simplistic land lines historically preferred by Soviet army communicators.[51]

Air Base Gains

The Soviets have gained much more than valuable experience in the Afghan war. They have gained many strategically important and possibly permanent air bases. Seven air bases have been built or improved by the Soviets in Afghanistan: Herat, Shindand, Farah, Kandahar, Kabul International Airport, Bagram, and Jalalabad. All of these airfields are now all-weather, jet-capable bases that are operable 365 days a year. At last report, Jalalabad air base has been used exclusively for helicopter operations but has jet capacity. Since each base is capable of handling large numbers of tactical aircraft, a huge fleet could be operated in Afghanistan or against other Southwest Asian countries from these bases.[52]

In the Afghan panhandle that stretches northeast to the People's Republic of China, the Soviets have cleared out the sparse population and are building highways, air bases, and an air defense and early warning network. The airfields may be nothing more than sod strips for resupply of the electronic intelligence sites located there, or they may become jet-capable. This area provides better terrain than the Soviets had in this central Asian military district previously, thereby improving their forward geographic position.[53]

The two most important Soviet installations in Afghanistan are at Bagram and Shindand. Bagram is the local supreme headquarters of the entire Soviet army in Afghanistan, where most of the senior Soviet officers in Afghanistan, as well as their Satcom system and other major facilities, are located. At Shindand, no Afghans are permitted on the air base because the Soviets have installed support and maintenance equipment for their naval aviation reconnaissance bombers. Soviet electronic warfare aircraft (converted bombers and converted transports) are operated from this installation by the air command of the Soviet navy. Most of these aircraft are not permanently based in any one location, so having the very sensitive technical support and maintenance capabilities needed for them available at various forward bases offers vital support for their missions.[54]

Having jet bases in the western/southwestern section of Afghanistan also places longer-range MiG-27 Flogger fighter-bombers and MiG-25 Foxbat reconnaissance aircraft 200 miles closer to, and within range of, the Strait of Hormuz—the strategic chokepoint at the mouth of the Persian Gulf. SAM-8 antiaircraft missiles have been installed to defend most of these bases, although currently there is no apparent air threat.[55] Having these bases eliminates any overflight problems that the Soviets might have incurred from an independent Afghanistan and allows Soviet electronic warfare aircraft more time to trail and monitor U.S. naval activities in the Indian Ocean.[56]

Combat Experience and Lessons Learned

The Soviets have learned and continue to learn many valuable lessons in their war in Afghanistan. Whether they win or lose their battle with the guerrillas is perhaps not as significant militarily as the lessons they learn, the experience they gain in warfighting, and the knowledge they obtain about the effectiveness of their weapons. Afghanistan, which is about the size of Texas and has terrain that varies from deserts to rugged mountains, affords the Soviets ample opportunities (and time) to experiment with their aircraft, tactics, weap-

ons, and command and control equipment and procedures.

From the standpoint of world power politics, the Kremlin has demonstrated in Afghanistan its ability to project power outside the boundaries of the Soviet Union through a massive airlift operation. This demonstrated ability creates a worrisome problem for other nations, especially those bordering on or near Soviet territory.

Evidence from Afghanistan indicates that the Soviet military has become increasingly reliant on its helicopter force. Most likely, this dependency will remain a part of the Soviet military system after the Afghan issue is resolved. Current helicopter roles that could easily transfer to other theaters, depending on the terrain and capabilities of the enemy, are: (1) landing forces on peaks to envelop an enemy in support of ground advances, (2) providing aerial attacks to channel the enemy into killing zones where ground forces can inflict maximum casualties, (3) providing close air support for advancing ground forces, (4) moving troops and supplies, and (5) acting as scouts or forward air controllers.[57]

Fixed-wing fighter-bombers, at least the older models, have proved somewhat ineffective in the air-to-ground role in which they have been used. As time elapses, more information on the successes and failures of later models should become available for analysis. The same can be said concerning the high-altitude saturation bombings being conducted by the Tu-16 bombers.

Some significant changes already appear to be occurring within the Soviets' command, control, and communications system. Some latitude in decision making is apparently now given to lower levels of command, and communications equipment is being improved. These changes should improve the Soviets' worldwide fighting ability. However, surface evidence indicates that the Soviet decision-making process is still controlled at fairly high levels, is still heavily layered, and continues to lack responsiveness.

A major advantage that the Soviets are gaining is combat experience. Exercises are good training, but real combat is the only true test of commanders, unit personnel, and equipment. Soviet Signal Troops in Afghanistan have a 25-percent turnover every six months.[58] It seems logical to assume that crewmembers in helicopters, fighter-bombers, bombers, etc., would also be rotated frequently to ensure that a large segment of the Soviet manpower force gains combat experience and a chance to hone individual combat skills. It follows that reports of various tactics and the effectiveness of different weapons would receive high-level scrutiny from Kremlin officials and that refinements would be made to enhance the effectiveness of Soviet air power. Gradually, the Soviets are learning the same hard lessons we learned in Vietnam. Fighting guerrilla forces with conventional forces is a long, arduous affair.

In concert with all the lessons learned and skills gained through combat in Afghanistan, it is evident that the Soviets have accomplished one thing—they have gained strategically important new airfields from which they can operate. Whether the Soviets transplant any of their specific tactics to future theaters of operations is still a matter of conjecture, but the basic warfighting principles that guide the Soviets remain intact—mass, shock, surprise, and willingness to apply any of the conventional weapons in their military arsenal.

Center for Aerospace Doctrine, Research, and Education
Maxwell AFB, Alabama

Notes

1. Jiri Valenta, "The Soviet Invasion of Afghanistan," *Crossroads*, Spring 1980, p. 67.

2. Lawrence E. Grinter, "The Soviet Invasion of Afghanistan: Its Inevitability and Its Consequences," *Parameters*, December 1982, p.

58.

3. Kenneth Allard, "Soviet Airborne Forces and Preemptive Power Projection," *Parameters*, December 1980, p. 46.

4. Yossef Bodansky, "The Bear on the Chessboard: Soviet Military Gains in Afghanistan," *World Affairs*, Winter 1982-83, p. 291.

5. David Isby, "Soviets in Afghanistan, Prepared for the Long Haul," *Defense Week*, 21 February 1984, p. 14.

6. Ibid.

7. Denis Warner, "The Soviet Union's 'International Duty' in Afghanistan," *Pacific Defence Reporter*, March 1983, p. 47.

8. Ibid.

9. David C. Isby, "Afghanistan's Winter War," *Soldier of Fortune*, April 1981, pp. 44-45.

10. Ibid., p. 44.

11. Jim Coyne, "Afghanistan Update, Russians Lose Battles But May Win War," *Soldier of Fortune*, December 1982, p. 72.

12. Isby, "Afghanistan's Winter War," p. 44.

13. David C. Isby, "Soviet Tactics in the War in Afghanistan," *Jane's Defence Weekly*, vol. 4, no. 7, 1983, p. 683.

14. Ibid.

15. Ibid.

16. Ibid.

17. Jere Van Dyk, "Journey through Afghanistan," *New York Times Magazine*, 17 October 1982, p. 47.

18. Isby, "Afghanistan's Winter War," p. 4.

19. Isby, "Soviet Tactics in the War in Afghanistan," p. 683.

20. Isby, "Afghanistan's Winter War," pp. 44-45.

21. Isby, "Soviet Tactics in the War in Afghanistan," p. 683.

22. John Gunston, "Afghans Plan USSR Terror Attacks," *Jane's Defence Weekly*, 31 March 1984, p. 481.

23. Isby, "Afghanistan's Winter War," p. 44.

24. Isby, "Soviet Tactics in the War in Afghanistan," p. 683.

25. "Update: Russia's 'Hidden War' in Afghanistan," *U.S. News and World Report*, 1 August 1983, p. 22.

26. Philip Jacobson, "The Red Army Learns from a Real War," *Washington Post*, 13 February 1983, p. 1; Borje Almquist, "Eyewitness to Afghanistan at War," *World Affairs*, Winter 1982-83, p. 312; Harold Johnson, "Soviets Cultivate Scorched Afghan Earth," *Washington Times*, 12 January 1984, p. 1C.

27. *Jane's All the World's Aircraft 1983-84* (New York: Jane's), p. 216.

28. Charles Dunbar, "Inside Wartime Kabul," *Asia*, November/December 1983, p. 27.

29. James H. Hansen, "Afghanistan: The Soviet Experience," *National Defence*, January 1982, pp. 23-24.

30. Ibid.

31. Coyne, p. 72.

32. "Su-25 Operating in Afghanistan," *Aviation Week and Space Technology*, 3 January 1983, pp. 12-13.

33. Yossef Bodansky, "Most Feared Aircraft in Afghanistan Is Frogfoot," *Jane's Defence Weekly*, 19 May 1984, p. 768.

34. *Jane's All the World's Aircraft*, pp. 235-36.

35. Isby, "Soviets in Afghanistan, Prepared for the Long Haul," p. 14.

36. Fred Hiatt, "Soviets Use Bombers in Afghanistan," *Washington Post*, 24 April 1984, p. A1.

37. Fred Hiatt, "Soviet Troops Advance into Key Afghan Valley," *Washington Post*, 27 April 1984, p. A19.

38. Hiatt, "Soviets Use Bombers in Afghanistan," p. A1.

39. Bodansky, "The Bear on the Chessboard: Soviet Military Gains in Afghanistan," p. 286.

40. *The Review of the NEWS*, 24 November 1982, p. 64.

41. Joseph J. Collins, "The Soviet-Afghan War: The First Four Years," *Parameters*, Summer 1984, p. 52.

42. Associated Press, "Use of Deadly Air Bombs Reported in Afghanistan," *New York Times*, 24 May 1984, p. A5.

43. James C. Bussert, "Signal Troops Central to Soviet Afghanistan Invasion," *Defense Electronics*, June 1983, p. 104.

44. Ibid.

45. Ibid.

46. Ibid.

47. Ibid., p. 107.

48. Ibid.

49. Ibid., pp. 107-08.

50. Ibid., p. 108.

51. Ibid.

52. Bodansky, "The Bear on the Chessboard: Soviet Military Gains in Afghanistan," p. 279.

53. Ibid.

54. Ibid., p. 280.

55. "Afghanistan Three Years Later: More U.S. Help Needed," *The Backgrounder*, 27 December 1982, p. 11.

56. Bodansky, "The Bear on the Chessboard: Soviet Military Gains in Afghanistan," p. 280.

57. Ibid., p. 287.

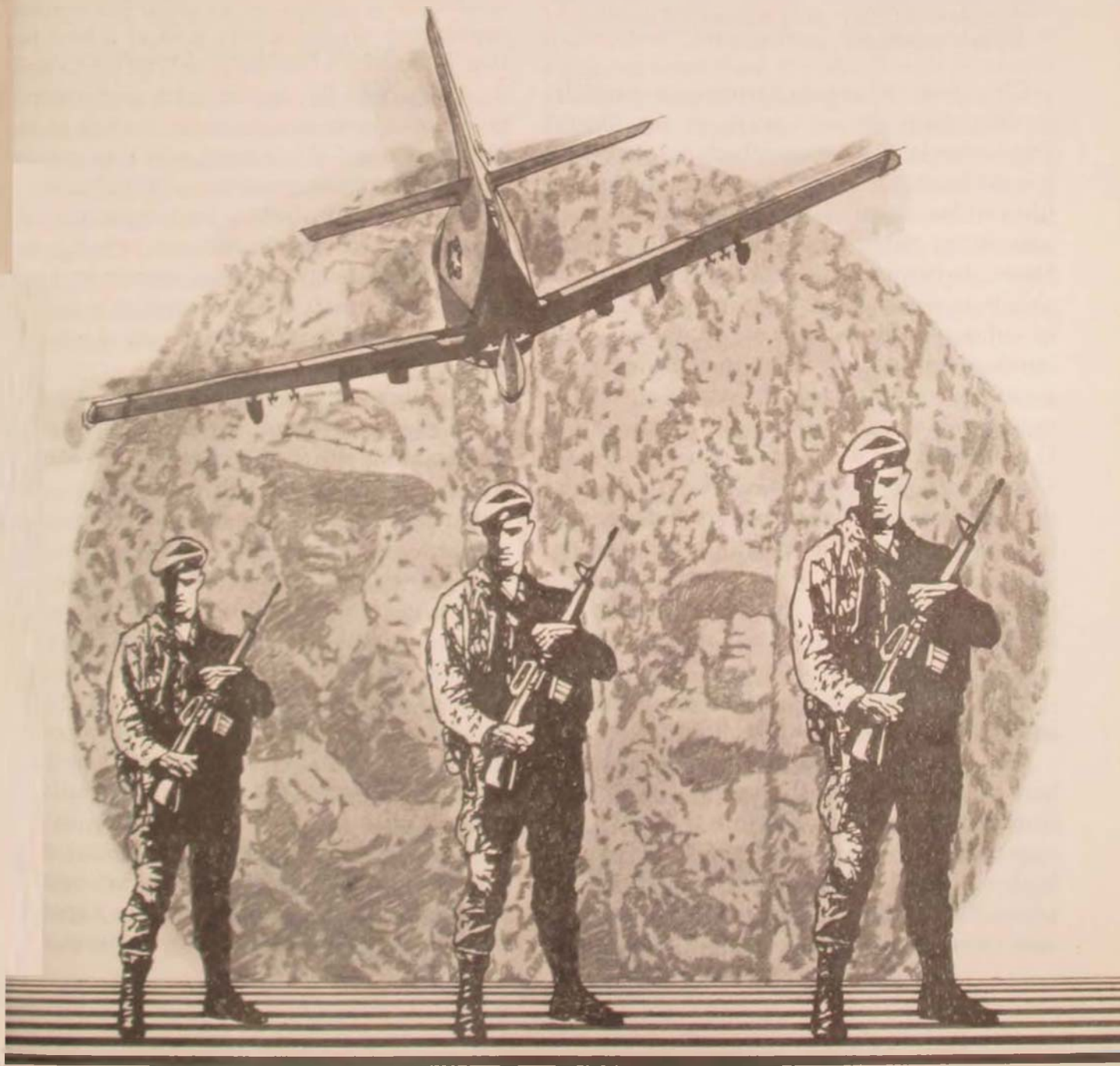
58. Bussert, p. 108.

The article "Air Force ROTC: Its Origins and Early Years," by Colonel William C. Stancik, USAFR, and R. Cargill Hall, which appeared in our July-August 1984 edition, should have carried the following credit: This article was based substantially on research completed by Dr. Donald E. Wilson, Associate Professor, Department of History and Political Science, Samford University, Birmingham, Alabama. During the time he did the research, Dr. Wilson was an Air Force lieutenant colonel assigned to the Simpson Historical Research Center, Maxwell AFB, Alabama.

THE USAF IN LOW-INTENSITY CONFLICT: THE SPECIAL AIR WARFARE CENTER

LIEUTENANT COLONEL DAVID J. DEAN

SMALL wars are an all too familiar part of the international situation these days. Lebanon, El Salvador, Nicaragua, Chad, and Western Sahara are only a few of the places where small wars are either in full flame or smoldering, ready to ignite. The term *low-*



intensity conflict is often used to describe these wars. It is a most unsatisfactory term because it defies precise definition. Actions related to low-intensity conflict can cover a vast range of military, political, and economic activity. A definition of the term developed at a 1984 workshop on the subject states that low-intensity conflicts are:

> situations ranging from terrorism, crises, and small wars to revolutions and counterrevolutions which require tailored limited responses short of national mobilization and often in conjunction with host regimes and third countries. These responses are likely to be military or paramilitary for short situations, but of mixed political-economic-military-other actions for revolutionary and protracted conflicts.[1]

Clearly this definition portrays low-intensity conflict from the viewpoint of the United States, that is, of a nation which perceives that it must be able to exert its will in limited conflicts without actually declaring war. Such situations are particularly sticky for the United States. It is often difficult for the American people to see a "vital" U.S. interest at risk in far-off and obscure places. In fact, a vital interest—one for which the United States would go to war—would probably not be at stake in most small wars, yet, for political reasons, a U.S. initiative in a small war may be required. Unfortunately, support from the Congress and the people might not be readily forthcoming for any conflict that could be perceived as "another Vietnam." Worse still, the military may not have a clear idea of its role in such a conflict, either in a primarily military operation or in a multidimensional operation involving the military as a subordinate element in a mainly economic and political effort.

One way for us in the military to think about being effective in small wars is to establish a simple framework for developing capabilities appropriate to such conflicts. A framework built on three levels of activity may be appropriate. Those levels are: assistance, integration, and intervention. While actions relating to those levels would apply to any military (or multidimensional) effort, they can be described in Air Force terms. Assistance means providing noncombat training and support directly to a friendly air force. That support would include developing the infrastructure of a host nation's air force—logistics, intelligence, planning—as well as training with that air force to develop flying skills appropriate to its threat. A USAF assistance effort could (and usually should) be part of a multidimensional (military-economic-political) or joint military effort.

The integration aspect of the framework for designing forces for low-intensity conflict means that a small, specialized USAF combat contingent would become part of a host nation's forces for a limited time. The USAF contingent would fly aircraft with performance capabilities comparable to the aircraft of the host nation and, if necessary, would be authorized to fly combat missions with the host air force. Essentially, the U.S. force would serve as "stiffeners" for the local force. Again, this higher level of activity could be carried out as an air force-to-air force operation, part of as joint-military operation, or as part of a multidimensional effort.

The highest level of U.S. activity in low-intensity conflict would be direct U.S. military intervention, either unilaterally or in concert with allies. Normally, such intervention would use air power in combination with other specialized military capabilities. Intervention would mean, of course, either that assistance or integration efforts had failed or that a crisis had erupted so rapidly that it required direct immediate action.

Thinking about participating in small wars by assisting, integrating with host forces, or intervening leads to knotty questions on national will, political guidance to the military, and the military's ability to act as an instrument of U.S. foreign policy in situations short of declared war. These questions lead, in turn, to others regarding specific military capabilities. Do we have the proper equipment, doc-

trine, tactics, training, and personnel selection by the services? Are we ready to provide a series of military options to political decision makers in situations short of war?

Such questions are not new. The U.S. military went through the same kind of self-appraisal under President Kennedy's prodding in the early 1960s. In the Air Force, that prodding resulted in creating the air commandos and the Special Air Warfare Center. The experience of the Special Air Warfare Center over two decades has a great deal to teach us about using and misusing air power in small wars.

Early U.S. Efforts in Special Air Warfare

The United States can trace its use of air power in unconventional ways back to World War II. Air commandos operated in China, Burma, Southeast Asia, Korea, and Europe. Early special warfare efforts using air power were linked to military activity in enemy-held territory. In the context of the war, special air warfare was closely linked to unconventional operations that supported larger, conventional efforts. There was no impetus to develop small-war strategies as a separate form of warfare, as had the British during the post-World War I era when air power strategies were developed to control large parts of the British Empire.[2]

Basically, from the 1920s through the 1950s, America's air power theorists thought "big." The experience of World War II simply reinforced the idea that air power's role was to destroy the enemy's capacity and will for continued conflict—an objective mainly accomplished by massive bombing campaigns.

The early sixties, however, were marked by confrontation between the superpowers over Berlin, Cuba, and "wars of national liberation." In a 6 April 1961 speech, Soviet Premier Nikita Khrushchev pledged to support wars in less-developed countries and cited conflicts in Algeria, Laos, Vietnam, and Cuba as examples of increasing guerrilla activities against oppressive regimes.[3] Correspondingly, President Kennedy believed that it was necessary and correct for the United States to resist aggression and Communist-inspired revolts.[4] Thus, in 1961, the National Security Council outlined policies to counter the insurgency threat in underdeveloped countries.[5] National Security Action Memorandum 56 tasked the military services to develop counterinsurgency forces for special operations in their functional areas.[6]

Creation of Jungle Jim

The U.S. Air Force established the 4400th Combat Crew Training Squadron (CCTS), nicknamed "Jungle Jim," on 14 April 1961 at Eglin Air Force Base, Florida. Jungle Jim had a twofold mission: training and combat (very close to the assistance and integration levels discussed earlier in this article). Pilots in friendly foreign air forces received a fifty-hour flying course, while their ground crews were trained to maintain aircraft in very austere conditions. Jungle Jim also provided "USAF personnel with optimum-type training for supervising the development of unit combat capability in similar-type aircraft of friendly foreign nations. . . ."[7] The combat mission was divided into strike, reconnaissance, and airlift operations.

The Jungle Jim units used vintage aircraft, such as the C-47, T-28, and B-26. These aircraft had proved their ability to operate from remote, primitive bases and had useful capabilities in terms of firepower, range, and cargo capacity for counterinsurgency operations.

Jungle Jim was fully operational by 8 September 1961, and everyone assigned to the unit was trained "on the job." The squadron devised the techniques and tactics for building a counterinsurgency capability in developing countries from Latin America to Africa to Southeast Asia without a basic Air Force doctrine to guide them. All the people of Jungle Jim knew was that someone on high had decreed that the Air Force would have a counter-

The versatile C-47 (above) is still flying, although the first of its type flew a half-century ago. During the Vietnam War, C-47s hauled cargo and men for every air force in the region, including that of the North Vietnamese. . . . The AC-47 Spooky gunship (right) carried three 7.62-mm Gatling guns, which together could spew out 18,000 rounds per minute.

insurgency capability, and they were it. The idea of visualizing how a small war might be planned and carried out using air power, by itself or in conjunction with other capabilities, had never been studied in the Air Force. Jungle Jim put the Air Force into the counterinsurgency activities for the first time. Only four months after activation, Jungle Jim personnel made their first overseas deployment. Code-named Sandy Beach One, this operation involved training Mali paratroopers to operate from C-47 aircraft. The Jungle Jim people noted

Special operations units in recent decades have frequently used aircraft of World War II and Korean War vintage. The B-26 (a World War II veteran and a workhorse of the Korean War) appeared in limited conflicts in the Congo, was employed in operations against Cuba during the aborted Bay of Pigs invasion, and was a mainstay of air commando operations in Vietnam during the early sixties.

that just across the airfield at Bamako stood Soviet and Czechoslovak aircraft, a stark reminder that superpower rivalry was beginning to occur in some very obscure places.[8] Detachment 1's commandos completed their mission in November and returned to Eglin. Their efforts established such good working relationships that air commandos returned to Mali in 1963 to give more training.

In November 1961, elements from the Jungle Jim squadron deployed to Bien Hoa, Republic of Vietnam. This operation was called Farm Gate; the requirements of supporting it soon became central to Air Force thinking on small wars. The air commandos' equipment was not significantly different from that used by the air commandos in World War II; tactics for using the equipment had to come from the ingenuity and imagination of the men on the scene. To further complicate matters, there was considerable controversy in Washington over just what Farm Gate's mission should be. Some people thought Farm Gate should be involved mostly in operational missions, while others wanted to assign strike sorties to Pacific Air Forces (PACAF) and a training role to Farm Gate. Secretary of Defense Robert McNamara chose the latter division of roles in December.[9] However, Jungle Jim elements continued to conduct combat operations, including night strikes with C-47s dropping flares. Meanwhile, President Kennedy pushed for a universal capability to oppose insurgencies.

The Origin of the Special Air Warfare Center

In an open letter to the U.S. Armed Services in the spring of 1962, President Kennedy said:

> The military challenge to freedom includes the threat of war in various forms, and actual combat in many cases. We and our allies can meet the thermonuclear threat. We are building a greater "conventional deterrent capability." It remains for us to add still another military dimension: the ability to combat the threat known as guerrilla warfare.[10]

He directed the Secretary of Defense to "expand rapidly and substantially the orientation of existing forces for sublimited or unconventional wars."[11] In response to this political pressure, the Air Force Chief of Staff, General Curtis E. LeMay, established the Special Air Warfare Center (SAWC) at Eglin Air Force Base on 19 April 1962. The unit was composed of the 1st Air Commando Group (1st ACG), the 1st Combat Applications Group (1st CAG), and a headquarters section. The SAWC absorbed the men and assets of the 4400 CCTS and continued to operate Farm Gate.

The Special Air Warfare Center's first regulation—Tactical Air Command Regulation 23-12, dated 13 July 1962—defined the center's mission:

> . . . USAF Special Air Warfare Center will command, organize, equip, train, and administer assigned or attached forces to participate in and conduct combat improvement projects for air actions in counterinsurgency warfare and other special warfare operations.[12]

SAWC's major responsibilities included modifying existing equipment or inventing items for special warfare and providing forces for ". . . supporting, instructing, and advising friendly foreign forces in counterinsurgency warfare."[13] Significantly, no mention was made of creating a capability to conduct air strikes. SAWC was "merely" supposed to train and develop foreign air forces through short-term assignments overseas.

The 1st Combat Applications Group was to develop the doctrine, tactics, techniques, and hardware that the 1st Air Commando Group would use in operations and training. The 1st CAG was given special funding priority. It also had arrangements with Air Force Logistics Command (AFLC) that allowed the group far greater flexibility and fewer delays than most research and development organizations have. The 1st CAG could design and construct new hardware, purchase goods locally, or use and modify off-the-shelf products.

SAWC's primary mission—training aircrews in all aspects of unconventional warfare and counterinsurgency air operations and techniques—was the responsibility of the 1st Air Commando Group. Equipped with C-46, C-47, T-28, B-26, U-10, and later A-1E, C-119, C-123, and C-130 aircraft, the group provided training in low-level parachute resupply, close air support, use of flares for night operations, assault takeoffs and landings, psychological missions with leaflets and loudspeakers, and other counterguerrilla techniques. Propeller-driven aircraft were preferred for counterinsurgency operations due to their ability to operate from remote, primitive bases as well as their capabilities in terms of loiter time over target, firepower, range, and cargo capacity.

The air commandos received unusual training for Air Force personnel. They learned self-defense, received small arms training with the .38 caliber pistol and M-16 rifle, and, for a while, conducted daily physical training. To prepare them to conduct training overseas, a language course was started at Eglin. Air commandos learned a 600-800 word French or Spanish vocabulary. These languages were chosen because of their wide use in Latin America, North Africa, and Asia. Much of the vocabulary that was provided dealt with aircraft terms or terms related to guerrilla warfare. After completing this training, SAWC sent its operational units, either an entire detachment or mobile training teams (MTTs) abroad. These units would be overseas for varying lengths of

time and in different force compositions, depending on the training to be accomplished.

SAWC Mobile Training Teams in Action

Among the first detachments to be established was Detachment 3, located at Howard Air Force Base, Canal Zone. Beginning on 10 May 1962, Detachment 3 offered counterinsurgency training to any Latin American country that requested it. Detachment 3 sent mobile training teams throughout Latin America to survey the needs of countries that requested training. These teams analyzed what types of operations needed to be conducted and gave instruction in counterinsurgency air operations and civic action techniques.

Detachment 3 was involved in numerous counterinsurgency and civic action projects. For example, in August 1962 an MTT went to Honduras to survey its needs for counterinsurgency and to train its pilots.[14] On another occasion an MTT installed wing racks for rockets on Guatemalan air force F-51s, resulting in a 600-percent increase in firepower.[15] On 5 October 1962, a mobile training team installed radio equipment at the airfield of David, a city in Panama, which gave the airfield necessary traffic control capability. Later, on 19 July 1963, the air commandos recovered and refinished an old ambulance and gave it to the city.[16] The air commandos flew teachers into remote areas to instruct villagers in public sanitation and health. They flew a U.S. Army team into villages to drill wells and improve local agriculture. In December, they airlifted Christmas gifts to cities in Panama.[17] In addition, the Detachment 3 air commandos tested equipment for the 1st CAG, such as a new set of target-marking rockets for use by forward air controllers. The tests went well; the air commandos reported that the rockets were effective for marking targets.[18]

Detachment 3 was successful in several other civic action programs. Their personnel provided medical assistance and evacuation in Panama and other Latin American countries. For example, in mid-1962 the 1st CAG developed a mobile medical dispensary. This 212-pound, three-piece unit fit easily in a U-10 light utility aircraft and contained almost all the necessary medicines and equipment needed for ailments encountered in a tropical environment.[19] On many occasions, the air commandos of Detachment 3 flew into villages to give medical and dental care. From appendectomies to inoculations, the air commandos provided treatment that had never been available before. This type of civic action created much public support for both the air commandos and the local government.

Another key civic action effort, accomplished with typical air commando élan, was establishing reliable communication with isolated villages. First, an airplane would drop a message asking for the villagers' help in building an airstrip. Later, a U-10 equipped with loudspeakers flew over the village and instructed the villagers on how to clear the area needed for an airstrip. Once the rough strip was readied, a U-10 landed and the air commandos helped finish the strip. Later these operations became more sophisticated and included parachuting a tractor down to the village to assist in the clearing.

Major William W. McDannel, Detachment 3 commander, stated the value of these various operations:

> Civic actions are now an integral part of commando operations in Latin America. We are using the "grass roots" or people-to-people approach. In training indigenous forces, we have created many lasting friendships. These friendships inspire confidence and trust. We believe the mutual trust to be the "key" to hemispheric solidarity and the greatest deterrent to international Communism.[20]

The work of Detachment 3 clearly demonstrated how successful special warfare missions could be and proved what SAWC could accomplish with ingenuity and flexibility. Unfortunately, Detachment 3's accomplishments

In Latin America and parts of Asia and Africa, a variety of political systems compete to win the hearts and minds of the people. If democratic governments are to prevail, they must demonstrate their interest in the welfare of the masses. The U-10 pictured above has brought medical supplies to a remote village in South America. . . . Training and working with local forces (left) is also an important part of special operations. In Vietnam, the 4400th Combat Crew Training Squadron trained two squadrons of A-1 pilots.

in the remote jungles of Central America were largely overshadowed by events in Vietnam.

Events in Vietnam had a direct impact on the Special Air Warfare Center. On 1 July 1962, Detachment 3, renamed the 605th Air Commando Squadron (ACS) (Composite), passed to Southern Command's control.[21] The removal of this unit from SAWC's control severely curtailed the center's role in training foreign forces. Now the only active training detachment of SAWC was Detachment 6 in Thailand. Detachment 5 was a CONUS-based unit whose major contribution was to STRICOM exer-

cises; Detachment 4, located at Sembach, Germany, provided unconventional warfare support to United States Air Forces Europe. Toward the end of 1964, SAWC all but ceased its mobile training team activities.

SAWC Operations in Southeast Asia

Special Air Warfare Center involvement in Southeast Asia was, initially, a continuation of the Farm Gate project that began in 1961. Now called Detachment 2, 4400 CCTS, this unit's mission ostensibly was to train Vietnamese in combat missions. Detachment 2 was supposed to operate under strict rules of engagement, one of which stipulated that Vietnamese air force personnel must be aboard the aircraft on all combat sorties. This practice was supposed to ensure that training was conducted and that USAF personnel were not unilaterally involved in combat.

Colonel Joseph W. Kittenger, Jr., a B-26 pilot for Farm Gate in 1963, told how the air commandos got around this requirement. While

Above, an Air Force technical sergeant shows a Brazilian noncommissioned officer how to arm rockets, while an American officer in the backseat prepares his student pilot for a practice bombing mission. Similarly, during the Vietnam War, NCOs assigned to the 56th Special Operations Wing trained Laotian crews to fly and maintain their T-28 fighter-bombers. . . . The Air Force used rockets like those shown below to blast Pathet Lao and North Vietnamese bunkers on the Plain of Jars.

they did fly combat missions with Vietnamese aboard, these Vietnamese were not pilot trainees. Most of them were low-ranking enlisted men and were so unmotivated to fly that the air commandos had to take away their boots at night so they could not run away. "None of them knew anything about flying or wanted anything to do with it. . . . There was not any intention whatsoever to teach them to fly ever. They could not touch the controls if they wanted to."[22] Thus, even in the early days of Vietnam, the commandos relied more on doing it themselves than on training local forces. However, the air commandos eventually did train enough pilots for two fighter squadrons. Even though the Vietnamese air force received some training, the trend for the future role of SAWC was set. Flying by U.S. forces would take precedence over training the Vietnamese.

On 1 August 1962, a new Tactical Air Command Regulation (23-12) redefined SAWC's mission, enabling the needs of the expanding organization to be met more easily and reflecting the reality of SAWC's activity in Southeast Asia. This change allowed special air warfare forces in certain instances to be used in counterinsurgency. A significant difference was that the directive authorized SAWC combat strike operations, which, early in 1962, Washington had admitted Farm Gate was doing.[23]

An operations plan developed during this period reflected the conceptual thinking going on at SAWC. The center planned to develop a force capable of deploying within twenty-four hours to any area of the world. Once there, this force would possess the capability to operate in conjunction with and in support of U.S. or friendly forces in counterinsurgency, unconventional warfare, and psychological warfare operations. It was also to provide training to a friendly nation's air forces in those areas.[24] Clearly, this seemed to be the appropriate mission for SAWC. The Special Air Warfare Center possessed its own resources for deploying mobile training teams on short notice and had the practical experience and expertise to develop effective working relationships with sister services and other national agencies.

This capability never came to fruition, however, due to the increasing demands of Vietnam. Because of quantum increases in strike and airlift requirements for special air warfare assets, the role of SAWC shifted from training host nation forces to training USAF crews, thus reducing the emphasis on its mission of providing a combat and advisory ready force. The Special Air Warfare Center soon became very busy, with the "Special" part of its title increasingly ignored, replaced by the routine demands of what had become an expanding conventional war in Vietnam.

Between late 1962 and early 1964 SAWC grew from a small unit with limited resources to almost 3000 personnel spread throughout the world, several hundred aircraft, and priority funding for its test projects. The expanding effort in Southeast Asia absorbed more and more of SAWC's resources. For instance, Detachment 6 (Waterpump) was created and sent to Udorn, Thailand, in January 1964, trained the Royal Laotian Air Force, provided a nucleus of U.S. counterinsurgency forces near Laos, and stimulated the Royal Thai Air Force counterinsurgency program.[25]

By the end of 1965, the Vietnam War was having a telling impact on SAWC. Trained USAF aircrews were needed to supplement the expanding effort in Vietnam. Still, the number one mission of SAWC was to train and equip USAF air and ground crews for operations in Vietnam. Although SAWC was supposed to provide mobile training teams to unified commands for training friendly foreign air forces in counterinsurgency, this requirement was virtually ignored.[26] From 1965 on, SAWC efforts would be almost solely directed toward Vietnam with only minor efforts for host country training and civic actions.

By late 1966, the war in Vietnam clearly had escalated to a conventional level with U.S. forces heavily committed to combat. The air commandos were not involved in counterguer-

rilla operations but mostly flew close air support missions.[27] Even though the war in Vietnam had expanded far beyond an insurgency, SAWC people still held to the idea that training and deploying special detachments to train air forces of friendly foreign countries in how to use air power in counterinsurgency operations was a valid concept, particularly where conditions were different from those in Vietnam—i.e., a level of conflict lower than a conventional war. The emphasis on training USAF aircrews in the mid-'60s, however, forced SAWC resources into training people for the larger-scale war in Vietnam. By 1966, SAWC had become primarily "a combat training unit, preparing people for Air Force commands and a number of friendly foreign powers . . . rather than training and maintaining combat ready forces . . . for counterinsurgency or civic action missions in all parts of the world."[28]

On 8 July 1968, SAWC was redesignated USAF Special Operations Force (SOF) and became the equivalent of a numbered air force. As operations in Vietnam became more conventional, the need for the Special Operations Force lessened. Ironically, the command billet was reduced from a major general to a brigadier general—a change incongruent with an apparent upgrade in organizational structure from that of a "center" to the equivalent of a numbered air force.

With the Vietnam effort winding down, SOF was gradually squeezed by budgetary and manpower cutbacks. By 1970, SOF unit manning was down to only 30 percent of its earlier strength; the decline in assets continued through the early seventies. On 30 June 1974, the Special Operations Force was deactivated, officially closing out this important chapter of special operations within the Air Force.

Lessons from the Special Air Warfare Center

Even this cursory look at the history and activities of the Special Air Warfare Center suggests some points about early Air Force participation in low-intensity conflict. First, it is clear that the center was created in response to political pressure from the top. Without President Kennedy's call to create forces to fight Communist-sponsored wars of national liberation, it seems very unlikely that the Air Force would have generated a dedicated counterinsurgency capability on its own. Second, the center grew very quickly. Aircraft and men were thrown together quickly, and there was no time to develop long-range thinking on strategies and doctrines that could guide the plans of those earliest Air Force counterinsurgent forces. As noted by Colonel Robert Gleason, who was with the commandos from Jungle Jim days, "The immediate missions of the original USAF COIN (counterinsurgent) unit (Jungle Jim) . . . were not immediately obvious to the original cadre."[29] The organization, equipment, planning, doctrine, and concept of operation for the early air commandos were very much ad hoc affairs.

It is important to stress the role of doctrine in the development of the Special Air Warfare Center. A lack of doctrine and the short time between SAWC's inception and its conducting operations may be the keys to the problems that resulted in this special organization. SAWC was entering a new field beyond any experience of the Air Force and most of the military. Entering the counterinsurgency arena without applicable doctrine may have encouraged the use of conventional air power tactics rather than developing new tactics appropriate to small wars. As early as 1963, the Commander in Chief of the Pacific Command, Admiral Harry D. Felt, noted that Farm Gate fliers were conducting conventional missions and did not need counterinsurgency training—a clear indication of the misuse of SAWC's capabilities.[30] The SAWC developed successful air power employment techniques for counterinsurgency and civic action programs in Central America, which were not applied in the same scope or intensity in Southeast Asia.

In spite of the lack of conceptual thinking that went into establishing Air Force counterinsurgency forces in the early sixties, the people assigned to that task did a most impressive job of getting organized and fielding a credible force. The basic idea of developing a force to train friendly foreign air forces took root quickly. They used simple, rugged aircraft for operations under relatively primitive conditions. They trained their personnel in languages, cross-cultural relations, hand-to-hand combat, and a host of other skills not normally part of an Air Force career. They designated a specific group within the center to obtain and develop equipment.

Certainly one of the highlights of SAWC was the 1st Combat Applications Group. The success of this organization in providing counterinsurgency and civic action equipment gave SAWC a valuable resource. It also gave the center the flexibility to handle the unusual missions that came its way. The 1st CAG accomplished literally thousands of projects between 1962 and 1972. These ranged from testing the prototype VC-123 transport under field conditions to designing an efficient dispenser for sterile screwworm flies. The 1st CAG developed low-light television equipment for night strikes and reconnaissance, as well as cargo extraction systems. It also tested the AC-47, AC-119, and AC-130 gunship platforms.[31]

Probably the most visible Special Air Warfare Center successes with long-term implications were with the mobile training teams and civic action programs. U.S. military people conducting beneficial civic action programs invariably provided a boost to American prestige in remote areas throughout the world. In addition, air commandos contributed to the functional ability of the host country's military, demonstrating how military units could improve conditions in their country and improve relations with the citizens. These low-risk operations inspired continued friendship and solicited respect. Direct military benefits, over the long run, included such things as basing agreements. However, due to the increased commitments to Vietnam, these efforts declined drastically.

As the Vietnam War evolved, it affected the center's mission, eventually leading to a dramatic change in the mission. By 1973, TACR 23-12 defined the mission as simply two basic tasks: training and operating forces in Air Force special operations and training USAF and allied personnel as directed by Hq TAC or USAF. From the previously mentioned wide-ranging responsibilities, the mission changed to a narrow USAF training role. In its original concept, the Special Air Warfare Center conducted operations worldwide and had considerable autonomy; and during its early years, the center demonstrated the ability to conduct successful operations throughout the world by reacting quickly and flexibly to unusual demands. However, the special capabilities of this unit were discarded as the war in Vietnam became more conventional. The Vietnam War consumed SAWC's resources and funneled a multipurpose organization toward one end. Conventional tactics, such as interdiction, close air support, and reconnaissance, became the mainstay of SAWC operations in Vietnam. The Vietnam War quickly erased the difference between special air warfare assets and conventional air forces.[32]

The many lessons of the Special Air Warfare Center include the importance of doctrine, the need for flexibility in operations, the effectiveness of mobile training teams when they are properly trained and motivated, the benefits of selected civic action programs, and the effectiveness of propeller-driven aircraft in counterinsurgency operations. These are worth studying for possible application to our present and future forces.

If the most likely type of war in which the United States will become involved during the years ahead is a low-intensity conflict, then it is important for us to examine past experiences in that area. The British, the French, the Soviets, and the Cubans have all used air power in

low-intensity conflict, and their efforts and experiences are worthy of our attention. However, the experience of the USAF Special Air Warfare Center might well serve as our most valuable basis of Air Force doctrine and planning for future low-intensity conflicts.

Joint Chiefs of Staff
Washington, D.C.

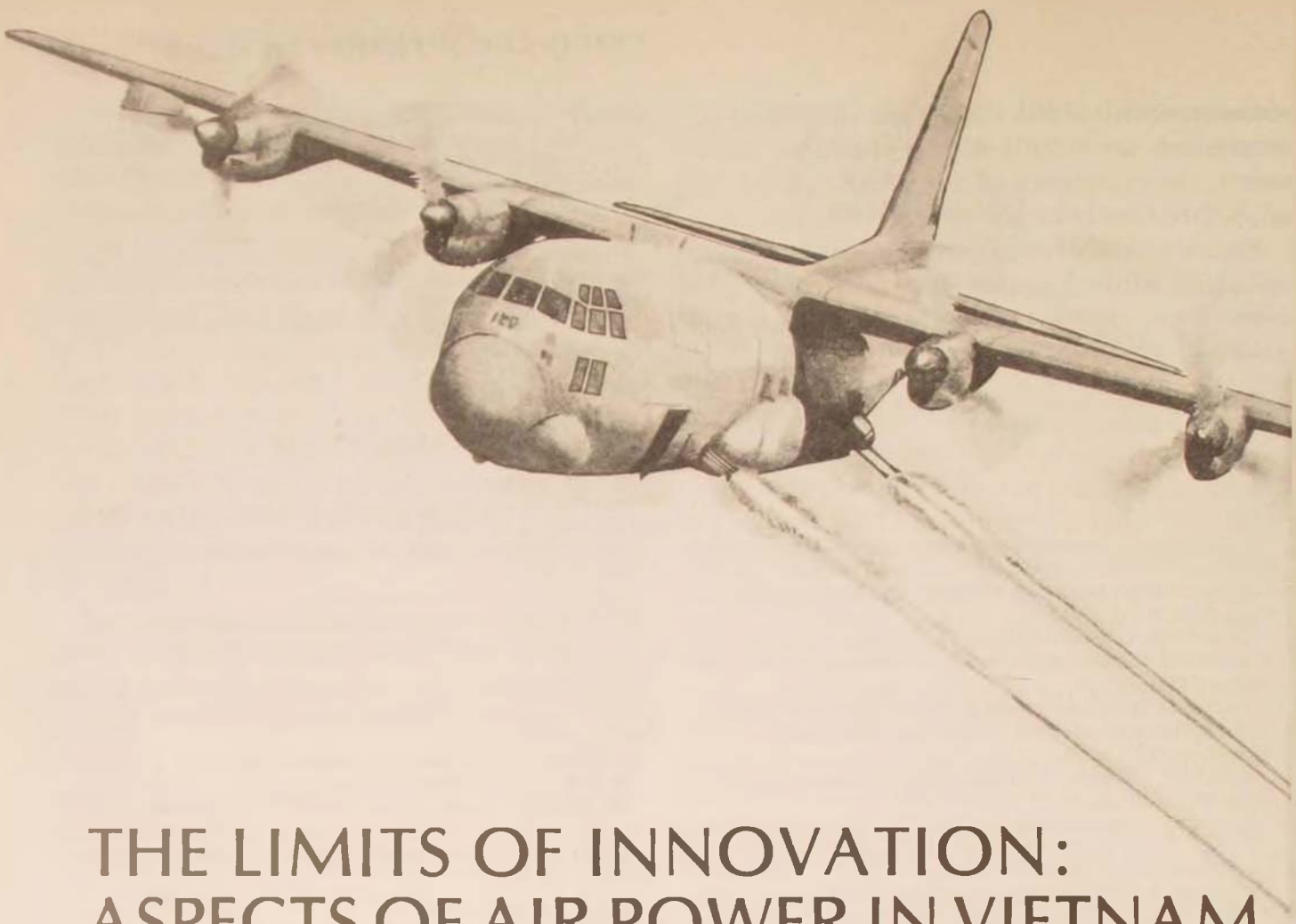
The author wishes to thank Major Mark D. Gage for research assistance in preparing this article.

Notes

1. Definition developed by the Policy Panel at the Center for Aerospace Doctrine, Research, and Education's workshop on Low-Intensity Conflict and Modern Technology, Maxwell AFB, Alabama, 22-23 March 1984.
2. Lieutenant Colonel David J. Dean, "Air Power in Small Wars: The British Air Control Experience," *Air University Review*, July-August 1983, pp. 24-31.
3. Robin N. Montgomery, *Military Civic Action and Counterinsurgency: The Birth of a Policy* (Ann Arbor, Michigan: University Microfilms, 1971), p. 20.
4. Richard J. Walton, *Cold War and Counterrevolution* (New York: Viking, 1972).
5. Robert L. Gleason, "Quo Vadis?—The Nixon Doctrine and Air Power," *Air University Review*, July-August 1972, p. 49.
6. Walton, p. 169.
7. "Jungle Jim Final Operational Concept," *USAF Special Air Warfare Center (TAC) History* (27 April-31 December 1972), Supporting Document #7, documentation compiled and available at USAF Historical Research Center, Maxwell AFB, Alabama.
8. Brigadier General Jamie Gough, "Airpower and Counterinsurgency," *Airman Magazine*, August 1962, pp. 2-7.
9. Robert F. Futrell, *The United States Air Force in Southeast Asia: The Advisory Years to 1965* (Washington: Office of Air Force History, 1981), pp. 83-84.
10. *USAF Special Air Warfare Center (TAC) History* (1 April-31 December 1962), p. 14.
11. John Hawkins Napier III, "The Air Commandos in Vietnam, November 5, 1961-February 7, 1967" (unpublished thesis, Auburn University, 16 March 1967), p. 15.
12. *USAF Special Air Warfare Center (TAC) History* (1 April-31 December 1962), p. 220.
13. Ibid., p. 2.
14. Ibid., p. 220.
15. Ibid., p. 229.
16. Ibid. (1 January-30 June 1963), p. 148.
17. Ibid., p. 234.
18. Ibid., p. 230.
19. "Commandos Bring Along Psychologist," *Air Force Times*, 31 July 1962, p. 21.
20. *USAF Special Air Warfare Center (TAC) History* (1 April-31 December 1972), p. 245.
21. Ibid. (1 July-31 December 1964), p. 12.
22. USAF Oral History Program Interview with Colonel Joseph W. Kittenger, Jr., USAF Historical Research Center, Maxwell AFB, Alabama.
23. Napier, p. 85.
24. *USAF Special Air Warfare Center (TAC) History* (1 July-31 December 1963), p. 139.
25. Ibid. (1 July-31 December 1964), p. 44.
26. Ibid. (1 July-31 December 1965), p. 1.
27. "Skyraider Squadron," *Air Force Times*, 2 November 1966, p. 26.
28. *USAF Special Air Warfare Center (TAC) History* (1 January-30 June 1965), p. 9.
29. Gleason, p. 49.
30. Futrell, p. 170.
31. *USAF Special Air Warfare Center (TAC) History* (1 January-30 June 1974), appendix K, p. 1.
32. Gleason, p. 49.

The Battle of the Bulge was won not so much by the high command as by resourceful divisional and regimental commanders and thousands of battalion and company officers.

Drew Middleton
New York Times Magazine, 16 December 1984



THE LIMITS OF INNOVATION: ASPECTS OF AIR POWER IN VIETNAM

DR. DONALD J. MROZEK

INNOVATION, flexibility, and versatility are part of the vocabulary of virtue in the United States—praiseworthy qualities whose possession and exploitation enhance the prospects for success in whatever one chooses to do. The experience in Southeast Asia during the Vietnam War, however, gives reason for pause and reconsideration of this part of our unspoken creed. Although innovation proved quite possible, in some cases it may have brought more harm than good, more risk than opportunity. The difficulty lay largely in our inability to identify alertly and correctly where innovation turned into excess, where the effort to transcend old operational limits and restraints foundered on its own complexity and cost, and where innovation became an expression of preference about the war we wished to fight rather than an appropriate adaptation to the conflict that was actually in progress. Whether tactical or technological, innovation did not necessarily ensure coincidental respect for local conditions of warfare.

Viewing the war fundamentally as an insur-

gency, the Kennedy administration strongly supported measures to counter the enemy decisively within Vietnam. The Vietnam Combat Development and Test Center, a subsection of the Defense Advanced Research Projects Agency (DARPA), developed and improved fragmentation weapons, tested experimental defoliants, studied terminal guidance beacons, and considered improved shoulder weapons. The center's Deputy Director, William H. Godel, claimed that these and other measures might "bring [South] Vietnamese troops out of their Beau Geste forts and into active pursuit of the enemy."[1]

While DARPA fostered "higher technology," occasional voices questioned its pertinence to Southeast Asian conditions. For example, William J. Jorden of the State Department's Policy Planning Council, seeing the Vietcong problem as largely local in origin, favored dealing with it on a local and low-level basis. He recommended junk operations along the coast, riverine operations by the South Vietnamese, "small, special forces units" to make "hit and run" strikes against guerrilla substations along the infiltration trails, and "a few hard-hitting strikes" at enemy main bases "by tough, special forces outfits." Requirements would vary according to local conditions from the mountains to the delta, and Jorden warned against warping the war with alien, technocratic values.[2]

As the war continued, DARPA's efforts charted changes in how the conflict was perceived. By Senate hearings in 1967, for example, Secretary of Defense Robert S. McNamara cited DARPA's research to improve the speed of helicopters and to develop prototype airborne weapons for antitank action. Also, DARPA promoted CH-54 "flying crane" helicopters to move heavy Army equipment over otherwise impassable terrain. Such experimentation favored improving large ground units and using air power more for conventional than counterguerrilla warfare.[3]

Even a small sampling of tactical and technological innovations pursued in Southeast Asia suggests that assumptions and preferences skewed performance. Although they also reduced the guerrilla's edge in night operations, fixed-wing gunships reflected long-standing reliance on firepower. Defoliation and crop destruction indicated both an inclination to see the war on a larger scale and a desire to defy natural restrictions. Even adaptation of transport aircraft and bombers to meet tactical needs was an interplay between traditionalist thinking and pressing current problems. Altogether, efforts at innovation seemed to wander in an uncharted "DMZ" between brilliance and self-indulgence.

Fixed-Wing Gunships: Square Pegs, Varied Holes, and the Penknife of Innovation

Although the Air Force's official history praises individuals who advocated fixed-wing gunships as proof of the enduring importance of the human element, the need for their extraordinary persistence reflected an underlying diffidence within the service toward their goals. Unlike various strategic weapons, the gunship, as a support weapon, won little enthusiasm at the concept or preliminary development stage. Even more significantly, later interest in gunships sometimes depended more on their potential for interdiction than for support of ground forces. In a sense, the "square peg" of the gunship was whittled by technological and tactical innovation in an effort to fill varied mission "holes."

The gunship program emerged almost *despite* institutions. Air Force Lieutenant Colonel Gilmore Craig MacDonald introduced a proposal on "Transverse Firing of Rockets and Guns" to a Tactical Air Command (TAC) panel on 14 September 1961. It went nowhere within TAC. Ralph Flexman of Bell Aerosystems Company, while on a Reserve tour at Eglin Air Force Base late in 1961, met MacDonald and eventually submitted the proposal to Dr. Gordon A. Eckstrand of the Behavioral Sciences Laboratory at Wright-Patterson Air Force Base, Ohio. Another individual, Captain John C. Simmons, forwarded Flexman's proposal to the Aerospace Medical Research Laboratory (AMRL) and the counterinsurgency group on base. Attempting to "sidestep local flight-support requirements," as an official history phrased it, he asked the U.S. Army Laboratory at Fort Rucker, Alabama, to test the dispersal pattern for guns fired from the side of aircraft. This innovating impulse swam against the institutional tide.[4]

According to Jack S. Ballard, author of *Development and Employment of Fixed-Wing Gunships 1962-1972*, progress was "crablike," as key personnel were called away from the program. Rescuing the idea from limbo depended on another individual—Captain Ronald W. Terry. He expected the C-47 gunship to serve ground units more reliably than fighter aircraft brought in by forward air controllers (FACs)—particularly in poor weather.[5] Reluctantly, General Curtis E. LeMay, then Air Force Chief of Staff, approved combat testing of the C-47 in Vietnam. "It's not a very good platform and you can't carry the load," he later said. "You don't have the range, staying capacity, or anything else. They're too vulnerable both on the ground and in the air."[6] But pessimistic suspicions regarding the side-firing C-47 owed much to the Air Force's emphasis on fast planes and heavy firepower. General Walter C. Sweeney, Jr., then commander of TAC, also feared that the gunship weakened the Air Force's case against the Army's use of helicopters for fire support. Ironically, General Sweeney and TAC were responsible for employing the gunships in combat.[7] Although then Vice Chief of Staff General John P. McConnell justified the gunship to General Sweeney specifically in terms of counterinsurgency,[8] apprehensions about a massive war in Europe weighed against them. The key was which war seemed more pressing—the one in progress or the one yet to be fought.

In Southeast Asia, the special effectiveness of the gunships in night operations became persuasive. Captain Terry said that saving forts or hamlets at night became "the only thing we ever got to do." The first night missions were conducted on 23 December 1964 when one gunship on airborne alert was sent toward Thanh Yend, which was under heavy Vietcong attack, while another was sent to aid Trung Hung. In the latter village, defenders testified that the Vietcong broke off the attack with the first burst of fire from the gunship.

In July 1965, the U.S. Air Force hierarchy finally approved sending a squadron of gunships to Vietnam on a permanent basis. From inception to deployment, the task had taken

about four years. Those who complain that Americans will not fight a long war might ponder the effect of taking one presidential term to develop a suitable weapon.[9]

Notwithstanding their early successes in support of ground combat, the gunships were soon called to interdict Vietcong supply lines. To maximize nighttime capabilities, the Air Force initiated Project Red Sea to test forward-looking infrared (FLIR) systems on the FC-47 aircraft. Although these particular systems were judged inadequate, the pursuit of interdiction continued.[10]

Meanwhile, the primary operational role of the aircraft, now designated as AC-47, remained that of providing support for ground forces. Seventh Air Force Operations Order 411-65 specified the mission: "To respond with flares and firepower in support of hamlets under night attack, supplement strike aircraft in defense of friendly forces, and provide long-endurance escort for convoys." Before members of the Senate Armed Services and Appropriations committees in 1967, General John P. McConnell, then Air Force Chief of Staff, cited persistent guerrilla and small-unit threats and supported the AC-47 to counter them. More broadly, he saw a world "where subversive insurgency continues to spread . . ."[11] perhaps justifying special weapon systems to counter the tide.

Despite talk of counterinsurgency, gunship modifications played to interest in interdiction and to visions of a larger war. Thus, although the search for a more capable successor to the AC-47 stemmed first from such concerns as volume of fire and survivability, the issue gradually shifted from site defense toward interdiction.[12] For example, the Air Staff, in a paper dated 5 January 1968, specified the mission of AC-130s as around-the-clock interdiction of enemy supply routes through Laos. This mission objective diverged from the initial emphasis on direct support of ground forces.[13]

In February 1968, calling for an AC-119 G/K force to go along with the AC-130, Secretary of the Air Force Harold Brown accepted two roles for gunships. Secretary Brown wrote: "I see a clear distinction between the more localized support and protective role of the AC-119 aircraft and the predominantly search-and-destroy concept envisioned for the AC-130."[14] But the two basic roles did not appeal equally to Air Force officers. Seventh Air Force Operations Order 543-69 (July 1968) gave clear priority to "night interdiction and armed reconnaissance to destroy wheeled and tracked vehicular traffic on roads and sampans on waterways." Close support of friendly installations ranked third; and "offset firing in support of troops in contact by use of aircraft radar and ground beacons" was fifth. AC-130 missions turned away from the spirit that had given birth to the program.[15] Moreover, although the AC-119 had "close fire support of friendly troops in contact with the enemy" as its primary role, a combat evaluation team concluded in 1970 that the aircraft had helped Pacific Air Forces (PACAF) effectiveness because "it was capable of destroying trucks and attacking targets as assigned."[16] Again, fire support was eclipsed by interdiction.

The continued operation of the gunships sustained internal debate in the Air Force. Those who advocated interdiction with jets doubted that propeller-driven gunships were effective. Although a JCS study in 1967 had shown propeller-driven craft to be nine times as effective per sortie as jet aircraft in killing trucks and watercraft, opponents noted loss rates four times greater than for jets. Just beneath the surface lay a doctrinal quarrel over force structure and the relative worth of Air Force roles. To some, the slower aircraft implied subordination to the ground effort and ground commanders; faster aircraft implied more autonomous air operations. The need to use F-4 aircraft to suppress antiaircraft fire against the AC-130s seemed to subordinate jet aircraft further.[17] Thus, improvements to the AC-130, under the name Surprise Package, sharpened the quarrel. TAC, the Air Staff, and

the JCS urged gradualism, while then Secretary of the Air Force Robert Seamans and Secretary of Defense Melvin Laird backed rapid development of a full Surprise Package gunship force.[18] The challenge was to improve performance today without damaging doctrine and the service's interests tomorrow.

Interdiction became a persistent theme, yet, in periods of acknowledged emergency, temporary changes in gunship operations restored the primacy of the fire support role. During the Tet offensive of 1968, for example, AC-47s attacking around Da Nang were credited with restraining the expected attacks. Also impressive was the defense of outlying camps, such as the Civilian Irregular Defense Group (CIDG) and Military Assistance Command, Vietnam (MACV) compound at Duc Lap in Quang Duc Province, which was attacked by enemy forces on 23 August. Army helicopters responded within 30 minutes; two AC-47s arrived shortly thereafter. Officers on the ground said that the firepower (761,044 rounds) strengthened their resolve.[19] The withdrawal of friendly forces from the Ngoc Tavak outpost of the Kham Duc base depended on AC-47 Spooky gunships. On 10 May 1968, with Ngoc Tavak under attack by well-armed enemy forces, firepower from AC-47s and from tactical fighter sorties helped to prevent the forces from being overrun.[20] Also, as General William Momyer later stated, during the North Vietnamese Easter offensive of 1972, An Loc "would have been lost without the day and night support flown by fighters and the AC-130 and AC-119 gunships."[21] Debate persisted over the role of gunships in interdiction, but their contributions to site defense were clear.

Fire support sometimes produced obvious results, but crews supposedly did not get satisfaction from it. In mid-1969, for example, AC-130s were diverted from Commando Hunt interdiction and AC-47s from operations in South Vietnam to counter North Vietnamese and Pathet Lao attacks on Lima Site support and operational bases used by friendly forces in northern Laos. No one could pinpoint the number of enemy attackers offset by one gunship or the number of gunship rounds needed to disintegrate enemy morale. Yet both benefits were cited during this emergency action.[22] Nevertheless, the Air Force official history states, "Since their truck-killing could be verified quite closely, the gunship crews found the usual absence of specifics from their attacks to aid troops somewhat demoralizing."[23]

Debate over the gunship's worth in interdiction intensified in the 1970s even as its value in site defense enjoyed acceptance. In April 1971, the Air Staff advised Air Force commanders in Southeast Asia: "AC-130 BDA [bomb damage assessment] is the hottest thing in the theater this moment." The message continued:

> Seventh Air Force is really concerned about the validity of the BDA reported by the AC-130 gunships in their truck killing operation. They stated all aircraft BDA for this hunting season indicates over 20,000 trucks destroyed or damaged to date, and if intelligence figures are correct, North Vietnam should be out of rolling stock. The trucks continue to roll, however.[24]

Meanwhile, the value of the gunships in night fire support—during Lam Son 719, for example—was generally beyond controversy.[25]

Nevertheless, the fragility of the "truck count" soon emerged. On 12 May 1971, for example, a test was undertaken on orders from Seventh Air Force Commander General Lucius D. Clay, Jr., at Tan Son Nhut Air Base. A direct hit from an AC-130 left a truck damaged but operable, while several other trucks were usable after only limited maintenance. Similarly, tests conducted during the autumn of 1971 at Hurlburt Field, Florida, showed that while a 105-mm M102 cannon could take out a truck with a single shot, the 40-mm gun could not.[26] Overall, the "truck count" numbers in interdiction form a cloud hanging over claims for the interdiction program.[27]

Missions that sparked the gunship program in the first place (and which were reconfirmed during emergencies in the war's later stages)

lost priority to more debatable ones with greater policy, doctrinal, and institutional appeal. Perhaps the technical and tactical virtuosity of U.S. personnel permitted—even encouraged—modifications which, rather than perfecting the innovation, actually changed it and undercut its initial purpose.

War and the Environment

Although the term *operational environment* has usually implied limitations within which armed forces act, innovative applications of air power permitted various U.S. officials both in and out of uniform to see the physical environment of Vietnam not as a given but as something to be changed. If various counterinsurgency programs might dry up the "sea of the people" in which Mao said the guerrilla-fish swam, might not jungles be thinned—even bared—to expose the enemy? And if not everywhere, might not such landscaping be done at least selectively?

The practical advantages of changing the combat environment seemed obvious. By exploiting U.S. chemical and mechanical know-how, U.S. and South Vietnamese troops might operate where it was otherwise too dangerous. South Vietnamese road and rail lines might be made safer. Further, in an engagement, the cost to friendly forces might be contained.

However, the methods adopted to pursue such goals proved costly. Our persistence owed something to pride in and love of our technology (suggested in the advertising slogan "better living through chemistry"); it also might be attributed to our reluctance to take Vietnam on its own terms. Within the "life-cycle" of the defoliation effort in Operation Ranch Hand, for example, some divergence appeared between its use to defend friendly sites and its somewhat later use to restrict the enemy by destroying his crops. In a sense, this dualism in Ranch Hand recalled the assignment of gunships to interdiction, where institutional interests changed the early purpose of the innovation.

At first, expectations of what the Tactical Air Command's Special Aerial Spray Flight (SASF) might contribute to the Vietnam War were low, concentrating on insecticide application.[28] By July 1961, however, interest in defoliation had risen. By August, the first test runs were undertaken in Vietnam, with President Ngo Dinh Diem personally selecting the target area for the second mission. The South Vietnamese president was willing to use even restricted chemical, biological, and radiological weapons (CBR). Defoliation to improve the combat conditions on the ground interested him less than crop denial. By October, the U.S. Secretaries of State and of Defense and President Kennedy were considering large-scale defoliation of Vietnamese jungles. President Kennedy delayed. Nevertheless, the Combat Development and Test Center, established in Vietnam with U.S. assistance and management, had already been testing defoliation and, by 23 September, had plans for a large operational program in border areas to "remove protective cover," defoliate Vietcong base areas, kill the manioc which the Vietcong used for food, and destroy the mangrove swamps where Vietcong forces hid. Taken together, the two phases of the program would have defoliated 31,250 square miles of jungle—about half the land area of South Vietnam—as well as 1125 square miles of mangrove swamps and 312 square miles of manioc.[29]

On 3 November 1961, the Joint Chiefs of Staff recommended a more modest program to Secretary McNamara, who, although officially undecided, directed the Air Force to provide aircraft and chemicals for it on a priority basis. Within a week of McNamara's order, William Bundy, Acting Assistant Secretary of Defense for International Security Affairs, summarized the benefits and disadvantages of the program, distinguishing between defoliation, which the United States might undertake, and crop denial, which would be handled by the Vietnamese. Deputy Secretary of Defense Roswell Gilpatric and Secretary of State Dean Rusk sup-

ported the proposal, and President Kennedy approved the joint recommendation on 30 November 1961. Thus, within a five-month period, the modest basis for what eventually turned into an extensive program of defoliation and crop destruction was established.[30]

Soon, however, Defense Department officials were debating the effectiveness of the Ranch Hand experiment, as were members of both the mission in Saigon and the State Department. Ambassador Frederick Nolting, PACAF Commander General Emmett O'Donnell, and Secretary McNamara approached the matter from varying perspectives.[31] On 10 March 1962, after reports that Ranch Hand's results had been at best ambiguous, TAC formally requested that Air Force headquarters return as many C-123s as possible to TAC in the United States. PACAF demurred, suggesting that retaining the C-123s would offset a possible Army encroachment in troop transport in Southeast Asia with its Caribous.[32] In late November 1962, Secretary McNamara recommended, and President Kennedy approved, delegating joint authority to the Commander, United States Military Assistance Command, Vietnam (COMUSMACV) and to the ambassador to approve future defoliation operations short of crop destruction. The explicit purposes were "to clear fields of fire to inhibit surprise attack by the Vietcong" and to apply defoliants "in areas wherein attainment of a military objective would be significantly eased."[33] In short, the principal intent was to give practical support to U.S. and South Vietnamese ground personnel.

But defoliation was not undertaken exclusively for its direct effects on ground combat operations. For example, keeping the railroads operating in South Vietnam served the goals of psychological warfare, while inviting experimentation with defoliation to reduce the danger of Vietcong attacks by increasing visibility along the railroad routes. But applying chemicals along a tightly restricted corridor encouraged the use of ground spraying systems rather than aircraft.[34] Air Force operational interests inclined in a different direction.

Gradually, Ranch Hand assumed an aspect broadly akin to interdiction. In December 1965, for example, Ranch Hand operations were extended into parts of southern and eastern Laos to clear, at least partially, areas through which the Ho Chi Minh Trail system passed. Ambassador William Sullivan in Vientiane first called the plan a "bottomless pit." But by November 1965 General William C. Westmoreland, Commander, MACV, and Admiral Ulysses S. Grant Sharp, CINCPAC, had come out in favor of it, and the plan won the support of the Secretaries of Defense and of State. Ambassador Sullivan eventually acceded. In May 1966, Westmoreland and Sharp also received Washington's approval for crop destruction (itself a kind of interdiction), although operations with that objective in mind never became extensive in Laos.[35]

Even as the defoliation effort grew, so did doubt over the program's effectiveness. In congressional hearings in 1967, General McConnell told Senator A. S. "Mike" Monroney that he did not "think there [was] anything we need to do that we are not doing, except just more of it." Only small jungle areas could be cleared, and the effort had to be continued to prevent new growth.[36] In short, the effectiveness of defoliation hinged on substantial continuing costs, which could constrain the buildup of other assets needed for the war effort. In January 1968, Ambassador Ellsworth Bunker in Saigon created the Herbicide Policy Review Committee, composed of members from the U.S. Embassy, the U.S. Agency for International Development (USAID), MACV, and the Joint U.S. Public Affairs Office (JUSPAO), to evaluate defoliation. Although the committee claimed that many lives had been saved by the operations, the number was said to be "undeterminable."[37]

Defoliation thus remained hard to evaluate.[38] The criteria for effectiveness shifted subtly but crucially over the lifetime of the pro-

gram. At first, the intent was to secure specific sites and railroad lines; but gradually the primary goal became generalized to reducing U.S. casualties. Securing the South Vietnamese government thus yielded to the substantially defensive aim of limiting U.S. losses. Higher authorities' sense of where defoliation fit into the broader picture lost the accents of dynamism and initiative, and the program's focus split between ground support and interdiction roles.

Meanwhile, the costs of defoliation remained extraordinarily difficult to calculate cleanly or to evaluate. Although Ambassador Bunker's committee knew the program had negative psychological, social, and economic potential, the long-term human and financial burdens were not estimated. In addition, the technical limits of defoliation changed what some had imagined would be a one-shot affair, into a continuing burden. Much like the bombing north of the DMZ, which, it was argued, could not be stopped without creating a negative psychological impression, defoliation became a self-sustaining requirement. Although conceptually plausible, defoliation and crop destruction faltered in the execution. Only the future will reveal their full cost.

Tactical Innovation and the B-52

One of the knottiest cases of innovation in the war involved the use of B-52s to support the ground war, which entailed both technological adaptation of aircraft and tactical or "mental" adaptation by military and civilian officials. Although the United States had considered using bomber-aircraft to support ground warfare before the 1960s, including a proposed B-29 raid to relieve the French garrison at Dien Bien Phu, skepticism was widespread.[39] A 1954 study from the Air Force planning staff observed that the effectiveness of bombing in such a war, especially by B-29 bombers, was limited by several factors. Notable were the mismatch between targets desired and targeting information available, the complex character and fluctuating level of ground operations, and the comparative unpredictability of the attitude of the local population.[40] The French experience against the Vietminh and the U.S. experience in support of the French left a legacy of doubt that air power could be used effectively as support for ground action, especially in the form of bombing missions by strategic aircraft. Confidence grew during the Vietnam War, and the reasons for doubt appear to have slipped from primary concern.

Opinions concerning B-52 support of ground operations varied according to time and conditions, including the precision with which areas were targeted and what results had been expected. The initial focus positively linked bombing to ground action. During the 1960s, General Westmoreland favored B-52 strikes against suspected Vietcong base areas. "Earlier attacks by tactical bombers had proven relatively ineffective," General Westmoreland recalled, "so deeply had the Vietcong dug in and dispersed their installations."[41]

On 14 May 1965, General Westmoreland wrote to Admiral Sharp, praising Operation Black Virgin One, conducted on 15 April 1965 against the supposed Vietcong headquarters. Still, it took 443 sorties to deliver 900 tons of ordnance over the 12 square kilometers of target area. Clearly pointing toward the B-52s, he added, "If an attack could have been launched in which the bombs were evenly distributed, the results would have been far more effective."[42]

The basis for Arc Light bombing was being laid. The first strike occurred on 18 June; investigating patrols brought back enthusiastically positive reports.[43] Commenting later on Operation Cedar Falls, 1st Infantry Division Commander General William DePuy concluded that bombing and artillery fire had "certainly disrupted VC activity" in the Iron Triangle. However, he added that "B-52 strikes and artillery bombardment could not be exploited with ground troops" since there were "simply no access routes, air or ground, into the heart of

the Triangle."[44] Bombing not tied closely to ground operations struck him as inconclusive.

Using B-52s even closer to friendly positions emphasized this tie of air to ground. Close use originated rather inadvertently when a B-52 mission flown out of U Tapao, Thailand, on 12 November 1967 during operations around Con Thien dropped bombs within the 3-kilometer safety zone. This strike came under General William Momyer's SLAM concept (for seeking, locating, annihilating, and monitoring the enemy). "Off and on for forty-nine days," General Westmoreland recounted in his memoirs, "SLAM strikes pummeled the enemy around Con Thien and demonstrated that massed firepower was in itself sufficient to force a besieging enemy to desist. . . ." Marine defenders, some 1.4 kilometers from the point of impact of the strike, appreciatively watched a tremendous array of secondary explosions.[45]

Even if close B-52 operations at Con Thien were something of a lucky accident, they gave precedent for improving support of the ground forces. On 8 January 1968, SAC personnel and representatives of the III Marine Amphibious Force discussed potential benefits from Con Thien's lessons. With Air Force personnel reluctant to discard the 3-kilometer safety limit, the Marines suggested tests and possible use of additional radar beacons. The basic ground direction for the B-52s came from Combat Skyspot installations, which also served attack-planes and fighter-bombers. Without this all-weather capability, defending such sites as Khe Sanh would have been much more difficult and complicated; and the President and General Westmoreland might have been less willing to commit to Khe Sanh's defense without it.[46]

After more thought, Air Force General Selmon Wells, Commander of the 3d Air Division on Guam, concluded that additional beacons would merely complicate the Combat Skyspot mission and would be highly vulnerable to enemy attack. Finally, a B-52 from U Tapao carrying 108 500-pound bombs ran a test mission on 26 February, guided by Skyspot; the delivery was precise and equipment operated well. The following day, four missions were run close to the defenders at Khe Sanh. During March, forty-four close-support B-52 sorties were run, becoming routine.[47]

The wide range in judgments about the effectiveness and appropriateness of B-52 operations in Vietnam reflected, among other things, the considerable range in preparations made for them. Although mere dropping of bombs may sometimes hearten ground forces, bombing is really meaningful only when correctly targeted on worthwhile enemy facilities, resources, and concentrations. In Southeast Asia, this meant added intelligence through sensors coupled with other electronic systems. Thus the success with B-52s at Khe Sanh was not repeatable without technical preparation.

For example, B-52 strikes did not much lessen an enemy attack on a special forces camp at Kham Duc in May 1968. Although several hundred tons of bombs were dropped on suspected enemy positions, the enemy, secured in high ground over Kham Duc, was apparently little hindered.[48] The following morning, renewed B-52 strikes were aimed at suspected enemy concentrations around Kham Duc. These strikes had become particularly critical, since Spooky AC-47 gunship attacks and fighter support supplied through the I Corps Direct Air Support Center (IDASC) had not prevented during the previous day the fall of the seven outposts ringing the main base.[49] The B-52 bombing took place an hour before the morning fog lifted, but the several hundred tons dropped evidently did little to diminish the enemy's ground attack. North Vietnamese regiments came at the camp at 0935, and support and evacuation were now complicated by the enemy's advantageous placement around the airstrip.[50] By the time ordnance could be delivered accurately, the enemy's proximity to Kham Duc and effective disposition made the use of air power extremely costly. The successful extraction of military and civilian personnel during the ensuing hours came at the cost of seven

U.S. aircraft: a CH-47 and an A-1E, as well as a Marine CH-46, one USAF 0-2, one Army UH-1C, and two C-130s. Some 120 U.S. Air Force tactical fighter and 16 Marine fighter sorties were flown on 12 May, as well as a C-130 ammunition airdrop and numerous Army helicopter gunship sorties. Some 1500 of the 1760 persons at Kham Duc on 10 May were safely removed on 12 May by the end of the operations at 1645; however, the cost and the urgency of the action made it no cause for unqualified elation.[51] The B-52s, in this instance, may have proved more useful in attacking the camp after it fell (some 6000 bombs were dropped within 500 yards of the runway). Despite the fact that the camp was lost, the B-52s became more useful as the accuracy of their drops rose. Thus, Kham Duc did not suggest that the B-52 was irrelevant to tactical support, but it did show the urgency of precision.[52]

The great expectations encouraged at Khe Sanh evidently survived the frustration of Kham Duc, but some new operations did not match the conditions under which B-52s had been effective in the past. At the end of the 1960s, U.S. personnel engaged in cross-border activities into Laos apparently assumed the best of the B-52s. Randolph Harrison, an Army officer in the Daniel Boone-Salem House reconnaissance operations into the Cambodian border area, recalled that he "had been told that B-52 strikes will annihilate anyone down there." He added: "We were told that we would go in and pick some of these guys up [as enemy prisoners; and] if there was anybody still alive out there, they would be so stunned that all you will have to do is walk over and lead him by the arm to the helicopter."[53] Such optimism was excessive. Harrison recalled that a reconnaissance team that went into Cambodia after one B-52 strike lost ten out of thirteen men; he wanted to say that they had been "slaughtered."[54] In this instance, an Army major at the Military Assistance Command, Study and Observation Group (MACSOG) in Saigon who lacked requisite personal experience took direct control of what he called a special mission (again, because it used B-52s), and confusion was substantial. After the helicopters landed and the team cleared, the men came under heavy automatic weapons fire before they could reach the tree line. When the major decided to send a second team immediately into the same area, some men objected and urgently demanded their customary prerogative of specifying their own landing zone. Tested procedure was impeached once the B-52s came into play.[55]

Harrison and other junior officers seem not to have been cautioned about the limits of effectiveness of B-52 strikes. A well-delivered strike on hard-surface roads, reinforced bunkers, and base-camp shelters had obvious results, as did a timely strike on a troop concentration. However, when B-52 strikes began in Cambodia in 1969, planners could not carry out advance preparations to ensure an effective drop as readily as they could at Khe Sanh or Con Thien. If a B-52 strike hit enemy forces, its effect was "devastating." But if it did not destroy them, the effect was "the same as taking a beehive the size of a basketball and poking it with a stick"—enemy forces became "mad."[56]

Even against falsely high expectations, however, ground troops tended to want B-52 operations. Testifying before the Senate Armed Services Committee, Thomas J. Marzullo, formerly an Army sergeant in Special Operations, doubted that bombing took a high direct toll on the enemy but thought that it forced them to disperse supply bases and be more secretive. (Others have argued, however, that this dispersal widened the zone of combat deeper into Cambodia.) Although the B-52s had mostly killed "a few monkeys and some birds and tore up a lot of vegetation," Marzullo still said the program was "definitely helpful."[57]

Similar testimony in support of B-52 strikes came from Air Force Lieutenant Gerald Joseph Greven. Uninformed of B-52 strikes in Cambodia when he was stationed at the Special Forces camp at An Loc, Greven observed overflights of B-52s in May 1969, followed by numerous large

flashes on the horizon. He later called it "visually the most destructive raid I had ever witnessed," claiming that "numerous base camps and staging areas had obviously been destroyed as the materials scattered in the treetops indicated." Although he observed no bodies, Greven pronounced the strike effective.[58]

Later reliance on aerial firepower yielded varied assessments of B-52 effectiveness. During the North Vietnamese Army's Nguyen Hue offensive in 1972, Army Brigadier General John R. McGiffert called the B-52 force "the most effective weapon we have been able to muster." B-52 raids, he noted, force "the enemy to break up his ground elements into small units and make it difficult [for him] to mass forces for an attack."[59] Yet using B-52s for strikes discouraged using well-trained provincial militia to overcome the enemy independently, and some strikes were counterproductive. For example, the Army of the Republic of Vietnam's (ARVN) 25th Division commander chose to bomb the enemy out of positions at Trung Lap in Hau Nghia province. The ensuing air strikes came in for some thirty-six hours, all but obliterating the village. According to U.S. personnel on the scene, the destruction of some 50 percent of the village overall—including the almost total disappearance of one of its hamlets—played into the hands of the Communists. The challenge, then, was to determine when such strikes were genuinely necessary.[60]

Augmentation of ground operations with air power made sense. Substitution of air power for manpower was another matter entirely, inviting as many problems as it handled—problems lethal to the overall war effort. That excessive dependence on air power can be demoralizing is suggested by rises in morale when troops, whether militia or regular, defeated the enemy without air strikes or gunships. Although there was much that air power could do, there were some things that might be done best by men—in part, to inspire them to fight with dedication and persistence.[61]

Despite the long-standing concern to preserve the B-52's identity as a strategic weapons system, it proved possible to use the B-52 in Southeast Asia in tactical support of ground units with some success, provided preparations were appropriate. Where preparations were sparse and where strikes were undertaken with little or no ground exploitation, results were nonadvantageous or ambiguous. Comprehensive assessment of B-52s in Southeast Asia remains a contentious issue, but perhaps the value and effectiveness of adapting these aircraft to augment tactical operations on the ground may be evaluated largely by how the ground combat developed.

Self-Sustaining Change

Officials who praised the adaptability of U.S. forces were far less eager to note that innovations related to air power not only were often expensive and complicated but also could have made our forces highly vulnerable if the United States had not enjoyed air control. Innovations added new problems and challenges. General Wallace Greene, Commandant of the United States Marine Corps, for example, testifying before the Senate Armed Services Committee and the Defense Appropriations Subcommittee of the Appropriations Committee on 24 March 1966, spoke proudly of Marine expeditionary airfields.[62] But their aluminum matting (as at Chu Lai) was often damaged by the shock of landings and by the blast of jet-assisted takeoff (JATO). Marine officials called for stronger materials and favored installing catapults and arresting gear, much like those on aircraft carriers. But at Khe Sanh, the vulnerability of even a strengthened metal strip to wear by friendly aircraft and to damage from the enemy made the value of such systems limited. Moreover, to make expeditionary airfields workable and the aircraft using them mission-capable, pressures were created on other elements of air power. While the Chu Lai field was still 3300 feet long (its original length), aircraft with full ordnance could be launched only by using JATO—and

then only with reduced fuel loads. After launch, the attack aircraft had to refuel from KC-130 tankers. One tanker was kept constantly on 15-minute alert. In a sense, the expeditionary airfields created a ripple effect of requirements—and each ripple might have offered lucrative targets to an enemy with greater air capability.

Certainly, innovation is not inherently a poor or risky business, but it is not inherently beneficial either. Its success depends upon pertinence to the situation, and pertinence is often decided in a turmoil of competing ideas driven by predispositions and clouded by illusions of scientific neutrality. The ultimate limits of innovation are set in the human mind and in the environment of prevailing policy—unfortunately all too often tied only loosely to the material needs of forces actually deployed. The limits in the hardware that we develop are more easily overcome than those inherent in our own "human software." During the Vietnam War, the apparent success of technological innovations over the short run encouraged the illusion that these adaptations were working in the long run. This self-deception contributed to failure in the war, in part, because it deflected attention from fundamental strategic and managerial defects that needed addressing. Meanwhile, as innovative "fixes" created the false perception that they were resolving problems created by U.S. policies, there was sporadic movement away from the initial purposes of various innovations, and pursuing important tasks explicitly in support of ground forces faltered before the allure of autonomous operations. Whether such preference can be safely accommodated in a future war remains to be seen. Yet one might do well to suspect innovations that coincide nicely with what one *feels* like doing, since these alterations may suit institutional traditions and parochial interests more than the material problems of the war at hand.

Even more suspect are innovations altering the character of the war itself or, even worse, confirming predispositions of what kind of war it *really* was or is. Innovations should ease winning the war, not add to bureaucratic tension. At times, some vision other than one's own may better serve this end. Similarly, one must be open to recognizing that some "innovations" sustain operations only long enough to bring frustration, not ever delivering favorable results. Defoliation along Vietcong supply routes in Laos—opposed by Ambassador Sullivan and favored by General Westmoreland and Admiral Sharp—is an example. Such innovative practices, as they were carried out, represented the convictions of *neither* side of the debate; and it remains worth considering why, under such circumstances, they should ever have been done at all. "Compromises" of this type suggest that the underlying value of innovation may be in its finessing of bureaucratic hostilities. Military officers who denounced the way a program was being conducted nonetheless advocated that the operations be continued, failing to sense that what seemed militarily "marginal" was worse than worthless because it contributed to incoherence in the U.S. military effort as a whole. Such cases suggest that welcome limits for innovation might start with the limits of common sense.

Center for Aerospace Doctrine, Research, and Education
Maxwell AFB, Alabama

This article was written while the author was a Visiting Research Fellow in the Airpower Research Institute, Center for Aerospace Doctrine, Research, and Education (CADRE). It draws on material from a book-length study to be published by CADRE in 1985.

Notes

1. William H. Godel, Deputy Director, Vietnam Combat Development and Test Center, DARPA, "Progress Report: Vietnam Combat Development and Test Center," 13 September 1961, in Kennedy Papers, National Security File, Countries file, Vietnam (9/61) folder.

2. Memorandum from Robert H. Johnson for Walt Rostow, 8 August 1961, in Kennedy Papers, National Security File, Countries file, Vietnam (8 61) folder; Godel, "Progress Report," loc. cit.; memorandum from William J. Jorden for Maxwell Taylor, 27 September 1961, in Kennedy Papers, National Security File, Regional file, Southeast Asia General (10 6 61-10 10 61) folder.

3. Testimony of Secretary of Defense Robert McNamara, U.S. Congress, Senate, Committee on Armed Services and Subcommittee on Department of Defense of the Committee on Appropriations, *Military Procurement Authorizations for Fiscal Year 1967, Hearings*, 89th Cong., 2d sess., 23 February 1966, pp. 162-63.

4. Jack S. Ballard, *Development and Employment of Fixed-Wing Gunships 1962-1972* (Washington, D.C.: Office of Air Force History, 1982), pp. 1-3. Ballard specifically indicates that the importance of fixed-wing gunships grew because a guerrilla war prevailed—that is, the gunships appeared valuable to the extent that one saw the war as an encounter with elusive guerrillas who were conducting a complicated insurgency. In other versions of what sort of war the conflict in Vietnam was, the gunships might not seem as valuable.

5. Ballard, pp. 3-10.

6. Interview of Dr. Thomas G. Belden with General LeMay, 29 March 1972.

7. Ballard, pp. 13-14. Also see Kenneth Sams, *First Test and Combat Use of AC-47* (Hickam AFB, Hawaii: Headquarters Pacific Air Forces, Project Checo, December 1965).

8. Ballard, pp. 14-15.

9. Ibid., pp. 20-21, 25-26.

10. Ibid., pp. 33-34.

11. Testimony of General John P. McConnell, U.S. Congress, Senate, Committee on Armed Services and the Subcommittee on the Department of Defense of the Appropriations Committee, *Military Procurement Appropriations for Fiscal Year 1968, Hearings*, 90th Cong., 1st sess., 2 February 1967, p. 842. For information on gunships and air base defense, see Roger P. Fox, *Air Base Defense in the Republic of Vietnam 1961-1973* (Washington, D.C.: Office of Air Force History, 1979).

12. Ballard, pp. 35-36. Also see Marvin Cole, *Fixed-Wing Gunships in SEA (July 1969-July 1971)* (Hickam AFB, Hawaii: Headquarters Pacific Air Forces, Directorate of Operations Analysis, 1971).

13. Ballard, pp. 94-97; Richard F. Kott, *The Role of USAF Gunships in SEASIA* (Hickam AFB, Hawaii: Headquarters Pacific Air Forces, Project Checo, 30 August 1969), p. 26.

14. Quoted in Ballard, *Fixed-Wing Gunships*, p. 179.

15. Ballard, pp. 106-07.

16. Ibid., pp. 204-05. The AC-119 was subsequently described in this official history as the "main interdiction force in Cambodia" at the start of the 1970s.

17. Ibid., pp. 110-11; Message, Joint Chiefs of Staff to CINCPAC, Subject: The Use of Propeller and Jet Aircraft in Laos, 201740Z December 1967.

18. Ballard, p. 142.

19. Ibid., pp. 61-62.

20. Alan L. Gropman, *Airpower and the Airlift Evacuation of Kham Duc* (Maxwell AFB, Alabama: Airpower Research Institute, Air University, 1979), pp. 7-8.

21. General William W. Momyer, *Air Power in Three Wars* (Washington: GPO, 1978), p. 332.

22. Ballard, pp. 67-69.

23. Ibid., p. 239.

24. Message quoted in Ballard, p. 169.

25. Ballard, p. 171.

26. Henry Zevbel, "Truck Count," *Air University Review*, January-February 1983, pp. 36-45.

27. See, for example, the elaborate tables on the performance of gunships in Kott, *The Role of USAF Gunships in SEASIA*. Also see cost-effectiveness data prepared by the staff of Secretary of the Air Force Brown, such as Memorandum, Hugh E. Witt to Assistant Secretary Robert H. Charles, Subject: "Estimated Cost to Destroy Damage a Truck in Laos," 2 May 1968.

28. William A. Buckingham, Jr., *Operation Ranch Hand: The Air Force and Herbicides in Southeast Asia 1961-1971* (Washington, D.C.: Office of Air Force History, 1982), pp. 6-8. The Cornell University Air War Study group included the effects of bombing (such as cratering) in a comprehensive judgment on the environmental impact of U.S. efforts in Vietnam. See Ralph Littauer and Norman Uphoff, editors, *The Air War in Indochina* (Boston: Beacon Press, 1972 rev.). For additional critiques, see T. Whiteside, *Defoliation* (New York: Ballantine Books, 1970); B. Weisberg, editor, *Ecocide in Indochina* (San Francisco: Canfield Press, 1970); and Stockholm International Peace Research Institute (SIPRI), *Ecological Consequences of the Second Indochina War* (Stockholm: Almqvist and Wiksell, 1976).

29. Buckingham, pp. 13-15.

30. Ibid., pp. 16-22.

31. Ibid., p. 45.

32. Ibid., p. 46.

33. Ibid., p. 67.

34. For specific information on ground-spraying operations for railroad security, see Cable 18, COMUSMACV to RUHLHQ/CINCPAC, 18 January 1964, in Johnson Papers, National Security File, Countries file, Vietnam Cables Vol. II (12 63-1 64).

35. Buckingham, pp. 116-19. Also see Pacific Command (PACOM) Scientific Advisory Group, "Crop Destruction Operations in RVN during CY 1967" (a 1967 report) and John F. Trierweiler, "Vegetation Control in Southeast Asia" (Kirtland AFB, New Mexico: USAF Weapons Laboratory, 1968).

36. Testimony of Secretary Harold Brown and General John P. McConnell, U.S. Congress, Senate, Committee on Armed Services and Subcommittee on the Department of Defense of the Committee on Appropriations, *Military Procurement Authorizations for Fiscal Year 1967, Hearings*, 89th Cong., 2d sess., 30 March 1966, pp. 945-46.

37. Buckingham, pp. 145-46; AMEMBASSY Saigon, "Report of the Herbicide Policy Review Committee," 28 May 1968, quoted in Buckingham.

38. Among the contemporary efforts to evaluate defoliation is Congressional Research Service, *Impact of the Vietnam War* (Washington, D.C.: U.S. Government Printing Office, 1971), prepared for the Senate Committee on Foreign Relations, especially p. 10ff. Also see Congressional Research Service, *Agent Orange: Veterans' Complaints Concerning Exposure to Herbicides in South Vietnam* (Washington, D.C.: Library of Congress, 1980), and Major Alvin L. Young, "Agent Orange at the Crossroads of Science and Social Concern," Air Command and Staff College Research Report (Maxwell AFB, Alabama, May 1981). For an unflattering commentary, see J. Lewallen, *Ecology of Devastation: Indochina* (Baltimore: Penguin Books, 1971). Also see W. B. House et al., *Assessment of Ecological Effects of Extensive or Repeated Use of Herbicides* (Kansas City, Missouri: Midwest Research Institute, 1967).

39. See Robert F. Futrell with Martin Blumenson, *The United States Air Force in Southeast Asia: The Advisory Years to 1965* (Washington, D.C.: Office of Air Force History, 1981), pp. 24-25.

40. "Study, Directorate of Plans, 19 April 1954," in *History of the Directorate of Plans, USAF*, January-June 1954, pp. 90-92.

41. General William C. Westmoreland, *A Soldier Reports* (Garden City, New York: Doubleday, 1976), p. 137.

42. Quoted in U. S. Grant Sharp, *Strategy for Defeat: Vietnam in Retrospect* (San Rafael, California: Presidio Press, 1978), pp. 87-88.

43. Ibid. Even the Arc Light bombings, for which considerable success could be claimed and in which considerable security could be enjoyed by B-52 crews, were not without their hazards. The first Arc Light strike on 18 June 1965 was marred by the loss of two B-52s, which collided in midair in their refueling area. Although

there were five refueling tracks, all were at the same altitude, and the 20-nautical-mile separation of the tracks proved inadequate. Later, to correct for timing discrepancies, provision was made to fly a triangular pattern just before entering the refueling area. Charles K. Hopkins, *SAC Tanker Operations in the Southeast Asia War* (Offutt AFB, Nebraska: Office of the Historian, Headquarters Strategic Air Command, 1979), p. 14.

44. Bernard William Rogers, *Cedar Falls-Junction City: A Turning Point* (Washington, D.C.: Department of the Army, 1974), p. 78.

45. Bernard C. Nalty, *Air Power and the Fight for Khe Sanh* (Washington, D.C.: Office of Air Force History, 1973), p. 116. Tactical air strikes at Khe Sanh were brought in as close as 400 yards. Westmoreland, p. 340.

46. Nalty, pp. 66-67.

47. Ibid., p. 116.

48. Gropman, p. 9. Somewhat ironically, sensors originally set out as part of the McNamara Line at the DMZ were relocated around Khe Sanh during the Niagara operation preparatory to the extensive use of B-52s.

49. Ibid., pp. 11-12.

50. Ibid., pp. 14-15.

51. Ibid. p. 29.

52. Ibid.

53. Testimony of Randolph Harrison, *Hearings*, U.S. Congress, Senate, Committee on Armed Services, *Bombing in Cambodia, Hearings*, 93d Congress, 1st sess., p. 245.

54. Ibid., p. 235.

55. Ibid., pp. 247-48.

56. Ibid., p. 239.

57. Testimony of Thomas J. Marzullo, U.S. Congress, Senate, Committee on Armed Services, *Bombing in Cambodia, Hearings*, 93d Congress, 1st sess., p. 271.

58. Testimony of Gerald Joseph Greven, U.S. Congress, Senate, Committee on Armed Services, *Bombing in Cambodia, Hearings*, 93d Congress, 1st sess., p. 279.

59. Quoted in Drew Middleton et al., *Air War—Vietnam* (Indianapolis: The Bobbs-Merrill Company, 1978), p. 102.

60. Stuart A. Herrington, *Silence Was a Weapon: The Vietnam War in the Villages* (Novato, California: Presidio Press, 1982), p. 129.

61. Ibid., pp. 132-33.

62. Testimony of General Wallace M. Greene, Jr., U.S. Congress, Senate, Committee on Armed Services and Subcommittee on Defense Appropriations of the Appropriations Committee, *Military Procurement Authorizations for Fiscal Year 1967, Hearings*, 89th Cong., 2d sess., 24 March 1966, pp. 670-71.

The United States is in danger of allowing its strategy to be determined by its weapons rather than its weapons being determined by its strategy.

Rear Admiral Henry E. Eccles, USN (Ret)
Christian Science Monitor, 1 October 1981

IMPROVING FORCE FLEXIBILITY THROUGH V/STOL

LIEUTENANT COLONEL PRICE T. BINGHAM

WORLD War II revealed the importance of air bases in air operations. German invasions of European countries were marked by early, determined efforts to capture or destroy airfields and annihilate enemy air forces while they were still on the ground. The Germans also assigned great importance to establishing base facilities quickly if captured fields were unavailable. In the beginning phases of the Pacific war, Japanese armed forces followed a similar course of action with regard to destroying enemy air forces and capturing their supporting bases.[1]

Later, when the Allies took the offensive, air bases continued to be an item of major military concern. The availability of air bases was a major planning factor in Operation Overlord, in General Douglas MacArthur's operations in the Pacific, and in Germany's continuing efforts to ward off approaching Allied forces.[2]

As the war progressed, it became apparent that air bases possessed a substantial degree of

survivability. For one thing, it became increasingly difficult to achieve surprise, since armed forces in war tend to be more alert than when their nations are at peace. Furthermore, high aircraft production rates, the relatively limited damage that could be caused by air base attack munitions, and the ability of most aircraft to operate from relatively austere bases—all contributed to decreasing the effectiveness of air base attacks. Despite these factors, however, by the end of the war in Europe the tremendous power of the Allied air threat forced the Luftwaffe to take several actions to provide a base structure that could sustain its dwindling forces. These actions included new construction (the Luftwaffe had 350 bases in Germany alone during the final days of the war), the use of highways for runways, camouflaging airfields, hardening airfield support facilities, and dispersing support facilities away from the runways.[3]

Today, these World War II experiences continue to provide an important lesson for those of us who are concerned with air power employment. Flexibility, one of air power's most important characteristics, remains just as dependent on the availability and survivability of supporting base structures as it is on the aircraft's airborne capabilities. Recognizing the close relationship that exists between aircraft and base structure characteristics, Air Force planners might be wise to explore the employment of vertical/short takeoff and landing (V/STOL) aircraft.

Post-World War II Trends

After World War II, the U.S. Air Force concentrated increasingly on long-range combat aircraft and nuclear weapons. The Korean conflict caused a temporary refocusing on shorter-range combat aircraft. However, in Korea, our ability to suppress quickly the weak enemy air threat to our bases, plus our use of safe sanctuaries, caused little attention to be paid to the World War II experiences regarding air base survivability. Furthermore, as the Korean ground battles became less characterized by advances and retreats over large distances, interest in measures to ensure the rapid availability of air bases for aircraft supporting the ground battle also waned. Instead, the peculiar air-to-air combat orientation of the air superiority battle, which resulted from the use of sanctuaries by both sides, allowed emphasis during and after the war to be put mainly on aircraft airborne performance parameters, such as airspeed, combat ceiling, maneuverability, and endurance.

These parameters for aircraft often were improved at the expense of performance characteristics that could contribute to greater base survivability and more rapid base availability. For instance, to achieve greater in-flight performance, aircraft weight and wing loading were increased. These additions, in turn, increased takeoff and landing speeds. As a result, runways had to be longer, harder, and smoother. Performance improvements also made aircraft more complex and support more elaborate and costly. To achieve economies in elaborate and costly support facilities, these facilities were concentrated. The survivability of bases became unspoken, untested, and ignored assumptions.

For a brief period in the 1950s, the U.S. Air Force did seek to reduce the requirement for long, vulnerable runways. Vertical takeoff and

landing (VTOL) research aircraft, such as the X-13 Ryan Vertijet, were developed. Also, attempts were made to develop zero-launch aircraft by attaching rocket bottles to the F-100. Unfortunately, the technology of the time was not sufficiently advanced for these concepts to be operationally feasible, and interest in further efforts soon faded.

In 1967, interest in airfield survivability increased suddenly after surprise Israeli Air Force attacks inflicted tremendous losses on Arab air forces, mostly while these forces were still at their air bases. Soon thereafter, the U.S. Air Force and other air forces placed increased emphasis on various defensive measures, focusing generally on passive hardening measures, such as building aircraft shelters.

Air Power and Flexibility in Modern Warfare

Unfortunately, emphasis on passive hardening measures also introduces a real possibility of developing a rigid mindset in our approach to the problem of attaining greater air base survivability. An uncomfortably similar situation can be found in pre-World War II France. The French built the Maginot Line, a costly, inflexible system of concrete fortifications that protected the French border with Germany from Switzerland to the Forest of Ardennes. French military thinkers considered the hilly Ardennes to be an unpenetrable barrier and thus a suitable feature on which to anchor the Maginot Line. The tremendous expense of the Maginot Line absorbed scarce resources. Worse, it constrained the thinking of the French military. The surprise German assault through the Ardennes in May 1940 proved the superiority of a combination of doctrinal and technological innovations over an approach that depends on narrow technological solutions to solve military challenges. Like the pre-World War II French, we have failed to recognize the advantages of flexibility gained from mobility. Instead, we too may have gained a false sense of security from our reliance on the protection of concrete and steel.

In addition to the dangers of the mindset that result from such an approach to basing, there is a serious question as to whether reliance on a combination of hardening measures, air defenses, camouflage, and rapid repair is really adequate to ensure air base survivability in the environment of modern warfare. The number and variety of Soviet air base attack assets (missiles, aircraft, and special operations forces) and their capability (speed, accuracy, and munitions effectiveness) present a rapidly growing threat. Increasingly, it is becoming quite likely, despite our active defenses, that enough weapons will be able to hit our bases so as to cause significant damage and hamper air operations severely. Moreover, the size and lack of mobility of our fixed bases, the concentration of assets at these air bases (often seventy-two aircraft per base), and the relatively small number of bases available combine to make these facilities extremely lucrative targets. It is very probable that the Soviets would consider the neutralization of these bases to be well worth the dedication of significant resources, possibly including the employment of nuclear weapons.

There is little possibility that reliance on active defenses and hardening measures will be sufficient to ensure base survival in a nuclear environment. Therefore, planners have long recognized that in the strategic nuclear arena the probability of force survival can best be ensured by using mobility, concealment, deception, and dispersal. Such measures also would improve base survivability in the theater war realm, where the attacker's problem is relatively simple because of vastly reduced ranges. Furthermore, by making our theater air base structure less vulnerable to nuclear attack, we provide less incentive for an enemy to employ nuclear weapons against our bases and, thereby, may raise the nuclear threshold.

The impact of chemical weapons on air base survivability is another subject of great concern. Even where air operations could continue

following an attack by an enemy using chemical and conventional munitions, the wearing of protective ensembles would severely handicap defensive measures, explosive ordnance disposal, repair efforts, and sortie generation activities. As a result, the number and quality of sorties produced by a damaged and chemically contaminated air base could be reduced substantially.

Even if the threat from nuclear and chemical munitions could be disregarded, the growing effectiveness of conventional munitions for area denial and the destruction of runways, taxiways, aircraft shelters, and other hardened structures make it likely that a capable, determined enemy could seriously impair an air base's ability to operate. If an air base were somehow able to recover from an attack with conventional munitions, the question is at what cost and, even more important, how quickly. The hours or days that it may take for an air base to regain its ability to generate large numbers of effective sorties could spell the difference between victory and defeat.

Some planners assert that after a conventional attack enough portions of an air base's runways and taxiways will remain to permit operations by short takeoff and landing (STOL) aircraft. While this assumption may be accurate, one also must assess the impact on sustained sortie generation capability that would result from having to move aircraft between their shelters and the usable portions of runways and taxiways. Particularly important to consider is the circumstance in which the intervening distance is heavily cratered and infested with area denial munitions.

Still another air base survivability concern must be the cascading impact that the closing of air bases may have within a theater. When air bases are closed, airborne aircraft must divert to air bases that remain open, thereby increasing the importance and impact of enemy attacks on these bases.

As World War II demonstrated, the ability of bases to survive air attacks is not the only concern. Even if concrete and steel could make bases survivable, such air bases are neither mobile nor quickly built. If war occurred in Europe and NATO armies were forced to withdraw, our air forces could not easily relocate, given their dependence on hardened, fixed air bases.

The problem of reliance on fixed air bases is especially acute for the United States, which has worldwide commitments. In many of the areas of the world where we may be required to introduce military forces, no suitable, hardened air bases exist. If our Air Force cannot survive without such facilities, we may not dare to introduce land forces. Likewise, the lack of suitable runways in many regions gives our plans an element of rigidity. If the enemy knows that we must take a particular airfield for sustained military actions to be feasible, he can plan accordingly. Our acquisition of such a base could result in heavy casualties and, perhaps even more important, lost time. Also, it is worth noting that the Battle of Okinawa in World War II suggests the danger of employing aircraft carriers as substitutes for land air bases when conducting sustained operations against a capable enemy.

While aerial refueling provides one way to reduce the disadvantages of a lack of available air bases, it is not a substitute for available air bases. In fact, aerial refueling often imposes significant handicaps. Dependence on aerial refueling requires adequate tanker resources and introduces increased complexity to operations. Most important, however, is the viability of aerial refueling in combat operations against a capable and determined enemy. Air bases capable of supporting tanker operations must be available and survivable. Further, refueling anchors must be protected and the impact of the enemy's ability to disrupt refueling considered. If refueling is disrupted, can targets be attacked? Or worse, can all aircraft safely recover? Other considerations are the increased time that aircraft would take to reach targets and the negative impact on sortie rates.

Aircraft Characteristics Necessary for Improving Flexibility

The challenge facing the West, particularly the United States, is how to regain the flexibility that our Air Force requires to win the air battle as we have been able to do in the past. Part of the answer, obviously, is to reduce the dependence of our aircraft on centralized, complex, perhaps vulnerable support facilities. Yet this approach will be far from adequate if the aircraft themselves are tied to long runways, taxiways, and hardened shelters that are expensive and time-consuming to build, defend, and, if damaged, repair.

One solution is to develop aircraft that do not require continuous, elaborate maintenance support or long, wide, hard, smooth surfaces from which to operate. To some degree, technology is providing a means to do this. As a result of recent technological developments, aircraft can be made more reliable and easily maintained. In addition, the length of runway needed for takeoffs and landings is being reduced.

Nevertheless, most aircraft in the current USAF inventory and most of those scheduled for procurement will continue to require runways of considerable length. Conventional takeoff and landing (CTOL) aircraft require long surfaces for landing—often two to three times their takeoff distances. This requirement results from the effect of wing loading on approach speed and normal touchdown dispersal due to judgment in the landing flare. Even STOL aircraft require at least 2000 feet of surface to get airborne.[4] Arresting gear, combined with nonflare aircraft, can reduce landing distances; but arresting gear is expensive and even mobile arresting equipment takes precious time to install and operate. The system presently being developed for the Air Force is designed to handle one engagement every two minutes.[5]

Another problem with reliance on cable or barrier arrestments is the risk resulting from missed engagements. Arresting gear can become fouled by accident or enemy action, and there remains a need for sufficient landing surface both before and after the arresting gear. In addition, conducting simultaneous takeoff and landing operations from the same surface when arresting gear is used introduces significant delays.

The width of takeoff and landing surfaces is as critical as length. The British Aircraft and Armament Experimental Establishment at Boscombe Down conducted a study on such criteria in 1978. This study revealed that an aircraft landing at speeds of 100-120 knots needs a landing surface at least 50 feet wide, especially if obstacles, such as trees, are near the landing surface. Such a requirement rules out the use of roads for landing, unless three or more unobstructed traffic lanes are available.[6] As a result, the number of highway locations suitable for CTOL or STOL aircraft operations, even in an area with the road density of western Europe, is quite small.

Still another problem restricting aircraft operations is the quality (load-bearing capability and smoothness) of the operating surface. The California Bearing Ratio (CBR) is a relative measure of the load a given surface can support without significant deformation. The CBR for a wet putting green is four; a baseball outfield, nine; a dirt road's shoulder, ten; and a bituminous pavement (highway), sixty. For comparison, the following is a sample of CBRs required for current tactical aircraft: the A-10 needs approximately ten; the F-16, almost fourteen; the F-4, more than fifteen; the AV-8B, approximately six.[7] Often more important than the aggregate strength of the surface, however, is the presence of surface irregularities or deformities.

Compared to other high-performance CTOL and STOL aircraft, a V/STOL aircraft, such as the AV-8B, can operate from a much wider variety of surfaces. Thus, for such aircraft, many more locations are available which can serve as bases. This large number of potential

bases can increase significantly the availability of the base structure needed to support sustained air operations in time of war.

V/STOL Aircraft: Current Status

Currently, V/STOL technology is being pursued both in the West and by the Soviet Union. Compared to CTOL aircraft, the time needed to develop a new V/STOL aircraft is increased by the greater importance and complexity of design problems involving weight control and center of gravity. This reality prevents Western air forces from fielding V/STOL aircraft rapidly unless such aircraft are already well along in development. It will also act to postpone the deployment of V/STOL aircraft in the future, unless their development is begun now.

In the West, only one V/STOL aircraft is available now and in production—the McDonnell Douglas, British Aerospace AV-8B/GR.Mk 5 Harrier II. Too often, the AV-8B's performance is confused with that of the earlier AV-8A. This error can cause serious misunderstandings, as the AV-8B offers major improvements over the AV-8A. Due to design changes such as the use of composite materials, a larger air inlet, and a large, wet, supercritical wing, the AV-8B has twice the payload or radius capability of the AV-8A. Taking off vertically, the AV-8B can carry a total payload of 6000 pounds of fuel and munitions. However, with a short takeoff roll, the AV-8B can increase its payload to 17,000 pounds. In this mode, using a takeoff roll well under 1500 feet, the AV-8B is advertised to be able to fly a hi-lo/hi-mission profile over a range of 615 nautical miles while carrying seven Mk-82 (500-pound) bombs. Its Angle Rate Bombing System is credited by the manufacturer and the U.S. Marine Corps with giving it an extremely accurate air-to-ground ordnance delivery capability. Using state-of-the-art avionics, pilot workload is reduced, even during navigation at low altitudes.[8]

Besides its air-to-ground capabilities, the AV-8B's air-to-air potential is greater than many observers have realized. According to B. R. A. Burns, Chief Aerodynamicist at British Aerospace Aircraft Group, in other than beyond-visual-range (BVR) air-to-air engagements, maximum speed is often less important than maneuverability and the ability to change energy by accelerating or climbing rapidly. He points out that, particularly with modern missiles, there is no escape from close air combat by speed alone; once engaged, only superior maneuverability or tactics will win the day. Except for "slashing attacks on an unwary foe, speed is an embarrassment because rate of turn is restricted by G limits (structural or physiological)." Burns identifies three key parameters for achieving success in air-to-air close combat: maximum sustained (thrust-limited) turn rate, maximum attained (lift-limited) turn rate, and specific excess power.[9] The AV-8B performs extremely well in all three of these areas.

The AV-8B's vectoring in forward flight (VIFF) and high thrust-to-weight engine permits agile maneuvering. Also contributing to make the AV-8B a formidable air-to-air opponent are the aircraft's small size, smokeless engine, raised cockpit, electronic countermeasures, AIM-9, and cannon capability. Finally, as the manufacturer points out, composite materials and emphasis on reliability and maintainability have significantly reduced the amount of maintenance support that an AV-8B requires.[10]

Commonly Perceived Problems with V/STOL Aircraft

Despite the demonstrated need for more flexibility, high-performance V/STOL aircraft have not been widely recognized as a realistic approach to air combat power. Presently, V/STOL aircraft are operated in small numbers by the Americans, British, Spanish, Indians, and Soviets. In the United States, only the Marine Corps uses such aircraft. The reluctance of most air forces to employ V/STOL aircraft

arises from many air power leaders' belief that the advantages of using a V/STOL aircraft are outweighed by the disadvantages. To evaluate the validity of this widely held perception, it is necessary to examine both the accuracy of the most frequently expressed concerns regarding the operational utility of V/STOL aircraft and the possible impact of technological improvements.

The V/STOL aircraft is generally criticized for having a poor safety record and for having shorter range, a smaller payload, and lower airspeed than CTOL aircraft. Other perceived problems with V/STOL aircraft are the cost and lead time required to build such aircraft. Finally, V/STOL aircraft are often associated with dispersed operations, which some critics believe involve such immense logistical and command and control problems that the operations ultimately are not worth the benefits gained.

While some of these concerns are valid, at least presently, there are clear indications that continued technological advances should overcome most of these objections to the future employment of V/STOL aircraft. For one thing, an increase in the use of composite materials should further reduce aircraft empty weight and thus improve both range and payload. Simultaneously, using such materials will increase aircraft reliability by reducing susceptibility to corrosion. The properties of composite materials also make sweptforward wings a viable possibility. Employing sweptforward wings, according to Glenn L. Spach of the Grumman Aerospace Company, offers the prospect for a lighter aircraft with improved maneuverability and better low-speed handling characteristics.[11]

Meanwhile, advances in engine technology are making V/STOL aircraft more viable due to improved thrust-to-weight ratios, as well as overall gains in engine efficiency, safety, reliability, and, potentially, maximum airspeed. Plenum chamber burning technology, in particular, offers significant promise for improving the maximum airspeed of V/STOL aircraft. Developments in avionics and fly-by-wire controls should contribute to aircraft weight reductions also, while increasing capability, reliability, and safety. Increased system reliability, combined with greater use of the current remove-and-replace maintenance procedures, should reduce the maintenance and supply burdens of dispersed operations.

Considering these technological trends, we can expect follow-on V/STOL aircraft to continue the dramatic improvements in overall capabilities begun with the AV-8B. As with the AV-8B, V/STOL aircraft operating in a short takeoff mode soon should be able to approach most small- to moderate- sized theater-based CTOL and STOL fighter/attack aircraft in range and payload capabilities.

Technology can increase the safety of V/STOL aircraft operations as well. Improvements in the AV-8B have resulted in a 65-percent reduction in pilot workload during VTOL operations compared to that required in the AV-8A. Even without considering such improvements, one can fairly state that V/STOL aircraft safety has been a seriously misunderstood issue. Seldom noticed is the fact that the early accident rate of the AV-8A has not been that exceptional when compared to the initial accident rates of high-performance CTOL aircraft. Few critics have noted either that the accident rate of the Royal Air Force's Harrier has always been significantly less than that of the U.S. Marine Corps' aircraft.[12] In addition, since late 1977 the Marines' AV-8 accident rate has declined dramatically, in part due to modifications in the selection and training of AV-8 pilots.[13]

Similarly, even if one ignores potential engine and munitions improvements that recent technology may provide, one might conclude that limitations in current airborne V/STOL aircraft performance are not so great as some tacticians have thought. Although the advantages resulting from high airspeed are well recognized in air-to-air combat, maximum air-

The generation of high-speed fighters that emerged in the 1950s required long, smooth, hard runways to get airborne. The Ryan X-13 Vertijet represented an early attempt at building a vertical takeoff combat aircraft. But given the high-speed mindset of the Air Force of the 1950s and the relatively primitive state of vertical takeoff technology available then, the time was not favorable for the X-13

speed is only one of many important considerations in aircraft design. The desirability of a specific capability must be weighed against the requirements of the aircraft's primary role, as well as other tradeoffs that must be made.

For example, it is necessary to determine whether supersonic capability is necessary, or merely desirable, for aircraft with a primary air-to-surface role. For such aircraft, armed with modern all-aspect air-to-air missiles, it may be that the difference between a maximum airspeed of mach .9 and 1.5 is not so important as aircraft maneuverability and turn rate, acceleration, aircraft size and signature, cruise speed, endurance, and target-acquisition capability. When all of these factors are considered, V/STOL aircraft with capabilities similar to the AV-8B may have sufficient air-to-air potential to be acceptably mission-flexible for an aircraft with a primary role of air-to-surface attack.

Harrier Performance in the Falklands/Malvinas

The potential of air power depends on more than just the airborne characteristics of aircraft. To reach an accurate judgment regarding the operational flexibility of V/STOL, we must examine British operations in the Falklands/Malvinas conflict of 1982. These operations revealed the great potential of V/STOL aircraft by showing how the unique characteristics of Harrier aircraft improved flexibility. V/STOL capability allowed Harriers to land vertically on the crowded flight decks of the carriers HMS *Hermes* and HMS *Invincible* without the carriers turning into the wind. The Harriers operated even when the flight decks were moving vertically through as much as thirty feet due to heavy seas and when visibility was severely reduced. One Harrier recovered on the HMS *Hermes* in a horizontal visibility of fifty meters.

To aid in recovery during reduced visibility, the carriers often dropped flares in their wakes, which the Harriers, due to the use of vectored thrust, were able to follow up slowly to the ships. The Sea Harriers also used their Blue Fox radar to assist in bad-weather recovery. With no previous experience in operating from carriers, RAF Harrier pilots flew from the container ships *Atlantic Conveyor* and *Contender Bezant* to the decks of the carriers. Other RAF Harriers used air refueling to deploy directly from Ascension Island to the carriers, a distance of approximately 3370 nautical miles.

Soon after the British landing at San Carlos, Royal Engineers built an 850-foot matting strip. This simple strip provided the Harriers with a base that allowed them to increase their endurance over the battle area significantly. They would fly air patrol from the carriers, which were located well east of the Falklands/Malvinas (to reduce exposure to the Argentine air threat), and land at the San Carlos strip for refueling. Other Harriers at this strip would await tasking calls to provide support for ground forces, reducing response time without maintaining inefficient airborne alert. Once, when a helicopter damaged the matting strip, Harriers recovered vertically and refueled on the aft platforms of assault ships HMS *Fearless* and *Intrepid*.[14]

After recapturing the Falklands/Malvinas, the British deployed McDonnell Douglas F-4Ks to the runway at Port Stanley for air defense, but only after the runway had been lengthened to accommodate these aircraft. The runway was originally 4100 feet long and had to be extended to at least 6000 feet, even with the use of arresting cables. Until this runway extension was accomplished, Sea Harriers sat air defense alert.[15]

USMC Harrier Employment Concept

Recognizing how the unique capabilities of V/STOL aircraft could aid them in their expeditionary mission, the U.S. Marine Corps procured AV-8A Harriers and developed an extensive employment concept. The USMC concept depends on the speed with which Harrier bases can be built so that Marine ground forces can receive air support. The concept includes three different types of bases: the forward site, facility, and main base.

Based on extensive testing, USMC plans allow for as little as one to two days for nineteen to twenty-five men to build an austere VTOL Harrier forward site in a light forest. Negligible time for construction would be required if an existing surface, such as a road, could be used. A forward site for one to four Harriers would consist, at a minimum, of a 72 x 72-foot pad in an area cleared 150 feet beyond the pad. According to the USMC concept of operations, it would be located in a secure area twenty nautical miles from the forward edge of the battle area (FEBA) and would be used for ground loiter. If fuel and ordnance were available there, the forward site could be used for sustained daytime visual flight rules (VFR) operations. For planning purposes, twelve sorties

per day could be flown from a forward site on the supplies provided by three CH-53E sorties. (This calculation assumes that the twelve sorties consume thirty-six tons of fuel and ordnance, including six 500-pound bombs per sortie. A CH-53 has about a thirteen-ton lift capability when flying in excess of seventy nautical miles without refueling.) Normally, no maintenance would be performed at a forward site.

The second type of base envisioned in the USMC plan, the Harrier facility, is an intermediate-sized land base located nominally fifty nautical miles from the FEBA. Organizational maintenance would be provided at a facility, which could support day and night VFR operations. Marine planners think that a facility with a 600 x 72-foot runway suitable for six to ten V/STOL aircraft would be constructed and ready for operations in twenty-four to seventy-two hours, depending on terrain or manpower used. All necessary construction equipment (an estimated 325 tons) could be delivered from a main base in thirty CH-53 sorties.

According to plans, a main base would be located about 50 nautical miles behind the facilities or 100 nautical miles from the FEBA. Operations from a main base will be day or night and all-weather. A main base would be equipped to provide organizational- and intermediate-level maintenance for a squadron of twenty V/STOL aircraft.[16]

Basing Availability Advantages of V/STOL Aircraft

As the British revealed at San Carlos and the Marines have recognized in their Harrier employment concept, one of the most obvious advantages of employing V/STOL aircraft is its capability of operating from bases that can be built quickly. Besides those bases that might be constructed rapidly, more potential bases are presently available for V/STOL than for CTOL aircraft. In Denmark alone, there are 102 runways more than 3500 feet in length, but only 23 of these have surfaces suitable for CTOL aircraft. According to McDonnell Douglas, the V/STOL AV-8B can operate from all 102.[17]

Operationally, V/STOL capability increases flexibility by allowing simultaneous takeoff and landing operations. The vertical landing capability allows pilots of V/STOL aircraft to set emergency bingos (minimum recovery fuel) only high enough for return to any friendly base or, in extremus, friendly territory. In contrast, pilots of CTOL aircraft not only must reach a suitable airfield but also must accept increasing risk if their bingos do not provide for fuel to reach alternate or divert bases.

Often when all-weather capability is mentioned, only navigation and weapons delivery, not aircraft recovery, is addressed. However, as was demonstrated in the Falkland Islands/Malvinas, one advantage of V/STOL aircraft results from their greatly reduced approach speeds, which allows the recovery of V/STOL aircraft in weather far below CTOL minimums. This capability would be particularly valuable in an environment where external landing aids may not be available.

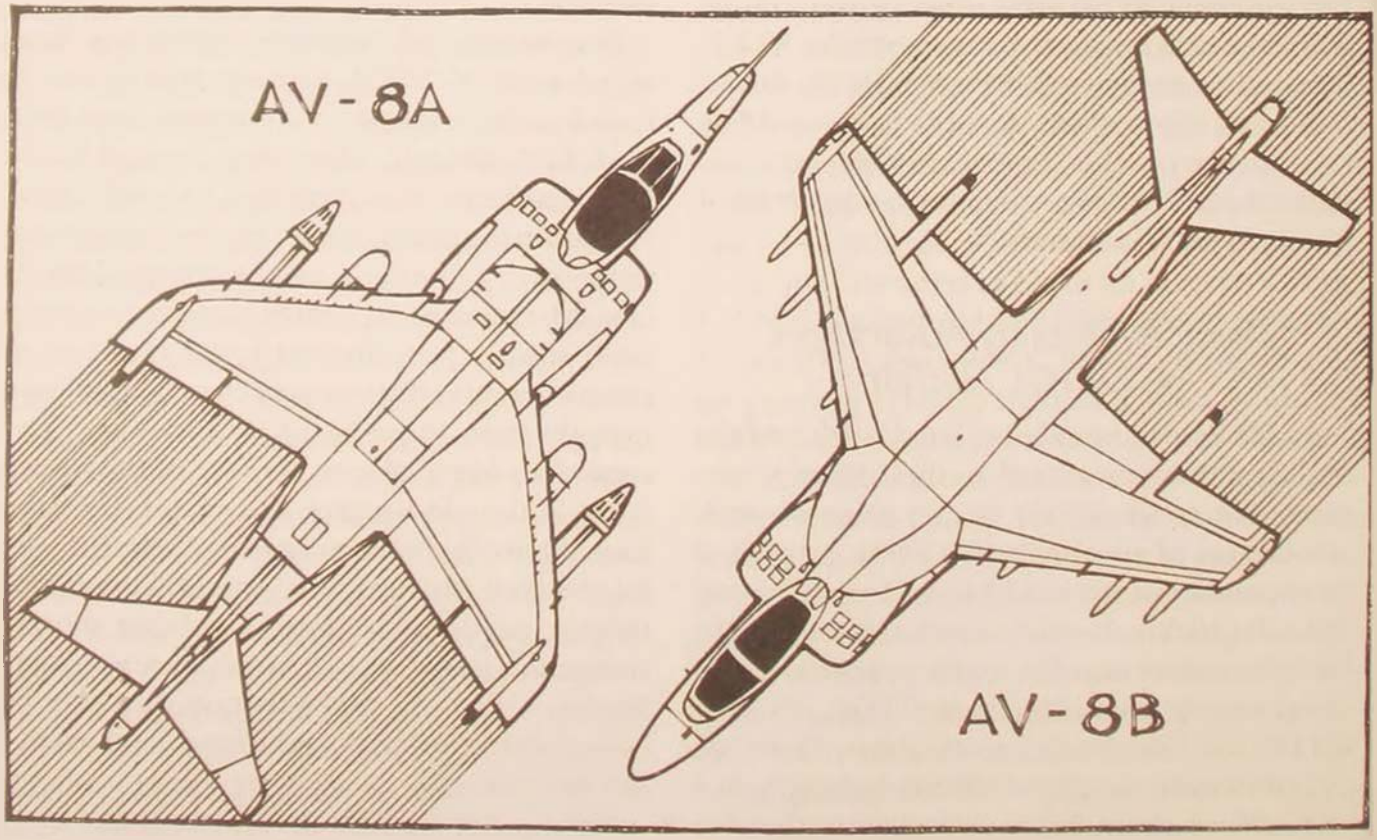
Due to reduced basing requirements, bases suitable for V/STOL aircraft usually can be found or built closer to the enemy than bases for CTOL aircraft. This more forward basing is a significant advantage in a ground combat environment characterized by extensive movement or vast distances, even when possible increased exposure to enemy actions is considered: simply put, aircraft based closer to an enemy air or surface targets can respond more quickly than those based farther away. This capability is significant because of the importance of time in warfare. Enemy air or surface forces that are threatening friendly forces must be attacked quickly. For certain interdiction targets, particularly those involving moving forces, the usefulness of target location information is directly dependent on the delay between when the target was located and when it can be attacked.

For an aircraft to reach the same target in the

same time as another based nearer the target, it must have both greater airspeed and range. For air-to-surface missions, where munitions usually are carried externally, significant increases in airspeed are not feasible, due to drag. The alternative to greater airspeed—airborne alert—requires range/endurance achieved by trading weapons payload for fuel or by relying on aerial refueling. Moreover, close proximity to the enemy allows a given force to fly far greater numbers of sorties than a force with a similar in-commission rate that is based farther away and must spend more time en route.

Fuel savings is another advantage. A study that compared employment of V/STOL aircraft to CTOL aircraft that were based 200 nautical miles farther from the target found that using V/STOL aircraft reduces total fuel consumption substantially. This advantage remained even after analysts considered the fuel that trucks consumed in transporting the necessary aircraft fuel forward to the V/STOL operating location.[18]

The increased operational flexibility gained from V/STOL capability has still another potential advantage. As the Falklands/Malvinas campaign demonstrated, RAF Harrier pilots without previous special training were able to operate from ships. Thus, a V/STOL force could make feasible far greater interservice cooperation in both aircraft procurement and operations. For example, if, during a future conflict, sufficient aerial refueling assets or en route CTOL air bases were not available for ferrying Air Force tactical aircraft to a distant theater, V/STOL aircraft could use ships equipped with the Arapaho system, not necessarily large-deck aircraft carriers, to reach the theater. In the Arapaho program, the Naval Air Systems Command has developed a portable,



The AV-8B, with its longer range, increased carrying capacity, enhanced flying characteristics, and improved bombing capability is a significant improvement over the AV-8A. The introduction of the AV-8B into the U.S. Marine Corps inventory will give the Marines new flexibility and muscle for both sea-to-shore and land-based operations.

modularized aviation facility intended for installation aboard container ships. It can be installed in less than twenty-four hours and includes all components necessary for V/STOL aircraft operations: flight deck, hangar, fuel, and crew accommodations. It is estimated to cost less than $20 million per set.[19]

Basing Survivability Advantages of V/STOL Aircraft

Continuing improvements in both munitions and delivery systems make the future threat to air bases one of immense concern. It is in light of this rapidly developing threat that the impact of V/STOL characteristics must be considered. The same increase in basing availability gained by using aircraft with V/STOL characteristics also provides a significant opportunity for enhancing basing survivability. This opportunity is the direct result of the fact that a V/STOL-equipped force can be more easily dispersed than a CTOL or STOL force. The ability to disperse also acts to improve the effectiveness of mobility, concealment, and deception measures. When carefully integrated, these different measures produce an extremely survivable basing mode.

One of the most obvious advantages of force dispersal is the corresponding reduction in the target value of any particular location. Unfortunately, due to basing availability requirements, it is more difficult to find an adequate number of bases suitable for dispersing a CTOL force than it is for a similar size V/STOL force. Even in Europe, the potential for dispersal is limited by the large numbers of CTOL aircraft compared to the relatively few CTOL bases available. The cost of building the necessary number of additional CTOL bases is prohibitive; however, it would cost considerably less to vastly increase the number of locations suitable for V/STOL aircraft. Perhaps an even greater problem with constructing CTOL bases is time. During an intervention into unprepared areas, it is unlikely that there will be time to construct the necessary numbers of CTOL facilities to allow for dispersal.

A few military analysts have criticized the dispersion of air forces as too costly or complex for logistical and command and control reasons. However, in fairness, it is necessary to weigh the perceived disadvantages of dispersion against the known disadvantages of a nondispersed CTOL force. The cost of building, maintaining, defending, and, if damaged, repairing these expensive CTOL air bases is high, particularly if one considers that many of them may later be abandoned, as they were in Southeast Asia. Also, dispersion may not be as difficult as some critics imagine. Ground forces have long recognized that it is both necessary and possible to support and control dispersed units. Further, modern ground forces often use equipment with maintenance, fuel, and munitions requirements similar to those of aircraft. If carefully planned, dispersed air forces might use the same, or portions of the same, logistical and command and control structure already existing for land forces, thus reducing costs. RAF Harrier operations have shown that dispersion can be successful and affordable. Twelve years of Harrier experience also have allowed the U.S. Marine Corps to develop and verify concepts for dispersal. The lessons learned by both the Royal Air Force and the Marines would be of immense value in the development of a concept for dispersed operations suitable for the special needs of the U.S. Air Force.

A V/STOL-equipped force able to disperse quickly also could have the mobility to change operating locations frequently. Mobility, when used by such a force already dispersed into a large number of locations out of an even larger number of potential locations, greatly increases an enemy's search and attack problems. Not only would an enemy have to search a large number of potential locations, but also the longer the time between when the enemy finds an occupied location and when he attacks, the greater his uncertainty that the location will still be occupied when he attacks. To counter

this uncertainty, an enemy would attempt to launch an attack as rapidly as possible after locating an occupied location—which, in turn, would decrease his available time for putting together an attack, planning the most survivable routes for his aircraft, and ensuring accurate navigation and weapons delivery.

Even when an occupied location is attacked, a V/STOL force has the potential, through vertical takeoff, to get airborne much faster and, therefore, with less warning than a similar-size CTOL force would need. In addition, surviving V/STOL aircraft, unlike CTOL aircraft, can take off vertically from a damaged runway and deploy to another location.

The capability of an aircraft to take off vertically is extremely important. Many studies on conventional air base attack show that although a portion of a runway suitable for STOL operations would probably remain intact, getting aircraft to and from their shelters to this usable portion of the runway is no easy matter. Moving aircraft over damaged, and perhaps mined, taxiways poses immense problems, as shown by the delays that back-taxiing causes on airfields when only one taxiway to a runway is available. Besides greatly reducing a force's ability to generate sorties, such a situation increases the time that aircraft would be out of their revetments and vulnerable to attack.

In regard to operating from a damaged location, the use of vectored thrust from a V/STOL aircraft like the AV-8 has the added advantage of allowing landing aircraft, if necessary, to use their own jet blast to clear debris from an operating surface. Conversely, a CTOL aircraft does not have this ability and would require a sweeper to clear a runway surface and engineers to repair any damage before the CTOL aircraft could land safely.

In an environment where forces are dispersed and mobile, concealment and deception also become extremely effective. Properly planned concealment and deceptive measures can act to reduce greatly an attacking force's certainty that it has, in fact, found an occupied operating location, no matter how current its intelligence. In contrast, a force based at a few, fixed locations will experience little gain in survivability, no matter how elaborate its concealment and deception measures.

Using these capabilities, V/STOL aircraft could be employed in theater combat from dispersed locations similar to the Marine Corps' forward sites. A scheduled sortie surge period would begin when these aircraft took off vertically from their widely dispersed, concealed locations and flew to strips where fuel and munitions were prepositioned. At these strips, the V/STOL aircraft would top off their fuel, arm, and then, using a short takeoff roll, fly their missions. Afterward, the aircraft would return to the original or a new strip to refuel and rearm. Many strips could be prepared quickly and used only for short periods of time. Such an employment concept, accompanied by deception measures, would make it extremely difficult for an enemy to find and destroy many of these aircraft on the ground or to disrupt their ability to generate a high, sustained sortie rate. After flying its scheduled sorties, each V/STOL aircraft would return to its original concealed location for maintenance and crew change. Because such a location could be very small and would be used infrequently and then only for a short period of time, concealment and deception measures could be simple yet prove effective.

Confidence in survivability measures is an important aspect not often assessed in theater warfare. In the strategic arena, particularly when we debate the advantages of aircraft versus those of missiles, a point often made in behalf of the air leg of the Triad is the ability to exercise aircraft fully—a feature that missiles do not offer. We recognize that ability as valuable. We achieve a higher degree of confidence in the reliability of that portion of our force which we can exercise. A similar case can be made regarding our confidence in ensuring the survivability of our theater air forces. It is pos-

sible to exercise V/STOL aircraft employment, which uses such measures as dispersion, mobility, concealment, and, to a degree, deception. In contrast, it is difficult or, to be more accurate, impossible to exercise simultaneously and successfully, let alone frequently, all the measures (such as point air defense, explosive ordnance disposal, runway repair, and chemical protection) necessary to ensure survivable CTOL air base operations.

Proposal for Air Force V/STOL Aircraft Employment

Careful examination of the potential threat to our theater air bases raises serious questions as to whether it is either economically or militarily sound for theater air forces to consist solely of CTOL and STOL aircraft operating from fixed CTOL bases. This concern is especially applicable in regard to the early critical stages of a conflict against an enemy who can attack at the time and place of his choosing, employing large air, missile, and special operations forces armed with conventional (and possibly chemical and nuclear) weapons. Similar questions about our force composition arise when we consider whether the United States has the capability to intervene effectively in large remote regions where few, if any, hardened CTOL bases exist.

To achieve the most flexible capability, the Air Force should maintain a force that includes a mix of various types of CTOL, STOL, V/STOL, and VTOL aircraft. The best aircraft for some missions will remain, for the reasonable future, CTOL and STOL aircraft—particularly for long-range bombing, aerial refueling, and airborne warning and command and control missions. We have a heavy investment in these conventional aircraft, and it would take too much money and time to convert to an exclusively V/STOL and VTOL force. For airlift missions in the near future, VTOL and V/STOL capability could only complement CTOL and STOL aircraft, due to the present range and payload limitations of VTOL and V/STOL airlift aircraft. However, to improve our flexibility by increasing the numbers of locations into which airlift aircraft can operate, a significant portion of Air Force airlift capability should be at least STOL, rather than CTOL.

For theater air missions, such as counterair, interdiction, close air support, and electronic combat and reconnaissance, the conventional and STOL-capable theater force structure can be made more effective if a portion of the force is V/STOL-capable. If some of these theater missions were performed by V/STOL aircraft, our existing CTOL airfields would not need to support so many aircraft. As a result, it would be easier to disperse and shelter the remaining aircraft, making these airfields less lucrative targets, possibly reducing the airfield attack effort that an enemy would make, and thus decreasing air base defense and repair problems. Further, possession of a force that consisted, in part, of V/STOL aircraft also would significantly increase our ability to intervene into remote, unprepared regions.

Therefore, our goal must be to strike the proper balance between V/STOL and CTOL/STOL for our theater air forces. For the Air Force to make the most rapid progress in achieving a truly flexible force, development of a V/STOL capability should be pursued energetically. Fortunately, as we have seen, V/STOL aircraft limitations are being rapidly reduced by new technological developments.

In the near term, the Air Force should procure a limited number of AV-8Bs, if necessary substituting them for some of the programmed CTOL aircraft. Building on RAF and USMC experience, the Air Force should begin developing and testing its own V/STOL employment concepts. Research also should be undertaken to modify the AV-8B to carry advanced air-to-air missiles, as well as standoff air-to-surface missiles. Ideally, all future tactical fighter aircraft should be V/STOL-capable, with appropriate support for dispersed, mobile operations.

At the same time, research efforts should be accelerated to increase basing flexibility. One step: converting our current force structure from CTOL to STOL-capable by employing new aeronautical technologies such as variable nozzles. Energetic efforts also should be given toward reducing aircraft support requirements, while simultaneously making necessary support more mobile.

Dispersal will require more rotary-wing aircraft, ground vehicles, and STOL air transports, or a combination thereof. The cost and complexity of these transportation requirements, as well as the greater communications requirements, possibly could be ameliorated by coordination with the Army and the Marine Corps. RAF Harrier operations in Europe, where both land and air units use the same communications network, have shown how the communications problems might be approached jointly.

GIVEN the importance of air base survivability and availability, the Air Force must change its present approach to aircraft and support force design to an approach that is better suited to the conditions inherent in modern warfare. Airborne capability alone should not continue to dominate aircraft design considerations.[20] Until aircraft no longer have to land for refueling, rearming, repair, and crew change, basing and support structure requirements will remain as important as airborne characteristics in determining the actual capability of air power.

The United States Air Force has a tradition of responding with imagination to the challenges it faces. We must continue this tradition by constantly and carefully examining our performance against the requirements of combat effectiveness. Constant vigilance is necessary to avoid the type of climate prevalent in the British Royal Navy before World War II. As Admiral Sir Herbert Richmond noted then, peacetime routine had corroded the military mind so that it lacked stimulation to think of war, while the twin gods became orthodoxy and conformity. Admiral Richmond was disturbed that "well-intentioned questions and suggestions were met with unthinking hostility on the part of the Admiralty, and by administrators in general, who not only felt that such ideas held personal reflections upon themselves, but also that, if adopted, they would make more work and upset the pleasant and well-ordered routine."[21]

Center for Aerospace Doctrine, Research, and Education
Maxwell AFB, Alabama

Notes

1. Matthew Cooper, *The German Air Force 1933-1945, An Anatomy of Failure* (London: Jane's, 1981), pp. 97-120, 198-201; Air Marshal Sir Victor Goddard, *Skies to Dunkirk* (London: William Kimber, 1982), p. 128. Williamson Murray, *Strategy for Defeat, The Luftwaffe 1933-1945* (Maxwell AFB, Alabama: Airpower Research Institute, January 1983), pp. 38, 84; Adolf Galland, *The First and the Last—The Rise and Fall of the German Fighter Forces, 1938-1945* (New York: Ballantine Books, 1965), pp. 218-19, 232, 274-75; Len Deighton, *Fighter: The True Story of the Battle of Britain* (New York: Alfred A. Knopf, 1978), p. 240; B. H. Liddell Hart, *History of the Second World War* (New York: G. P. Putnam's Sons, 1970), pp. 59, 227-29.

2. Kenn C. Rust, *The Ninth Air Force in World War II* (Fall Brook, California: Aero Publishers, 1967), pp. 87, 116; *Condensed Analysis of the Ninth Air Force in the European Theater of Operations* (Washington, D.C.: Army Air Force Office of Assistant Chief of Air Staff, March 1946), pp. 3-21. Denis Warner and Peggy Warner, *The Sacred Warriors: Japan's Suicide Legions* (New York: Van Nostrand Reinhold, 1982), p. 287.

3. Charles E. Hunt, *Airfield Survivability and Post-Attack Sortie Generation*, Concept Issue Paper 80-2, Hq USAF/XOXID, February 1980, pp. 6-21.

4. B. R. A. Burns, "Advanced Fighter Design," *Air International*, September 1983, p. 123.

5. "USAF Tests Arresting Systems," *Aviation Week and Space Technology*, 2 January 1984, p. 45.

6. Wing Commander Peter Millar, *The Maginot Mentality*, Air War College Essay, Academic Year 1982-83, p. 6.

7. "Rapidly Deployable Airstrips for Strategic Aircraft" (Marina del Rey, California: R and D Associates, January 1982), pp. 26-27; McDonnell Douglas, *AV-8B Rapid Development Overview*, MDC A6827 (St. Louis: McDonnell Douglas Corporation, 1980), pp. 24-25.

8. McDonnell Douglas, *AV-8B Operations Summary*, MDC A6121 (St. Louis: McDonnell Douglas Corporation, 1980), pp. 3-11; U.S. Marine Corps, *AV-8B V/STOL Program*, Volume III, *AV-8A: Concept Validation—AV-8B: Performance Fulfillment*, pp. 6-1 to 6-22.

9. Burns, p. 123.

10. McDonnell Douglas, *AV-8B Operations Summary*, pp. 3-11.

11. Roy Braybrook, "Aircraft Design Philosophy," *Air International*, April 1984, pp. 187-90.

12. Data on losses of various aircraft are revealing and merit our attention:

Aircraft Losses

Aircraft Type	Flight Hours	
	First 90000 hours	213000 hours
AV-8A	25	50 (includes RAF)
A-4	37	64
A-7	37	73
F-8	44	79
A-6	16	33
F-4	17	44
F-100	39	78
F-102	27	38
F-104	43	88
F-105	31	47
F-106	15	26
A-10	8	17
F-15	4	15
F-16	10	30

Data on the first six aircraft in this listing (AV-8A through F-4) were obtained from U.S. Marine Corps, *AV-8B V/STOL Program*, Volume III, pp. 4-11 to 4-12; figures for the other eight aircraft (F-100 through F-16) were provided by the U.S. Air Force Inspection and Safety Center, Data Analysis Section. USAF aircraft losses are rounded to the nearest whole number.

13. U.S. Marine Corps, *AV-8B V/STOL Program*, Volume III, pp. 4-11 to 4-12.

14. British Aerospace, *V/STOL in the Roaring Forties*, 1982.

15. David A. Brown, "British to Establish Military Presence on Falklands," *Aviation Week and Space Technology*, 21 June 1982, pp. 20-21.

16. U.S. Marine Corps, *AV-8B V/STOL Program*, Volume III, pp. 2-1 to 2-23; McDonnell Douglas, *AV-8B Operating in NATO: An Evaluation of the USMC AV-8B V/STOL Light Attack Aircraft in NATO Environment*, MDC A6139 (St. Louis: McDonnell Douglas Corporation, 1979), pp. 40-45.

17. McDonnell Douglas, *AV-8B Operating in NATO*, pp. 28-35.

18. Ibid., pp. 42-49.

19. Naval Air Systems Command, *ARAPAHO—Final Report*, 3 February 1983.

20. M. B. Berman with C. L. Batten, *Increasing Future Fighter Weapon System Performance by Integrating Basing, Support, and Air Vehicle Requirements*, Rand, N-1985-1-AF, 1983, p. 26.

21. Robin D. Higham, *The Military Intellectuals in Britain 1918-1939* (New Brunswick, New Jersey: Rutgers University Press, 1966), p. 55.

While we know the fundamental procedures, we on the ground do not fully understand the potential for integrating our own systems with those of the Air Force, and I do not see that the blue suiters do either.

Lieutenant General Jack Galvin
Armed Forces Journal International, August 1984

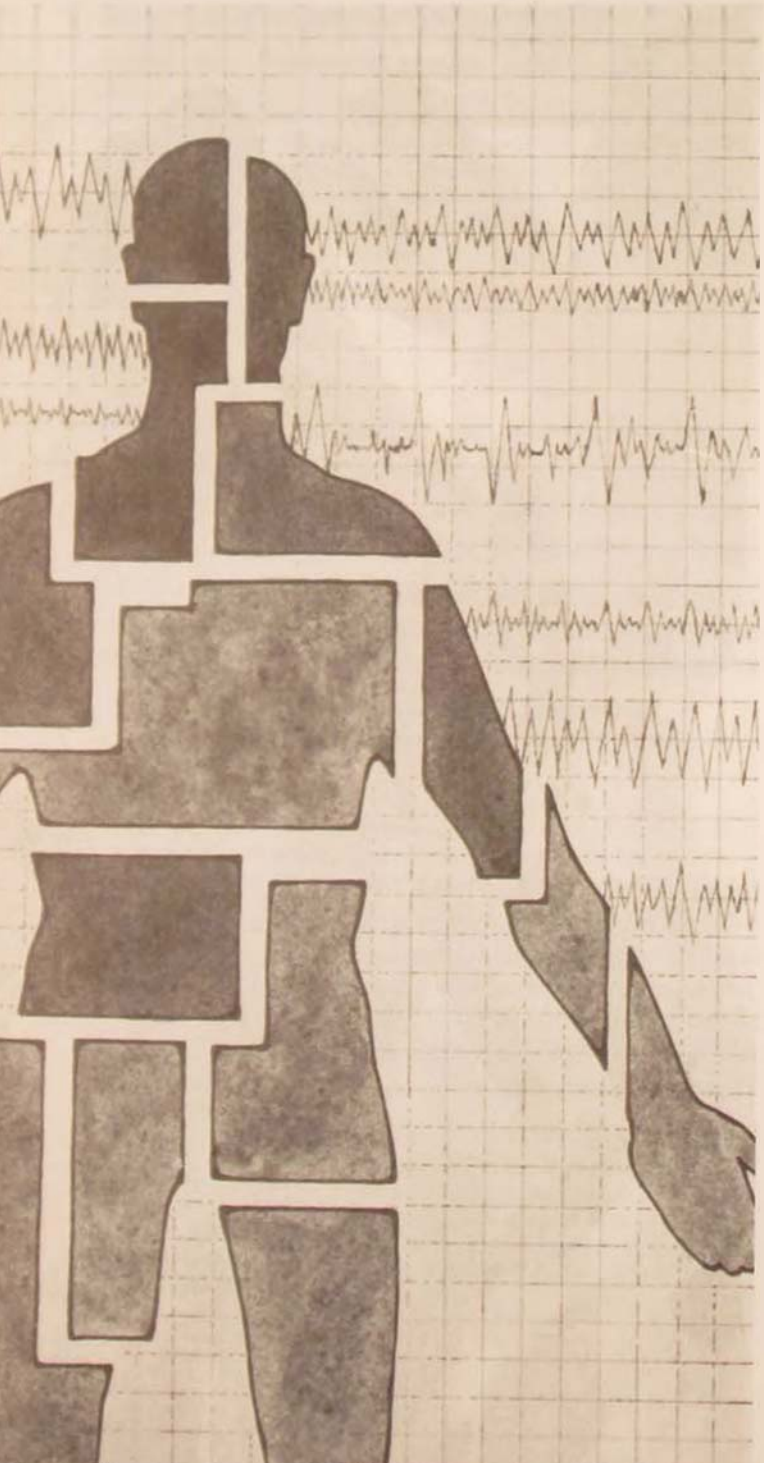
Specialization is necessary, but there is also an urgent need for some individuals to be broadly based and still maintain a degree of depth across that spectrum to be able to lead specialists and to integrate their work and yet not be led by them. Essentially, a key segment of the officer corps must know *how to think* about war in broad terms and not only *what to think* in terms of functionally defined doctrinal prescriptions. This is especially critical in an environment of rapidly changing parameters.

Colonel Huba Wass de Czege, *Military Review*, June 1984

R in my opinion

AN OLD CHALLENGE, A NEW DIMENSION: ASSESSING LEADERSHIP POTENTIAL IN THE AIR FORCE

MAJOR JAMES H. SLAGLE



EVERYDAY, in my opinion, the Air Force wastes manpower and money by placing personnel in the wrong billet. This statement is not intended to be a criticism of the Manpower Personnel Center (MPC), which has historically used the record selection process to place people, but rather identifies what seems to be a limitation in the existing system. Within the Air Force, there are growing numbers of "unique" billets that require specialized skills—skills that cannot be measured quantitatively or revealed in personnel records. One can easily identify a physical limitation, such as poor eyesight, through a medical checkup. However, one cannot easily determine leadership qualities that are required for a certain function. To be more specific, a records check will not provide the needed information on a person's leadership abilities. There is an answer: leadership assessment.

"Pay me now or pay me later" is an expression heard in a popular TV commercial. This expression can be applied to the cost of putting people in the wrong positions, and it sums up the Air Force need for a "leadership assessment center" approach to selecting officers for certain "critical" billets. These billets are critical because they require a "controlled" personality—a personality that has that certain

combination of traits or characteristics which make a leader. These characteristics or leadership traits are more extensive than those found in the Officer Effectiveness Report evaluation areas. To evaluate all the required characteristics would take more than an untrained rater's assessment on a page that eventually is reflected in the officer's records. An evaluation of leadership should involve a systematic assessment using developed and proven tools. Such an assessment can provide specific feedback that will allow the Air Force to place an individual in a critical position with a significantly higher probability of success. This leadership assessment process is not needed for every position. However, there are critical billets that require an "up-front" expense because of the degree of leadership required.

An Air Force assessment center might be any controlled environment where officers can be placed in situations requiring them to display certain leadership characteristics. The "characteristics" can be observed and recorded for later evaluation of the officers' leadership style and potential, and results can be fed back to the officers. These evaluations might be in the form of a written report, which could include numerical ratings on specific leadership dimensions.

ONE of the Air Force's newest operational weapon systems is the ground-launched cruise missile (GLCM). The development of this system created a new position in the Air Force—the GLCM flight commander, whose main duty is to lead a tactical nuclear missile convoy to various remote locations in a foreign country during times of increased world tensions. He will command personnel who must defend and maintain the launch-capable status of sixteen cruise missiles. His personnel will be forty-four security police, nineteen maintenance personnel, one independent-duty medical technician, and four operations launch officers. The GLCM flight, presently being deployed in Europe, will disperse at the command of the Supreme Allied Commander, Europe, and, once dispersed, will hide in tactically selected sites to await the order to execute its mission. The flight must work as a team, and excellent leadership is essential.

Initially, the flight commander must ensure that he has a flight capable of deployment into the countryside. On short notice, he must marshal his men and equipment and guide his convoy of more than twenty vehicles to a preselected location. This convoy will be made up of various types of vehicles, including security vehicles, five-ton supply trucks, and missile support equipment pulled by a unique all-terrain tractor. Moving a convoy of this size over European roads will require special skills and knowledge, plus the ability to react to unique and unforeseen situations.

After reaching the assigned location, the flight commander will be responsible for a myriad of critical tasks. Site security is important, and the flight commander will have overall responsibility for deploying forces to establish a secure perimeter. In addition, various personnel must dig and inspect foxholes; string, test, and verify communications lines; camouflage vehicles; site hygiene areas; place sophisticated sensors, etc. Few Air Force missions require this type of field leadership. Furthermore, the GLCM flight commander is the only leadership position with the responsibility of protecting and ensuring that tactical missiles launch when directed.

The GLCM flight commander is tasked with a very broad spectrum of leadership requirements. To begin with, he must be a technical leader. Much has been written about the sophistication of today's weapon systems. GLCM is no exception. The heart of the GLCM weapon system is equipment that ensures continuous contact with the present-day NATO command and control (C^2) system. The flight commander must understand this C^2 system and ensure that his flight is always capable of launching the required missiles. To do this, he

must understand the basic C^2 messages, the actions they direct, and the technical status of his flight's launch equipment. He is also responsible for other specialized areas, such as directing combat defensive fire fights, interrogating prisoners, and ensuring the physical and mental health of his personnel. To ensure that all aspects related to the mission are carried out, the flight commander must be an experienced officer with mature forcefulness, developed interpersonal skills, and the capability of leading both foreign and U.S. personnel. He will be dealing with his personnel in a stress-filled environment. He must give commands that cannot be questioned, and he must be able to communicate these clearly and succinctly. Obviously, he must be mentally prepared to assume a combat leadership position in a high-technology battlefield environment.

To select this type of leader requires more information than can be found in an officer's selection folder. Records do need to be screened to identify potential candidates, but this process should serve only as a first step in the selection process. Because of the physical demands placed on GLCM flight commanders, candidates should be given a thorough health examination. Then the candidate should be evaluated by a leadership assessment center where his leadership characteristics/traits can be determined.

What should the assessors be looking for? What characteristics measure leadership? There are a variety of approaches to select from. For example, consider two "military assessment centers" and the leadership characteristics which they focus on. At Air University's Squadron Officer School, the following leadership skills are assessed: organizing, planning, motivation, acceptance of responsibility, flexibility, willingness to lead, interpersonal skills, and forcefulness. The Army also has developed assessment parameters for leadership; these are adaptability, administrative skills, communication skills, decision-making skills, forcefulness, mental ability, motivation, organizational leadership, physical fitness, social skills, supervisory skills, and technical and tactical competence. Both programs incorporate the basic element of assessment, using various individual and group exercises, as well as tests designed to measure the behavioral dimensions of leadership. After a three-day period of observation and testing, the assessing staff can return an accurate profile on the strengths and weaknesses of the candidate. In some cases, by making the candidate aware of his or her leadership style, the tests enable the candidate to compensate or modify that style. Leadership assessment programs can also identify the candidate who does not display the characteristics required by the job or command for which he or she is being considered.

IT is time for the Air Force to use sophisticated processes to select personnel for critical leadership positions. The use of the leadership assessment center method, prior to the final selection of commanders, will provide the best possible leadership in the field and will save money and time in training. In addition, the profile provided by the leadership assessment center can be helpful in placing the "nonselected" candidate in a more appropriate area. Whether the Air Force chooses the Air University approach, which could easily be adapted by the Leadership and Management Development Center, or the model used by the Army's Fort Benning Assessment Center, there is a need for the assessment center approach in the leadership selection process of today's modern Air Force.

Hq USAF

PLANNING FOR FORCE PROJECTION

DR. LEONARD C. GASTON

In the Air Force bureaucracy, things get thought about and done largely by groups of people organized and chartered to think about and do specific things.

Major General Howard M. Estes, Jr., USAF (Ret)
Air University Review,
November-December 1982

The answer you get often depends on how you ask the question.

Anonymous

Range is fundamental to power projection to diverse regions of the world where speedy intervention is necessary and a supporting base infrastructure is not always available. Range minimizes the dependence on aerial refueling, intermediate stops, and other constraints. . . .
In his 1942 book, Victory Through Air Power, *DeSeversky called for a nearly global projection capability—up to 6,000 miles from the United States. This was beyond the realm of possibility at the time but is now much closer to becoming a reality. The challenge is to insure that long range capability without compromising combat capability.*

Air Force 2000

IN a past issue of the *Review*, Dr. I. B. Holley carefully examined the demonstrated tendency of military doctrine to lag behind technology.[1] Joseph Martino, in his comprehensive work on technology forecasting, has pointed out the tendency of any institution—including the military—to resist new systems that would disrupt familiar traditions and methods of operation.[2] Although the Air Force makes a deliberate attempt to predict future needs and to use those need predictions to motivate the generation of concepts for future weapons, the system probably does not work as well as one would like to believe. Operational people will tend to think of future needs in terms of past ways of doing business, and those whose job it is to invent new weapon systems will tend to follow familiar evolutionary patterns of development. Robert Perry verifies the latter tendency in his documentation of ballistic missile decisions made in the 1950s.[3]

We need to recognize then that if our planning process does not guard against undue emphasis on the familiar, it may overlook the possibilities offered by innovation. If it relies too heavily on past ways of thinking and develops plans only within traditional mission area "compartments" (such as tactical, airlift, etc.), it may result only in the development of "new" weapon systems of familiar, traditional types.

This traditionalist approach appears to exist in an area of great importance to the United States at the present time. Before examining that area however, it will be useful to look briefly at one historical example where planning moved in familiar channels with unfortunate results. Between World Wars I and II, the French failed to appreciate the nature of the German threat; even more important, French military leaders confidently expected to fight the next war with the tactics developed in the previous one, and they planned to do it in roughly the same place. The Maginot Line, their ultimate preparation for trench warfare, was built across northeast France, along the German frontier. Failing to perceive the inadequacies of their planning assumptions (and perhaps applying their own version of "strategic sufficiency"), they failed to extend the line to the Mediterranean on the south and to the English Channel on the north. As a result, the system was circumvented easily by a tactic which the planners had not anticipated.

It is entirely possible that our planning today also tends to focus too much on past experiences and not enough on future possibilities.

In World War II, the United States built, deployed, and supported a global war machine. Time, abundant resources, and a large capacity for industrial mobilization were necessary for this U.S. accomplishment. But any future conflict is likely to find the United States "on the short end of the stick" in all three of these categories. The "arsenal of democracy," pouring out weapons and equipment along secure logistics pipelines, is no longer a valid planning concept. In spite of this fact, great emphasis is placed today on a perceived requirement for massive airlift and sealift capabilities to transport U.S. forces and supplies to potential worldwide trouble spots.[4] *Force projection*, rather than being a useful generic term for planning purposes, is almost automatically defined as tactical fighters nursed across vast distances by tanker aircraft, along with large transports full of support people, ground troops, and combat equipment—all flying to airfields located conveniently close to future battlefields. This conception assumes, of course, that the requisite airlift is affordable and will be purchased, that bases will be available and safe for lumbering transports to fly to, and that enemy forces will conveniently wait until U.S. forces are set up and supplied before going about their business.

Nevertheless, some published material casts considerable doubt on such assumptions.[5] Beyond the difficulty of setting up a conventional tactical air force in a battle area lies the formidable task of keeping it operational there. Large, fixed air bases and their accompanying industrialized support structure are vulnerable to disruption or destruction by hostile forces. One solution might be small-unit autonomy with dispersed combat operations. If this were practical, it would seem to offer a way to keep tactical air forces close to the action; but mobility and dispersion introduce a new set of problems. For example, equipping aircraft with large amounts of built-in test equipment to provide a measure of self-sufficiency extracts a cost in terms of both dollars and system complexity. And even if the U.S. Air Force could come up with adequate quantities of rugged, dispersed systems, it would still have the problem of supplying large volumes of munitions, fuel, and other supplies to widely dispersed units. In fact, whichever way planners turn in their efforts to plan conventional-looking tactical air forces for possible worldwide use, they seem to run into a stone wall of problems.

The answer to a range of future worldwide threats may not lie in the purchase of more transports, tactical aircraft, or other stereotyped mission area hardware. It is more likely to be found in a comprehensive search for innovative systems and appropriate techniques for their employment, a search that goes beyond traditional mission area boundaries and includes a realistic appraisal of both U.S. resource limitations and technological opportunities. Although the discussion that follows is not the result of a comprehensive and detailed search and analysis effort, it *is* the result of a train of thought that attempts to keep those two critical factors in view; and it suggests one promising system concept.

PERHAPS the key is to start at the beginning, with the gruesome but fundamental fact that the purpose of a weapon system is to kill people and destroy property. (If the threat to do so will control an enemy's behavior, so much the better.) The best system is the one that will destroy people and things most cost-effectively. Whether such a system looks like those we are accustomed to is unimportant. And the requirement to deliver destructive force at global range may force us to change our views of what future "tactical" systems should look like.

Planners must anticipate a variety of future circumstances under which destructive force may have to be applied. In some cases, conventional tactical aircraft may be most cost-effective. In others, the battleship *New Jersey* might be the best system for the job. In many other con-

ceivable future situations, however, the need for extremely rapid response and global range will be paramount. In such cases, it would appear that the needed destructive force, whatever its level, could best be applied by long-range aeronautical systems, particularly if the trouble spots were in remote areas (the interior of Africa, for example) far from established U.S. air bases.

The argument can be raised, of course, that large aircraft are vulnerable over the battlefield, and indeed they are. So, too, are smaller, conventional aircraft. Losses in Vietnam and in the 1973 Arab-Israeli War illustrated this fact.

What is needed then? Effective force projection requires a system that can operate from secure, supportable bases; transport destructive force to targets at global ranges; apply that force accurately and in a timely manner; and safely return to do the job again and again if necessary.

These requirements seem like a big order for any possible all-purpose aircraft. Therefore, the key is to think of a system, not an aircraft. A large, long-range aircraft to supply large capacity and global range would be a basic part of such a system. One or more types of standoff missiles would probably be necessary to reduce vulnerability of the carrier. If friendly forces were being furnished close air support, they might provide target designation. In autonomous operation, drones might be used to fly into hostile environments and seek out targets for destruction, as suggested by recent public relations releases concerning the Aquila program. Starting with the concept of a long-range carrier aircraft and carefully integrating target acquisition subsystems, including drones, plus accurate standoff weapons, could result in a new level of cost-effectiveness in force projection.

More than forty years ago, as the final quotation opening this article shows, a famous air power pioneer looked ahead to a day when military aircraft would provide rapid force projection at global ranges. Advances in propulsion and materials are bringing these ranges closer. At the same time, electronic and computer advances may be bringing closer the scout and strike vehicles to provide the survivability needed by such a system. The resulting system, however, will be neither tactical fighter nor strategic bomber; and to evaluate the need for it and to assess its potential will require stepping out of familiar mission area ways of thinking that tend to confine our thinking to one or the other.

Enon, Ohio

Notes

1. I. B. Holley, Jr., "Of Saber Charges, Escort Fighters, and Spacecraft," *Air University Review*, September-October 1983, pp. 2-11.

2. Joseph Martino, *Technology Forecasting for Decision Making* (New York: American Elsevier, 1971), p. 82.

3. Robert L. Perry, *The Ballistic Missile Decisions* (Santa Monica: Rand, 1967).

4. For example see Thomas Fabyanic, "Conceptual Planning and the Rapid Deployment Joint Task Force," *Armed Forces and Society*, Spring 1981.

5. See Dr. E. Asia Bates, "The Rapid Deployment Joint Task Force—Fact or Fiction," *Journal of the Royal United Services Institute*, June 1981.

EDUCATION AND TRAINING: SOME DIFFERENCES

DR. JOHN A. KLINE

A CONTINUING debate exists as to the distinction between *education* and *training*. In everyday conversation, people frequently use the terms interchangeably. Indeed, there are some, I suspect, who believe that the best approach to the problem of differentiating between education and training is to ignore the distinction. I do not share this view.

For many years the U.S. Air Force drew a clear distinction between education and training. Education was organized under Air University; training, under Air Training Command. Then, in 1978, the Air Force consolidated education and training under the same major air command structure. In 1983, USAF leaders decided again to draw a clear distinction between education and training, reintroducing a major air command structure to administer each. The decision was a good one, for although there are similarities between education and training, there are some basic differences—differences which Air Force curriculum developers and instructors should keep in mind.

FOLLOWING the traditional three-part distinction among the domains of learning (psychomotor or doing, cognitive or thinking, affective or feeling), training emphasizes the psychomotor domain of learning. Training that is done in the cognitive domain is generally at the knowledge level and lower part of the comprehension level. Education, on the other hand, teaches a minimum of psychomotor skills. It concentrates instead on the cognitive domain, especially the higher cognitive levels, i.e., high comprehension and above. Affective learning, by the way, may be a product of both education and training.

Criterion objectives are most appropriate for training. That is, under a given set of conditions, a student will exhibit a specific behavior to a certain predetermined level or standard (e.g., "without the use of references, list the steps of the USAF Instructional System Development Model according to AFM 50-2, in order and without error"). Cognitive objectives written at the appropriate level of learning (knowledge, comprehension, application, analysis, synthesis, or evaluation) are more useful for education. When behavioral or criterion objectives are used in education, they are generally broader than when used in training and relate to the learners' ability to generalize, see relationships, and function effectively in new situations—situations which cannot be completely visualized or defined.

Training is essentially a closed system. The trained individual is easily recognized as knowing the "right answers," doing things the "approved way," or arriving at the "school solution." Under these conditions, the products of each trainee in every situation can be expected to look the same. Education, in contrast, is an open system. Learning is continuous with no cap or ceiling on how well the graduate may be prepared to handle new responsibilities. Right answers and ways of doing things often do not exist in education—only better or worse ones.

Objectives, job requirements, and skill levels are constraints with training. Yet time required for training can vary because of the aptitude, experience, and previous skill level of the student. With education, however, time is often a constant (four years, ninety semester hours, ten months, forty hours in class) and therefore is specified. This is not to say that one's education is ever complete. It is not. However, to fit

time constraints, objectives in education must be selected from a much wider range of possible objectives than can ever be included in the time available, due to the nearly infinite combination of position responsibilities of the graduates. Objectives, job requirements, and skill levels are not constraints with education, since persons are encouraged to develop to their potential.

With training, a task analysis can be done so that the curriculum will include a complete listing of skills and knowledge required for the graduate to demonstrate competence. With education, curriculum planners and instructors must select a sample to teach from a universe of ideas. Furthermore, they must often rely on opinion from acknowledged, credible experts to determine what needs to be taught. Creative, visionary experts are needed to predict future needs rather than merely reflect current ones. This absence of exactness often results in a lack of consensus on what should be taught. Analyze courses taken by majors in a given field or discipline at different universities, and you will find differences. For that matter, you will find differences among curricula of the various senior and intermediate service schools. Differences in curricula and emphasis on individual study are good in education but usually not in training.

THESE differences between education and training do not suggest that one facet of learning is more important than the other, only that they are different. Obviously, genuine accomplishment (competence, proficiency, good judgment, effectiveness) incorporates both. A person cannot, for example, effectively give a speech, fly an airplane, edit a scholarly journal, or command an Air Force organization without a wide range of knowledges and skills. Still, these differences have strong implications for those who provide education or training. Failure to acknowledge them will hinder learning and, ultimately, performance. Recognizing their relevance in curriculum planning and teaching will improve both education and training in the United States Air Force.

Air University
Maxwell AFB, Alabama

Historical study can be a corrective to the narrowness of specialization and, therefore, is particularly valuable in focusing on the highest area of professional thought in the armed forces.

John B. Hattendorf
Naval War College Review
September-October 1984

fire
counter fire

DEFICIENCIES IN AIR FORCE DOCTRINAL EDUCATION

MAJOR JOHN W. FAL

IN MY opinion, the U.S. Air Force does not teach its staff officers and future leaders what they need to know about the doctrine of conducting an air war.

> In the development of superior air leadership, the education process cannot treat air doctrine as a set of abstract principles to be learned by rote like mathematical formulas and dutifully filed away for future reference. Air doctrine is made up not of abstractions, but of dynamic living truths forged in the heat of combat and tested in the crucible of war.[1]

I formed this opinion after completing two years of duty as the director of Team Spirit employment planning. Team Spirit is the annual joint/combined exercise in Korea. It involves more than 161,000 South Korean and U.S. personnel in a joint air-land-sea training exercise. During that time I worked with officers from all other services to plan these operations. Our contact included discussion, sometimes debate, about the associated doctrinal issues. These issues included such things as the control of air power in the airspace over an area where amphibious operations are under way, responsibilities of the joint commander for control of Marine airspace, USAF support of amphibious operations, support of a protracted land battle by United States Marine Corps and United States Navy air, and air support of ground forces under the AirLand Battle concept.

In a very short time, I found that I had many misconceptions about the employment of air power and that there were many concepts and practices necessary to managing the air side of a joint operation that I had never even heard about: e.g., the roles and missions of the various services; how these roles complement one another; and concepts of economy of force, unity of command, and fragmentation of effort. As I observed and compared myself and other Air Force officers to our contemporaries in other services (especially our Marine Corps contemporaries), I also perceived that this ignorance is the norm for Air Force officers. The Air Force simply does not educate its staff officers about the management of a joint air war, even though air operations are clearly a part of a joint land, sea, and air operation and such joint operations are not an unusual phenomenon, as these comments from General Dwight D. Eisenhower indicate:

> Experiences . . . have indicated that in many operations, if not in the majority, the task was of necessity accomplished by contributions from two or three services acting under the principles of unified command. . . . The welding of the forces resulted in the greatest possible concentration of combat power at the decisive point while at the same time permitting the greatest economy of force.[2]

Specifically, I believe that two subjects are

neglected in an Air Force officer's professional education. These are history (especially air power history) and joint doctrine. If we do not study how we did things in the past, then we will not know what worked and what did not work. Consequently, we shall be prone to repeat our mistakes, and each new generation of Air Force staff officer will do little more than spend his efforts relearning old lessons "the hard way" instead of advancing and improving air doctrine.

This was the way General Otto P. Weyland, Commander, Far Eastern Air Forces, put it when reflecting on the war in Korea:

> An astounding facet of the Korean War was the number of old lessons that had to be relearned.... It appears that these lessons either were forgotten or were never documented—or if documented were never disseminated.[3]

If we do not teach air doctrine and its applicability in joint operations to our officers, how can they qualify as advocates of air power? Doctrine evolves from our assigned roles and missions and the unique characteristics of air power. In this day of limited funding, the competition for roles and missions is keen. If airmen do not understand doctrine, then roles and missions suited to air power could be overlooked or misassigned simply because airmen are unable to argue the merits of assigning them to air power.

I think that it is safe to say that a joint air force commander's staff, even though it will have representation from all services involved in the joint air operation, will be largely composed of Air Force officers. Under the concept of unified action as put forth in JCS Pub 2, the joint air force commander is responsible for the employment of all air power in a theater regardless of service. If Air Force officers on this staff do not understand joint doctrine, how can they properly plan the employment of this joint air force? If these staff officers do not know the doctrinal differences between the participating services, there will be disharmony and competition instead of cooperation throughout the joint air force.[4] Moreover, any team member who is not at least familiar with joint doctrine and the specific responsibilities of air, land, and sea team members in a joint operation could jeopardize the contribution of air power to the overall theater operation.

We spend much time in our professional military schools teaching principles of management and the social, economic, and political factors behind war, but how much time do we spend teaching the conduct of war as a joint problem? In my two years with Team Spirit, I worked with graduates of all intermediate schools and found that, generally speaking, the Air Force graduates of these schools are not equipped to discuss doctrinal topics but that any Marine officer is.

Obviously, some Air Force officers are learning joint doctrine "in the crucible of combat" as they deal with other services daily on joint staffs. But it seems to me that there are many more of us who know nothing about it because no one has even told us that there is a body of knowledge called joint doctrine which is well worth knowing. Is there any Air Force school that teaches such doctrine, or is this instruction left to OJT? If this type of learning is relegated to an almost pure trial-and-error method, the probability of errors seems dangerously high. Mistakes made in this joint arena not only will cause the Air Force embarrassment but could establish a bad precedent by misaligning roles and missions best suited to air power. After an Air Force officer starts dealing with joint matters is not the time for him or her to begin learning about joint doctrine. Air Force officers need to be taught joint doctrine and the Air Force interpretation of this doctrine before they begin these assignments.

I have seen Air Force action officers make concessions to other services in the interest of harmony and cooperation. These concessions have been made in the highest spirit of compromise. Unfortunately, they were inconsistent with Air Force doctrine and probably degraded combat power. The action officers were

unaware of the doctrine that should have guided them, and the precedents set by their decisions caused or fueled more problems than their immediate compromises solved. Air Force leadership may argue doctrine, roles, and missions; but action officers implement the outcomes. If action officers do not know the doctrinal positions of the Air Force, how can they be expected to follow current doctrine correctly?

The conduct of war is the reason for our existence as a military service. If we are to consider ourselves warriors, we must strive to know as much as possible about the conduct of war. Air leaders, planners, staff members, and combatants must understand doctrine, or the combat power of the Air Force will be eroded by improper employment. This doctrine has come from the lessons that our predecessors learned in armed conflict and must not be put in a library to gather dust. This knowledge is needed today. We are constantly training our forces in joint/combined exercises such as Team Spirit. Are we training the way we plan to fight? Is the joint force achieving the greatest possible combat power with the greatest economy of force?

Joint doctrine, Air Force doctrine, specific roles and missions—all of the underlying principles of air power employment should be taught today. These are adequately addressed in Air Force One- and Two-series manuals, JCS Pub 2, and official Air Force histories. But trying to learn these by trial and error or by simply reading these documents on one's own is not the way to do it. Understanding is called for, not fragmented knowledge or answers memorized by rote. Doctrine must be studied. It must be investigated, compared, and discussed, with history serving as its backdrop.

I believe that the Air Force needs to develop a formal doctrinal education program. Ideally, this program should be the primary emphasis of a school similar to the Air Corps Tactical School, predecessor of the Air War College. If establishing such a school is not possible, a specific air doctrine course should be created. This course could be separate from the present professional military education courses, or it could be included in them. Whatever program is developed, it must provide the time and expertise to develop doctrinal understanding in each officer, not just rote memorization of some basic concepts. Some of the subjects that should be taught are structure of the battlefield; fire support; combat support (logistics, engineering, and communications); relationships of air superiority, CAS, BAI, reconnaissance, airlift, and bombardment; interoperations of USAF and non-USAF air; and interoperation of air, land, and sea forces.

I am not suggesting that all Air Force officers should be made doctrinal experts. I am suggesting that the Air Force needs to do a better job of equipping its personnel to work in the joint arena and that all Air Force officers should understand how joint and Air Force doctrine affects their functional areas. In short, more thorough schooling in Air Force and joint doctrine must be provided than that offered currently.

The creation of a separate Air Force nearly four decades ago was a monumental organizational decision based on the unique decisiveness of air power. The status of the Air Force of the 1980s and beyond should not be jeopardized because the doctrinal reasons for that decision are no longer understood by Air Force officers.

Maxwell AFB, Alabama

Notes

1. AFM 1-1, *Functions and Basic Doctrine of the United States Air Force*, 14 February 1979, p. iii.

2. Dwight D. Eisenhower quoted in AFM 1-1, 14 February 1979, p. 2-5.

3. "FEAF Report on the Korean War," 26 March 1954, p. 130; Robert F. Futrell, *The United States Air Force in Korea 1950-1953* (New York: Duell, Sloan, and Pearce, 1961), p. iv.

4. AFM 1-1, p. 4-4.

EDUCATION: FORMAL SCHOOLING *PLUS* PERSONAL PREPARATION

CAPTAIN DIETER BARNES

I AGREE with Major John W. Fal that most Air Force officers should have a thorough knowledge of air power doctrine, and I share his concern over the fact that this is not the case. However, our professional military education (PME) program is not entirely responsible for the problem he describes. In my opinion, PME does a good job of laying the foundation for an officer's continued professional development, and this is essentially the function of an educational system. A special feature of Air Force PME is that it provides different phases of study, each tailored to meet the special needs of officers at three critical points in their careers: company grade, field grade, and senior field grade service. But PME merely lays the foundation for continuing professional development that must also include an individual, personal study program. Thus, professional development involves both formal, academic training and individual study that should take place throughout an officer's career.

The formal process begins with Squadron Officer School (SOS), an intense course of study that lasts eight and a half weeks. More than fifty-five hours of the SOS curriculum are allocated for the study of force employment and doctrine-related issues. The concepts presented in the lectures, seminars, and readings that comprise this portion of the curriculum are reinforced as students participate in wargaming exercises that demand a thorough knowledge of how we fight.

The formal schooling begun at SOS is continued at the Air Command and Staff College (ACSC) and the Air War College (AWC), both of which offer courses of study approximately ten-months long that go even deeper into the study of doctrinal issues. Each of these schools designates approximately 350 curriculum hours for the detailed study of military history and military doctrines, including those of our sister services, our allies, and our adversaries, as well as our own. Officers at both ACSC and AWC also gain practical experience by applying their knowledge of strategy and doctrines in computer-assisted war games.

Once an officer has received a basic professional education through resident, seminar, or correspondence PME programs, it is up to that individual to expand and deepen his or her knowledge of the principles and doctrines that must guide the use of air power. In this respect, our situation as officers very much parallels that of physicians, lawyers, and other professionals: we have a personal responsibility to stay abreast of developments in our profession through self-study. Just as it is inconceivable that a surgeon would never read a medical journal after completing his or her formal study of medicine, it should be impossible to think of an Air Force officer who never reads a professional journal and other pertinent literature beyond that required in formal PME courses.

Each of us has a professional obligation to follow debates of key defense issues in professional journals, such as *Marine Corps Gazette*, U.S. Naval Institute *Proceedings, Parameters, Military Review, Naval War College Review*, and our own *Air University Review*. Furthermore, we should not shy away from writing down our own ideas on these issues and submitting them for publication. There is no better way to sharpen one's own views than to prepare a coherent, written version of them.

The importance of a personal study program is illustrated by an episode recounted in Edgar

Puryear's *Nineteen Stars*. In December 1941, General Dwight D. Eisenhower was assigned to the War Plans Division. Upon reporting to General George C. Marshall for his first task, Eisenhower was given a brief outline of the situation in the Western Pacific and asked "What should be our general line of action?" Eisenhower asked for a desk and a few hours. Puryear tells us of this occasion:

> Though he spent several hours on his answer, it was really a matter of organizing his thoughts. Years had gone into the preparation of his answer—the countless hours of study in the service schools he had attended; the training furnished by his many and varied assignments, . . . [and] the informal studying he did on his own time; . . .—all of this went into his answer. He reached his conclusions and took them back to General Marshall. The answer must have been what Marshall was looking for; he said to Ike, "I agree with you," and Ike said to himself, "His tone implied that I had been given the problem as a check to an answer he had already reached."

Puryear notes that General Eisenhower went on to command the largest aggregation of forces in the history of the world and that his informal professional study program was a key factor in his achieving that position. We might all do well to spend more of our leisure time in a personal study program designed to enhance our knowlege of pertinent issues, including air power doctrine.

Maxwell AFB, Alabama

Results of the 1984 *Air University Review* Reader Survey

WE received 1556 responses to our reader survey. The bulk of the responses were from our officer readers: 19 percent (296) from the ranks of full colonel and above, 40 percent (616) from majors and lieutenant colonels, and 23 percent (358) from lieutenants and captains. A total of 177 enlisted personnel answered the survey; 97 of these were master sergeants, senior master sergeants, and chiefs. Of the 1556 respondents, 71 percent were active duty Air Force. Written suggestions for improvement in our journal were provided on 666 (43 percent) of the surveys.

The vast majority (98 percent) of respondents found our layout, illustrations, and graphics effective or highly effective. A somewhat smaller percent (92) considered us effective or highly effective as "a forum to stimulate professional thought"; 1 percent considered the *Review* ineffective in this respect.

Survey question 12 asked readers which of our departments they found most valuable. About two-thirds of those replying selected "Feature" articles as the most valuable section, while 15 percent chose "In My Opinion" as most valuable. Where opinions are concerned, our readers seem to believe the views we publish tend excessively to favor established policies. One of the most common comments among the 666 suggestions for improvement was that the *Review* should be printing more articles that criticize or question established policy. One charges us "to be less obviously a house organ." Another officer wrote: "I think a wider range of viewpoints would be healthy if the writers could be assured of survival! Iconoclasm can stimulate creative thought." One officer advised us: "Keep an eye on controversy. Don't

follow current Air Force trends. Encourage those young guys who wish to look with wider eyes and ideas." And finally, there was this rhetorical question put to us by a respondent: "Could the Billy Mitchell of today—wherever he or she is—get published in the *AU Review*?"

When asked (in question 13) about which subject areas should be emphasized most, 21 percent favored tactics and employment, while 20 percent chose strategy and planning. Management theory was favored by 12 percent, while leadership and related topics received the "vote" of 17 percent. The fairly even distribution of preferences here is indicative of the wide-ranging interests of our readership. Such a variety of interests makes it impossible for the *Review* to keep everyone happy all the time. Thus, it isn't surprising that we took numerous "hits" in remarks from our readers concerning the topics of articles printed, although no pattern in the "hits" was apparent. One respondent called for more "comparison of older strategies (ten years [older] or more) with modern ideas," while another chided us with these words: "Stop talking about out-of-date strategy and start addressing the real world of electronic warfare." Another respondent wanted less technical material and "more discussion on how logistics influences strategy and tactics. We win with logistics." Comments like "more military history and theory" are offset by remarks like "less history, more strategy." One company grade officer advised us colorfully: "Make it more useful for the people in the draining swamp (i.e., how to deal with alligators)."

When it comes to the quality and level of writing in the *Review*, our critics were a little more consistent. There were numerous remarks like "minimize the academic starch," "join the real world," "no need for the writing to be so scholarly," and "stop being a dull academic forum." Nevertheless, a couple of people disagreed with those who think the level of the *Review* is too high. One commenter urged us to "bring [the *Review*] up to the level of Naval Institute *Proceedings*." And there were even a few words of encouragement. A junior field grade officer told us "keep it scholarly," and a senior field grade officer (full colonel or above) advised us to "keep the intellectual level up."

One area where criticism was very consistent concerns the authors of articles appearing in the *Review*. Virtually all comments here called for more "blue-suit" authors. Although we tend to favor publishing the work of serving Air Force personnel, we do not have a specific policy dealing with authorship. Our readers should keep in mind that the Department of the Air Force does include about 260,000 civilians, who sometimes can offer important observations and insights into modern defense issues. Similarly, both members of other services and civilians in the intellectual community provide important perspectives on defense matters that we in the Air Force must consider in our decision making. In general, the *Review* publishes about two articles by active duty, reserve, and retired military for every one article by a civilian.

We at the *Review* appreciate your efforts to let us know how you feel about what we are doing. We aim to serve you and are seriously considering your suggestions for improving. If any of you would care to drop us a line and elaborate on your remarks, we would be happy to respond. We shall continue in our efforts to make *Air University Review*, your professional journal, the best professional military journal in the United States.

R commentary

To encourage reflection and debate on articles appearing in the *Review*, the Editor welcomes replies offering timely, cogent comment to be presented in this department from time to time. Although content will tend to affect length and format of responses, they should be kept as brief as possible, ideally within a maximum 500 words. The *Review* reserves the prerogative to edit or reject all submissions and to extend to the author the opportunity to respond.

BEWARE OF SIMPLISTIC SOLUTIONS

Lieutenant Colonel Dennis M. Drew

WILLIAM Lind's articles are usually both enjoyable and challenging. The typical Lind article is punctuated skillfully with sardonic wit used to highlight fundamental problems within the U.S. military that might otherwise be overlooked or ignored. Unfortunately, Bill Lind's latest contribution to the *Air University Review* was not a noteworthy literary effort.* Perhaps worse, the article mirrored the faulty analyses and simplistic solutions typically found in the writings of the so-called military reform group, for which Lind is a vitriolic unofficial spokesman. However, the article did serve as an object lesson to those who might be tempted to accept the ideas of the "military reformers" without rigorous scrutiny.

Identifying Lind's thesis tested the reader's patience. After opening with an obscure quotation, followed by a truism about the importance of ideas, and an overly long example only tenuously connected to his theme, Lind finally settled on his message. Using his unique flair for understatement, Lind asserted: "Intellectually, the Air Force officer corps appears not merely sluggish but moribund." To Lind, the reason for this problem is clear: "The average officer appears to read little if at all about warfare [and] writes less. . . ."

The evidence that Lind presented to bolster his assertions reflected the shoddy research and incomplete analysis that is all too typical of self-anointed experts who comment on military affairs. First, Lind claimed that Air Force officers do not read professional military literature. His basis for this claim was an offhand comment made by a former editor of the *Air University Review*, plus the minimal response generated by a sharp debate carried on by Lind and an Air Force colonel in previous editions of the *Review*. The former argument relied on "gut feel" rather than hard data. The latter argument disregarded alternative explanations, including my own personal reaction that the colonel stated his case well in his pieces and that the quality of Lind's remarks did not merit further attention.

Lind presented equally unconvincing evidence regarding the writing of Air Force offi-

*William S. Lind, "Reading, Writing, and Policy Review: The Air Force's Unilateral Disarmament in the War of Ideas," *Air University Review*, November-December 1984, pp. 66-70.

cers. Concerning the *Air University Review*, he asserted that "imaginative articles written by Air Force officers on controversial subjects seldom appear in its pages." As a frequent contributor to these pages, I am tempted to launch a frontal attack on this assertion. However, this would miss the point. The point is that Lind presented no content analysis, no survey of authors, and no definition of "controversial subjects." In short, he presented no evidence, and his assertion remains only an assertion.

This is not to say that Lind's assertions are totally wrong. The sweeping generalization that the Air Force officer corps is intellectually sluggish and moribund is not substantiated by Lind's evidence (or lack thereof). I might agree, however, that not enough Air Force officers read and write seriously about the complex and controversial issues which the American military must face. I have no hard evidence except my observations of several thousand Air University students over the past seven years. Even though my evidence may be more persuasive than Lind's, I would hesitate to make any sweeping assertions.

Lind continued in his essay to speculate about a cause for the problems he asserted and to propose a solution. But once again, his analysis was incomplete and his proposed solution simplistic.

According to Lind, U.S. Air Force officers do not read or write about controversial topics because of censorship within the Air Force security and policy review process. Lind compares the leniency of U.S. Army censorship with the stringent policies followed by the United States Air Force. His solution to the problem, as one would suspect, requires an Air Force policy and review process at least as lenient as that of the U.S. Army. It is instructive to examine each of these points.

Lind indicates that while there may be multiple reasons why Air Force officers do not read and write about controversial subjects, the bulk of the blame can be fairly placed on the security and policy review process. Lind may be correct. But without evidence, one can say only that censorship prevents the open publication of certain controversial articles and books. It does not necessarily prevent Air Force officers from reading controversial materials, either from open sources or from sources available only within the government. Nor does it necessarily prevent Air Force officers from writing about controversial subjects and publishing such material for official use only. Lind would have been much more accurate if he had said that censorship may restrict the ability of officers to read and write about controversial subjects and that it may inhibit constructive dialogue between the military and civilian intellectual communities.

In spite of Lind's lack of evidence and analysis, I would agree that censorship is a serious problem. In my experience at Air University, I have seen a large number of important articles and studies that have been denied publication because of security and policy review. Many, it would seem, were denied clearance on questionable policy grounds and perhaps could be accurately characterized as victims of Pentagon paranoia. But the solution to the problem is not as simple as Lind suggests.

It is clear that the military has the right, indeed the duty, to restrict what its officers publish. Even Lind would agree that the Air Force cannot allow one of its officers to publish an article advocating willful disobedience to lawful orders. Thus the issue in question is not censorship. Rather, the issue is how to apply censorship in a manner that satisfies the often conflicting needs for constructive debate, organizational cohesiveness, and necessary secrecy.

The Air Force has an especially difficult problem with security and policy review, particularly when compared with the Army. It is one thing to publish an article questioning the purchase of an armored fighting vehicle or criticizing the performance of the M-1 tank. It is quite another thing to question the purchase of the MX missile, to argue against the deploy-

ment of cruise missiles in Europe, or to criticize the performance of the Minuteman missile fleet. The political and military implications of the issues are much more limited in the first instance than in the second. Open discussion of nuclear issues would be much more likely to affect delicate international negotiations and Soviet perceptions of our deterrent posture. In essence, it is possible that there must be different censorship standards for the Air Force and the Army. All of this means that we face a very complex problem requiring more than a simplistic solution. We need to devise a security and policy review system that meets the complex and often conflicting needs of the Air Force.

What would be the elements of such a system? Four come quickly to mind, but even these elements have hidden complications. First, there should be a *reference standard* or benchmark to use in judging whether or not publication should be denied because of conflicts with current policy. At present, we have reasonably precise definitions to determine whether material is classified confidential, secret, or top secret. A similar meaningful standard would be most helpful in terms of policy review. Unfortunately, even with a reference standard, the policy review system could be abused, just as the classification system has often been abused by overzealous classifying authorities. Abuses of such a system might be minimized if we place the *burden of proof* on the *censor*. Today the burden of proof is on the writer (de facto, if not de jure), and the censor can deny clearance almost out of hand and with only the most cursory explanation. Each public release denial should be accompanied by a full explanation, including suggestions for corrective action. Additionally, there should be censorship *accountability*. Today, written works are evaluated for clearance by nameless members of the Pentagon bureaucracy. The requirement to place personal reputations on the line when denying clearance might change many security and policy review decisions.

Unfortunately, the requirement for full explanation and accountability might create an enormous bureaucratic bottleneck at the Pentagon and impose an intolerable workload on those saddled with the responsibility to review various written works for public release. This problem might be solved by *decentralization* of the security and policy review process. Although decentralized by regulation, the list of exceptions that currently require clearance by Pentagon agencies includes nearly every important or controversial subject. In effect, the process is highly centralized. Unfortunately, decentralization requires officers in the field who are willing and able to "bite the bullet" and make the difficult and contentious decisions under guidelines that are vaguely defined. Such decisions obviously carry heavy risks where the decision maker's career is concerned. This explains why these kinds of decisions have, over the past decades, been gradually centralized into the faceless and nameless Pentagon bureaucracy where careers can be protected.

THERE are no easy answers, and each answer seems to create its own set of new problems. Moreover, I have only mentioned four elements of a reformed security and policy review system. There may be many others of equal or greater importance. It would be particularly interesting to read comments from those who have actually been part of the process within the Pentagon, from public affairs personnel who are charged with administering the system, and from legal officers with opinions on the legal basis of the system.

I invite comments on the problem from all who are interested in the subject. Further comments from Lind would be welcome, even though I continue to be dismayed by his original haphazard analysis and simplistic solutions.

Center for Aerospace Doctrine, Research, and Education
Maxwell AFB, Alabama

ON INOCULATING FOR SURPRISE

Major Richard W. Bloom

DR. Roger A. Beaumont's article on "inoculating" for surprise has two main points.* The first—that military surprise is a common psychological experience—is in accord with history and psychological research. The second—that "stress inoculation" leads to more effective functioning after surprise in a crisis—must be very carefully qualified.

Psychological research clearly shows that stressful training may have a number of possible outcomes. Presenting a carefully graduated sequence of fear-provoking stimuli (i.e., systematic desensitization) can increase future stress tolerance. Presenting a moderate amount of depression-provoking stimuli (i.e., the Velten procedure) may lead to temporary performance decrements with no lasting effects whatsoever. Presenting an amassed amount of fear-provoking stimuli (i.e., implosive therapy) or ensuring that behavior has no relationship with reinforcement (i.e., the learned helplessness paradigm) may lead to chronic performance decrements in future situations.

Psychological research also shows that the best training techniques leading to effective performance after surprise in a crisis may not involve "stress inoculation" at all. Instead, the best approach might be to overlearn predictable mission behaviors and internalize the attitude that "I am the best and can handle the unexpected." There also are experimental training modules shaping flexibility and creativity that may have potential. What's more, there are other experimental approaches to *prevent* being surprised, as opposed to picking up the pieces.

Lastly, psychological research suggests that different techniques will work with different people. There is no "one way" or "magic pill."

Dr. Beaumont makes some excellent points in his article. However, before we jump on the bandwagon of "no pain, no gain," we should consult the psychological literature.

Fort Detrick, Maryland

---

*Dr. Roger A. Beaumont, "Certain Uncertainty: Inoculating for Surprise," *Air University Review*, July-August 1984, pp. 8-16.

Major Bloom is Medical Intelligence Program Manager at the Armed Forces Medical Intelligence Center, Fort Detrick, Maryland.

IS YOUR BASE READY TO COUNTERACT TERRORISM? A RESPONSE

Dr. Thomas P. Ofcansky

CAPTAIN Michael T. McEwen's article addressed a very serious security problem, namely, the proliferation of unexpected and unprovoked terrorist attacks on U.S. Air Force facilities, equipment, and personnel.* Although Captain McEwen's suggestion for a response plan was timely and worthy of close consideration, there are at least two other more practical steps the U.S. Air Force could take to reduce the possibility of terrorist attacks.

Huge signs identify the overwhelming majority of buildings on most USAF bases. While admittedly useful to personnel trying to find a particular office, such signs are an open invitation to terrorists. Even more serious is the traditional military practice of using door plaques to identify, by rank and name, individuals living in base housing. This custom not only provides potential terrorists with a valuable guide to the whereabouts of USAF personnel but also needlessly endangers family members.

To make Air Force bases safer and less of a target for terrorists, all identification signs should be removed. Such a nonidentification policy would be a clear deterrent to terrorists and would help to resolve some of the problems Captain McEwen discussed.

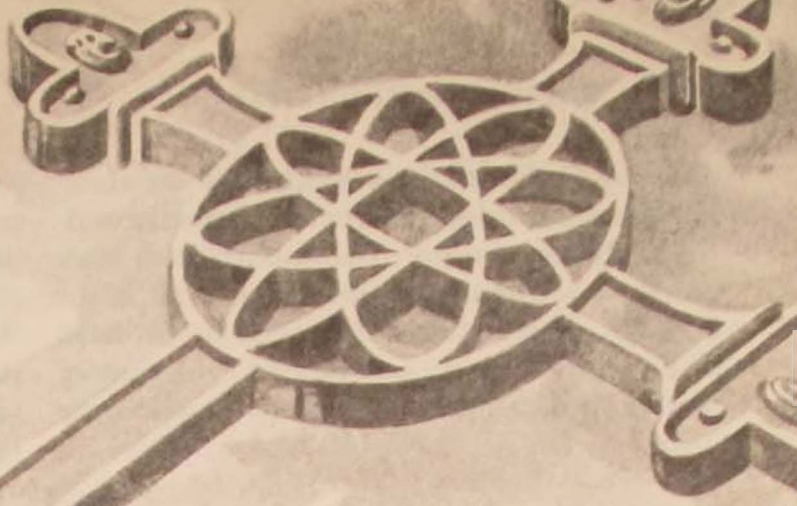
Scott AFB, Illinois

*Captain Michael T. McEwen, USA, "Is Your Base Ready to Counteract Terrorism?" *Air University Review*, September-October 1984, pp. 80-87.

Dr. Ofcansky is a historian at Hq Air Force Communications Command.

The Napoleonic era proved to be the harbinger of the fact that warfare is a clash between whole peoples over their political and physical independence. Accordingly, strategy grew from being the "art of the general," focusing on the battlefield conduct of affairs, to being the business of arranging a nation's whole disposition for war—a business that increasingly has intruded on peacetime affairs.

William H. Langenberg
Defense Science 2002+, October 1984



THE AMERICAN CATHOLIC BISHOPS AND NUCLEAR WAR: A MODERN DILEMMA

MAJOR BRUCE B. JOHNSTON

As military professionals, we are caught up in one of the oldest and deepest of moral dilemmas: We have attempted, and are still attempting, to build a nation on certain clear moral and social principles, yet the need to protect our nation often causes us to contemplate or take actions that directly contradict these principles. Although the conflict between needs and ideals is manifest throughout the full spectrum of society's endeavors, it is when societies resort to war that the conflict reaches its most immediate and frightening dimensions. For the ten millenniums prior to 1945, the conflict has been kept to manageable proportions because destruction was usually, although not always, limited by the capabilities or objectives of the opponents—even when whole peoples became involved in a conflict. Since the detonation of the first nuclear weapon in 1945, the conflict between needs and ideals has assumed a greater significance, since they gave man the ability to destroy whole peoples and societies (indeed, perhaps even civilization).

Recently, the National Conference of Catholic Bishops attempted to deal with the moral dilemma posed by nuclear weapons in its pastoral letter titled "The Challenge of Peace: God's Promise and Our Response." More specifically and to the point for men and women in the U.S. Air Force, the pastoral letter examines the morality of nuclear deterrence and using nuclear weapons. Although a minority (approximately 25 percent) of the military is

Roman Catholic, the relevance of the statements contained in the letter is far more extensive. For this reason, it is important that we understand the major ideas expressed by the bishops, their implications in terms of current U.S.-Soviet military capabilities, and some of the major moral problems not addressed in the letter.

The Pastoral Letter

The term *pastoral letter* is actually a misnomer. The document is more like a treatise than what one would normally think of as a letter, containing approximately 40,000 words. The letter deals with several complex problems in addition to the nuclear issue and draws from secular as well as religious sources. Many current and former government officials, including Caspar Weinberger, Eugene Rostow, Edward Romney, Harold Brown, and others, appeared before the drafting committee. Writing the letter took more than two years and required three major drafts before the Catholic bishops of the United States approved it by a 238-9 margin in May 1983. Four sections of the final document are particularly relevant to the Air Force mission: just war theory, use of nuclear weapons, nuclear deterrence, and steps to promote peace.

just war theory

Western societies have wrestled with the just war concept for centuries, and the Roman Catholic Church has been a driving force in this struggle. The discussion concerning just war in the pastoral letter is worth considering because the bishops' position probably closely reflects what the American military institution would regard as just war.[1] The letter distinguishes between when it is permissible to resort to war (*jus ad bellum*) and what is permissible in the conduct of war (*jus in bello*).

The best way to describe the letter's position on *when* it is permissible to take up arms is that it is pacific, not pacifist. The Church opposes any war of aggression and reluctantly supports defensive wars once all peace efforts have failed. The letter carefully explains that nonviolence best reflects the teaching of Jesus, but that force, including deadly force, can be justified in certain instances and that nations have a right to provide for their own defense.[2] As Pope Pius XII stated: "A people threatened with an unjust aggression, or already its victim, may not remain passively indifferent, if it would think and act as befits a Christian."[3] Specific guidelines for when war is permissible include a just cause, competent authority to commit the nation, right intention, a reasonable probability of success, proportionality, comparative justice, and last resort. Essentially, the nation's leaders must carefully subject the use of military force to each just war criterion and resort to force only when the action meets all criteria.[4]

Once a nation becomes convinced that it must resort to force to protect itself, the conduct of the war is subject to two general principles: proportionality and discrimination. Proportionality refers to the amount of military advantage that can be obtained from a military action weighed against the amount of damage caused by it. If the damage exceeds the advantage, the act is immoral.[5] It is worth noting that proportionality is not linked to the concept of revenge; that is, the fact that the other side commits immoral acts does not render moral similar acts on your part.

Differentiation is the ability to distinguish between combatants and noncombatants and to direct attack at the former. Of course, recognizing combatants, like recognizing beauty, is somewhat dependent on the eye of the beholder. In reality, selecting valid combatants in a conflict can vary between the extremes of defining combatants narrowly as only armed forces and considering every person, every asset, and virtually everything a resource to be used in war. World War II bombing illustrates the difficulties in making such distinctions. The British described the German bombing of

Warsaw as immoral yet themselves engaged in an enormous campaign of bombing civilian targets in Germany. In the case of the British bombing, the morale of the German people had been selected as the military target. Still, this campaign bothered not only religious leaders but others too, perhaps most notably the British military historian B. H. Liddell Hart, who wrote:

> A new directive to Bomber Command on February 14, 1942, emphasized that the bombing campaign was now to "be focused on the morale of the enemy civil population and in particular, of the industrial workers." That was to be the "primary object." Thus terrorisation became without reservation the definite policy of the British Government, although still disguised in answers to Parliamentary questions.[6]

One is also struck by President Truman's unequivocal statement that he never had any moral reservations about dropping atom bombs on two Japanese cities.

These examples illustrate the problem of discriminating between military and nonmilitary targets, so it is not surprising that the American bishops had difficulty with the issue also. The bishops recognized that modern war requires the mobilization of significant portions of the political, social, and economic sectors of a society. Nevertheless, the bishops concluded that even under the broadest definition of combatants, it is not morally permissible to consider certain classes of people as combatants (namely, children, the elderly, the ill, farmers, and industrial workers engaged in nonwar-related endeavors). According to the letter, such groups may never be directly attacked.[7] Instead, one must link the concepts of proportionality and differentiation in determining how many noncombatants may be killed or injured indirectly during an attack on a valid military target before the military advantage is outweighed and the attack rendered immoral.

Because of the unprecedented potential of nuclear weapons to produce collateral death and destruction, many, including the American bishops, feel that nuclear warfare raises new moral questions. In its extreme form, nuclear warfare between the superpowers could lead to the destruction of each side's civilian population. Clearly, warfare has never before posed the possibility of such a moral and physical catastrophe.[8]

use of nuclear weapons

Faced with the immense destructive capability of nuclear weapons, the bishops attempted to reconcile the use of nuclear weapons with the two concepts of proportionality and discrimination. Where counterpopulation strikes are concerned, they concluded that such strikes are in no way morally permissible. This prohibition applies even if our own cities have been destroyed. "No Christian can rightfully carry out orders or policies deliberately aimed at killing noncombatants."[9] In the same category are counterforce strikes on a scale that would cause so many civilian casualties as to be virtually indistinguishable from a countervalue strike, especially given the commingling of military, political, and militarily significant industrial targets with civilian population centers. Thus, significant counterforce strikes are to be judged immoral in terms of both discrimination and proportionality.[10]

It should be noted that many secular authorities also object to counterforce targeting. Their objections are largely based on the nature of the Soviet bases that would be targeted. Many Soviet military facilities are closely interspersed with civilian population centers, making high collateral damage and civilian casualties probable in a counterforce strike. Twenty-two of the thirty-two major air bases, some three-quarters of the IRBM and MRBM sites and more than half of the twenty-six ICBM fields are located west of the Ural mountains, many in densely populated areas of the Soviet Union.[11] Collateral damage during a counterforce strike quickly approaches that of a countervalue strike if one

also includes political centers, command and control centers, and the rail network as valid military targets. In fact, U.S. strategic target planners have always recognized the possibility of collateral civilian damage when attacking military targets and during the 1950s referred to such damage as the "bonus effect."[12]

Only a limited nuclear war in which destruction would be both discriminate and proportionate is morally acceptable, according to the pastoral letter. Moreover, the letter makes clear, the bishops have strong reservations about the ability of the superpowers to keep a conflict contained once nuclear weapons have been used, especially in a confused battlefield situation. Thus, since there are virtually no situations in which nuclear weapons can be used and be guaranteed to remain within the bounds of acceptable morality in terms of discrimination and proportionality, the conclusions of the pastoral letter are tantamount to denying the moral acceptability of any use of nuclear weapons.

nuclear deterrence

If the use of nuclear weapons is essentially judged immoral, then what can be said about the national defense policy of deterrence, which rests on the possession of nuclear weapons and the unalterable determination to use them in response to a nuclear attack? Clearly, the possession of nuclear weapons and the determination to use these weapons in a manner that is neither discriminate nor proportionate poses moral difficulties. It is somewhat surprising, therefore, that Pope John Paul II, during the U.N. Second Special Session on Disarmament in June of 1982, rendered the following clear-cut moral appraisal of nuclear deterrence:

> In current conditions, "deterrence" based on balance, certainly not as an end in itself but as a step on the way toward a progressive disarmament, may still be judged to be morally acceptable. Nonetheless, in order to ensure peace, it is indispensable not to be satisfied with this minimum, which is always susceptible to the real danger of explosion.[13]

Obviously, the Pope recognizes the efficacy of nuclear deterrence in preventing a nuclear war. Yet he realizes too, as do most responsible people, that nuclear deterrence is so fragile that we cannot live forever with the status quo. The pastoral letter echoes these awarenesses.

the search for peace

Recognizing that nuclear deterrence, while morally acceptable as a temporary measure, is too dangerous to be accepted forever, the bishops offer some guidelines and steps toward achieving a more acceptable state of the world. The measures that they suggest in the letter go beyond prevention of war, encouraging positive peacemaking initiatives. To begin with, there should be immediate, bilateral, verifiable agreements to stop the testing, production, and deployment of new nuclear weapons. Efforts should also be directed toward a significant reduction in current nuclear arsenals, starting with counterforce weapons. Simultaneously, renewed efforts to prevent nuclear proliferation and to control expanding conventional arms sales should be initiated. Nonviolent means of conflict resolution should be taught and encouraged. Finally, nations should pursue political and economic policies designed to protect human dignity and rights for every person.[14]

Obviously, this agenda goes far beyond putting the nuclear genie back in the bottle. As the bishops acknowledge, there are significant obstacles to achieving such broad, utopian goals. How does one reconcile two opposing political systems to a reduction and eventual elimination of the nuclear threat? The bishops recognize that we face in our Soviet antagonist a political leadership whose ideology and concepts of morality are fundamentally different from those of our country. They further recognize that despite Soviet claims of good will, a

better indicator of true motives is Soviet malevolent behavior in the world. Nevertheless, they believe that these circumstances must not prevent us from conducting meaningful negotiations.[15]

An Analysis from a Military Professional's Point of View

Overall, the letter is well balanced, well researched, well written, and well worth reading. In preparing it, the Catholic bishops considered some of the most complex and pressing issues facing the human race today. Although the letter clarifies or can help clarify one's thinking about the moral issues involved with nuclear weapons, there are two crucial areas where the letter is inadequate.

morality and the new soldier

At this moment, there are thousands of American service personnel who are assigned duties related to America's nuclear arsenal and who are duty-bound to use these weapons on receipt of a lawful command to do so. It seems to me that these modern military professionals are caught in a moral dilemma of considerable dimension. If one momentarily accepts the American bishops' definition of what is moral and immoral, the dilemma becomes quite obvious: As long as these people simply carry out their duties to provide deterrence, their actions can be viewed as moral. However, should deterrence fail, our men and women may need to choose between following legitimate orders, in which case they would be condemned by the Church for committing immoral acts, or violating their oath and military ethic and disobeying the order to fire, in which case their refusal would be judged moral by the standards stated in the bishops' letter. By pronouncing nuclear deterrence moral, yet defining virtually any use of nuclear weapons as immoral, the American bishops appear to have posed a moral dilemma for military personnel. How can we sustain a moral condition (deterrence), which itself depends upon a commitment to use nuclear weapons when necessary, an act that the bishops define as immoral?

Perhaps the solution to this dilemma can be found in one of two ways. First, we could abandon the concepts of proportionality and discrimination and declare the opposing population as a legitimate military target. Essentially, this position is what the Soviets have adopted; they do not concern themselves with the concept of morality in war. Lenin simplified the whole debate for the Soviets by declaring that morality is not even to be considered in determining a course of action. This line has been followed consistently by all subsequent Soviet leaders.[16] Thus because the Soviets have dispensed with the concept of morality and "led the way" on matter, we could follow suit, putting aside comparisons between the moral stance of the Soviet military service and our own.

However, abandoning morality is not acceptable to Americans. We as a people do not solve moral problems by simply doing away with morality. We must look, therefore, for another solution to our dilemma.

A second possible solution would be to recognize that the concepts of proportionality and discrimination must now be applied within a much larger context for nuclear weapons than for conventional arms. The whole issue of nuclear weapons must be examined in terms of the consequences if deterrence fails. Is it possible that there is no circumstance where the military value gained by use of nuclear weapons is proportionate to the collateral destruction of nonmilitary targets?

The proportionality of the limited use of nuclear weapons to end a general confrontation as envisioned by Sir John Hackett in his popular book, *The Third World War: August 1985*, can be viewed two ways. In the strict sense, the destruction of the military targets in and around the city of Minsk, as Hackett depicts it, did not justify the attendant loss of the

civilian population. This would be the position of the Catholic bishops. However, if the limited use of nuclear weapons results in the termination of the general war and an acceptable peace, then it is difficult to argue that civilian losses in a particular city are disproportionate to the military advantages gained.

The Catholic bishops deny the possibility of proportionality where limited use of nuclear weapons is concerned by stating that they cannot envision any realistic situations in which the use of nuclear weapons would remain limited. Many secular authorities agree with this thesis. If we momentarily accept this major assumption, we are left only with the proportionality of general nuclear war to consider.

It is difficult to imagine any national strategy, Soviet or U.S., that would call for the start of a general nuclear war. Nevertheless, let us assume that the United States has just endured a Soviet first strike that disarmed us significantly, destroying most of our counterstrike capability. The bishops would have us do nothing with the remaining nuclear strike force because any generalized response would be, by their definition, disproportionate and immoral. The implication of this is clear: the United States must give up. In so doing, we would be electing to do the "moral" thing, but the result would be that a political leadership that recognizes no morality would have a military capability far greater than that of the rest of the world combined. Under these circumstances, what would become of our surviving countrymen? Furthermore, and in more general terms, what would become of our West European allies? Who can believe that they would be spared the loss of their freedom and dignity?

Viewed within this larger context, the concept of proportionality takes on new significance. As Western military professionals, we shudder at the thought of annihilating millions of Soviet civilians. Applying the concept of proportionality in its usual sense, perhaps the value gained by destroying the military targets in Moscow would not be worth the death of several million civilians. But if the alternative is the loss of basic human rights and dignity for hundreds of millions of our countrymen and allies, it is difficult to judge the destruction of the Soviet war-making capability as being disproportionate to the value gained by Western civilization, even assuming the death of tens of millions of Soviet civilians. Thus, in today's world, the concept of proportionality must be rethought on a global scale that considers not only the potential scope of modern warfare but the long-range results of victory or defeat.

shaping a peaceful world

The second serious deficiency in the pastoral letter is its discussion of steps that we should take (with our antagonists) to reduce the risk of war and create an acceptable, harmonious world in the future. I found two shortcomings in this discussion.

First, the bishops recognize that there are great moral differences between our society and that of the Soviets. However, they do not go far enough. The differences go beyond the fact that Marxist-Leninists operate from an entirely different moral basis than we do. The dialectic that forms the foundation of their political doctrine does not allow for the existence of our sociopolitical system alongside their own for any extended period of time. This point is crucial. The Communists see themselves as locked in a cataclysmic struggle with Western capitalistic societies, the conclusion of which can only be the utter and complete destruction of the capitalist system. This idea within Marxist-Leninist doctrine has been constant and unchanging since Lenin established the Communist state in 1917.

Furthermore, this doctrine gives the Soviet leadership a sense of being the "chosen" ones and a sense of inevitability about the ultimate triumph of their system. This attitude can be accurately described as close to an article of religious faith. It is one thing to deal with a

political adversary who operates from different philosophical and moral precepts yet recognizes the right of others to live under different systems. It is quite another thing to deal with an adversary who is bent on the destruction of all other systems. This difference is not adequately recognized by the pastoral letter. Because of this shortcoming, the whole discussion of steps to promote peace takes on an almost Pollyanna quality in its oversimplification.

A second shortcoming in the bishops' discussion of peacemaking is the lack of specifics concerning what should be done. The bishops encouraged the United States to negotiate effective arms control treaties leading to disarmament, to ratify pending treaties, and to develop nonviolent alternatives. This is the usual advice that one can find in many sources, and who would disagree? The difficult and unanswered question is *how*. Aside from a broad suggestion that we should take advantage of Soviet-American mutual interests, the bishops offer no proposed initiatives, no insights, no moral perspectives that shed new light on this murky issue. The shallowness of this particular section of the letter is especially disappointing since we urgently need assistance in dealing with an adversary who openly proclaims our destruction as his final goal.

By not identifying this core problem and dealing with it in their pastoral letter, the American bishops missed a chance to make a lasting and significant contribution to the problem of attaining a just and lasting peace in the modern world. We can only hope that clergy in our nation will again consider these problems and develop more useful moral constructs to guide both policymakers and soldiers as we wrestle with the frightening realities of our nuclear world. If they chose to make the attempt, they would do well to remember these words of St. Augustine: "War and conquest are a sad necessity in the eyes of men of principle, yet it would be still more unfortunate if wrongdoers should dominate just men."

Purdue University
West Lafayette, Indiana

Notes

1. Kenneth H. Wenker, *Some Introductory Notes on Just War Theory* (unpublished paper, USAF Academy, undated), p. 5.
2. U.S. Catholic Conference, *The Challenge of Peace: God's Promise and Our Response* (Washington, D.C., 1983), p. 11.
3. Ibid.
4. Ibid.
5. Ibid., p. 13A.
6. B. H. Liddell Hart, *History of the Second World War* (New York: Paragon Books, 1979), pp. 596-97.
7. U.S. Catholic Conference, p. 13A.
8. Ibid., p. 14A.
9. Ibid., p. 16A.
10. Ibid., pp. 18-19A.
11. Desmond Ball, "U.S. Strategic Forces: How They Would Be Used?" *International Security*, Winter 1982/3, p. 40.
12. David Allen Rosenberg, "Origins of Overkill," *International Security*, Spring 1983, p. 15.
13. U.S. Catholic Conference, p. 18A.
14. Ibid., p. 4A.
15. Ibid., p. 24A.
16. Lenin's comment about morality was, "We repudiate all morality from nonhuman and nonclass concepts. We say that it is a deception, a fraud in the interests of the landlords and capitalists. We say that our morality is entirely subordinated to the interests of the class struggle of the proletariat (the in-group). . . . We say: morality is what serves to destroy the old exploiting society (the out-group) and to unite all toilers around the proletariat, which is creating a new Communist society. . . . We do not believe in an eternal morality."

The Cuban Threat by Carla Anne Robbins. New York: McGraw-Hill, 1983, 311 pages, $17.95.

Carla Anne Robbins has produced a book as interesting and controversial as its title. *The Cuban Threat* represents a substantive and timely contribution to available literature dealing with U.S. foreign policy and current issues in the Caribbean Basin. The author's comprehensive research and detailed analysis focus initially on the origins of Fidel Castro's revolution in Cuba and the reactions of successive U.S. administrations to the new Cuba and what it represents in the Western Hemisphere. Claiming that the Cuban revolution challenged nearly everything which the United States held sacred, Robbins cites the United States for intolerance by substituting confrontation for diplomacy in dealing with Castro. The author then skillfully blends Cuban attempts to export their revolution with the changing nature of U.S. and Soviet relations over time. She asserts that the Cubans have been fitful and inconsistent in their ideological commitment to exporting their revolution and equally uncertain in their relationship with the Soviet Union. In contrast, the United States has been relatively consistent, if not reactionary, in dealing with Castro's Cuba through several presidents and many years.

Successive administrations have viewed Cuban revolutionary bravado as a direct threat to U.S. security and regional interests. While Robbins generally credits Cuba with enthusiastic nationalism and good intentions, she portrays the United States as malicious and antagonistic, precipitating defensive but hostile reactions from the Cubans. Shifts in Cuban policy and changes in behavior are attributed to skillful and realistic adjustments to changing world conditions in consideration of Cuba's vital interests; U.S. consistency is viewed as inflexibility stemming from an anachronistic and self-serving foreign policy. Overall, Robbins portrays U.S.-Cuban relations as mutual and intense hostility aggravated by both parties over time, with slight prospects for reconciliation. Although the current conflict may not have been inevitable, the peculiar nature of the tragic dynamic between the United States and Cuba certainly exaggerated the magnitude of the problem.

The author's research is very thorough, and her thesis is well reasoned and logically developed. Her tone is one of positive and constructive inquiry in developing arguments and describing Castro's revolution in the context of recent U.S. foreign policy covering nearly three decades. Eventually, she proposes a list of what she terms "myths" regarding the Cuban "threat," which she claims are basic operating assumptions for U.S. policy and strategy in the Caribbean Basin. They include such propositions as the Cubans are Soviet pawns; Cubans are everywhere; Cubans are always subversive; Cubans are international outlaws; and Cubans are anti-U.S. Sequentially, she debunks each myth, concurrently condemning U.S. regional policy and strategy in the process. The author's eventual bottom line is that "the real Cuban threat may well come from within the United States." This assertion certainly has some substance, but it is far too simplistic an answer for a very complex problem. The rationale of "we have met the enemy and they are us" may be appropriate for comic strips but detracts from the overall excellence of this book.

Nevertheless, Robbins has skillfully engaged a complex and controversial subject and provided the reader with a thoroughly researched and well-written book that is guaranteed to enliven and enlighten discussions about Cuba and U.S. foreign policy for many years to come. Although the author identifies and analyzes many facets of the "Cuban threat," unfortunately she neglects to focus on some very key considerations that directly impact on U.S. foreign policy and military strategy for the Caribbean Basin. First and foremost, Cuba poses formidable problems for our military planners. Cuban combat forces in the Caribbean represent a combat capability that must be deterred or destroyed in the event of a general war. This requirement would demand and consequently divert significant U.S. combat forces from other priority requirements. Cuba's conventional military capability is impressive and improving at an alarming rate, and this capability is well documented even in unclassified sources. Since it is unlikely that the Soviets will curtail their force modernization and expansion programs for Castro's armed forces, the "Cuban threat" and military planning considerations will probably become even more significant in the future. But there is another aspect to Cuban combat capability that Robbins lightly acknowledges but neglects to analyze. Cuban military power not only enables Castro to intervene overseas, as he effectively demonstrated in Angola in 1975, but represents a particularly formidable capability for deployment and employment in the Caribbean Basin. Equally important, Castro's forces have the ability to intimi-

date weaker nations and reinforce the impact of terrorism and revolutionary destabilization. The author's contention that Fidel Castro did not create the causes of revolution in the Caribbean Basin is totally correct, but she disregards, minimizes, or rationalizes repeated Cuban attempts to manipulate and exploit unrest, terrorism, and revolutionary destabilization throughout the region for more than twenty years.

The Cuban Threat represents an interesting, informative, and controversial contribution to a better understanding of U.S. foreign policy and our political, economic, and military relationships in the Western Hemisphere. While some readers may contend that the author's assumptions and arguments imply the need for a question mark at the end of the title, others with a different perspective might replace such a question mark with an exclamation point, particularly after the recent revelations from Grenada. Nevertheless, this book is one of the very best on the subject and should be carefully read by anyone who would presume to discuss the current controversies of the Caribbean Basin.

Colonel J. L. Cole, Jr., USAF
McGuire AFB, New Jersey

The Banana Wars: An Inner History of American Empire 1900-1934 by Lester D. Langley. Lexington: University Press of Kentucky, 1983, 244 pages, $26.00.

The story of U.S. interventions in Central America and the Caribbean during the first three decades of the twentieth century has usually been told piecemeal. Some excellent books record specific interventions, such as Robert Quirk's *An Affair of Honor*, widely recognized as a first-rate account of Woodrow Wilson's Veracruz venture, and guerrilla fighter-turned-professor Neill Macaulay's now classic *The Sandino Affair*, the story of U.S. counterinsurgency campaigns in Nicaragua from 1927 to 1933. These books are written primarily from a civilian perspective. They, along with dozens of other accounts of this controversial era in the history of our foreign policy, concentrate on political and diplomatic issues: the central players are the presidents, politicians, and diplomats who, from their isolation in Washington or the Caribbean capitals, justified intervention policy and ordered American troops into the region. The U.S. military receives less attention. Those authors who do discuss the military aspect tend simply to attack the military participants for lacking political sensitivity in dealing with foreign nationals.

The Banana Wars is a notable contribution to interventionist literature and is an exception to the norm. It is a valuable book on three counts: it is perhaps the first work that pulls together all U.S. interventions in Latin America for the early period into a survey of case studies; Professor Lester Langley provides a balanced amount of material on the military and political roles in policymaking and implementation; and finally, *The Banana Wars* is unique in that it reflects an objective appraisal of the military role by a respected, nonmilitary historian.

The author's considerable research in military archives—at Carlisle Barracks, the Navy Yard Historical Files, and the U.S. Marine Corps History and Museum Division—is evident in a book that gives keen insight into the role and conduct of the "implementers" of Caribbean policy. The U.S. Navy, characterized as the service of "genteel traditions," furnished the "banana emperors"—i.e., admirals who often remained apart from the indigenous population, offshore or in the capitals, and who maintained an idealistic view toward mission and a benevolent attitude regarding the Latins. The U.S. Marines (the "perennial banana warriors"), on the other hand, were thrown into direct contact with the natives. They lived quite differently from their proconsul counterparts in the cities and had different views of mission and the local inhabitants. Surprisingly, the marines were quick to recognize the difficulties in becoming mired in a pacification mission in unfriendly environments. They realized that counterrevolutionary campaigns using revolutionary tactics would inevitably alienate, even brutalize, the civilian population and arouse American indignation at home. The dilemma of a democratic people attempting to rule another people undemocratically through destructive operations was not overlooked by the soldiers on the ground in the banana wars.

Langley deals forthrightly with the military's reliance on force in delicate situations, their inability to recognize viable political alternatives, and their frequently expressed prejudices about race. But he does not yield to the temptations to moralize and to attack the "military mind." Langley realizes, and duly notes, that the "military mentality" was not limited to men in uniform. Theodore Roosevelt and even Woodrow Wilson were examples of civilian politicians who revealed excessive faith in the instruments of force to solve essentially political questions; and William Jennings Bryan and Robert Lansing as Secretaries of State were deeply prejudiced and naïve regarding our Latin neighbors.

In looking for heroes, the reader, particularly if military, is inevitably drawn to the colorful group of

marine officers who came of age in the banana wars. Men like "Old Gimlet Eyes" Butler, "Hike 'em Hiram" Bearss, "Dopey" Wise, "Uncle Joe" Pendleton, and "Chesty" Puller became legends in the Corps. Although they were all exceptionally tough soldiers who fought brilliantly in the Caribbean ventures, a careful study of their attitudes, as Langley has demonstrated, reveals an underlying cynicism of mission and a recognition of the basic irreconcilability between force and diplomacy in a counterinsurgency pacification campaign. The earlier era did not produce marines-turned-novelists like the Vietnam era's Philip Caputo, but Langley has illustrated, from a thorough study of letters and oral history transcripts, that some of the same ideas existed in the Corps at that time.

The Banana Wars will prove instructive for those interested in America's past involvement in Vietnam and in our current commitments to countries in Central America.

Lieutenant Colonel Paul C. Clark, Jr., USA (Ret)
University of Alabama, Tuscaloosa

The Grenada Intervention: Analysis and Documentation by William C. Gilmore. New York: Facts on File, 1984, 116 pages, $14.95.

In *The Grenada Intervention*, William Gilmore is concerned with the questions of the legality under international law of the U.S.-O.E.C.S. intervention in Grenada. In this slight volume, Gilmore provides some useful background material not readily available in current writings on Grenada.

Gilmore was at the University of the West Indies, in Barbados, when Grenadian Prime Minister Bishop was killed and the Provincial Revolutionary Government was replaced by the Revolutionary Military Council. It is the relationships among the internal governments of the region, the degree of control over Grenada that various governments would like to have, the relationship between Grenada and its Head of State (Britain's Queen Elizabeth), and the position of Governor-General Sir Paul Seonn that have made the legal issues unclear.

Since Gilmore's stated purpose is to examine the "international legal aspect of the armed intervention," the reader will find little more than a mention of the military operation itself. He notes that the United States and the Soviet Union used the same reasons for their latest military interventions: they were invited in.

Gilmore reports the genuine revulsion that swept through the region when news of Bishop's execution became known, and he understands why the U.S.-O.E.C.S. decision makers acted. He suggests that the action would probably be considered illegal by experts in international law. In this, he might be right.

Colonel Peter M. Dunn, USAF
AFROTC Det 440
University of Missouri-Columbia

The Kurds: An Unstable Element in the Gulf by Stephen C. Pelletiere. Boulder, Colorado: Westview, 1984, 220 pages, $22.50.

An ancient people whose origin is not clear, the Kurds have inhabited the region known as Kurdistan for more than one thousand years. Kurdistan is an ill-defined landlocked area extending in an arc from northeast Syria across southeast Turkey and on into northern Iraq and Iran. It is the misfortune of the Kurds to live in a strategically crucial location along the "USSR's vulnerable underbelly" where the interests of the superpowers overlap. The critical questions raised in *The Kurds* are: Why have the Kurds—the fourth most numerous people in the Middle East after the Arabs, Turks, and Persians—failed to achieve nation-state status? What are the prospects? And how does Kurdish nationalism affect the political stability of the Gulf region and the rivalry of the superpowers?

Stephen C. Pelletiere has great sympathy for the Kurds, and he argues their case accordingly. He attributes their failure to achieve nation-state status to the interplay of several factors. First, their own internecine quarrels: besides allowing tribal rivalries to continue, the Kurds have lacked the ability to draw together the rural peasant masses and the urban political intelligentsia. Second, the efforts of the governments of the countries they inhabit to nationalize their peoples fully, which have resulted in discrimination against the Kurds. Finally, circumstances in which all too often the Kurds have been pawns in struggles between imperial powers involved in the region, including the present rivalry between the United States and the Soviet Union.

The author is gravely concerned with the "accelerating destabilization throughout the *whole* Gulf region." In that environment, the Kurdish question becomes a "worrisome problem for the system managers, the United States and the U.S.S.R." as the Kurds "represent an ingrained tendency toward disruption." Neither of the superpowers wants adventurism in the region; both prefer dealing with established governments rather than revolutionaries. Therefore it appears that the most the future may

offer for the Kurds is some autonomy within the existing nation-states.

The Kurds was written for the general reader. Pelletiere relies entirely on English-language publications and on interviews he conducted in Kurdistan in 1964 when he was a journalist for the *Milwaukee Journal*. Since the geography of the region is so important in the Kurdish question, one finds the single map included to be inadequate. But readers of the *Air University Review* will find much food for thought in this interesting work.

Dr. George W. Collins
Wichita State University, Kansas

Reason and Realpolitik: U.S. Foreign Policy and World Order by Louis René Beres. Lexington, Massachusetts: Lexington Books, 1984, 143 pages, $10.00 paper, $20.00 cloth.

The lessons of history, if they teach us anything at all, writes Louis Beres, professor of political science at Purdue University, point up the futility of America's strategy of realpolitik. Realpolitik, or power politics, is a strategy founded on the very principles that have ensured the oblivion of other great states and, unless changed, will produce the most intolerable conditions that the United States and the world have ever known. The United States now has a "last opportunity" to confront the spirit of realpolitik by supplanting competitive self-seeking with cooperative self-seeking: it can move to the kind of global renaissance that is desperately needed. "If we want peace, we must prepare for peace, not war." (p. 6) But the United States allows the spirit of realpolitik to spread "like a gangrene on the surface of the earth, and rejects all standards of reasoning. . . ." (p. 13) Here is the meaning of the book's title: reason and realpolitik are antithetical.

In his chapter titled "Embracing Omnicide," Beres discusses U.S. nuclear strategy and comments, "Sadly, almost everything now being done by the U.S. contributes to the Soviet fear of an American first strike." (p. 20) Asserting that the U.S. government "has not told the truth" about how it will enlarge its inventory of destabilizing missiles, Beres opposes the NATO Euromissile deployment, stating that the use of the missiles to deter a Soviet/Warsaw Pact conventional attack is "wholly incredible." (p. 21) U.S. leaders must overcome their egoism (i.e., their incapacity to recognize the mortality of the United States) and cease asserting the sacredness of the United States "in a world in which the idea of the state has become a perfect stand-in for God." (p. 31) The United States must, he writes, take the initiative for a viable agreement through START, arms limitation in Europe, a comprehensive test ban, a joint nuclear freeze, ever-expanding nuclear-free zones, and renunciation of first use. Even if not reciprocated, these initiatives are low-risk compared to expanded nuclear competition.

Beres sees generally deteriorating relationships between the United States and the Soviet Union, a condition for which the "Reagan administration is especially culpable," having based its policies on "extraordinarily erroneous assumptions concerning the physical and biological effects of a nuclear holocaust." (p. 65) There is little time left, so American citizens "must confront a national leadership that knows nothing and wants to know nothing of truth." (p. 75)

This confrontation will require the revival of "that original foundation of Americanism that has now been drowned by the tide of unquestioning compliance—the willingness to disobey." (p. 75) Beres believes that U.S. nuclear strategy amounts to abandonment of the government's overriding purpose to protect human life and other natural rights; therefore, his book is dedicated: "For all those who would choose to disobey."

Following this line of thought, Beres moves on to human rights, asserting that U.S. policy has shifted from support of human rights to selective opposition. "The Reagan administration has now completed the severance of American foreign policy from American tradition" (p. 82), a result achieved "not by depravity or base motives, but by the literal incapacity to reason." (p. 83)

A separate chapter is given to the "most pernicious abuse of human rights," i.e., genocide. Animated by realpolitik, the United States obstructs "any remaining chances for a decent world society" and our thoughtlessness will likely lead, absent development of a conscience, to a "far reaching pattern of instability . . . that will produce not only worldwide economic collapse but also political unrest and dislocation everywhere." (p. 116)

Throughout this volume, near-despair with current American leadership and near-certainty of disaster alternates with high optimism that the United States "can serve as a gifted mentor to all who wish to survive," if only the current realpolitik model could be replaced.

Reason and Realpolitik is recommended for those who wish to track a murky trail in following the thinking, as the dust jacket indicates, of one of the leading scholars in the worldwide movement for justice and peace.

Dr. James H. Buck
University of Georgia, Athens

Leaders and Battles: The Art of Military Leadership by Lieutenant Colonel W. J. Wood, USA Retired. Novato, California: Presidio Press, 1984, 337 pages, $16.95.

One of the positive aftereffects of the Vietnam War is the renewed emphasis on military history throughout the U.S. Armed Forces. After literally a generation of neglect, this phenomenon is a most welcome development. But because of that neglect in the past, the foundation for an appreciation and critical analysis of such histories is too often lacking. Add to this the fact that the more detailed and factually correct the history, the more turgid and unreadable it tends to be. What is needed as kindling to build the fires of interest are texts that excite the readers and at the same time stimulate their curiosity to dig into the more scholarly works.

Lieutenant Colonel W. J. Wood has provided just such a book in his *Leaders and Battles*. Using a "living history" approach to recreate historical events, he analyzes some ten battlefield actions under five topical headings: courage, will, intellect, presence, and energy. He deliberately selected vignettes to demonstrate the importance of both physical and moral courage, boldness, tenacity, imagination, flexibility, judgment, and inspiration. The battles and leaders range from Scipio Africanus at Ilipa in 106 B.C. to Colonel Paul von Lettow-Vorbeck at Tanga in 1914. All satisfy Alfred Thayer Mahan's ambition to use history to illustrate theory.

Such histories are sorely needed. For example, an article in the October 1984 *Washington Monthly* examined the military's current fascination with video war games. Among other things, the article pointed out that the Army's Command and General Staff College war game "assumes that all soldiers in a battalion will rise and charge into battle." In his introduction, Colonel Wood quotes Stephen Vincent Benét's *John Brown's Body* to expose the fallacy of such theories. "If you take a flat map and move wooden blocks upon it strategically," Benét wrote, "the things look well, the blocks behave as they should. The science of war is moving live men like blocks." But he then observes that these blocks "stick in the bush, they are tired and rest, they straggle after ripe blackberries, and you cannot lift them up in your hand and move them. . . ." As Clausewitz reminds us, the art of war lies precisely in the anticipation of just such nonquantifiable human frailties. Given the ongoing conflict within our Armed Forces between Jomini's "science" of war and Clausewitz's "art" of war, Wood's emphasis on intangibles and moral factors as the key to battlefield success is particularly timely.

Leaders and Battles is a perfect complement to the "great warriors" approach pioneered by the Air Command and Staff College. Guaranteed to spark interest in any military reader, it serves as a beguiling introduction to the more detailed critical analysis of military history absolutely essential "to anyone," as Clausewitz put it, "who wants to learn about war from books."

Colonel Harry G. Summers, Jr., USA
Army War College
Carlisle Barracks, Pennsylvania

Chickenhawk by Robert Mason. New York: Viking, 1983, 339 pages, $17.75.

The Vietnam War has inspired numerous first-person narratives. Combat infantry troops, generals, pilots, POWs, an Army nurse, rear-echelon soldiers, and journalists have described their impressions. Although the helicopter was so pervasive that it is commonly considered a symbol of the war, *Chickenhawk* is the first major account by a helicopter pilot.

Although author Robert Mason briefly discusses his experience in flight school and his difficulties after returning to the United States, his account focuses on his 1965-66 tour in Vietnam. He effectively weaves detailed information about helicopter operations and strategy into a gripping account of the stress of combat and the camaraderie of chopper pilots.

When Mason joined the U.S. Army in 1964, he did not anticipate being in the vanguard of Army combat troops in Vietnam; he merely wanted to learn to fly. But he was assigned to the 1st Cavalry shortly before its deployment to Vietnam. As a member of the 1st Cavalry and later the 12th Aviation Battalion, Mason worked with more experienced aviators who helped him to become a highly skilled combat pilot. Like all chopper pilots, he became resigned to "hot LZs" and exhaustion. However, the stress and constant fear took its toll, and Mason began to experience dizziness, insomnia, and hallucinations. He returned to the United States to serve as an instructor pilot at the Army Helicopter School at Fort Wolters, Texas, where continuing problems with dizziness and hallucinations finally forced him to be grounded. This trauma compounded his already significant emotional problems, and his growing dependence on alcohol and drugs eventually led to a prison sentence for drug smuggling.

Chickenhawk is a very interesting book and may become one of the better known first-person accounts. Mason writes with style and wit. Military

professionals will appreciate the detailed accounts of helicopter operations; general readers will simply experience the trauma and excitement of a good combat narrative.

Jeanette R. Dunn
Spartanburg, South Carolina

The Quality of Mercy: Cambodia, Holocaust and Modern Conscience by William Shawcross. New York: Simon and Schuster, 1984, 464 pages, $19.95.

Seldom has history known a more brutal regime than that of Pol Pot and the Khmer Rouge in Cambodia from 1975 to 1978. The young savages who came to power were responsible for the murder and starvation of well over a million (possibly nearly two million) Cambodians. While the coming of the Vietnamese "liberators" in late 1978 put an end to mass genocide, the Cambodian travail hardly ended. A multisided civil war has raged since then, with the populace caught in the middle. The Vietnamese conquerors and their puppet Heng Samrin have been somewhat less barbaric than the Khmer Rouge, but rather in degree than in kind.

British journalist William Shawcross's extremely controversial earlier book, *Sideshow: Kissinger, Nixon and the Destruction of Cambodia* (1979), was a scathing indictment of the American role in the Khmer Rouge triumph and established the author as one of the heroes of the Left. His damning investigation of international relief activities in Cambodia since 1978 is equally controversial, but it will win him few friends in the Left. Shawcross finds much to question and condemn about the relief efforts and the interplay of politics in Southeast Asia, but he makes it clear that the real villains are the Communists—the Khmer Rouge, the Vietnamese imperialists, and the Soviet interlopers. The American record in Cambodia in the late 1970s and early 1980s is not unsullied, but, comparatively speaking, the United States emerges rather well.

In this pioneering area of study of international relief agencies, the author poured over thousands of internal records and other documents of such groups as UNICEF, the World Food Program, the United Nations High Commission for Refugees, the International Committee of the Red Cross, CARE, Catholic Relief Services, OXFAM, and the World Council of Churches to evaluate how each responded to the starvation crisis in Cambodia. He demonstrates case after case of ineptitude, bureaucratic inertia, institutional self-aggrandizement, and political stalemate. The shocking waste of precious resources and the squandering of money are appalling; the accounts of the frustration and inertia of agencies caught between the politics of factions while people suffered are maddening; and the cynical cruelty of the Cambodian, Vietnamese, and Soviet Communist competitors is damning.

But everything is not negative. U.S. Ambassador to Thailand Morton Abramowitz and his associates receive positive reviews. The International Committee of the Red Cross and UNICEF had good records and were generally effective. Other U.N. agencies performed poorly, and Shawcross has few good words for U.N. General Secretary Kurt Waldheim's leadership.

This is a depressing and very necessary book on a neglected topic. The work of international agencies needs to be subjected to independent evaluation. Determining whether the author's assessments are all correct would be difficult without duplicating his research, but Shawcross seems to be judicious, objective, caring, and willing to give credit for good work where it is merited.

The weakest element of the volume is the author's feeble effort to speak of Cambodia in terms of the Holocaust—a continual digression that detracts from the book's basic purpose. The study would have been better if Shawcross had stuck to the Cambodian experience. *The Quality of Mercy* has sufficient thought-provoking content to stand on its own merits without a larger focus.

Dr. Joe P. Dunn
Converse College
Spartanburg, South Carolina

World Armies, second edition, edited by John Keegan. Detroit, Michigan: Gale Research Company, 1983, 688 pages, $80.00.

In the preface of this second edition of *World Armies*, John Keegan explains that the aim of the work is to "provide a portrait of each army in its domestic context, historical, social, political as well as military." This the authors do admirably, with the aid of photographs, detailed maps, and an astonishing amount of research.

Each of the 140 armies (from Afghanistan to Zimbabwe) is discussed under nine sections, ranging from history to dress and distinctions. The detail lavished on each entry portrays each army effectively, although obviously some armies are more sharply etched than others. The People's Republic of China, for example, receives ten pages of detailed attention, while the army of Guyana warrants less than a single page.

What makes *World Armies* different from the inventory lists that often pass as assessments of military forces is that Keegan and his colleagues did painstaking historical research to put the various armies in proper perspective. Conversely, the book is not without fault. Lesser volumes have done a far better job of depicting rank, dress, and other accouterments of military forces; and this to me would be even better had the authors enlivened it with illustrations. Nevertheless, *World Armies* is a valuable research tool and a volume that military professionals ought to consider for their private libraries and work-area shelves.

Major John Conway, USAF
Headquarters AFRES, Intelligence
Robins AFB, Georgia

U.S. Intelligence: Evolution and Anatomy by Mark M. Lowenthal. New York: Praeger, 1984, 142 pages, $7.95.

For the unanointed but interested, Mark M. Lowenthal's *U.S. Intelligence: Evolution and Anatomy* offers a tightly written and easily read overview of almost a half-century's development of the U.S. government's intelligence establishment. In this two-part book, the section on "The Evolution of U.S. Intelligence" offers the greater reward. In a well-written narrative, Lowenthal has isolated the important milestones, starting before World War II, and has linked them together to trace the community's development from its origin to the multibillion-dollar intelligence enterprise that exists today.

The author's focus is more on organizational developments than on the roles of personalities. When Lowenthal does discuss personalities, he portrays them accurately and fairly. He mentions all of the directors of Central Intelligence and, directly or through inference, evaluates their performance. He is very much on target, both in his assessment of their contributions and the perspective in which they were held by those who served with them. It goes without saying that General Walter Bedell Smith was an organizational genius and that Allen Dulles earned the accolade of the "Great White Case Officer." Perhaps John McCone should have been given additional credit for driving the community more in the direction of science and technology; William Colby, for his forthright dealings with the investigating committees in 1975; and George Bush, for his revitalization of morale, particularly in the CIA, in 1976. On balance, however, Lowenthal deserves high marks for his categorization of events and people.

Two specific points raised by the author deserve particular comment. In chapter 7, the question is raised as to what constitutes an intelligence failure. The author shows a breadth of understanding on national security matters sadly lacking in most other writers. Additionally, the author's treatment of the "bipartisan" nature of the Senate and House oversight committees is noteworthy. It is our impression that the original bipartisan mode has been sadly eroded. Shortly after his retirement as Deputy Director of Central Intelligence, Admiral Bobby Inman resigned his noncompensated position as a staff consultant to the House Intelligence Committee because of the committee's partisan activity. Knowledgeable observers of the Senate Intelligence Committee have noted the partisanship demonstrated during the investigation of Director of Central Intelligence Casey's alleged financial irregularities, as well as the tendencies of certain committee staff members to speak publicly about partisan political issues.

The weakness in the book appears in part two, "The Anatomy of U.S. Intelligence." There are inaccuracies in the descriptions of the organizations of the Defense Intelligence Agency (DIA) and the military intelligence units; readers needing accurate information on organization structures should seek out and refer to other sources. Additionally, material indicating that the DIA has co-opted some of the military's intelligence collection capability and assessing the resultant services' inadequacy serves only to perpetuate a popular but inaccurate myth. In truth, DIA's only intelligence collection capability rests with its Defense Attaché System. All other collection within the Department of Defense is accomplished by the military intelligence units, the National Security Agency, and the offices within DOD for specialized reconnaissance programs.

These criticisms aside, *U.S. Intelligence: Evolution and Anatomy* is a worthy addition to the literature on intelligence, offering interesting reading to the general reader and having particular relevance within the academic world.

Professor John F. Blake
Captain James T. Strong, USAF
Defense Intelligence College
Washington, D.C.

Conflict of Duty: The U.S. Navy's Intelligence Dilemma, 1919-1945 by Jeffery M. Dorwart. Annapolis, Maryland: Naval Institute Press, 1983, 262 pages, $18.95.

Conflict of Duty is advertised as a "refreshingly impartial study" of the Office of Naval Intelligence from 1919 to 1945. Unfortunately, it does not live up to this claim. This is Jeffery Dorwart's second book on naval intelligence, continuing the chronology he began in *The Office of Naval Intelligence, 1865-1919*. That both books have been published by the Naval Institute Press is unfortunate, since this circumstance may work toward establishing them as the definitive works on the history of the Office of Naval Intelligence (ONI). Such a reputation would be inaccurate because the book suffers from major weaknesses, including a restrictive and indefensible premise, incomplete research, and a significant failure to understand the administrative procedures of ONI. Conversely, the book does provide a fair chronology of ONI during the period and may therefore be of value to researchers.

The book's greatest weakness is its premise. Dorwart states that ONI's mission was "to collect, synthesize, and distribute information about foreign naval and maritime technology, strategies, and policies for the United States Navy." However, according to the author, ONI had a second, less clearly defined mission which pertained to security and required "investigative, political, and even legal expertise well beyond the scope of a naval officer trained at the U.S. Naval Academy." It is this "agonizing contradiction" that Dorwart calls the Navy's "intelligence dilemma." This restrictive perspective governs the author's investigation in that he attempts to show that the security responsibilities continually interfered with and hindered ONI's accomplishing its informational mission. Chapter by chapter, the premise of information versus security is maintained, but at great expense: the scope and breadth of the work are restricted significantly so that this theme can be upheld. For example, in the preface, the author states that although "communications and combat intelligence at times become part of the intelligence dilemma," he has chosen to exclude "these largely separate issues." These are not issues and are not functions separate from naval intelligence. Rather, they are major responsibilities of ONI and are intimately interrelated with the several other responsibilities of the organization. By so restricting his investigation to that which will conform to his thesis, Dorwart denies himself the possibility of producing a penetrating, definitive work on ONI.

A second major problem concerns the author's research. Issues of mission, intelligence doctrine, functions, organization, and responsibilities are rarely mentioned and are almost never analyzed. The result is a journalistic, chronological account that fails to grasp fully the complexity or dynamics of ONI.

An additional problem is one of perspective. Writing in the aftermath of Watergate, the author applies moral positions of the 1980s to events in the 1920s and 1930s. Little attempt is made to place the operations of ONI into the moral context of the times. This deficiency creates the greatest problems in the first two chapters of the book. In the first chapter, which deals with World War I, the author asserts but fails to substantiate that "for the first time, ONI manifested a sinister side, materialized as elitism, anti-Semitism, illegal conduct, and repression of divergent opinions and civil rights." Dorwart asserts that after the war these attitudes persisted as ONI confronted the "Bolshevik menace," the subject of chapter 2. Here the author focuses his criticism on Rear Admiral Albert Niblack, depicting him as a simple-minded "embarrassment." Throughout, his portrait of Niblack is too stereotypical and is presented in a two-dimensional discussion that fails to appreciate fully the complexity of the times. Written from a point of view that is at best only hostile to ONI, the author's judgments and conclusions are far too definite, given the evidence he presents. Fortunately, many of the other chapters, particularly those covering the late 1930s, are stronger, more carefully researched, and less emotional.

Overall, *Conflict of Duty* provides a chronology of ONI from the end of World War I to the end of World War II. Inconsistent in quality and depth, it is not the penetrating, definitive history of ONI that it purports to be. In fairness, as an academic who lacks experience in naval intelligence, Professor Dorwart cannot be expected to appreciate the intricacies of ONI. The publisher is far more culpable, having chosen to put its reputation behind a book that has such obvious, fatal faults. ONI is a subject that deserves investigation and comprehensive analysis of all its successes and failures. In a definitive work, all significant aspects and factors *must* be examined, discussed, and analyzed. My hope is that this need will be satisfied in the future for ONI history, since *Conflict of Duty* did not fulfill its promise.

Commander Bruce W. Watson, USN
Defense Intelligence College
Washington, D.C.

The Reluctant Supplier: U.S. Decisionmaking for Arms Sales by Paul Y. Hammond, David J. Louscher, Michael D. Salomone, and Norman A. Graham. Cambridge, Massachusetts: Oelgeschlager, Gunn and Hain, 1983, 307 pages, $27.50.

This is an excellent book. It is not one, however, for the casual reader. A relatively high level of technical familiarity with the subject is required. *The Reluctant Supplier: U.S. Decisionmaking for Arms Sales* would be a valuable addition to the libraries of students of arms control and individuals at decisionmaking levels of government. The reader not versed in arms sales history and jargon might start by reading chapters 2, 6, and 7; then, if his interest is whetted, he may wish to read the rest.

While tightly written, *The Reluctant Supplier* could have been expanded. Some chapters—chapter 2, "The Demand for Arms, the Pressure to Supply, and the Urge to Control" (with 85 footnotes), and chapter 7, "Transatlantic Arms Transfers: The Search for Security," for example—could have been profitably divided and/or some topics dealt with in an appendix. Additions that would have helped include a table listing armed conflicts since World War II in which the United States was simply an observer; *citing* the cases where the government "seems" to have kept a number of production lines open by awarding nonrelated defense contracts; and more discussion on the question of whether it is better policy to supply arms to a friendly nation before or after it needs them (i.e., if the requested arms had been delivered and in place, would the need to use them have arisen?). In addition, chapter 4 needs a short explanation of the rationale for dividing America's allies and friends into Class A countries (close allies where arms sales are less controversial), and Class B countries (Iceland, Portugal, Greece, Turkey, and Spain), even though the Reagan administration has nominally abolished the distinction.

The stated purpose of the book—"to replace mistaken perceptions, where they exist, with more accurate ones"—has been admirably met. However, for those who read only book reviews and not books, some observations and statistics merit mention here. First, a key question that observers of the world scene should rhetorically ask or note is *not* why nations *sell* arms but why nations *buy* them. Second, if gains from trade theory still has any meaning, it is economically efficient for nations with a comparative advantage in arms production to sell to nations whose limited resources would be better used elsewhere, given the fact that developing countries increased their arms production from $1 billion in 1970 to $5 billion in 1977. Third, the dollar value of foreign military sales *agreements* between 1950 and 1980 was twice the dollar amount of foreign military sales arms actually *delivered*. (In talking about arms sales, it helps to use the right statistic.) Next, America's arms sales to Latin America are minor compared to U.S. sales to other regions of the world. Further, the U.S. market share as an arms supplier has fallen consistently from the 50 percent that it was in 1968. And finally, in the words of the authors, "the demand for arms transfers is massive; any policy that denies the pervasiveness, persistence, and deep political roots of this demand is illusory."

Dr. Clinton H. Whitehurst, Jr.
Clemson University, South Carolina

Delta Force by Colonel Charlie A. Beckwith, USA (Ret), and Donald Knox. New York: Harcourt Brace Jovanovich, 1983, 276 pages, $14.95.

Delta Force is not a good book. It is poorly written, self-serving, and bloated with bluster. But it is a most significant one, especially for the military reader of all services. Billed as the "inside story" of the attempt to rescue the hostages at the American Embassy in Iran, it affords us the only personal account, thus far, of this ill-fated operation. However, the book is really about Colonel Charlie Beckwith's long struggle to establish an antiterrorist unit in the United States Army patterned after the elite British Special Air Service (SAS). This account of the rescue attempt is merely the culmination of that career-long effort.

The story begins in 1962 with Beckwith assigned to the SAS as an exchange student; outlines his military career, during which his sought-after special action unit (Delta Force) is slowly given birth; and ends with the disaster at Desert One. The operation itself and the causes of its failure are best left to the commander to describe. However, the story of the rescue attempt is not the sum total of the book. In addition, we are given a self-portrait of the man who was selected to lead this important mission, and it is a disturbing one.

What we are shown is a picture of a dedicated, courageous soldier, who was also often emotional, brash, and impatient. Frequently at odds with his superiors and abrasive with his peers, he enjoys insulting fellow officers, and he admits proudly that he is considered a "misguided missile." The list of those whom he dislikes and those who dislike him reads like a *Who's Who* of important military officers. He shoots from the hip frequently; afterward, he often regrets doing so. He is crude and profane, and the book is sprinkled with expletives.

And in the end, he is something worse. In a final comment in which he "shoots himself in the foot" with deadly accuracy, he tells us that if General Vaught, the task force commander, had ordered him to go on from Desert One with only the five operational helicopters he had remaining, he would not

have done so but would have feigned radio problems, pretending he could not hear the order. This is a dismaying statement from the commander of one of the most important military undertakings of our time.

One wonders, at the end of this strange self-portrait, what misguided set of circumstances and individuals were responsible for placing Beckwith in charge of such a critical effort. Was he the best we had? If not, why was he there? In pondering this question, the most important lesson of Desert One is brought into focus: we must have better methods of selecting commanders who will be charged with accomplishing such important tasks.

Richard A. McMahon
Kailua, Hawaii

60 Minutes: The Power and Politics of America's Most Popular TV News Show by Axel Madsen. New York: Dodd, Mead and Company, 1984, 256 pages, $16.95.

You are facing life imprisonment for a crime you did not commit. When hope has all but vanished, you become the subject of a "60 Minutes" program. Ten days after the broadcast, you are released from prison. Eventually, all charges are dropped and you are a free man! Such is the story of Lenell Geter, an engineer who is black and from Texas. Such is the power of "60 Minutes." However, the story of this popular "newsmagazine" show is not all victories and no defeats.

Axel Madsen provides some interesting insight into the people and policies of this most successful but not infallible news show. Although born and educated in Europe, Madsen adopted the glamorous world of American entertainment as the subject of most of his writing. Adding *60 Minutes: The Power and Politics of America's Most Popular TV News Show* to his long list of books on the entertainment industry is understandable. After all, "60 Minutes" may inform, but it mostly entertains.

Madsen's research provides some enlightenment into the production of the program but certainly no revelations. In chapter 1, titled "Afterburn," Madsen discusses one "60 Minutes" segment, "Small Town, USA." It is the story of a community that shut off the water to the home of a family with a severely handicapped child because the family refused to pay the water bill. The "60 Minutes" crew, with the best of intentions, swooped down on the town of Polo, Illinois, to expose what appeared to be a terrible act motivated by intolerance and prejudice. Madsen uses the saga as an example of how the correspondents' pursuit of the truth sometimes goes awry. In the case of "Small Town, USA," the roles of victim and villain were not so clearly defined as those projected on "60 Minutes." Thus, Madsen begins his book by demonstrating that when a news show has tremendous power, the best intentions can easily bring unexpected and uncomfortable "afterburn." Unlike the Lenell Geter episode, "Small Town, USA" was not one of the "60 Minutes" team's finest hours.

After a short overview of the show's history in chapter 2, the remaining fifteen chapters deal with the careers and personalities of the current stars: Mike Wallace, Harry Reasoner, Morley Safer, Ed Bradley — "and Andy Rooney." He also explores career highlights of former correspondent Dan Rather; the producer, Don Hewitt; and a myriad of individuals who have had an impact on the program. Madsen gives the reader a privileged tour behind the closed doors of CBS, but the journey is very bumpy. As Madsen explores the newsmagazine, he tends to leave a story abruptly and then resume his discourse in a later chapter. Also, definitions of terms are occasionally repeated. In chapter 4, he concisely explains the meanings of *hook*, *pipe*, and *topspin* (TV jargon for moving the story along); in chapter 13, he repeats his explanation almost verbatim.

There are other weaknesses in Madsen's writing. When he introduces the concept of "reverse angle," the newsman's penchant to get the enemy's point of view (POV), he compares the POV of the Wehrmacht in World War II Berlin with that of the Kuomintang in 1950 Pyongyang, the capital of North Korea. I am puzzled by this analog, since the Kuomintang, the Chinese Nationalist Party once led by Chiang Kai-shek, was unlikely to have any influence on Kim Il-sung, Communist dictator of North Korea, let alone be permitted to hold a point of view. There are several spelling errors, which may not be the fault of the author. They do, however, detract from the author's credibility.

Madsen loads his text with clichés and cutting-room jargon. Hackneyed terms, such as *pitched his ideas, the heavies, the party line, dicey, classy,* and *trying to screw them out of . . .,* instills boredom where better use of the English language might have stirred the reader's emotions. Perhaps his use of jargon was meant to correspond with his potpourri of chapter titles: "Developing Muscle," "Getting the Politicos," "Scams and Hustles," etc.

The discussion of defense-related stories, on and off the TV screen, will raise the hackles of most military readers. Madsen makes undocumented assertions regarding the policies of the Department of

Defense and perpetuates allegations of American atrocities in Vietnam. Moreover, Morley Safer's negative Vietnam commentary is called a "new dimension of candor to the television coverage of the war." Madsen's offhanded remarks in support of some controversial war reporting will open some old wounds among Vietnam veterans and do little to ease any mistrust that the military holds for broadcast journalism.

Madsen does make some salient points about trends in news reporting. Television news media's increasing involvement in airing an adversary's point of view in times of conflict sometimes interferes in delicate foreign policy initiatives, making the job of our government leaders very difficult. Another important point is that various pressures require the networks to make news shows mixtures of entertainment and information. The public must make a determination where fantasy ends and fact begins. Finally, Madsen clearly points out that "60 Minutes" is a show first, a news program second. That statement also applies to *60 Minutes: The Power and the Politics of America's Most Popular TV News Show*. It is more entertaining than informative and is recommended for light reading.

Colonel Richard L. Upchurch, USMC
Air War College
Maxwell AFB, Alabama

The Chinese People's Militia and the Doctrine of People's War by Thomas C. Roberts. Washington: National Defense University Press, 1983, 146 pages, $4.75.

Among students of China's defense establishment and within the People's Republic of China itself, defining the role of the militia in China's military strategy has been a source of controversy. It should come as no surprise, therefore, that Thomas C. Roberts's analysis may stir up additional disagreement. Within China, adherents to more orthodox strategies of "people's war" see the militia as a critical mass on which people's war depends. Within the ranks of the Chinese People's Liberation Army (PLA), however, supporters of policies stressing extensive military modernization and strategies of modern warfare have seen the militia more as a potential "ready reserve" than as a mass base for guerrilla warfare. For the last few years, as "people's war under modern conditions" has become the official dogma of the PLA's approach to military strategy, the ready reserve view of the militia has come into vogue once again.

In this National Defense University monograph, Roberts initially places the militia in perspective by briefly reviewing its origins and functions in Mao's military strategies of the 1930s. Then he describes the place of the militia in the current military system. In doing so, Roberts carefully discusses both the difficulties in determining the militia's strength and order of battle and the importance of distinguishing between the three types of militia: ordinary, basic, and armed. Indeed, it is this discussion that will prove most useful to those unfamiliar with the Chinese militia, for the distinction is critical to understanding the role of the militia in Chinese military strategy.

In subsequent chapters, Roberts analyzes the rebuilding of the militia system following its involvement in the struggle to succeed an ailing Mao Zedong and examines the matter of where this system fits in the military modernization programs that emerged from the defense debate of 1976-78. In addition, the author provides a detailed discussion of the role of the militia in China's military strategy, including an assessment of the militia's role in China's 1979 war with Vietnam. Ultimately, however, the monograph is concerned with clarifying that role in China's basic military doctrine of people's war. Chapter 4 succinctly links the militia to the revisions made in orthodox concepts of people's war in order to make the doctrine function as the basis for a transitional strategy while the Chinese armed forces undergo a slow migration away from the 1950s and 1960s toward more modern military technologies. As the conventional forces become more modernized, both the strategies they follow and the role of the militia in these strategies will change.

The Chinese People's Militia and the Doctrine of People's War will serve as a valuable contribution to the library of any professional soldier who seeks insight into one of the least understood concepts of warfare.

Dr. Paul H. B. Godwin
Center for Aerospace Doctrine, Research, and Education
Maxwell AFB, Alabama

America Inside Out: At Home and Abroad from Roosevelt to Reagan by David Schoenbrun. New York: McGraw-Hill, 1984, 485 pages, $17.95.

America Inside Out is the personal memoir of David Schoenbrun, a pioneer TV broadcaster and long-time American foreign correspondent. Mixed with Schoenbrun's personal history is commentary on events "at home and abroad from Roosevelt to Reagan." In addition, his book includes observa-

tions on the coming of age of TV news and foreign journalism in the years after World War II.

Schoenbrun began his journalism career in the late 1930s after a brief fling as a high-school French teacher. Drafted early in 1943, he served in the Psychological Warfare Branch of General Eisenhower's headquarters and, later, as a liaison officer to the French Army. Discharged in Paris, Schoenbrun covered French affairs for Associated Press before becoming Paris correspondent for CBS News. Except for a brief interlude with the Eisenhower campaign in 1952, Schoenbrun remained in France until 1960. Three years as Washington Bureau Chief followed, until a conflict with CBS management prompted his shift to ABC News. Now an analyst with Independent Network News, Schoenbrun has received several Overseas Press Club awards for his reporting.

During his years in Paris, Schoenbrun reported on such developments as the Marshall Plan, the establishment of Israel, the formation of the Federal Republic, and the return to power of General Charles de Gaulle. His memoirs are replete with his encounters with the national leaders of that period. One favorite was General Eisenhower, whom he coached on the use of TV during the 1952 campaign; another was Ho Chi Minh, whom he regarded as a perceptive and dedicated revolutionary. Of the European leaders, he most respected De Gaulle and Robert Schuman, architect of the European Economic Community. The prominent radio and TV news personalities of the period—Edward R. Murrow, Howard K. Smith, Charles Collingwood, Eric Sevareid, and Walter Cronkite—also appear frequently in his pages, although Schoenbrun says surprisingly little about the personal qualities of his professional colleagues.

America Inside Out may receive friendly reviews from Schoenbrun's fellow journalists. It is interesting, is very readable, and has an occasional tidbit we have not heard before on the great men of the period. Yet *America Inside Out* has serious flaws; certainly, it compares poorly with Schoenbrun's earlier books on France—*Soldiers of the Night* and *As France Goes*. His narrative history of events affecting American life is particularly disappointing. Perhaps because he was in France for much of the period, it is superficial, is largely secondhand, and adds little to our understanding of the implications of these events for American politics. Schoenbrun gives little attention to the one matter he is best qualified to assess: the development and influence of the network news organizations and their influence on American views of foreign affairs.

Although Schoenbrun certainly did not intend it, his account raises troubling questions about the quality of American journalism, particularly in its coverage of foreign affairs. Any network correspondent, he seems to assume, is capable of intelligent reporting on developments abroad, even though lacking background knowledge of the culture, society, and language. Related to this idea is the matter of bias. An ardent New Dealer and an outspoken political liberal, Schoenbrun seems unaware that his strongly held personal views might have influenced his reporting on French or American politics.

In short, *America Inside Out* is readable but sadly lacking in depth. Try it on your next MAC flight overseas if nothing else is handy.

Dr. William P. Snyder
Military Studies Institute
Texas A&M University

The Japanese: Everyday Life in the Empire of the Rising Sun by Jean-Claude Courdy and translated by Raymond Rosenthal. New York: Harper and Row, 1984, 269 pages, $19.95.

Writing a general introductory book for those of us who are properly humbled by the superficiality of our understanding of "non-Western" societies is an art requiring considerable skill. Such books often either get bogged down with excessive background or detail or are so full of unwarranted generalizations that what emerges is a stereotype; also, the analysis and coverage tend to be uneven, depending on the author's interest or specialization. Jean-Claude Courdy's highly readable work manages to avoid most of these pitfalls. While it will not and should not replace Edwin O. Reischauer's definitive book of the same title, it does present an overview of the immediately apparent aspects of Japan today.

Courdy, a French journalist who holds degrees from Columbia in contemporary Japanese politics and in Chinese political history, lived in Japan from 1963 to 1970, acting as the representative of the French Radio-Television Bureau in the Far East. During this period and in subsequent return visits, he went through the three stages that many expatriates experience. First, he found everything exciting and exotic, even inscrutable. Next, the euphoria vanished. Everything became an excuse for going into a rage. The "inscrutability" caused only irritation. Finally, Courdy metamorphosed in the process of encounter. He learned the Japanese language and adopted certain Japanese customs, he interacted with his new environment, and a process of hybridization set in. He became unashamedly pro-Japanese.

It is as a partisan of the Japanese that Courdy has written *The Japanese*. He has divided it into four

sections. The first, "Meetings," covers such topics as shopping, the stock exchange, Japan by day and Japan by night, and bar crawling in Tokyo. The second, "Dualities," examines the permanent coexistence of myth and reality in Japan. The highlight of this part is a discussion of Yukio Mishima, whose writing, perhaps more than that of any other Japanese, typifies the mixture of myth and reality at the confluence of the sacred and the profane. Section three, "Realities," provides a view of the Japanese at home, in society, and in business. Here, Courdy deals with the pejorative and restrictive aspects of a people and a nation being typed as "economic animals." The final portion of *The Japanese*, titled "Challenges," investigates Japanese attitudes toward foreigners, democracy, and war. On the latter topic, Courdy does not dismiss the notion of a renaissance of Japanese militarism.

Dr. Gerald W. Berkley
Auburn University at Montgomery, Alabama

The Image of War: 1861-1865, Volume IV: Fighting for Time edited by William C. Davis. New York: Doubleday, 1983, 464 pages, $39.95.

Photographs of the Civil War have always fascinated both serious scholars and casual readers. The U.S. Civil War was the first war recorded in high-quality photographs. The battlefield cameramen, in their ubiquitous search for art and history, pointed their lenses toward a bewildering array of images that they believed representative of the war and of a soldier's life. *The Image of War: 1861-1865* series, under the editorship of the noted Civil War historian William C. Davis, is an attempt to collect a large number of the surviving photographs, organize them thematically, and present them in high-quality reproductions to the reading public. In Volume IV, the photographs are divided into related areas: the Vicksburg-Port Hudson campaign; Confederate commerce raiders; the siege of Charleston; hospitals and medical care; the cameraman's art; the cavalry; "a sailor's life"; prisoners, North and South; and a portfolio of miscellany. Each section is introduced and the photographs annotated by noted Civil War scholars, including Herman Hattaway, Norman C. Delaney, Rowena Reed, Dee Brown, George Worthington Adams, Harold D. Langley, and Frank L. Byrne.

Most of the photographs are familiar ones seen in other, earlier collections. Few of the new ones are significant. The quality of the reproductions is generally good, and much time, trouble, and expertise have been put into analyzing the photographs in small detail for the benefit of the reader. There are very few errors, and little bias is apparent. Byrne does seem to whitewash the Union's treatment of Confederate prisoners while lambasting the Southern prisons, but not to an unacceptable degree. Nor is Dee Brown's customary proclivity for the usually ineffective Union cavalry more than marginally obvious. Almost all of the photographs are of Union forces, as few photographers wandered through the war-torn Confederacy.

For any Civil War buff, *The Image of War: 1861-1865* is a delight. It will reward the reader time and again. Each time he opens it, something unnoticed before will remind him of what the Civil War really was, as only a photograph can.

Dr. Walter E. Pittman, Jr.
Mississippi University for Women, Columbus

AWARD

The *Air University Review* Awards Committee has selected "Beyond Deterrence: The Strategic Defense Option" by Lieutenant Colonel John E. Lawyer, USAF, as the outstanding article in the November-December 1984 issue of the *Review*.

the contributors

Sam C. Sarkesian (B.A., The Citadel, M.A., Ph.D., Columbia University) is Professor of Political Science at Loyola University, Chicago, and Chairman, Inter-University Seminar on Armed Forces and Society. Dr. Sarkesian is a retired lieutenant colonel (U.S. Army) and the author of *U.S. Policy and Low-Intensity Conflict: Potentials for Military Struggles in the 1980s* (1981). His more recent publications include *Presidential Leadership and National Security* and *America's Forgotten Wars*. Dr. Sarkesian's article "America and Third World Conflicts: Prospects for the Future" was published in *Conflict Quarterly* (Summer 1984).

Lieutenant Colonel Dennis M. Drew (B.A., Willamette University; M.B.A., University of Wyoming) is Deputy Director for Research, Center for Aerospace Doctrine, Research, and Education, Hq Air University. He has served in several SAC missile assignments and as Chief, Warfare Studies Division, Air Command and Staff College. Colonel Drew is a frequent contributor to the *Review*, and his article in this edition is first-prize winner in the fourth annual Ira C. Eaker Essay Competition. He is a Distinguished Graduate of Air Command and Staff College and a graduate of Squadron Officer School and Air War College.

Lieutenant Colonel Denny R. Nelson (B.S., Oklahoma State University; M.A., Webster University) is a Research Fellow at the Center for Aerospace Doctrine, Research, and Education, Hq Air University. He has had worldwide F-4 assignments and a staff assignment in DCS/Personnel at Tactical Air Command. Colonel Nelson, a graduate of Squadron Officer School and Air Command and Staff College, is a previous contributor to the *Review*.

Lieutenant Colonel David J. Dean (B.S.F.S., Georgetown University; M.A., Florida State University) is an Action Officer in the Middle East Africa Division (J-5), Office of the Joint Chiefs of Staff. His previous assignments include Research Fellow, Center for Aerospace Doctrine, Research, and Education; Military Concepts Analyst, Airpower Research Institute at Hq Air University; and Intelligence Officer with the Defense Intelligence Agency and Pacific Air Forces. Colonel Dean is a Distinguished Graduate of Squadron Officer School and Defense Intelligence School, as well as a graduate of Air Command and Staff College and Industrial College of the Armed Forces. He has contributed to earlier issues of the *Review* and was second-prize winner in the 1984 Ira C. Eaker Essay Competition.

Donald J. Mrozek (A.B., Georgetown University; M.A., Ph.D., Rutgers University) is Professor of History at Kansas State University, Manhattan. He has been a Visiting Research Fellow at the Center for Aerospace Doctrine, Research, and Education and the Airpower Research Institute, Hq Air University. Dr. Mrozek is coeditor of *A Guide to the Sources of U.S. Military History* (1981) and has written articles that have appeared in *Military Affairs* and other publications, including the *Review*.

Lieutenant Colonel Price T. Bingham (USAFA) is a Military Concepts Analyst in the Doctrine and Concepts Division, Center for Aerospace Doctrine, Research, and Education, Hq Air University. At Hq USAF, he was an air operations officer and a member of the Air Staff in the War and Mobilization Planning Division. He has flown fighters in Tactical Air Command, United States Air Force in Europe, and Southeast Asia. Colonel Bingham is a previous contributor to the *Review*.

Major James H. Slagle (B.S., University of Illinois; M.A., University of Oklahoma; M.S., Troy State University) is Tactical Forces Planning and Programs Action Officer at Hq USAF. He has served as a missile combat crew commander for both Titan II and Minuteman III; Chief, Training Division at Squadron Officer School; and Chief, Ground Launch Cruise Missile Command and Control Operations Branch, Hq USAFE. Major Slagle is a graduate of Squadron Officer School and Air Command and Staff College.

John A. Kline (B.S., Iowa State University; M.S., Ph.D., University of Iowa) is Educational Advisor to the Commander, Hq Air University. Dr. Kline has been Assistant Professor of Communication at the University of New Mexico; Associate Professor and Director of Graduate Studies in Speech, Theater, and Broadcasting at the University of Missouri-Columbia; and Dean of Communication at Academic Instructor School and International Officer School, Maxwell AFB. His writings have appeared in a variety of books and professional journals.

Captain Dieter Barnes (B.A., San Francisco State University; M.A., Louisiana Tech University) is a student at Air Command and Staff College. He has served as a B-52 instructor navigator, a radar navigator, a Squadron Officer School faculty member, and an action officer at Hq Air University.

Leonard C. Gaston (B.S., Texas Tech; M.B.A., Ph.D., Ohio State University) is an Operations Research Analyst with the Deputy for Development Planning, Aeronautical Systems Division, Air Force Systems Command and is an Air Force Reserve officer assigned to the Air Force Business Research Management Center, Wright-Patterson AFB, Ohio. Dr. Gaston is a previous contributor to the *Review*.

Major John W. Fal (USAFA; M.A., New Mexico State University) is a faculty member at Academic Instructor School, Hq Air University. As a weapon systems officer, he has flown the F-4, F-111, and AT-38B. His assignments have included tours at Da Nang Air Base, Republic of Vietnam, and various training or operational planning positions in PACAF, TAC, and USAFE units. Major Fal is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.

Major Bruce B. Johnston (USAFA; M.S., Air Force Institute of Technology) is Assistant Professor of Aerospace Studies at Purdue University, West Lafayette, Indiana. His previous assignments, all in contracting, have been at Hq USAFE, Ramstein Air Base; 6991st Air Base Squadron, Crete, Greece; AFIT; and 92d Bombardment Wing, Fairchild AFB, Washington. Major Johnston has previously written book reviews for the *Review*.

Professional Staff

LIEUTENANT COLONEL DONALD R. BAUCOM, USAF, *Editor*
JANICE M. BECK, *Managing Editor*
MAJOR EARL H. TILFORD, JR., USAF, *Associate Editor*
JOHN A. WESTCOTT, *Art Director and Production Manager*
ENRIQUE GASTON, *Associate Editor, Spanish Language Edition*
LIA MIDOSI MAY PATTERSON, *Associate Editor, Portuguese Language Edition*
STEVEN C. GARST, *Art Editor and Illustrator*
HATTIE DIXON MINTER, *Copy Editor*

Advisers

COLONEL KENNETH J. ALNWICK, *Senior Fellow, SCDC, National Defense University*
COLONEL ALAN L. GROPMAN, *Deputy Director for Planning Integration, Hq USAF*
LT. COLONEL JOHN F. GUILMARTIN, JR., USAF (RET), *Immediate Past Editor*
MAJOR GENERAL I. B. HOLLEY, JR., USAFR (Ret), *Duke University*
FRANCIS W. JENNINGS, *Air Force Service Information & News Center*
DR. RICHARD H. KOHN, *Chief, Office of Air Force History*
COLONEL DONALD E. ROSENHOOVER, *Dean, Air War College Resident Program*

Printed by Government Printing Office. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, Air Force Recurring Publication 50-2. ISSN: 0002-2594.

AIR
UNIVERSITY
review
MAXWELL AFB, AL 36112

SPECIAL FOURTH CLASS MAIL
CALCULATED POSTAGE
PERMIT G-1
USAF-ECI
GUNTER AFB, AL 36118

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300
RETURN POSTAGE GUARANTEED

The Professional Journal of the United States Air Force

AIR UNIVERSITY review

MARCH-APRIL 1985