



The Professional Journal of the United States Air Force





AIR UNIVERSITY **review**

MARCH-APRIL 1979



AIR UNIVERSITY **review**

from the editor's aerie

Any dream of aerial conflict is merely the product of fertile imagination, a malady often encountered in younger men with insufficient service to recognize certain things as manifestly absurd.

An anonymous Army spokesman (1911)
as quoted in *Air University Review*,
January-February 1979, p. 47

One of the elder statesmen of the Air Force recently agreed that the *Air University Review* is a book "written by old men for old men." That hurt! True, we have often been accused of prejudice against junior officers, women, and noncommissioned officers because of the scarcity of their articles in our pages.

This is the 148th issue of the *Review*. Casual research in the tables of contents over this 30-year history reveals that the lead article spot is typically the stomping ground of the high and the mighty. Twice, Secretary of Defense Harold Brown has occupied the lead position, though not in his present capacity. An ambassador of the United States headed the line-up in our July-August 1977 edition. A congressman was number one in March-April 1975. Former Secretaries of the Air Force have been the point man, also. Even a foreign ambassador to the United States supplied the lead in the September-October 1971 issue. Twenty-five four-star generals, fourteen doctors of philosophy, eight chiefs of staff, and one Air Marshal of the Royal Air Force have also led the parade. Only once in these 147 issues, however, has a junior officer made the front rank, and that was a captain in September-October 1975. Never has a lieutenant made the grade. Now we march on new ground with First Lieutenant John W. Jenson and his "Nuclear Strategy: Differences in Soviet and American Thinking." The thought of *this* young man is in no way absurd, and we offer his article with considerable enthusiasm. It has already drawn favorable remarks from readers on the Air Staff, and we hope it will please you.

Lieutenant Jenson leads our little parade in another sense, also. His piece on the nature of Soviet strategic thought is one of four on the general subject of the relationship between the world's two superpowers. The cover art, depicting the fearsome array that could face us, is intended to tie the whole package together.

With this issue we welcome a new and young (or younger, at least) Associate Editor to the staff of the *Review*: Major Theodore M. "Ted" Kluz. Ted, whose field is military history, comes to us from a tour as a teacher of strategy at the Air Command and Staff College. His students and colleagues there, and those from his days at the RAF College, Cranwell, England, and at AFIT, can help him along in his acquisitions work by burying him in manuscripts. He can be reached at Autovon 875-2773. Welcome aboard, Ted!

As for our so-called prejudice against the young, the women, and the NCOs—perhaps it is only a prejudice against the meek, for we cannot publish that which we do not receive, be it out of meekness or whatever. Lieutenant Jenson has proved that it can be done—and done well. What are you waiting for?



March-April 1979

Vol. XXX No. 3

articles

- 2 Nuclear Strategy: Differences in Soviet and American Thinking 1st Lt. John W. Jenson, USAF
- 18 Tactical Air Defense: A Soviet-U.S. Net Assessment Maj. Tyrus W. Cobb, USA
- 40 Soviet-United States Civil Defense: Tipping the Strategic Scale? Maj. Thad A. Wolfe, USAF
- 56 The Calculus of Surprise Attack Lt. Col. A. L. Elliott, USAF
- 68 "The *Shasta* Disaster": Forgotten Lesson in Interservice Relations Dr. Murray Green
- 75 The Challenge of Clausewitz Group Captain R. A. Mason, RAF

departments

BOOKS AND IDEAS

- 80 The Southern Duck Wants to Lie Down Col. James L. Morrison, Jr., USA (Ret)
- 85 Power, Control, and Legitimacy Col. Raymond E. Bell, Jr., USAR
- 90 Potpourri
- 95 THE CONTRIBUTORS

NUCLEAR STRATEGY

*differences in Soviet and
American thinking*

FIRST LIEUTENANT JOHN W. JENSON



MORE than any other change in the technology of war, the advent of nuclear weaponry has forced military and political leaders around the world to reassess the role of warfare in international politics and to re-examine the strategic concepts that had served them in the past. War had reached such cataclysmic and terrible proportions that even the possibility of war seemed unthinkable. More than ever before, the mandate of national strategists focused on preventing war rather than on successfully prosecuting it. The resulting debate among scholars over suitable doctrine and strategy was, unfortunately, often lacking in the objectivity and firm logic that such a discussion warranted. Some theorists went so far as to suggest that the destructiveness and ferocity of modern weaponry had made warfare obsolete as a means of resolving international conflicts. A little reflection, however, revealed that the same notion had been popular prior to both of the major wars of this century and in both instances had proved tragically false. In other circles, scholars and national leaders tended to dwell on philosophical and moral issues, all but ignoring the urgent and equally important military questions.

The uncertainty and apprehension over the implications of nuclear weaponry were compounded by the rapid polarization of the world system into two opposing, belligerent blocks after the collapse of the Axis powers. When the Soviet Union began to acquire its nuclear arsenal, speculation among political and military leaders of both sides about the nature and likelihood of nuclear war became soberingly if dismally relevant to the entire community of nations. The need for some hard intellectual scrutiny of the impact of modern weapons on the international political system became apparent. It was also apparent that if nuclear war were to be avoided, both sides would have to take active, deliberate measures to ensure against it. Thus began the search, by theoreticians in both the United States and the Soviet

Union, for military doctrines and strategies appropriate for the respective nations during the nuclear age.

Before discussing the military doctrines and strategies that have evolved in the United States and the Soviet Union during the postwar era, one must define the terms "doctrine" and "strategy." Throughout the history of military thought, both have taken on a variety of meanings in different contexts. One studying the works of military theorists and strategists is often confronted with a bewildering array of definitions depending on the period of history during which the author wrote as well as on the writer's particular position and perspective.

For purposes of this discussion, military doctrine can best be defined as a set of prescriptive principles set forth as a guide for action and designed to ensure "uniformity of thought and action" throughout the armed forces of a nation in prosecuting its policies during peace and war.¹ It defines the manner in which the military is to contribute to the political activities of the state and establishes the guidelines on which military action may properly be employed in the pursuit of the goals of the state. Strategy is subordinate to doctrine and is the broad set of military actions consistent with the accepted doctrine, which are to be employed when the military is used to implement the policies of the state.

A nation's choice of military doctrine and strategy has historically reflected the intellectual and cultural climate of the times and the peculiar economic, political, geographic, and social characteristics of the country. A state's political system and ideology, its national goals and aspirations, its historical experiences, and its perception of itself and the world political environment—all contribute to its choice of appropriate doctrine and strategy, while its geography and resources determine the practicality of the strategic options open to it.

Throughout the Cold War of the 1950s and 1960s, the United States possessed continuous

superiority in number and technical quality of nuclear weapons, even if she was not always certain of the existence or extent of her lead. During the same period, the Soviet Union, well aware of U.S. strategic superiority, was generally preoccupied with catching up with the U.S. As the American lead in nuclear capability began to wane, U.S. doctrine and strategy went through a continual process of revision and adaptation to the changing balance of nuclear capability. The first explicit U.S. doctrine on the use of nuclear weapons was the doctrine of massive retaliation, conceived and articulated primarily by then Secretary of State John Foster Dulles. Under massive retaliation, the U.S. eschewed using limited military responses in opposition to Soviet political and military initiatives around the world and instead threatened the Soviet Union with nuclear attack for any of an unspecified list of military and political actions.² Such a doctrine, of course, could be tenable only while the Soviet Union had no significant strike capability against the U.S. As Soviet capabilities grew, however, and as the imprudence of massive retaliation became manifest, nuclear arms policy was divested of such sweeping political roles and began to focus exclusively on the prevention of a large-scale nuclear holocaust. U.S. policy-makers eventually realized that options short of nuclear warfare ought to be devised for dealing with lesser political and military conflicts. Ultimately, the U.S. approach to the prevention of large-scale nuclear war came to rest on a strategy of deterrence under the doctrine of mutual assured destruction, which postulated that so long as either side was capable of inflicting unacceptable damage on the other, after having itself suffered a massive attack, neither side would have any incentive to initiate a nuclear exchange.

The adoption of mutual assured destruction as the guiding principle of U.S. deterrence initiated the ensuing perpetual debate over what size and type of military forces were

necessary to achieve national security. Advocates of the mutual assured destruction concept have been generally divided into two schools of thought. One side maintains that a force "balance" between both sides is necessary. The other argues that to deter a potential aggressor effectively, one need not possess superior or even equivalent military forces but simply a sufficient or adequate capability to assure the aggressor that, regardless of which side suffers the more from a nuclear exchange, the attacker will still suffer more than he is willing to bear. The "sufficiency" concept has been increasingly cited by advocates in various circles as justification for cutting back on U.S. nuclear force levels, regardless of Soviet or Chinese force buildups.

Lest the notion of sufficiency seem like too easy a solution, however, one must realize that it has some important limitations. First of all, its viability depends in turn on the viability of the mutual assured destruction doctrine, which presumes that the sole objective of both sides is the prevention of nuclear warfare. This tends to be true of U.S. doctrine but is far less characteristic of Soviet doctrine, which assigns a much broader range of tasks to the nation's strategic nuclear forces in both peace and war. For sufficiency to be attainable, both sides must subscribe to the assured destruction doctrine. If either side is determined to deny the other an assured destruction capability, the other will find itself continually reaching for, but never being able to attain, the requisite level of forces. It will, instead, find itself racing for sufficiency with no less effort than if it were racing to obtain decisive superiority.

Second, aside from the practical limitations on attaining "sufficient" deterrent forces, the required level and composition of those forces is extremely difficult to determine. One must first outguess the enemy on what level of destruction he is willing to allow and then try to determine what sorts of force structure and weaponry are necessary to achieve the requisite destructive power. It behooves us to keep

in mind, incidentally, that the willingness of other nations to endure destruction may be quite different from our own. Russia, to cite the most relevant example, has historically demonstrated an awesome capacity to endure incredible destruction and huge losses, yet go on to fight, survive, and win. The Soviets, who suffered 20 million casualties in World War II and who witnessed the loss of 12 million additional countrymen at the hand of their own government during Stalin's regime, have a much different perception of violent conflict than Americans, who have never fought a modern war on their own soil and who regard the preservation and protection of human life as the highest duty of the state.

The American debate of strategic issues, even as late as the early seventies, centered almost exclusively around the assured destruction concept and its corollaries, primarily the notions of sufficiency and overkill. Deterrence through mutual assured destruction had become the orthodox faith, and its disciples usually argued only over how much of the federal budget ought to be spent on it and what kinds of weapons and force mix were necessary to achieve it. Not until the recent rethinking of U.S. strategy, fostered to a large degree by then Secretary of Defense James R. Schlesinger, did the U.S. move away from its reliance on the assured destruction concept and broaden its doctrine and strategy to include such objectives as escalation control and U.S. survival in the event of war.

Under current doctrine, the principal goal of strategy remains deterrence of a nuclear war, but rather than rely on mutual assured destruction, current doctrine is based on the concept I shall call, at the risk of oversimplification, "assured response." Under assured destruction, nuclear war was virtually an all-or-nothing proposition. As long as the enemy did not exceed the requisite level of provocation, he could engage in any number of lesser political or military initiatives which, though they may have been very threatening or even damaging

to the U.S. or her allies, might not be sufficient cause for launching a global nuclear war. How, for instance, was the U.S. to respond to a Warsaw Pact invasion of Western Europe if the Soviets were to launch an unlimited attack on our NATO allies but refrain from attacking the U.S.? Would the U.S. really come to the defense of her NATO allies if doing so meant triggering a global nuclear war and especially a war at the expense of her own population?

To cope with threats short of an all-out attack on the U.S., current doctrine calls for a range of options from very limited attacks with a small number of weapons to a full-scale war. By assuring the enemy that we can, and might, also respond to lesser military initiatives than a full-scale attack on the U.S., we can deter such initiatives without having to threaten initiating a holocaust. Besides deterring lower-order enemy initiatives, possession of a range of responses short of full-scale war may enable us to control the escalation of nuclear warfare in the event that it does break out. Although present doctrine concedes that nuclear war may be extremely difficult to control and may even escalate rapidly once started, such escalation is, at least, no longer automatic.

Finally, present doctrine establishes a commitment to maximizing the military, political, and economic capacity of the U.S. relative to the enemy, in the event that escalation cannot be controlled.³ To what extent this constitutes victory or even national survival is open to debate, but it indicates that U.S. theorists are beginning to think in terms of attempting to provide some means of assuring U.S. survival or at least of limiting damage should war break out. Under the doomsday mentality of previous decades, such issues were seldom seriously discussed.

One must be careful, however, not to assume that the emergence of the current U.S. assured response doctrine represents the wholesale abandonment of the assured destruction doctrine. The latter concept is by no means dead, and there remain many who scoff

at the concepts of escalation control and national survival. Indeed, many people view the mere discussion of such concepts as morally reprehensible.

Speculation on the nature of nuclear warfare and its potential impact on international politics has never been popular in the United States. Herman Kahn's famous works in the early sixties, *On Thermonuclear War* and *Thinking about the Unthinkable*, were answered not by equally well-thought-out theoretical challenges but by a barrage of moral outrage that demonstrated just how unthinkable the subject really was to much of the American academic and political community, as well as to the general public. More recently, James Schlesinger's advocacy of a nuclear arms strategy allowing for limited and flexible counterforce as well as countervalue options in general nuclear warfare proved most unpopular in this country. The very notions that nuclear warfare is winnable, or that it may take any form other than instant, reciprocal annihilation are still held by most people to be preposterous. Scenarios for fighting, surviving, and achieving victory in various types of nuclear warfare have been discussed from time to time by a few military theorists and by students at the professional military schools but have rarely been employed as a basis for U.S. policy.⁴ The direction of U.S. doctrine and strategy during the next decade cannot be predicted with certainty. Because our policy, doctrine, and strategy are created and adopted through a dynamic and essentially democratic process, our position at any given time will reflect the particular disposition of our political leadership, the impact of national and international events on the general mood of the country and, of course, the creativity of our strategic theorists, both military and civilian.

THE essential premises behind Soviet nuclear doctrine and strategy, and in-

deed the very processes by which they are created in the Soviet Union, are fundamentally different from their counterparts in the U.S. Unfortunately, too few Americans appreciate how the vast gulf between the national histories, ideologies, and political characters of the two nations has led to profoundly different perceptions of warfare and the role of military forces in the affairs of the state. The remainder of this article shall be devoted to a description of the fundamental differences between U.S. and Soviet nuclear thought and the implications that the latter holds for U.S. security. Effective military strategy cannot be formed in a vacuum. It must be designed with the opponent's intentions, perceptions, and capabilities in mind. It is, after all, the Soviets, not ourselves, that we are hoping to deter. A strategy aimed merely at the pacification of our own fears from our own perspective, or for the satisfaction of popular sentiment, can at best provide only an illusory feeling of security; at worst it invites disaster.

Soviet military doctrine and strategy, like their Western counterparts, have been designed to help lessen the likelihood of a general nuclear conflict. But Soviet doctrine and strategy reflect the essential differences between the Soviet and American political systems, ideologies, historical experiences, geographic positions, economic and technical capabilities, and differing perceptions of themselves and the world at large. Indeed, the entire Soviet approach to the formation of military doctrine and strategy is fundamentally different from the approach in the West. For example, while American strategy has been aimed at maintaining the present world order, the Soviets have stated time and again their ideological commitment to altering rather than preserving the status quo. The Soviets see world affairs as a dynamic system that neither can nor should be held perpetually in its present state. Military strategy, as they see it, should be tailored to an inherently changing rather than a static world.

To assume that Soviet doctrine has emerged through a process similar to that in the U.S. or that it is constructed along parallel lines but has merely reached different conclusions because the objectives of the two systems are different is to make the error of trying to analyze the characteristics of another culture using the perspectives and yardsticks appropriate for, but peculiar to, one's own. Soviet military thought, revealed in doctrine and strategy, is a creature different from its American counterpart not only in color, size, and shape, but in its basic anatomy and physiology. It must be explored within the context of its own origin and environment.

In examining Soviet military literature, the Western reader is immediately struck by a number of features not present in American military writing. The first of these is the persistent claim of Soviet writers that Soviet military concepts proceed from a scientific basis, founded on irrevocable principles about which there can be no debate or argument. This scientific basis is Marxism-Leninism, which in the Soviet view provides the framework of analysis for all social phenomena. Military doctrine, according to Marxism-Leninism, is a class phenomenon, springing ultimately, as all other social phenomena do, from the economic conditions of the society. Although the Soviets also recognize the impact of political, geographic, and demographic factors, they reject the notion that military doctrine can be deliberately formulated through an intellectual, cognitive approach. In the volume *Military Strategy*, which was compiled in 1960 by a group of military scholars headed by Marshal V. D. Sokolovsky and which still serves as one of the chief explications of the basic premises of Soviet strategy and doctrine, the following explanation is given of the nature of military doctrine:

Military doctrine is not thought out or compiled by a single person or group of persons; it comes out of the vital activities of the state as a whole, and is the result of a quite complex and lengthy

historical process of the creation and development of official ideas. . . . There can be no single military doctrine for all states, since the general political line of the state's ruling class and the economic and moral resources at its disposal determine military doctrine.⁵

In contrast to what is often assumed in the U.S., the Soviets do not believe that there are any universally applicable schemes for achieving strategic stability. There are, therefore, no attempts made in Soviet literature to divine such a scheme.

Although the Soviets reject the notion that *doctrine* can be produced by a cognitive process, or that any doctrine can be generally applicable to all states, strategy and tactics are the subjects of intense intellectual scrutiny by military scholars in the Soviet Union. Military strategy is defined, as in the West, as occupying a subordinate role to doctrine. Military doctrine is said to determine general positions and principles, whereas military strategy deals with concrete problems of the actual deployment of military forces in the preparation for war and the conduct of war.⁶

Another unique feature of Soviet military thought is the very limited role of debate in the open literature. Consistent with their view that doctrine cannot be developed through a deliberate academic approach, there is no discussion of alternative doctrines or the relative merits of each. Moreover, only a very few dissertations on strategic and tactical concepts are deemed suitable for open publication. To the outside observer, there is little evidence of debate. This does not reflect any monolithic unity of thought, as the Soviets are given to claiming; rather, Soviet strategic concepts are ultimately formulated only by high-ranking members of the Soviet politico-military establishment. Soviet publications on strategy and tactics do not represent contributions to a freewheeling interchange of scholarly opinions and differences but could more appropriately be characterized as statements of the accepted, official position arrived at by consensus within

the higher political and military circles. If questions of strategy are ever treated by groups of scholars, such groups are generally under the central control of some leading personality, as was the committee which, under Sokolovsky's guidance, compiled *Military Strategy*. Statements of Soviet doctrine and policy are the outcome of official efforts to identify the military concepts and measures best suited to achieving the political objectives of the state.

The role of Marxism-Leninism in the formulation of military doctrine and strategy is difficult to assess—just as it is difficult to assess its role in domestic or foreign policy or any of the other activities of the Soviet government. That it does impact on Soviet policy and decisions cannot be denied. Marxism-Leninism does give Soviet leaders a framework within which to evaluate world events. It also provides broad prescriptions for dealing with various political and military problems.

Because it is a sociopolitical rather than a military theory, Marxism-Leninism provides no direct guidance for Soviet military strategy and tactics; but it does serve as the foundation for a de facto Soviet military doctrine. It establishes the need for armed forces, the politically acceptable modes of warfare, and other general rules governing the role that the military may play in the affairs of the state. From the dissertations of Marx and Lenin, Soviet leaders obtain theories and arguments necessary to explain, justify, rationalize, and legitimize their policies and to interpret and act on world events.

War itself is seen as a manifestation of the class struggle. Soviet leaders assert that although the Soviet Union, being a socialist state, is inherently peaceful and would never initiate a war, it must be prepared for conflict with the hostile and inherently warlike imperialist nations of the capitalist camp. Furthermore, because of the nature of class warfare, there can be no coming to terms with the enemy. One does not compromise with a class

enemy. As long as the capitalist camp endures, it will continue in its aspirations to destroy the socialist camp. A formidable peacetime deterrent is therefore a necessity. In order for the socialist world to achieve lasting victory in the event of a large-scale conflict with the capitalist world, the latter system must ultimately be dismantled and a new social order established in its stead. From this ideological imperative springs the doctrinal requirement, in the event of war, for "complete defeat of the enemies' armed forces," the invasion and holding of his territory, and "eternal vigilance" in the protection of Soviet territory against invasion.⁷ For any nation to have such a capability, it must not have merely "sufficient" or even "balanced" forces but decidedly superior forces. This is the essence of Soviet doctrine.

The determination of Soviet leaders to have a free hand in implementing peacetime foreign policy goals provides further impetus for advocating superior strategic capability. Firm believers that a nation's ultimate peacetime prerogatives depend on its relative military capability, Soviet leaders are committed to acquiring a military force that will allow them maximum freedom from coercion or interference by other nations in prosecuting their foreign policy. The Soviet experience during the Cuban missile crisis of the early sixties was a profound lesson, and the almost immediate subsequent acceleration of Soviet arms buildup was evidence of their resolve that never again would they allow themselves to be put in a position in which they would have to back down in the face of an ultimatum from a superior military power.

Marshal A. A. Grechko, in his important monograph *On Guard over the Peace and the Building of Communism*, published in 1971, justified Soviet military efforts in characteristic Soviet terms:

In the USSR and the other Socialist nations there are no social groups interested in a war, and indeed, they could not be. L. I. Brezhnev said at the Twenty-fourth Congress: "we have territorial

claims on no one whatsoever. We are in favor of the free and independent development of all peoples. But let no one try to talk to us in the language of ultimatums and force."⁸

Soviet strategy for the employment of nuclear forces, then, consists of two dicta. The first calls for a military force capable of deterring potential enemies from the use of nuclear weapons during peacetime and, in the event such deterrence fails, surviving the war and going on to defeat the enemy. The second calls for a military force of sufficient strength to prevent other nations, including other nuclear powers, from limiting Soviet peacetime prerogatives through the use of force or the threat of force. Current U.S. policy, I believe, has more limited objectives. Rather than defeat of the enemy, U.S. policy has emphasized control of the conflict. Second, although the U.S. also seeks to deter the use or threat of use of nuclear and conventional forces against itself and its allies, the U.S. is not seeking the same broad freedom of action that the Soviet Union hopes to achieve under its expanding nuclear umbrella.

One should also keep in mind that even though U.S. defense spokesmen may from time to time speak in terms of "escalation control," "U.S. survival," and other terms associated with current doctrine, the nation's commitment to that doctrine is not absolute. There are many in Congress, the executive, and the public at large who do not believe that nuclear war is winnable, controllable, or even survivable. Previous commitments to conflict escalation control and counterforce options are being constantly re-examined. As the debate over appropriate national strategic options continues, appeals to the persistent notions of assured destruction, massive retaliation, balance of terror, sufficiency, and overkill, are continually made by members of Congress as well as the academic community and the popular media. The dearth of serious references to the possibilities of realizing a U.S. war-winning or survival capability is evidence

that the historical preoccupation solely with the deterrent mission of U.S. nuclear forces continues to stifle discussion of policy measures that could help to preserve the United States or U.S. interests in the event of a nuclear conflict. Recent warnings about expanding Soviet civil defense capabilities have sparked little interest in the U.S., which presently has no meaningful civil defense program largely because no one believes it can do any good. Much of the debate over the MX and B-1 has been disappointingly unsophisticated, proceeding too often from the assumption that such weapons will be employed only as a means of futile retaliation by an already dead or dying nation. Because of the unpopularity of discussing any aspect of nuclear war other than its deterrence, U.S. theorists have barely begun to explore scenarios for prosecuting nuclear war, surviving it, or winning it. Nor have we even made many serious attempts even to define what might constitute survival or victory.

The acceptance or rejection of such scenarios as a basis for policy, of course, is the prerogative of the political leadership of the nation, who must reconcile the strategic options with the nation's political constraints and objectives. But it is, indeed, unfortunate that U.S. theorists have not been more active, more objective, and more academically courageous in providing political decision-makers with a greater data base and a more candid analysis of contemporary issues for their use in policy-making. In what follows, I shall offer a comparative analysis of American and Soviet strategic theory and shall conclude by examining some strategic options open to the U.S.—not as policy proposals, for that is outside my purview—but to help illuminate some of the compelling, though disquieting, strategic issues of the coming decade.

TO Western readers, accustomed to thinking of nuclear warfare as a synonym for

the inevitable and immediate destruction of humanity, any discussion of victory and the various means of achieving it seems moot. But in this field of discussion, largely unexplored by Western theoreticians, Soviet military theorists have produced some impressive works addressing contingencies for war as well as peace. While Western strategic theory is often preoccupied with the preservation of peace, Soviet writing contains extensive discussions on every problematical level of nuclear warfare from national strategy to the most minute aspects of civil defense and battlefield tactics.

In 1970, Marshal A. A. Sidorenko published his book *The Offensive*, which deals at considerable length with the tactical problems of nuclear warfare in land theaters. In this and other works, Soviet theorists have explored an impressive array of theoretical topics from the problems of targeting nuclear weapons to moving infantry through areas undergoing nuclear attack.

The mere fact that Soviet discussion of battlefield tactics in land nuclear warfare is occurring is evidence of their conviction that there exists an important role for ground troops and army units in nuclear war; indeed, tactical and theater employment of nuclear weapons receives as much or more attention in Soviet writings as strategic nuclear employment. The popular conception in the West, on the other hand, is that ground units will be of little use once the planet is blown to bits. But Soviet theorists have been more sympathetic toward the views of Herman Kahn than of Nevil Shute. The fastidious attention that the Soviets have paid to the theory of ground operations in nuclear warfare can be attributed first to the Soviet doctrinal requirement for victory by seizure and occupation of enemy territory and second to the historical importance of ground warfare in Soviet military experience.

Throughout their entire history, war to the peoples living on the exposed plains of West-

ern and Central Asia has meant land warfare. Over the last two millennia, the Russian people have been continually invaded by armies sweeping in from both the East and West. Because of the extreme exposure of the Russian and Soviet states to invasion by the armies of Europe and East Asia, large, well-equipped, and highly mobile standing armies have always been of crucial importance in guaranteeing the security of the nation.

The geographical position of the U.S.S.R. has given it a far different perspective from the U.S., which, in contrast, has always been buttressed against invasion by two oceans. Until the advent of intercontinental bombers and missiles, the U.S. relied almost exclusively on the navy as her means of protection against invasion. The Soviet Union, unlike the U.S., has constantly had to prepare for the possibility of land invasion and has fought both of the major wars of this century on her own soil. To the Soviets, the possibility of any enemy attempting a full-scale invasion subsequent to a massive nuclear attack on her military bases and centers of government, industry, and population has been more than mere academic speculation.

Furthermore, the Soviet Union has traditionally faced a much larger number of potential enemies both across the seas and directly on her borders. Today, not only the U.S. but Western Europe, China, Japan, and possibly India are all perceived as potential enemies; and it should be noted that most of them have at one time or another invaded or attempted an invasion of the Russian or Soviet states. Soviet strategy in the nuclear era, as well as in the past, has had to be designed to cope with a considerably wider variety of threats and possible scenarios of war than has U.S. strategy.

To deter potential attackers, Soviet strategists have advocated a combined conventional and nuclear force superior in strength to any potential enemy or likely combination of enemy forces. Marshal Grechko, in his previously

mentioned pamphlet on Soviet military strategy and doctrine, declared:

In order to be completely prepared for . . . [future war], it is essential to constantly follow Lenin's thesis that in war the victorious side will be the one which possesses *superiority* in the economic, scientific, technical, socio-political, morale, and military areas. This superiority finds itself concentrated primarily in the army, in its definite socio-political type and combat capabilities.⁹

Superiority in nuclear as well as other types of military capability and the possession of a strong standing army are seen as essential aspects of Soviet strategy. Possession of such a force not only provides an effective deterrent against aggression but as Soviet officials have often stated provides "those conditions under which politics is in a position to achieve the aims it sets for itself."¹⁰

Should peacetime deterrence fail, however, and the Soviet Union be drawn into nuclear war, or should she opt for nuclear war in order to protect what she deems a vital interest, Soviet strategy has also been designed to meet the doctrinal mandate that the Soviet Union survive and retain the capability to crush the enemy forces and consummate its victory by invading and occupying the enemy's territory.

Standing superiority in nuclear forces, which is in the opinion of the author the cornerstone of Soviet strategy, would enhance the potential for survival of the Soviet Union by allowing it to destroy an increased amount of the enemy's offensive capability during an initial exchange of nuclear weapons. Force superiority would also allow the U.S.S.R. to respond to a combined attack by a number of enemy nations acting in concert, and to deter nonbelligerent nuclear powers that may consider intervening in the exchange or threatened exchange of strategic weapons with another nation. The architects of U.S. strategy have traditionally presumed that nuclear war would be waged against a single powerful enemy: the Soviet Union. Though this premise may be valid for

U.S. strategy, the Soviets have been compelled to contend with other possibilities. The Soviet Union has a number of potential enemies within short and medium ballistic missile range, and the possibility of having to deter or fight a number of enemies at the same time is keenly felt by Soviet planners. Furthermore, the Soviet Union, unlike the U.S., faces potential enemies on her perimeter capable of invading her either as a follow-up to a nuclear attack or coincident with a nuclear barrage launched by another nation.

Soviet strategy further differs from Western strategy in that it proceeds from a fundamentally different concept of the nature of nuclear warfare. As previously mentioned, the Soviets see an extensive role for ground troops even in general nuclear war. The popular Western concept of nuclear warfare has generally been one involving a convulsive or spasmodic exchange of weapons, after which both nations will lie prostrate and incapable of deploying traditional invasion forces and land armies. Although an exchange between the Soviet Union and the U.S. could possibly follow such a scenario, one must keep in mind that the goal of Soviet planners and strategists is to ensure that the U.S.S.R., at least, will never find itself in such a position. Furthermore, aside from the threat posed by the U.S., Soviet planners must also consider the possibility of nuclear warfare between themselves and peripheral nations on the Eurasian landmass. Since the final victory, in the Soviet view, will go to the nation that eventually seizes and occupies the other's territory, Soviet strategy also calls for the maintenance of large standing armies, highly mobile, possessing great firepower, and capable of seizing the initiative and achieving large territorial gains in the ground war before, during, and subsequent to the exchange of long-range weapons.¹¹

The Soviets apparently see nuclear weapons not so much as having introduced a fundamental change in the nature of war but rather as having merely extended warfare to more vio-

lent proportions—a process that has been observed and discussed by military theorists ever since Clausewitz wrote about it in *On War* nearly a century and a half ago. The first two chapters of Sidorenko's *The Offensive* are devoted to a Clausewitzian analysis of the evolution of twentieth-century warfare toward increasing levels of violence and destruction and the role that nuclear weapons play as the most recent addition to the technology of mass destruction. Sidorenko's thesis is that nuclear weapons in both a tactical and strategic sense have reduced the distinction between the front and rear lines of the enemy forces; and that by giving the attacker the capability of quickly and decisively penetrating huge areas of the enemy's positional defenses, nuclear weapons have extended the tactical and strategic advantage of the offensive. Modern large-scale ground warfare has, therefore, become more than ever before a contest of maneuver and initiative rather than of attrition.¹² An important corollary to this thesis is that although a general war employing nuclear weapons will be much more destructive than any previous war, it will proceed along analogous lines. Instead of launching long-range attacks on enemy cities by using waves of conventional bombers, as in the last war, it will now be done by ballistic missiles; and instead of long-range artillery and conventional air support in the battlefield, armies will now employ nuclear artillery and jet aircraft delivering tactical nuclear weapons in support of highly mobile ground operations. World War III, in the Soviet view, will be much like World War II—only bigger, faster, and more destructive.

There is nothing in this conception of warfare which dictates that the levels of destruction in warfare be absolute or even the maximum attainable. Indeed, a nation facing an assortment of potential enemies would be well advised to deploy its forces as economically as possible, using only those required to secure victory rather than throwing them all away at the initiation of hostilities in an at-

tempt to annihilate the other belligerent merely for the sake of annihilating him, or of making good one's previous threats.

Furthermore, if the realization of certain political goals or military objectives requires the preservation of given economic or military resources and government or population centers, the deployment of nuclear forces should be limited accordingly. Nuclear war, as Sidorenko sees it, will basically resemble previous modern wars but will simply be fought using more concentrated firepower and faster delivery systems.

To many Westerners this concept of nuclear warfare seems at least surprising, if not absurd. American doctrine and strategy, by traditionally relying on deterrence through terror, has conditioned most Americans to think of nuclear weapons only as instruments of total annihilation. The perception of nuclear strategy held by most of the public and adhered to by many national leaders remains rooted in the belief that the only object of nuclear war is indiscriminate, unrestrained, and absolute destruction. So long as this belief persists, U.S. policy will often be influenced to varying degrees by the old mutual assured destruction concept and could during such times forswear many military options and force structures that could help to assure U.S. survival and victory in the event of hostilities. More important, a persistent faith in mutual assured destruction by its advocates would continue to justify the sufficiency argument. Should this argument prevail in the coming debates on force structure and weapons procurement, the U.S. could find itself possessed of a force of only tenuous deterrent capability, abdicating all but the faintest hope for U.S. survival in a general nuclear war, and incapable of precluding future Soviet political initiatives that may jeopardize U.S. interests. Ironically enough, should the sufficiency notion ever become the basis for U.S. strategy while the Soviets press for superiority, it would become increasingly likely that in the advent of nuclear war between the

two powers, the U.S. could suffer the kind of Armageddon-like destruction currently envisioned by those who advocate this concept.

A more subtle but equally sobering aspect of the popular American conception of nuclear warfare as mutual suicide is the widely held confidence that the validity of that concept is self-evident to the rest of the world—including the Soviets. The typical American is unaware that the Soviet concept of nuclear warfare is profoundly different from ours. Which of the two concepts is the more valid can ultimately be determined only in the unfortunate event that nuclear warfare between the two nations someday occurs. In the meantime, however, for purposes of political decision-making and diplomatic intercourse, what matters is not whether the Soviet concept of warfare is more accurate than the popular Western concept but that the Soviets believe it is. The strategy they adopt and the subsequent agreements and commitments they will be willing to enter into with the West will all be significantly influenced by their view of warfare. American policy-makers and planners must not lose sight of the fact that some Soviet strategists continue to view nuclear warfare in more traditional strategic and tactical terms and are committed to the position that national security and other lesser objectives in both peace and war are best attained through the possession of decidedly superior force—both nuclear and conventional.

American negotiators, policy-makers, and strategists must also keep in mind that the international political and geographical position of the Soviet Union dictates some strategic requirements not shared by the U.S., which the Soviet Union cannot and will not ignore. While U.S. and NATO strategy has primarily been formulated to counter only the Soviet threat, Soviet nuclear strategy is designed to cope with a multitude of threats from nuclear and nonnuclear powers alike. Although Soviet doctrine on nuclear forces may be espoused in Marxist-Leninist phraseology establishing the

need for nuclear forces on the grounds of the threat posed by imperialist and capitalist adversaries, Soviet strategists have never overlooked the possibility of war against China or a coalition of a number of other states. In recent years it has become apparent that the conflict between Moscow and Peking is genuine. The Twenty-fourth Congress of the Soviet Communist Party went so far as to state explicitly that although the Communist Party of the Soviet Union "sought to aid . . . in the normalization of relations, and to restore friendship with Chinese People's Republic," the "CPSU would *never make concessions to the national interest of the Soviet State*, of the principles of Marxism-Leninism."¹³

The rapid buildup of the Soviet stockpile of strategic weapons in the 1960s can be attributed to the need which the Soviet Union felt not only to reduce America's superiority but to establish unmistakable superiority over China's nascent nuclear power. Adam B. Ulam argues that it was to offset the future Chinese threat that the Soviets erected their ABM system to protect their capital and other sites. By purely technical criteria, it makes little sense to install an ABM system; for all its huge expense, it offers no protection against a first-rate atomic power, such as the United States. But, as Ulam suggests, the Kremlin was not thinking of a large nuclear power when it erected its ABM system. With the great degree of centralization that characterizes their political system, the Soviets have to take account of the threat and potential effect of *one* bomb or missile striking Moscow.¹⁴

Flanked by potential enemies on both sides, the Soviets have had to anticipate the possibility that war with one might precipitate an attack by the other, either from political commitment or a desire to exploit an opportunity for easy victory. With the easing of relations between the U.S. and mainland China in the last few years, Soviet strategists have had to take increasing account of the possible actions that the U.S. may take should the Soviet

Union ever become embroiled in open hostilities, including nuclear warfare, with China. To provide assurance that the U.S. would stay out of a Sino-Soviet conflict, particularly if such a conflict were to escalate to nuclear war, the Soviet Union would have to engage a portion of her forces against one nation but still have sufficient reserve left to deter the other. The U.S. does not have to cope with this type of strategic problem to anywhere near the same degree.

The possibility of having to conduct a multi-front or multilateral war is further complicated by the antagonistic relationship that exists between the Soviet Union and her manifestly resentful and reluctant satellites in Eastern Europe. The specter of having to hold the forces of revolution within her allies at bay after suffering a nuclear attack herself, or while engaged in war on another front, provides tremendous impetus for maintaining both her huge forward-based standing army and a nuclear umbrella against outside nuclear powers who may be sympathetic with the Eastern European countries.

Finally, Soviet strategy reflects concern over the eventual rise of China and conceivably other nations to nuclear power status. Certainly China will possess a viable nuclear delivery capability against the Soviet Union several years before she will pose a commensurate threat to the United States. Of Soviet concern also is the possibility that India, Japan, or Germany may someday acquire substantial nuclear arsenals of their own. The Soviets have been, and remain, much more apprehensive than the U.S. has traditionally been over the possibility of two or more nuclear powers teaming up against them. The forces of both historical experience and Marxist ideology have not served to ameliorate Soviet apprehension about the intentions and aspirations of many of the nations in the outside world, both in the East and the West. Again, whether such a perception of the world is realistic is not the relevant question for Western analysts of So-

viet strategy. The important question is whether the Soviets do, in fact, perceive the world with such apprehension and how this apprehension impacts on their military posture and political behavior.

Although Western analysts of the Soviet Union may have overplayed the themes of traditional Russian xenophobia and Bolshevik suspicion of the outside world, the Soviets have always exhibited a cautious approach to world politics and military strategy. They have historically prepared for a broad set of contingencies in peace and war, and have generally made concessions in international politics only when coerced or limited by an opponent of superior military or political strength. What implications, then, does Soviet strategy have for Western security at the present time and during the forthcoming SALT discussions with the U.S.?

It is the author's contention that since Soviet strategy is designed to provide both a deterrent and a war-winning capability and ensure a peacetime environment in which the political objectives of the Soviet Union can be freely pursued, it seems doubtful that the Soviet Union will opt for any military posture short of superiority over any of its potential enemies. I believe that the historical, ideological, and strategic imperatives behind Soviet military planning make it difficult for the Soviet Union to feel secure with anything less than a strategically superior nuclear force. These imperatives include her perceived need to prepare for multilateral conflict with other nations or coalitions of nations on and off the Eurasian landmass. It seems doubtful to me, therefore, that the U.S. can expect the Soviet Union to make substantial concessions in arms limitations under the SALT agreements or any subsequent discussions. The Soviets will continue to build a diversified mixture of forces including land-based and sea-based missiles, and their interest in refining the accuracy of their delivery vehicles and developing a MIRV capability is not likely to wane.¹⁵ Soviet strat-

egy, especially in the face of growing rapprochement between the U.S. and China, is almost certain to remain one of emphasis on long-range nuclear weapons, backed up with vast standing ground forces capable of rapid deployment on both the European and Asian fronts.

IN coping with the Soviet nuclear threat, the U.S. can, of course, pursue any number of options. There are, however, given the force of recent history and the impact of current events, three options particularly worth examining. A comparative examination of them could be the most valuable academic exercise possible in an article of this length.

The first of these options is for the U.S. to return to reliance on the assured destruction concept. Since it is unlikely that the Soviets will ever agree to such a doctrine, there would be little about it that would be mutual, and the U.S. would have to identify and strive for some sort of sufficient force structure in the face of Soviet superiority. Second, the U.S. could attempt a traditional balance-of-power approach by establishing an entente among the various blocks of world powers, balancing them in a series of alliances in hopes of achieving a stable world order. Under such a system, the deterrent for war would rest not so much on the nuclear capabilities of any one nation, but on a system of interconnected alliances designed to ensure, by collective agreements, the security of all nations against any one belligerent power. Third, the U.S. could opt for a powerful nuclear and conventional strategic strike force, protected from and designed primarily to neutralize Soviet offensive and conventional forces at the onset of a military conflict. By being able to deny the Soviet Union her sought-after force superiority, the U.S. could achieve both an effective deterrent and a force capable of ensuring both national survival and the protection of U.S. interests in

the subsequent phases of the conflict.

The first option of unilaterally returning to assured destruction as a deterrent would amount to little more than clinging to false hopes. Since the Soviets lend little credence to the notions of assured destruction and sufficiency, it is unlikely that U.S. policy based on these concepts could give us the sort of security we have had in the past or would have hoped for in the future. These two notions gained force and acceptance in the U.S. during the first two decades after World War II when the U.S., in fact, enjoyed the kind of superiority over the U.S.S.R. that the Soviets are now attempting to establish over the U.S. It has been only in the last few years that Soviet nuclear strength has begun to approach our own. Ironically, the peace and stability of the postwar period can be more readily accounted for by U.S. superiority during those decades than by the presumed validity of the U.S. doctrine of mutual assured destruction. With the Soviet Union, I believe, now pressing for superiority, U.S. reliance on assured destruction as a means of achieving international stability has little future. Indeed, the U.S. military capacity for an assured destruction capability against the Soviet Union is one of the very things which I believe the Soviets intend to eliminate in their pursuit of superiority. Soviet-sponsored exploits in Africa and the growing uneasiness in Western Europe are but the faint rumblings of things to come in the future of emerging Soviet pre-eminence as the Soviet Union begins to test U.S. resolve under the changing strategic balance.

As for the second option, balance-of-power politics is a time-honored method of establishing a peaceful world order. Efforts begun by Henry Kissinger during the Nixon administration to establish a *détente* through a balanced system of world power raised some hopes that a permanent solution had been found to the problem of international stability. *Détente*, however, has always traveled a very rocky road, and the success of such a system in the

future would be dependent on the continuing improvement of U.S.-Chinese relations, the continued confidence of Japan and our NATO allies in our commitment to their interests, and Soviet agreement in the upcoming SALT discussions to substantially limit her buildup of military forces. But even if we could be sure of maintaining all of these requisite ifs, there are some less obvious but even more serious shortcomings to any international order based on a balance of power.

As long as the balance is maintained by careful and skillful statesmanship, the system can be an effective instrument in preventing international conflict. But if allowed to break down, it can rapidly polarize into a perverse assemblage of separate and arbitrarily antagonistic blocks, as did the European system on the eve of the First World War. The congealment of the European system at the turn of the century into the opposing Triple Entente and Triple Alliance can be traced to the fall from office of Germany's Bismarck and England's Lansdowne, who throughout the late nineteenth century had adroitly balanced the military and political power of England, France, Germany, Russia, and Austria-Hungary against one another.¹⁶ Whether the U.S. is capable of similar statesmanship and how long it could sustain it would be important questions for the future should the U.S. ever opt for this course.

But the final and most serious indictment of the two courses just discussed is that, in my opinion, neither provides any incentive for the Soviets to forswear their military doctrine of assured survival and preparedness for war, nor to scrap their strategy of eventually achieving nuclear superiority. U.S. negotiators must recognize that the Soviets are committed to achieving superiority and that it is not likely that they will accept a position of inferiority or even parity with the West. If the U.S. hopes to persuade the Soviet Union to stop increasing its stockpile and improving its nuclear delivery capability, it will probably have to

allow the Soviet Union to cease doing so at a position of discernible superiority to Western nuclear capability. Whether the U.S. could, under those circumstances, ensure its own safety and the stability of the world political order would then depend primarily on the success of U.S. diplomacy.

The third option calls for retaining our present diplomatic ties and the concomitant commitments of conventional forces to NATO and East Asia but emphasizing in U.S. strategic posture a flexible counterforce capability against Soviet nuclear and conventional forces. Such a strategic force would have considerable deterrent value and would have the added benefit of helping to ensure U.S. survival and continued military strength in the event that war actually does occur. Furthermore, such a posture has the welcome attribute of being best achieved by improving the control and increasing the accuracy, selectivity, speed, and invulnerability of our strategic forces more than by simply adding megatonnage or increasing the number of weapons. Moreover, a strong counterforce commitment is far more morally and politically defensible than the traditional countervalue concept. While making the prospect of war no more inviting to the potential aggressor, it provides neither side with any incentive to target the others' civilian populations. In fact, such a strategy forces both sides to commit what weapons they have to the others' offensive forces rather than squandering them on civilian targets. One need only recall that the decisive factor in Nazi Germany's failure to overwhelm British air power in the Battle of Britain was Göring's decision to deploy German bombers against London instead of British airfields and radar installations in order to appreciate the imprudence of misdirecting one's ultimately limited offensive resources.¹⁷

Finally, the most compelling argument of all is that a decisive counterforce capability, which allows one to deny the enemy his sought-for superiority, is the most effective strategy

against an enemy who bases his strategy on force superiority. The only real way to deter such an enemy is to deny or be able to deny him at the outbreak of war precisely the advantage that he deems necessary to ensure his success and survival.

THE preceding discussion is not intended to be construed as a comprehensive list of the strategic options open to the U.S., nor is the third option professed to be the only possible means of achieving our national goals of peacetime deterrence and of conflict limitation and survival in the event of war. The implications, however, should be clear. In the face of Soviet goals of acquiring a force that can fight, survive, and win a nuclear war, and given the present momentum of the Soviet military buildup, U.S. theorists and strategists will have to face up to the task, however unfashionable it may have been in the past, of designing and proposing scenarios for not only deterring but for countering, controlling, fighting, sur-

viving, and winning against the enemy in the event of nuclear war. Policy-makers and leaders, both civilian and military, will have to boldly confront the task of honest, courageous, and dispassionate discussion of these same topics.

However catastrophic nuclear war may be, the world may someday witness it; and if we fail in the meantime to rationally and objectively discuss not only the deterrence of nuclear war but the problems of its prosecution as well, its unfortunate eventuality will be all the more terrifying and tragic. To study the prosecution of warfare no more implies a desire to perpetrate it than the study of disease implies a desire to promote an epidemic. Indeed, it is our prior study of both warfare and disease that will enable us best to cope with the cataclysm or the epidemic, when and if they come. And if nuclear warfare is potentially the greatest tragedy that may yet befall the human race, ought it not receive the tireless attention of our best minds?

Malmstrom AFB, Montana

Notes

1 Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (New York: Macmillan, 1973), p. 512.

2 *Ibid.*, pp. 403-4.

3 "U.S. Can Still Hold Its Own . . . for Now," *U.S. News and World Report*, February 14, 1977, p. 61.

4 Richard L. Curl, "Strategic Doctrine in the Nuclear Age," *Strategic Review*, Winter 1975, p. 49.

5 Vasilii D. Sokolovskii, editor, *Military Strategy, Soviet Doctrine and Concepts*, translation by Translation Services Branch, Foreign Technology Division, Wright-Patterson AFB, Ohio (New York: Praeger, 1963), p. 42.

6 *Ibid.*

7 *Ibid.*, p. 192.

8 A. A. Grechko, "On Guard over the Peace and the Building of Communism," JPRS Translation 54602, December 3, 1971, from "Na Strazhe Mira, Stroitelstvo Kommunisticheskogo Obshchestva" (Moscow: Military Publishing House, 1971), p. 26.

9 *Ibid.*, p. 28. Italics added.

10 Bruce D. Hamlett, "SALT: The Illusion and the Reality," *Strategic Review*, Summer 1975, p. 68.

11 Andrei A. Sidorenko, *The Offensive*, translated under auspices of United States Air Force (Washington: U.S. Government Printing Office, 1970), pp. 40-70.

12 *Ibid.*, pp. 1-70.

13 Grechko, p. 7. Italics added.

14 Adam B. Ulam, *Expansion and Coexistence: Soviet Foreign Policy* (New York: Praeger, 1974), p. 771.

15 Thomas W. Wolfe, "The Global Strategic Perspective from Moscow," P-4978, March 1973 (Rand Corporation, 1973), p. 9.

16 Richard Rosecrance, "Detente or Entente?" *Foreign Affairs*, April 1975, pp. 466-67.

17 B. H. Liddell Hart, *History of the Second World War* (New York: G. P. Putnam's Sons, 1970), pp. 104-8.

TACTICAL AIR DEFENSE

a Soviet-U.S. net assessment

MAJOR TYRUS W. COBB, USA



IN THE next decade, United States and Soviet ground forces will encounter formidable air threats, consisting of light/medium bombers, fighter aircraft, and assault helicopters, all capable of employing sophisticated electronic warfare (EW) measures and delivering ordnance with excellent accuracy, speed, and effectiveness. To counter the air threat, the U.S.S.R. has deployed a diverse and extremely dense tactical air defense (AD) network, ranging from advanced interceptor aircraft to fully tracked, self-propelled surface-to-air missile (SAM) systems augmented by highly mobile, rapid-firing antiaircraft artillery (AAA).

Although the United States has deployed an impressive counterair capability, ground-based air defense has received relatively low priority in terms of research and development (R&D) funding, weapon systems acquisition, and doctrine development. This trend has shifted since 1973, when the critical importance of SAMs and AAA on the battlefield was clearly demonstrated by the Arab-Israeli War. Still, Soviet air defense systems are currently more numerous, mobile, and responsive than their U.S. counterparts. Further, the fact that the Russian systems are generally as sophisticated and technologically advanced as the U.S. weapons erases one of our traditional "combat multipliers."

The relative importance of tactical AD on the battlefield will continue to increase in the near future. Army commanders will be facing Warsaw Pact attack aircraft capable of striking at low altitudes while using terrain-following techniques and employing increasingly sophisticated air-to-surface missiles, cannons, and conventional ordnance. Not only is the growing lethality of the threat a factor but modern AD systems will also have to operate in a potentially chaotic environment. The airspace will be congested by many users, including friendly and enemy high-performance aircraft, rockets, missiles, helicopters, air defense, and field artillery weapon fires, etc., all employing advanced EW measures. The difficulty in ac-

quiring and tracking targets and differentiating between friendly and enemy aircraft will be increased dramatically.

It is useful to try to determine how well the U.S. and Soviet tactical AD systems are capable of denying this airspace to their adversaries. Comparing defensive weapon systems is somewhat of an illusory exercise, however, since they will not be pitted in battle against one another and can only be understood in terms of the threat they are designed to counter. Thus this assessment begins with an analysis of the air threat to both Soviet and U.S. forces, then examines the AD aircraft, SAM systems, and AAA weapons deployed by each superpower to counter the enemy's offensive capability. Finally, deployment patterns and tactical employment concepts will be compared to complete the net assessment.

At the outset it might be helpful to distinguish between *strategic* and *tactical* air defense. In both the U.S. and U.S.S.R. strategic AD is the responsibility of a major command that has the mission of defending the territorial integrity of the homeland. The disparity between U.S. and Soviet strategic defenses is quite broad, reflecting different perceptions of the threat and contrasting strategic doctrine. The U.S.S.R. now has some 12,000 SAM launchers and 2600 interceptor aircraft under its National Air Defense Command (*PVO Strany*), whose responsibilities include coordination of the AD effort in all the Warsaw Pact countries. The U.S.-Canadian counterpart, North American Air Defense Command (NO-RAD), suffers in comparison, having recently eliminated the United States Army Air Defense Command (ARADCOM) and most of its Nike-Hercules units and reduced the number of interceptor squadrons to fifteen—six active USAF F-106, six manned by the Air National Guard, and three by the Canadians.*

**PVO Strany* is one of the five services that constitute the Soviet Armed Forces. For a more complete comparison of U.S. and Soviet strategic defense, see Major Tyrus W. Cabb, "Who's Out in Front?" *ARMY*, January 1975.

The Air Threat to Tactical Forces

Prior to undertaking an assessment of U.S. and Soviet AD systems, a review of the air threat these weapons are designed to counter is in order. Soviet defense planners must design their AD systems to defend against an impressive array of USAF fighters and bombers, Navy and Marine carrier and land-based aviation, and U.S. Army helicopters. Technically superior and at least numerically equivalent over the years, U.S. aviation, unlike its Soviet counterpart, has traditionally performed close air support (CAS) missions as well as interdiction and counterair roles.¹ While the U.S. advantage in tactical aviation has been narrowed dramatically in the last few years, Soviet air defenses must still consider that the U.S. has some 6000 fighters and helicopters in its inventory.² Most of these platforms are equipped with sophisticated air-to-surface, antitank, and antiradiation (to suppress air defenses) missiles, some of them precision-guided and laser-assisted. The front-line interdiction aircraft now is the F-111 all-weather, variable-geometry fighter-bomber, backed up by the multipurpose F-4s. The Warsaw Pact forces will soon have to deal with the A-10 CAS fighter, the dual-mission F-16, and the Army's family of advanced attack and transport helicopters.³ The A-10 will mount Maverick missiles, Rockeye cluster-bomb units, and a 30mm cannon. The A-10, in conjunction with the Army's soon-to-be-deployed Advanced Attack Helicopter (AAH), will give the U.S. two potent tank-killers on the battlefield.

Following ten years of fighting in Vietnam, U.S. Army ground forces became accustomed to operating in a total air-superiority environment. This factor had the effect of deferring R&D efforts in the AD area in favor of more pressing concerns raised by the Vietnam conflict. Although the Soviet air threat was not forgotten, the numerically large but comparatively unsophisticated Soviet Air Force—de-

emphasized in Soviet tactical considerations in favor of armor and artillery firepower—was not viewed as a sufficient threat to require an extensive U.S. battlefield AD network.

Soviet tactical aviation (*Frontovaya Aviat-siya*), when employed in the ground-attack role, has been used primarily as an extension of the artillery, striking targets beyond the range of the ground systems, and seldom employed to support troops in contact. Recent doctrinal changes, however, have broadened Soviet tactical air responsibilities. The U.S.S.R. is now deploying fighter aircraft with improved avionics, advanced munitions capabilities, and greater range, enhancing their capability to perform ground attack and interdiction missions and possibly even close air support.

The new-generation aircraft entering the inventory are indeed impressive. The venerable MiG-21/Fishbed has been modified to give it greater range and payload capabilities. In 1973 the Su-17/Fitter-C fighter-bomber was deployed, followed by the multipurpose MiG-23/Flogger. Both are variable-geometry aircraft carrying rockets, bombs, cluster bomb units, and cannons. The Fencer A, the first Soviet fighter designed specifically for the ground-attack role, carries bombs, 57mm unguided rockets, and four air-to-surface missiles (ASM) fired by an on-board weapons officer. The variable-geometry fighter has a laser range-finder and a terrain-avoidance radar. About 200-300 of the Fencers have been deployed with Soviet forces in East Europe.⁴ Tactical bombers have been upgraded, too, especially with the deployment of the controversial Backfire to naval and long-range aviation units. These new aircraft will carry modern air-to-air missiles (AAM), tactical ASMs, and cluster and retarded bombs. Most are day/night and all-weather capable and are designed to fight in a heavy ECM environment.⁵

The Soviets are also encroaching on a former U.S. preserve with the rapid deployment of transport and attack helicopters. Most impressive is the new Mi-24/Hind, the world's most

heavily armed helicopter. Carrying antitank guided missiles (ATGMs), rockets, and a 23mm cannon, the Hind can also transport an infantry squad.

Because of this rapidly expanding inventory, General George Brown, former Chairman of the Joint Chiefs of Staff, has estimated that the Warsaw Pact would have a 2 to 1 edge in fighter assets over NATO air forces in the opening stage of a European conflict.⁶ In addition, the increased range will mean that the Floggers and Fitter-C will be capable of striking NATO airfields and command and control centers from bases in the Western U.S.S.R. The number of tactical aircraft in Warsaw Pact operational units now exceeds 5000, including 4000 fighters, up 1300 since 1968.⁷ These forces could be further augmented by medium bombers dispatched from the long-range aviation command and several hundred armed assault helicopters now in theater. Countering this massive threat carrying advanced munitions and employing sophisticated penetration measures, U.S. air defense gunners will have only seconds in which to acquire, identify, track, and engage targets.

Air Defense Command and Control

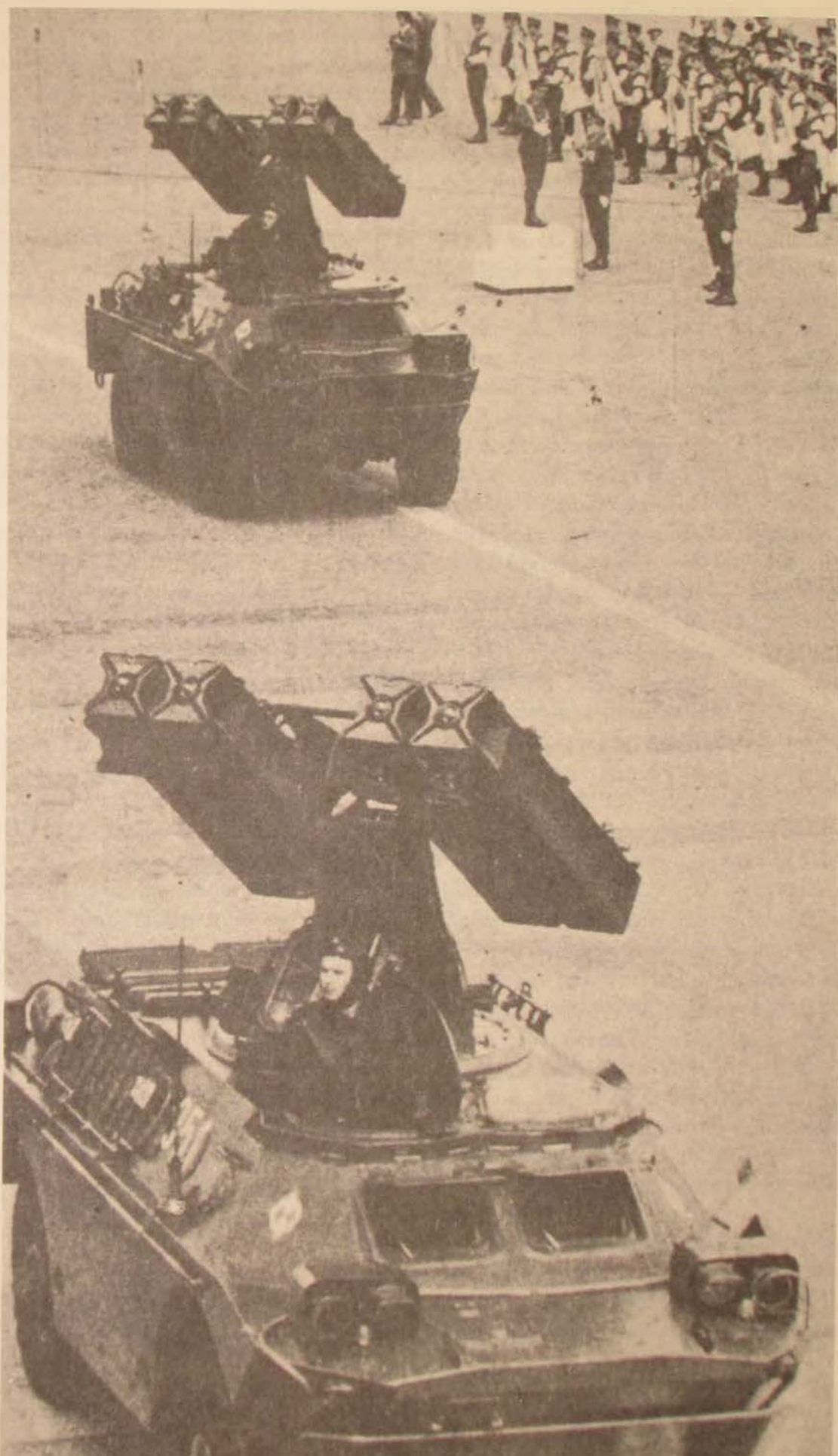
Effective air defense requires centralized planning of AD weapon employment in an area of operations, although execution may be decentralized and autonomous. Identification criteria, weapons assignment procedures, rules of engagement—all must be standardized and coordinated. Both U.S. and Soviet doctrines adhere to these requirements, but there are significant differences in the conduct of tactical AD operations.

U.S. doctrine for the employment of air defense weapons by a unified command designates the senior Air Force commander as the "Joint Air Defense Commander," who has authority to exercise operational control over

the various weapon systems of all forces. He in turn assigns weapon systems in the required amount, type, and sequence to meet the threat. Usually this Area Air Defense Commander will establish AD regions and subassign areas of responsibility, delineated by distance from the forward edge of the battle area (FEBA), horizontally and vertically, delegating authority to U.S. Army AD commanders for air defense within certain parameters. Coordination is achieved through common doctrine, standing operating procedures (SOPs), established procedures, and joint target distribution centers. Nevertheless, AD operations have become quite autonomous, with the USAF primarily handling the air-to-air battle and the U.S. Army concentrating on the surface-to-air conflict.

While there is a great deal of commonality between AD operations in the Soviet and U.S. armed forces, one important difference is the Soviet practice of assigning responsibility for AD operations to the ground forces commander. In fact, virtually *all* Soviet air operations are controlled from the ground.⁸ "Frontal Aviation" units, usually organized as tactical air armies (TAA), are organic to military districts (MD) in the U.S.S.R. or Groups of Soviet Forces in East Europe and operate under the control of the ground commander. These MDs and Groups will probably become Fronts in wartime, a level somewhat analogous to a U.S. Army Group but perhaps better considered as a Joint Task Force in terms of functions and organization. At the front the Air Defense Directorate (*PVO Voisk*) will coordinate early warning, tactical AD employment, and direct air-intercept operations from the ground (GCI).^{*} On the whole, AD operations in the Soviet forces appear to be much more centralized, rigid in terms of execution, and lacking in flexibility.⁹

*Where the line of responsibility between *PVO Strany* and the *PVO Voisk* is drawn is not clear, but the former will probably control AD operations up to a few miles from the Pact's western border.



Soviet Inventory

Infrared (IR), heat-seeking missile systems are now part of the Soviet arsenal. The newest surface-to-air missile, a low-altitude IR system, is the SA-9 Gaskin (facing page). . . . The shoulder-fired SA-7 Grail (above) is effective only for short ranges. . . . The MiG-25 Foxbat (below) is deployed in the forward area in a reconnaissance role.



Air Defense Weapon Systems

fighter-interceptor aircraft

Given the traditional Soviet emphasis on the air defense role for its fighters, the numerically impressive interceptor inventory is not surprising. There are about 4600 fighters in Frontal Aviation units, about 40 percent of which are designated primarily counterair. Counting the 1000 or so organic to Soviet forces in East Europe, augmented by an equivalent number in the other Pact nations' inventory and about 500 immediately available in the Western U.S.S.R., the Pact could send over 2500 fighter-interceptors into battle in the first hours of a European conflict.¹⁰

The most widely deployed tactical interceptor is the MiG-21/Fishbed, principally the J, K, and L versions. These Fishbeds are short-range, delta-winged mach 1.1 all-weather fighters carrying four A-A missiles. The most recent addition is the multipurpose MiG-23/Flogger, a variable-geometry aircraft deployed in interceptor and ground attack variants. Likely soon to become the Pact's primary air-to-air tactical weapon system, the Flogger is capable of flying at mach 2.3 while carrying four A-A missiles. The MiG-25/Foxbat is also reported to be deployed in the forward area, but in a reconnaissance not an interceptor role.

The USAF, in contrast to Soviet Frontal Aviation, developed its fighters primarily for interdiction and ground-attack missions and only secondarily for the counterair role. Relatively few aircraft were developed especially for one or the other task. The prevailing philosophy has been simply to assign a certain percentage of the available dual-mission aircraft to the counterair role and the rest to ground attack, with the emphasis going to the former in the initial stages of the conflict. However, the rapidly expanding and diverse threat represented by Soviet tactical aviation has caused a rethinking of this approach. The Tactical Air Command (TAC) is now moving

away from generalized to specialized training, having its F-4 wings designated as either primary air-to-air or air-to-ground, and requiring 65 percent of training to be in the primary area. Aircraft specifically designed for a single mission, like the A-10 CAS plane, the F-15 counterair fighter, and the F-111 interdiction fighter-bomber, are now the rule.

The primary U.S. fighter today is the F-4, performing both ground attack and counterair missions as required. The F-4E is the principal interceptor version, a mach 2.3 fighter armed with infrared (IR) seeking Sidewinder and semiactive homing Sparrow missiles, and further augmented by a 20mm cannon. The USAF fighter inventory will soon be enhanced by the addition of the world's two most capable fighters, the F-15 and the F-16. Each has a primary mission of air superiority, but the F-16 can also be employed in the air-to-surface role.

The F-15/Eagle is a single-seat, fixed-wing, all-weather fighter carrying Sparrow and Sidewinder missiles and a 20mm cannon.¹¹ The F-15, a mach 2.5 aircraft, can climb to over 65,000 feet and has radar that can track high-speed objects down to tree-top level (with a "head-up" display) for dogfights. The USAF first deployed the Eagle with TAC in 1974 and ultimately plans on procuring 729 of them. The F-15 was specifically designed for sustained air combat operations against potential future Soviet Frontal Aviation fighters.

The F-16 is the Air Force's newest fighter, a relatively low-cost, multipurpose aircraft being developed primarily to defeat the large number of Warsaw Pact aircraft that will likely provide cover for a Soviet armored breakthrough. The F-16 is highly maneuverable, flies at mach 2, and carries a 20mm cannon and IR missiles. It can also load munitions for a ground attack mission. It does not, however, have an all-weather capability. The comparatively low-cost F-16 will complement the longer-range F-15 for the close-in air-superiority battle and will become the standard

fighter for four other NATO nations.

A major advance in effective battlefield management should be forthcoming as the first of the E-3A Airborne Warning and Control System (AWACS) aircraft are deployed. While the E-3A will perform several functions, from tactical and theater-level command and control to long-range reconnaissance, the air defense capabilities of the system will also be substantial. The goal is the establishment of a single, integrated capability to control and allocate air defense resources for a theater of operations in peacetime and wartime.¹² From a normal operating level of 30,000 feet, the AWACS can detect low-flying aircraft some 250 miles away and is virtually immune to enemy electronic countermeasures. AWACS is the forerunner of a family of compatible units that will tie in with the JTIDS, the projected Joint Tactical Information Distribution System. Once integrated with the ground systems, DOD believes the AWACS will result in a significant improvement in offensive as well as defensive air operations and will increase our capability to detect a Warsaw Pact preparedness to attack.¹³

surface-to-air missiles

The rapid Soviet advances in surface-to-air missile technology and deployment exemplify the comprehensive military-technological revolution the Kremlin has embarked upon to overtake the U.S. A decade ago the United States had widely deployed its Nike-Hercules missile systems, augmented by the Hawk tactical SAM system, and the Redeye infrared missile was coming into the inventory. The Soviets, in contrast, were performing tactical AD with machine-guns, AAA, and two SAM systems, the SA-2 and SA-3. Since that time they have deployed five new tactical SAM systems as well as several advanced variants of the SA-2. The U.S. has fielded only the Chaparral system and is not overly pleased with its performance. Currently, for every

U.S. SAM system there are generally two Soviet counterparts in the field, and the U.S. trails in terms of tactical SAM launchers by at least a three-to-one margin. The proliferation of SAM systems has been so rapid that DOD now estimates that Soviet AD systems will have multiplied threefold in the five-year period from 1973 to 1978.¹⁴

Providing medium-to-high-altitude air defense for Soviet forces are the SA-2/Guideline and the SA-4/Ganef. The SA-2 is a two-stage, command-guided missile system with a slant range of 45 km and a ceiling of 80,000 feet. The Guideline is fired, often in "salvo" fashion, from a single-rail launcher deployed in star fashion in a group of six about a central fire-control radar. While the SA-2 lacks the mobility of newer SAMs, it is transportable. Formerly organic at front and army echelons, the SA-2 is primarily used today to defend static positions in the rear.¹⁵

The primary SAM system for high-altitude air defense is the SA-4/Ganef, twin-mounted on a tracked carrier and capable of striking targets 70 km away.¹⁶ The SA-4 is command-guided, and the fire-control radar is also fully tracked. Like the SA-2 it is replacing, the Ganef is organic to front and army. Because of its excellent mobility, the SA-4 will be deployed far enough forward to provide AD coverage to divisions in contact, leaving rear-area defense to the SA-2 and SA-3.

Two excellent SAM systems are providing low-to-medium-altitude defense for the Soviet ground forces, the SA-6 and SA-8. The SA-6/Gainful, with an effective slant range of about 22 km, is triple-mounted on a tracked carrier and can deliver extremely responsive fires. Employing sophisticated electronic counter-countermeasures (ECCM) and command-guidance systems, coupled with semiactive homing, the SA-6 proved to be an effective weapon against Israeli aircraft in the 1973 October War. The Gainful is found at army level but may be deployed at division level with the SA-8 as the 57mm guns are phased out.

One of the newest SAM systems is the SA-8/Gecko, a fully contained, short-range (10-15 km), command-guided missile system. The highly mobile SA-8 system mounts four rails on top of a 6-wheeled amphibious carrier and has an auxiliary electro-optical (TV) tracking system for use in a heavy ECM environment.

A third low-altitude system, the older SA-3/Goa, is a dual-mounted SAM system now employed primarily in defense of installations, airfields, and critical assets in the rear.

Two infrared, passive heat-seeking missile systems round out the Soviet inventory. The man-portable and shoulder-fired SA-7/Grail



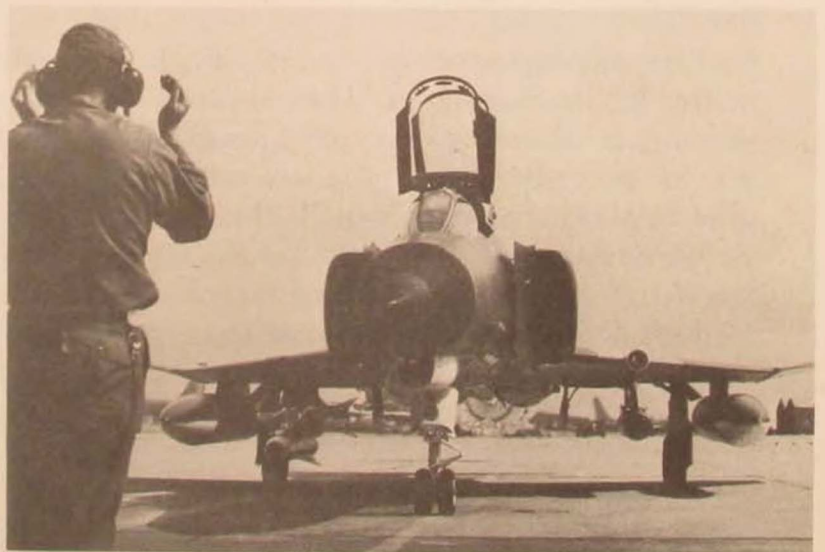
(*Strela* in Russian), like the U.S. Redeye, is effective only for short ranges (about 2–3 km) and is organic to maneuver battalions. The newest SAM, the SA-9/Gaskin, is a low-altitude IR system effective to about 7 km. Four missile canisters are mounted on a modified BRDM-2 amphibious armored vehicle. The

Gaskin, along with the ZSU-23-4 Shilka AAA system, will provide air defense at the regimental level.

The proliferation of SAM systems gives the Soviets capabilities at various frequencies, defense in depth, and complementary systems. Qualitative improvements as well as these

United States Inventory

The USAF F-111 (facing page), an all-weather, variable-geometry fighter-bomber, is a frontline interdiction aircraft. . . . A potent U.S. tank-killer is the A-10 (top), armed with Maverick missiles. . . . An excellent backup to the F-111 is the multipurpose F-4, primary U.S. fighter today (below).



numerical deployments have lessened their dependence on fighters for air defense, and will, consequently, free some Frontal Aviation assets to concentrate more on ground attack operations.¹⁷ While this proliferation may not in itself raise the kill probability against attacking aircraft to beyond, say, .05 percent, a 1-in-20 shot against a vehicle costing perhaps 500 times as much is certainly cost-effective! Of course, the very proliferation of SAMs has generated countermeasures such as air defense suppression, but this requirement will take away assets that might otherwise be engaged in offensive operations and thus is in itself an effective measure.

Long-range, high-altitude air defense is provided for U.S. tactical forces by the command-guided Nike-Hercules system in conjunction with USAF interceptors and Hawk missiles. "Herc" units are normally assigned to theater AD organizations protecting critical rear area assets. The Hercules, which also can be employed in a surface-to-surface role, carries either high explosive or nuclear rounds and is effective out to 140 km. The "Herc," first deployed in 1958 with the last one produced over 13 years ago, is technologically out of date. The system suffers from a lack of mobility and a limited rate of fire, and it is becoming quite expensive to operate.¹⁸ However, until the Patriot system is deployed in the 1980s, the Nike-Hercules will continue to serve as NATO's only high-altitude SAM system.

The key to U.S. ground-based tactical air defense is the Hawk system, designed to provide protection against the low-to-medium-altitude air threat. Often described as the best SAM system in the world, the Hawk employs semiactive homing guidance and ranges out to 30 km. Current doctrine for a U.S. corps organization prescribes one Hawk battalion with a direct support mission to each committed division, while at least one battalion provides general support to the corps rear. In practice, a "Hawk belt" may be established parallel to and about 30 km from the FEBA.

Under the "belt" concept, all AD assets above division level would be employed in a line designed to stop massive waves of aircraft in the initial assault.*

The Basic Hawk system was first deployed in 1959 and is in the process of being phased out in favor of the Improved Hawk (IH). In addition to the fact that the original system reflects 17-year-old technology, Hawk lacks mobility, is hampered by an inability to engage more than two targets simultaneously, and is susceptible to ECM.¹⁹ The Improved Hawk has an increased range capability (40 km), a repackaged warhead with greater lethality, more sophisticated ECM equipment, and enhanced ability to discriminate against multiple target formations. The missile is delivered as a "certified round," ready to fire without field maintenance or testing. The IH system will appear only in towed form efforts to employ a self-propelled Hawk having been somewhat unsuccessful.²⁰ In comparison to the Soviet SA-6, the IH has greater range and a better capability at lower altitudes, but the SA-6 has greater mobility and is deployed in greater density on the battlefield.

Like the Soviets the U.S. has fielded two infrared-missile systems, one man-packed and one vehicle mounted. The Chaparral system carries four IR missiles mounted on a self-propelled, fully tracked launcher. However, targets must be acquired visually and tracked only with the assistance of an audible tone to the gunner. The missile is effective out to 5 km but, like most IR-seeking missiles, can be easily evaded. More important, the Chaparral is more of a "revenge weapon" in that it can engage aircraft only by "chasing" the attacker after he has passed over the defended area. Doctrine calls for the Chaparral to be generally employed in conjunction with the Vulcan gun system. A composite Chaparral-Vulcan battalion is now organic to infantry, armor, and

*This Hawk forward-missile intercept zone ("belt") is essentially an extension of the FEBA as the Hawk units will still be deployed so as to cover deploying divisions.

mechanized divisions, and platoons of each system are generally cross-attached for maximum effectiveness. The towed Vulcan alone is the airborne and air-assault division weapon.

Low-altitude, short-range AD for the division is provided by the man-portable, shoulder-fired Redeye IR missile, with one team generally assigned to each company-sized unit. Like the Chaparral, the Redeye uses a passive-homing, infrared-seeking guidance system, has a short effective range (about 3 km), and can engage only receding aircraft. The Redeye is employed in concert with small arms, AA guns, and with the self-propelled Chaparral system.

DOD officials are clearly unhappy with the present lineup of American SAM systems.²¹ Both the Nike-Hercules and the Hawk reflect aging technology and are clearly limited in terms of mobility, reaction time, and ability to engage multiple targets. The Chaparral and Redeye are clear-weather, day-only systems, since targets are visually acquired. Neither is effective against high-performance aircraft or any incoming target. Even if the SAM systems were more effective, adequate defense would be hampered simply by the sparsity of deployment of these systems. The adequacy of our SAM program can be gauged by noting that Egypt alone had more SAMs deployed along the Suez Canal in 1973 than we then possessed in our entire inventory!

The inadequacy of U.S. tactical air defense was recently highlighted by former Undersecretary of the Army Norman Augustine and Lieutenant General Howard Cooksey, then the Army's DCSR&A, who noted that our SAM AD systems simply were not capable of inflicting unacceptable attrition rates on a mass formation of the sophisticated high-speed attack aircraft possessed by the U.S.S.R. They added that this might cause the loss of essential installations and units and could cause the diversion of our high-performance tactical aircraft to the air superiority mission instead of being used in support of engaged ground

forces.²² In view of these serious shortcomings, the U.S. is now committed to moving forward in the development of a new family of mobile, capable, and responsive SAM systems. The aging Hercules and Hawk systems will be replaced by the Patriot, formerly the SAM-D. In the forward battle area, the U.S. Roland system is programmed to replace or supplement the Chaparral, and Stinger is slated to come in for the Redeye.

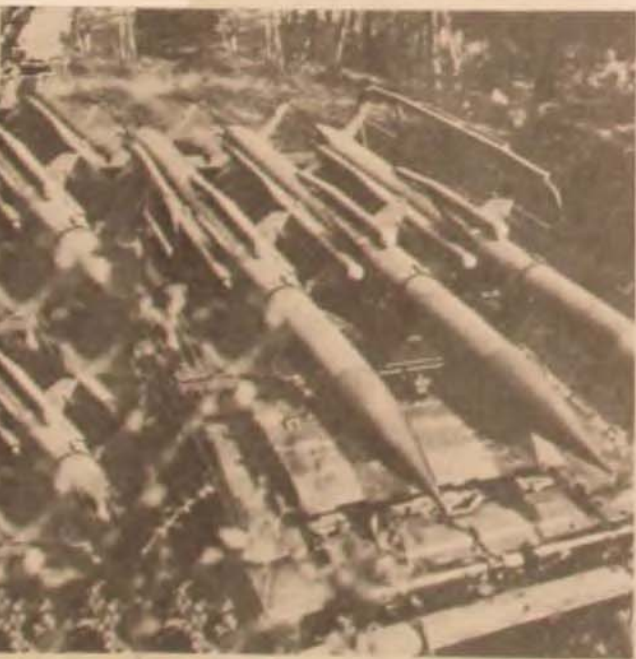
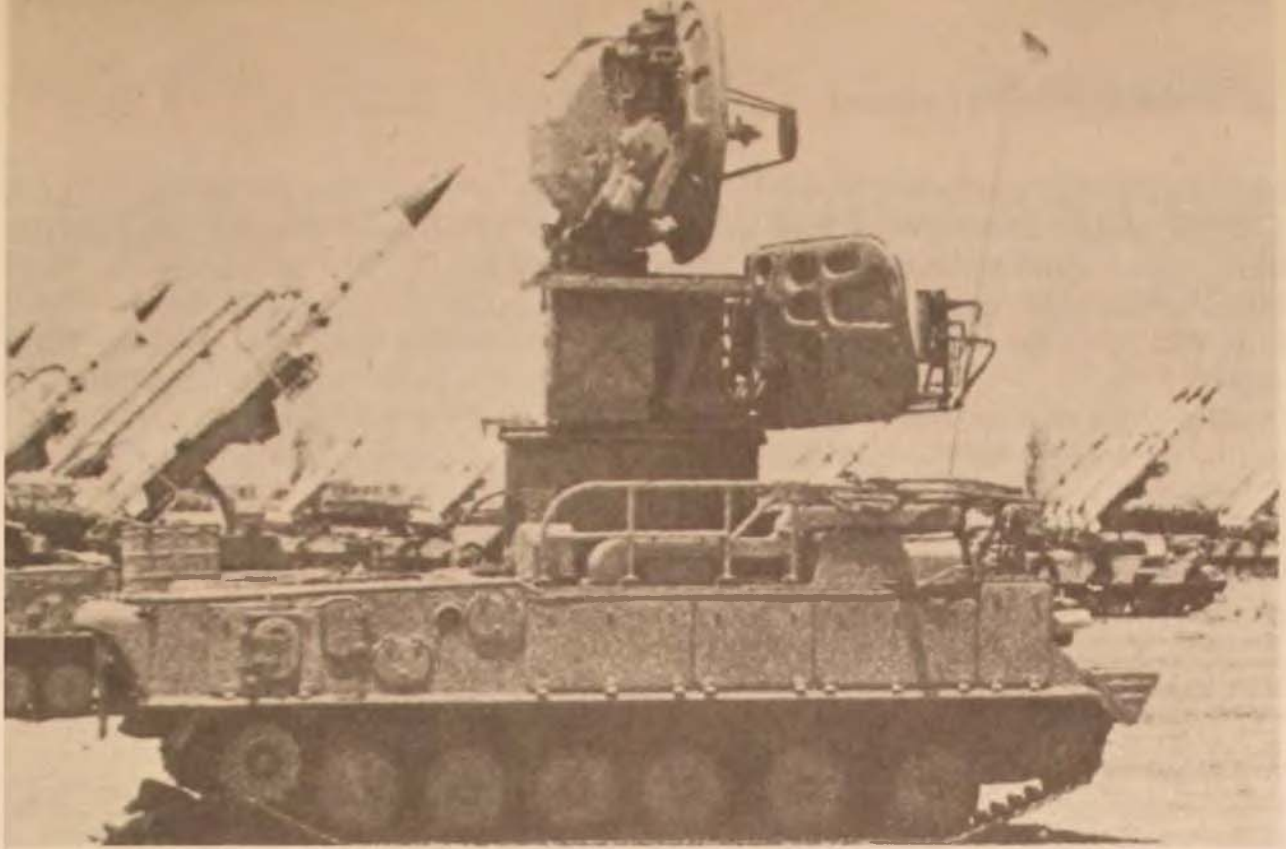
The Patriot is an advanced AD guided-missile system designed to counter threats across the entire spectrum. Programmed to replace both Hercules and Hawk in the mid-1980s, Patriot will have the capability of engaging a high-G maneuvering target, multiple aircraft, and maintaining effectiveness in a dense ECM environment. Patriot will have a single multi-function phased-array radar tied to the launcher area by radio, not cables. Although the development program is very ambitious, system performance has thus far met or exceeded all criteria. No further improvements will be made to the Hercules system in the interim, but the Improved Hawk program will be upgraded through the next decade until Patriot is in the field.²³

Complementing the Patriot in the forward area, the U.S. Roland SAM program will provide an all-weather, day/night, low-altitude capability in place of or supplementing Chaparral. The entire firing module, developed jointly by France and West Germany, is now being adapted to U.S. production. The system will be tested this year and operational by the mid-1980s. However, all is not roses in this effort at NATO standardization. The U.S. contractor has experienced considerable difficulty in interpreting the engineering design and many parts were not interchangeable.²⁴ However, an international interchangeability program is now progressing well. Congressional critics have criticized the excessive R&D costs for what was supposed to be an operational missile system. DOD is also moving ahead on an improvement program for Chaparral. The



The impressive Soviet ZSU-23-4 Shilka (left) has been in the field for several years and is superior to anything the U.S. has deployed. . . . A Soviet counterpart to U.S. surface-to-air missiles is the SA-2 Guideline (below). In production in 1956-57, it is primarily used today to defend static positions in the rear.





The SA-6

Another of the excellent surface-to-air missiles providing low-to-medium altitude defense for the Soviet ground forces is the SA-6 Gainful. This weapon system has great mobility and can be deployed in much density on the battlefield.

improved system will have a forward engagement capability, an improved fuze and warhead, a new guidance system, identification, friend or foe (IFF) capability, reduced signature, and increased resistance to countermeasures.

Stinger, a follow-on system to the Redeye, will be in the field later in this decade. It has an extended range and velocity over Redeye, an improved IR seeker, IFF capability, and will engage incoming as well as outgoing aircraft.

antiaircraft artillery

Soviet planners have carefully monitored the U.S. experience in Vietnam and lessons learned from the 1973 Mideast conflict. From these disparate wars one conclusion came through loud and clear: AA guns working in concert with SAMs are a very effective AD team in the forward area.²⁵ The U.S.S.R. has produced a number of weapons ranging from 12.7mm machine-guns (MGs) to 130mm AAA guns. Several of the 12.5, 14.5, and 23mm caliber machine-guns are proliferated throughout the forces, either single, double, or quad-barrel versions, towed or mounted on armored vehicles and tanks, and some 100mm and 130mm guns are found in reserve and East European divisions. But the frontline AAA systems are the S-60 and the impressive ZSU-23-4.

The Soviet ZSU-23-4/Shilka gun system was credited with nearly half the total kills against Israeli aircraft in the 1973 Mideast War.²⁶ The completely self-propelled system mounts four 23mm cannons on a modified PT-76 chassis and is capable of firing up to 4000 rounds per minute to an effective range of 2.5 km. Target acquisition and fire control are radar-controlled, with an optical assist for use in an ECM environment. The Shilka can fire on the move at speeds up to 25 KPH. The ZSU-23-4 with its high rate of fire can also be effectively employed in a direct-fire role to a maximum

range of 7 km. The Shilka covers the "dead zone" of the SA-6. The ZSU-23-4 and the SA-9 apparently will be organic to tank and motorized rifle regiments.

The Soviets have phased out the ZSU-57-2 system, a twin 57mm self-propelled gun effective to 4 km that was found in tank divisions. A towed 57mm gun, the S-60, has served as the standard AA gun with the Soviet motorized rifle divisions. The S-60 is a powerful, radar-controlled gun that can also be employed effectively as a direct-fire weapon in addition to its AA functions. The S-60 is being replaced by the SA-6 and SA-8 missile systems, but it probably will be utilized in a rear-area static defense role.

Following the phase-out of the venerable twin-40mm Duster gun system, the U.S. Army fielded the Vulcan gun system as a stop-gap measure to provide automatic weapons AD support for the division. The Vulcan is fielded in towed and self-propelled versions, and its 20mm gun system is capable of firing at a rate of 3000 rounds per minute. However, the Vulcan gun is severely limited in range, effective only to 1200 meters in the AD role, and hampered by the lack of a fire-control radar. The gunner is assisted by a range-only radar but must visually acquire the target, making the system effective only in good weather. The Vulcan is severely limited in range, accuracy, and kill probability. The system is very vulnerable to ECM and cannot handle rapidly maneuvering targets. Vulcan is normally deployed with Chaparral, in four-gun teams, but the Vulcan may move with the maneuver unit while Chaparral is held back to defend critical, fixed assets. In airborne and air assault divisions the towed-Vulcan is the only organic AD system.

The U.S. Army is unhappy with the performance of the Vulcan gun system and greatly impressed by the success exhibited by the ZSU-23-4. A 1974 study concluded that a new low altitude forward area air defense system (LOFAADS) gun was needed, and Army is

now proceeding with a development program for a division AD (Divad) gun system. This system is expected to be a self-propelled (tracked), radar-aimed, medium-caliber, all-weather system capable of firing over 4000 rounds per minute; in other words, it is a system not unlike the Soviet Shilka! However, it is doubtful that such a gun could be fielded before the mid-1980s.

Deployment Patterns and Tactical Employment

In the employment of tactical AD systems, Soviet doctrine stresses mobility, mass, mix, system redundancy, centralized fire control, and passive defensive measures.²⁷ A viable air defense network must represent a mix of complementary systems that can engage enemy aircraft at virtually any altitude, at great distances, and in any condition of visibility. Multiple frequency capabilities even within the same system (e.g., the various models of the SA-2) are considered necessary in order to force enemy ECM operators to jam a wide spectrum and suffer a consequent loss of power.

Realizing that insufficient assets in an area represents a significant risk, Soviet planners insist on deploying AD systems in mass. Coverage in depth and over a wide lateral area is ensured by utilizing "obsolete" weapons in gap-filler and auxiliary defense roles. Through such redundancy a progressive saturation of the airspace horizontally and vertically throughout the area of operations is ensured. Since virtually every Russian AAA and SAM system deployed in the last decade is self-propelled, the requirement that AD systems have mobility equal to that of the unit supported is being achieved.

Training is repetitive, rigorous, and somewhat mechanical. The primary systems that their air defenders train against are attack helicopters, close air support aircraft employ-

ing smart bombs and antiradiation missiles, Wild Weasel locate and attack aircraft, and standoff jamming airborne platforms.²⁸ Passive defensive measures such as camouflage, terrain preparation, hardened sites, and use of non-electronic acquisition and tracking means are emphasized. Centralized fire control and tight fire discipline are required.

U.S. air defense tactics do not materially differ from those of the Soviets. However, our efforts have been handicapped by insufficient numbers of systems in the field and by a growing gap in the application of technology. A comparison of AD assets available at equivalent tactical levels is shown in Figure 1 and illustrates the impressive lead maintained by the U.S.S.R.

A Soviet "front" is the highest tactical level and has no set organization, although it is roughly analogous to a U.S. theater army or NATO Army Group. Air defense assets are a composite of organic fighter-interceptors and long-range SAMs,²⁹ augmented by AAA in a point defense role. Although all of the aircraft are multipurpose and Soviet air regiments are designated with a primary mission, it would be difficult to say with any certainty how many MiG-21s and 23s would be available for the air superiority role. A reasonable guess is that about 40 percent of the TAA's aircraft will be fragged for air defense in the initial stages of the conflict. Ground-based AD in the near future will be provided by one or two SA-4/Ganef brigades (27 launchers in each), replacing the less-mobile SA-2/Guidelines. However, as the SA-4 deployment progresses, the SA-2 will probably shift to a rear-area static defense role, protecting bridges, rail junctions, airfields, and the like. In addition, some SA-3s will provide low-altitude point defense in the rear, and S-60s and other AA guns will serve as gap-fillers and back-up AD systems.

Since there is no table of organization and equipment (TO&E) for a U.S. theater army, it is necessary to speculate regarding probable AD assets.³⁰ If CENTAG, in the NATO chain,

Figure 1. Tactical air defense assets available at comparable U.S. and Soviet echelons

Soviet Echelon		U.S. Echelon	
Major Subordinate Tactical Units	Air Defense Assets	Air Defense Assets	Major Subordinate Tactical Units
Front		Army Group/Major Air Command	
4/5 CAAs 1/2 TAs 1 TAA	1/2 SA-4 brigade 0/1 SA-2 regiment MiG-21, MiG-23 SA-3s, S-60s	Nike-Hercules group F-15, F-16, F-4	4/5 corps 2 tactical air forces*
Army		Corps	
CAA—3/4 MRDs 1 TD TA—3/4 TDs 1 MRD	1/2 SA-2 regiment 1/2 SA-4 brigade 1/SA-6 regiment	1 Hawk battalion (GS) 1 C/V battalion	2/4 divisions
Division		Division	
TD—3 TRs 1 MRRs MRD—3 MRRs 1 TR	1 SA-6 regiment or 1 SA-8 regiment or 1 57mm AAA regiment	1 Hawk battalion (DS) 1 C/V battalion	3 brigade
Regiment		Brigade	
TR—3 tank battalions MRR—3 MR battalions	1 SA-9 platoon 1 ZSU-23-4 platoon	none	3/4 battalions
Maneuver Battalion		Maneuver Battalion	
3 Commanding Officers	SA-7s	Redeye	3 Commanding Officers

CAA—combined arms army
TA—tank army
TAA—tactical air army
MRD—motorized rifle division

TD—tank division
MRR—motorized rifle regiment
TR—tank regiment

*Air assets are subordinate to the ground forces commander at the front level in the Soviet armed forces. On the U.S. side, the air and ground components do not share a common commander until the next echelon. Thus in Europe, U.S. ground forces (V and VII Corps) are under the NATO Central Army Group (CENTAG), while the air elements are in two allied tactical air forces under the Allied Air Forces, Central Europe (AAFCE). However, both CENTAG and AAFCE are subordinate to CINCENT, the commander of Allied Forces, Central Europe.

is used as an example, this echelon might have four Nike-Hercules battalions supported by a number of U.S. and allied F-15, F-16, or F-4 wings. The area air defense commander would initially devote the majority of his air assets to counterair, but these aircraft would not be controlled by the ground commander (CENTAG) as is the case with a Soviet front. Some Hawk and even Chaparral-Vulcan (C/V) assets may be pulled from corps support missions to form a rear area AD belt, depending on how the threat is perceived.

The subordination at a U.S. corps/Soviet army level is somewhat clearer. An American corps will have one Hawk battalion in a general support role (24 or 27 launchers) and one C/V battalion (24 of each), although other assets may be pulled from their role in support of subordinate divisions. A Soviet army currently has the SA-2, but the Guideline is gradually being relegated to rear area defenses at this level, too. Air defense for an army in the future probably will consist of one or two SA-4 brigades and an SA-6/Gainful regiment (20 launchers).

Air defense for the division is in the process of rapid change in the Soviet armed forces as the 57mm guns are phased out. The future mix of division AD assets is subject to debate, but it now appears that both the tank division (TD) and the motorized rifle division (MRD) will have either an SA-8 regiment (24 fire units) or an SA-6 regiment organic—or possibly a mixed SA-8/SA-6 regiment. Although the SP 57mm guns are being withdrawn, the venerable towed S-60 will likely be kept around to perform close-in defense of critical positions. In contrast, a U.S. division is now limited to one organic C/V battalion (24 Vulcans, 24 Chaparrals) or a straight towed Vulcan battalion in airborne and air assault units, augmented by a Hawk battalion in direct support when the division is committed.

A U.S. brigade is not a fixed organization and has no organic AD assets and will be limited to whatever support division makes

available. A Soviet regiment, on the other hand, is extremely strong in terms of air defense. Until recently a motorized rifle regiment (MRR) had a mixed AAA battery consisting of towed 14.5 and 23mm AA guns and from four to eight SP ZSU-23-4s, while a tank regiment (TR) had a mixed ZSU-23-4 and ZSU-57-2 battery. The future regimental AD picture for both the MRRs and the TRs will consist of a platoon of four ZSU-23-4 SP guns complemented by a platoon of SA-9 infrared seeking missile fire units.

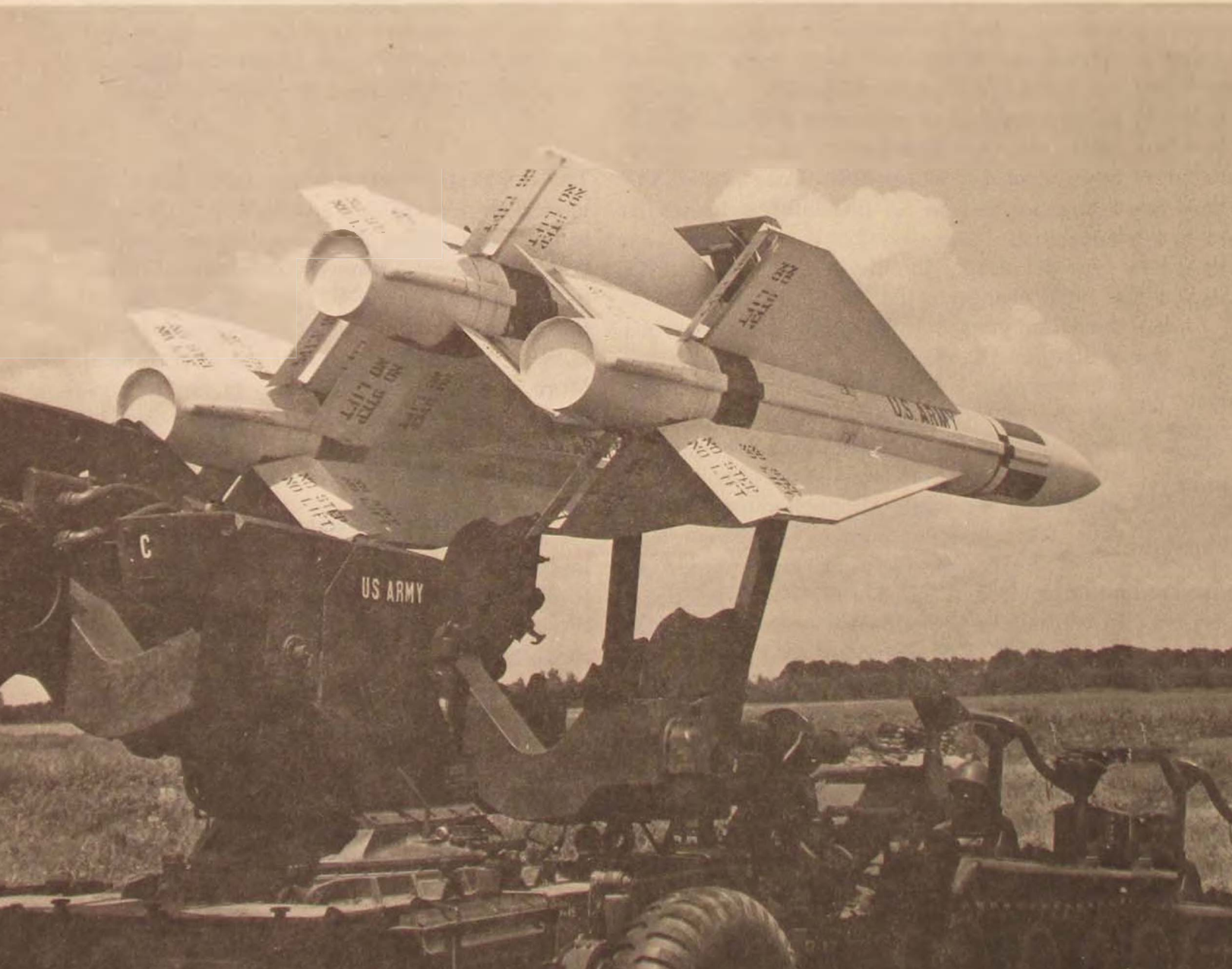
Finally, at maneuver level the U.S. now has roughly 73 Redeye teams organic to battalions in a type division (six weapons per team). The Soviets have a similar number (about 400) of the SA-7/Grails deployed with the division's maneuver elements. In addition, some combination of older 14.5 and 23mm AA guns will be scattered throughout the Soviet division.

THE CONTRAST in relative emphasis placed on tactical air defense by Soviet and U.S. planners is quite significant. The gap between battlefield AD systems is now approximately three-to-one in favor of the U.S.S.R. and, in light of the continued deployment of Soviet systems, is likely to widen further in the near future. More disconcerting, however, is the technological edge enjoyed by the Soviet armed forces in this field, an area of traditional U.S. supremacy that formerly could offset Russian numerical advantages.

Complicating the comparison is an increasingly more sophisticated Soviet Air Force that is shifting its focus away from an emphasis on the air-superiority role toward increasing its capabilities for ground attack and interdiction missions. Fighter aircraft are now being deployed with improved avionics, range, munitions, and penetration capabilities. Added to this are the versatile new attack and transport helicopters, the Hind A/D and Hip E, which significantly broadens the spectrum represented by the Soviet air threat.



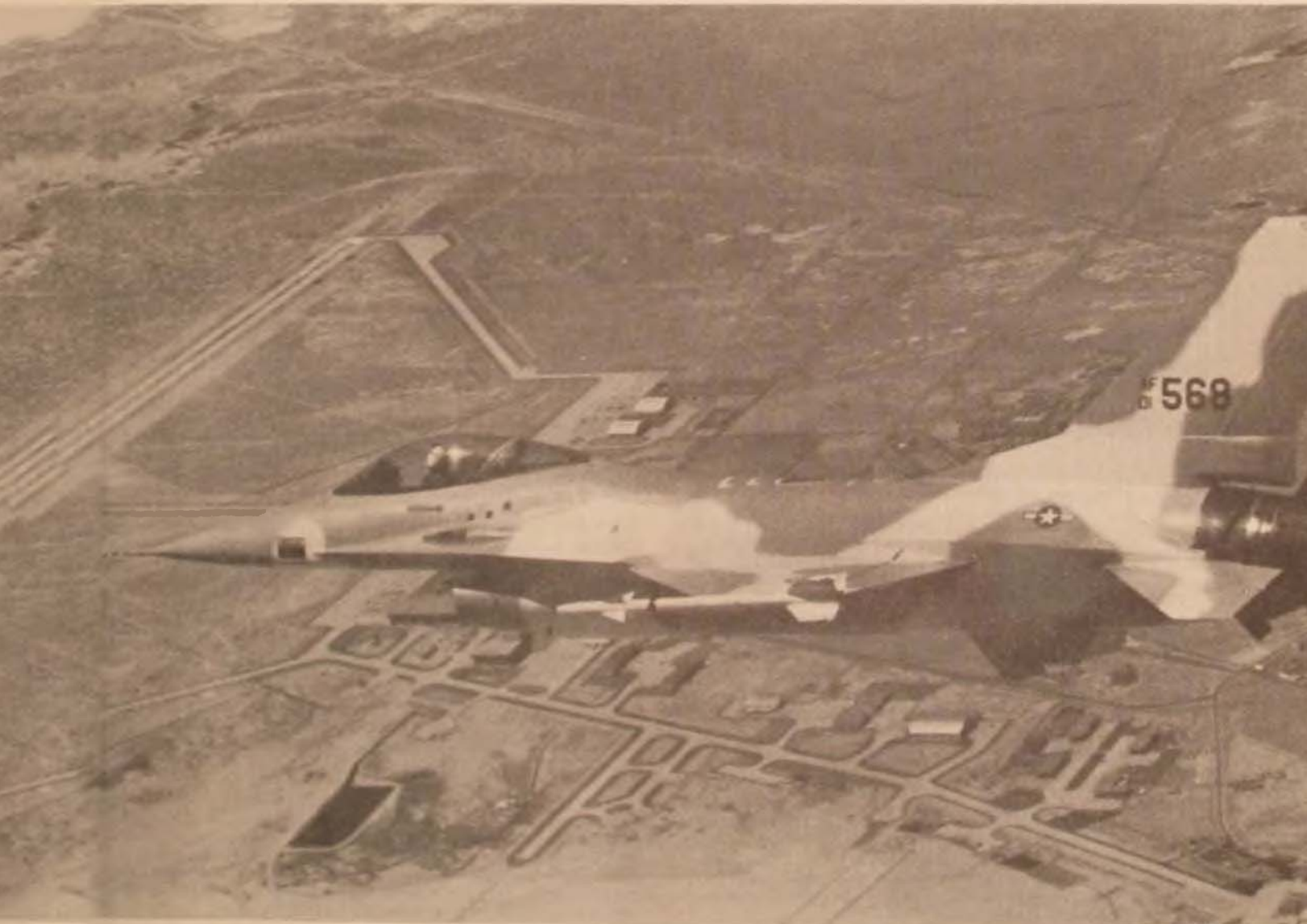
The newest U.S. aircraft in the air defense role, such as the F-15 (left) and the F-16 (facing page), represent the most advanced technology available and are clearly superior to their Soviet counterparts. . . . The same cannot be said of our Hawk system (below), which reflects aging technology and is limited in mobility, reaction time, and ability to engage multiple targets.



Defense planners in the U.S. have coped with the challenge in the counterair arena rather well. The new U.S. aircraft in the air defense role such as the F-15 and the F-16 represent the most advanced technology available and are clearly superior to their Soviet counterparts. In fact, tactical fighters are the only item in the current defense budget in which we will outspend the Russians.³¹

The same cannot be said with respect to SAMs and AAA guns. Our Hercules and Hawk

systems reflect aging technology and are limited in terms of mobility, reaction time, and ability to engage multiple targets. The Chaparral and Redeye systems are clear-weather only and somewhat ineffective against high-performance targets, deficiencies that will be partially corrected by the Roland II. The Vulcan's shortcomings have caused DOD to search for a more effective forward-area AD gun. In comparison with the newer Soviet SAMs such as the SA-4/Ganef, SA-6/Gainful,



or the SA-8/Gecko, the U.S. systems have serious drawbacks. The impressive ZSU-23-4 has been in the field for several years and is clearly ahead of anything we will have until the Divad gun is deployed.

However, tactical air defense is only one of the critical areas in conventional force weaponry in which the Soviets are rapidly outpacing the U.S. Right now the U.S.S.R. maintains an impressive three-to-one lead over the U.S. in artillery and is outproducing us by an eight-to-one rate! The Soviets lead us by four-to-one

in numbers of tanks, by more than two-to-one in armored fighting vehicles, and they have a critical advantage in offensive and defensive chemical equipment. In view of these discrepancies, it may be difficult to secure funding for additional tactical air defense weaponry. On the other hand the rapidly expanding Soviet fighter and helicopter inventory makes it imperative that the U.S. respond with a capable battlefield air defense network.

*U.S. Military Academy
West Point, New York*

Notes

1. Whether the Soviet Frontal Aviation performs close air support missions is a matter of dispute within the U.S. intelligence community. If close air support is considered as the delivery of aerial fires in support of ground forces in contact, then it is the author's opinion that, although the Soviets conduct ground attack missions, they have not traditionally performed close air support (except in emergency circumstances).

2. The United States has about 4100 tactical aircraft in its inventory, including assets from the Air Force, Navy, and Marine Corps (excluding trainers and CONAD aircraft), supplemented by about 9000 helicopters. The 6000 figure represents an assessment of the number of tactical aircraft and assault helicopters that Soviet AD gunners could face. For a more detailed comparison see General George Brown, Chairman, Joint Chiefs of Staff, *United States Military Posture for FY 1979* (20 January 1978), pp. 82-86. (Henceforth referred to as *United States Military*.)

3. A thorough comparison would include non-U.S. aircraft in this discussion, but U.S.-only assets are discussed here since the focus of this article is on the U.S.-Soviet comparison.

4. Technical characteristics of the Fencer can be found in *Commanders Digest*, 17 February 1977, "How DOD Assesses the Balance of US, USSR, & PRC General Purpose Forces," p. 16.

5. *Ibid.*, pp. 14-18.

6. Brown, *United States Military*, FY 1977, p. 12.

7. Harold Brown, *Annual Defense Department Report*, FY 1979 (February 2, 1978), p. 76, and Brown, *United States Military*, FY 1979, p. 82.

8. *Military Operations of the Soviet Army* (Arlington, Virginia: U.S. Army Intelligence Threat Analysis Detachment, 25 May 1976), pp. 229-234.

9. See Major A. E. Scheglov, "The Commander of an Anti-aircraft Battery Controls the Fire," *Voenny Vestnik* # 3 (Military Herald), 1971 (Moscow, translated by OACSI, # K-0089). Scheglov stresses that the unit commanding officer must have constant control over his fire units, resorting to decentralized operations only when centralized mode is not feasible. Even when the shift to decentralized operations is made, the subordinate leaders are required to "act according to the instructions given them." (p. 133)

10. Reaching an accurate count of the "available interceptors" is almost an impossible exercise given the difficulty in deciding which aircraft are to be used in that role, whether the assets of the other Pact nations should be counted, if the PVO *Strany* aircraft should be included, and if one should consider the fighters immediately available from bases in the Western U.S.S.R. The difficulty is compounded further by the multimission capabilities of the newer Fishbeds and especially of the Floggers.

11. Donald H. Rumsfeld, *Annual Defense Department Report*, FY 1978 (January 17, 1977, p. 214) (Henceforth referred to as FY 1978.) See also Harold Brown, *DOD Report*, FY 79, p. 207. The F-15 Program Review can be found in *DOD FY 79 Authorization Hearings (Part VI)* before the U.S. Senate's Armed Services Committee (March 1978), pp. 4596-4615. (Henceforth referred to as *FY 79 Authorization Hearings*.)

12. John Ralph, "Tactical Air Systems and New Technologies," in *The Other Arms Race* (Kemp, Pfaltzgraff, and Rajanan), Lexington, Massachusetts: Lexington Books, D.C. Heath, Co., 1974, pp. 29-30.

13. Harold Brown, *Department of Defense Annual Report*, FY 1979, p. 209. In the JTIDS role, the AWACS will assure jam-resistant surface-to-air communications and data links essential for command and control. AWACS is designed to provide real-time intelligence to commanders on the battlefield. See *FY 79 Authorization Hearings*, pp. 4692-4705.

14. "The Importance of Electronic Warfare to the National Defense Posture," *Commanders Digest*, 9 December 1976, p. 4.

15. The SA-2/Guideline is the most widely deployed system in the U.S.S.R. with some 9000 SA-2 launchers under the control of the PVO *Strany*. In addition, the SA-2 is found in all of the non-Soviet Warsaw Pact countries. In the "strategic" role, the SA-2 is operated from fixed sites, much like the U.S.'s Nike-Hercules.

16. Data on Soviet air defense missile systems is extracted from numerous sources. Among the most useful are "Military Operations of the Soviet Army," pp. 36-43, USAREUR Pamphlet 30-60-1, *Identification Guide, Volume II, Part One, Artillery* (15 January 1973), *Handbook on Soviet Airpower and Artillery* (Fort Bliss, Texas: U.S. Army Air Defense School, April 1976), *Organization and Equipment of the Soviet Army* (Fort Leavenworth, Kansas: USA Combined Arms Development Activity, 1 December 1976); and *Selected US and Soviet Weapons and Equipment* (Fort Leavenworth, Kansas: USA Command and General Staff College, July 1976).

17. *Commanders Digest*, 17 February 1977, p. 15.

18. *Ibid.*, p. 8.

19. See Rumsfeld, FY 77 and FY 78 Reports. Of course, virtually any AD system is susceptible to ECM, but the Hawk vulnerability at present is beyond what DOD would like. The 1H organization of the Triad configuration will allow the Hawk system to engage three targets simultaneously (battalion level).

20. The self-propelled Hawk system floundered on maintenance and alignment problems, the fact that it was more expensive and primarily because time to fire was not significantly improved merely by hetering the system mobility. Alignment and missile transfer problems determined the battery operations time more than maneuverability.

21. See, for example, the issues of the *Commanders Digest* of 17 February 1977 and 27 May 1976, both stressing the need for the U.S. to move ahead with a more mobile family of battlefield air defense systems with greater capabilities and response time. For a complete overview of the Army's air defense program, see *FY 79 Authorization Hearings*, pp. 4804-14.

22. Statement by Norman Augustine, Assistant Secretary of the Army for R&D, and Lieutenant General Howard Cooksey, Acting Deputy Chief of Staff for RD&A, before the House Armed Services Committee, 7 March 1975, p. 38.

23. *Ibid.*, pp. 40-41, and Rumsfeld, FY 78, p. 169.

24. Gene Famiglietti, "Europe Roland to Fire US Missiles," *Army Times*, 20 December 1976, p. 28.

25. See, for example, A. N. Latukhin, *Sovremennaya Artilleriya* (Modern Artillery), Voenizdat, 1970, p. 215 and p. 33. The author notes that the appearance of armed helicopters on the battlefield created "a renewed need" for AA guns. To complement the AAA systems, the Soviets are introducing the SA-8 and SA-9 SAM systems into the forward area, also.

26 RB 100-2, Vol. 1, *Selected Readings in Tactics: The 1973 Middle East War* (Fort Leavenworth, Kansas: USAC&GSC, August 1976), Chapter 5, "Air Defense."

27 See Scheglov, "The Commander," for a review of Soviet tactics. For an excellent summary of Soviet air defense training, see Captain Michael H. Crutcher, "Soviet Tactical Air Defense—An Introduction of Anti-Aircraft Unit Weapons for the Defense of Maneuver Forces," unpublished paper written at the U.S. Army Institute for Advanced Russian & East European Studies, Garmisch, Germany, March 1975.

28. Ibid.

29 USAITAD, "Military Operations," pp. 229-36, Colin Gray in "Soviet Tactical Airpower," *Air Force Magazine*, March 1977, argues that a typical tactical air army organic to the front would have two Fighter-Bomber Divisions and three Fighter-Interceptor Divisions, but the total number of assets available could range from 100 to 1100. (pp. 62-65)

30 It is extremely difficult to compare a Soviet front, which has organic aviation and ground units, to a comparable U.S. or NATO entity. The NATO Army Group, such as CENTAG, has no aviation assets, but it is supported by a Tactical Air Force under the control of the Commander of the Allied Air Forces in Central Europe, who is on a level equal to the CENTAG commander. All land and air forces from the Alps to the Elbe River are under the next higher commander, CINC AFCEM, who has two Army Groups (Allied) and the Allied Air Force (CE) subordinate to him. The 4th ATAF supports the Central Army Group and is composed of Canadian, German, and U.S. components. See Jim Taylor, "USAFE and AAFCE: Central Europe's Airpower," in *Air Force Magazine*, February 1977, pp. 41-47.

31 In recent years the U.S. has surrendered its lead over the Soviets in numbers of tactical aircraft, but the trend was reversed last year. However, the U.S. total will continue to be about 1000 below the numbers of tactical aircraft fielded by the Soviets (*Commanders Digest*, 17 February 1977, p. 14).

Basis of Issue

AFRP 50-2, *Air University Review*, is the professional journal of the Air Force. . . . Requirements [for distribution] will be based on the following:

1 copy for each Active Duty Air Force, Air Force Reserve, and Air National Guard general officer and colonel;

1 copy for each civilian employee in grades GS-16 thru GS-18 and each Public Law 313 appointee;

1 copy for every 10 officers in the grades of Lt Colonel thru 2d Lt assigned to HQ USAF, and to each Headquarters of major commands, separate operating agencies, numbered Air Forces, divisions, wings, depots, districts, hospitals, military assistance advisory groups, missions, detached special activities and offices;

1 copy for each Air Force Reserve and Air National Guard major headquarters in states or numbered Air Forces, wings, groups, squadrons, and separate activities;

1 copy for each full time student attending schools of professional military education such as Air War College, Air Force Institute of Technology, and NCO Academies;

1 copy for each 10 faculty members of such schools;

1 copy for each Office of Information;

1 copy for each Air Attache office;

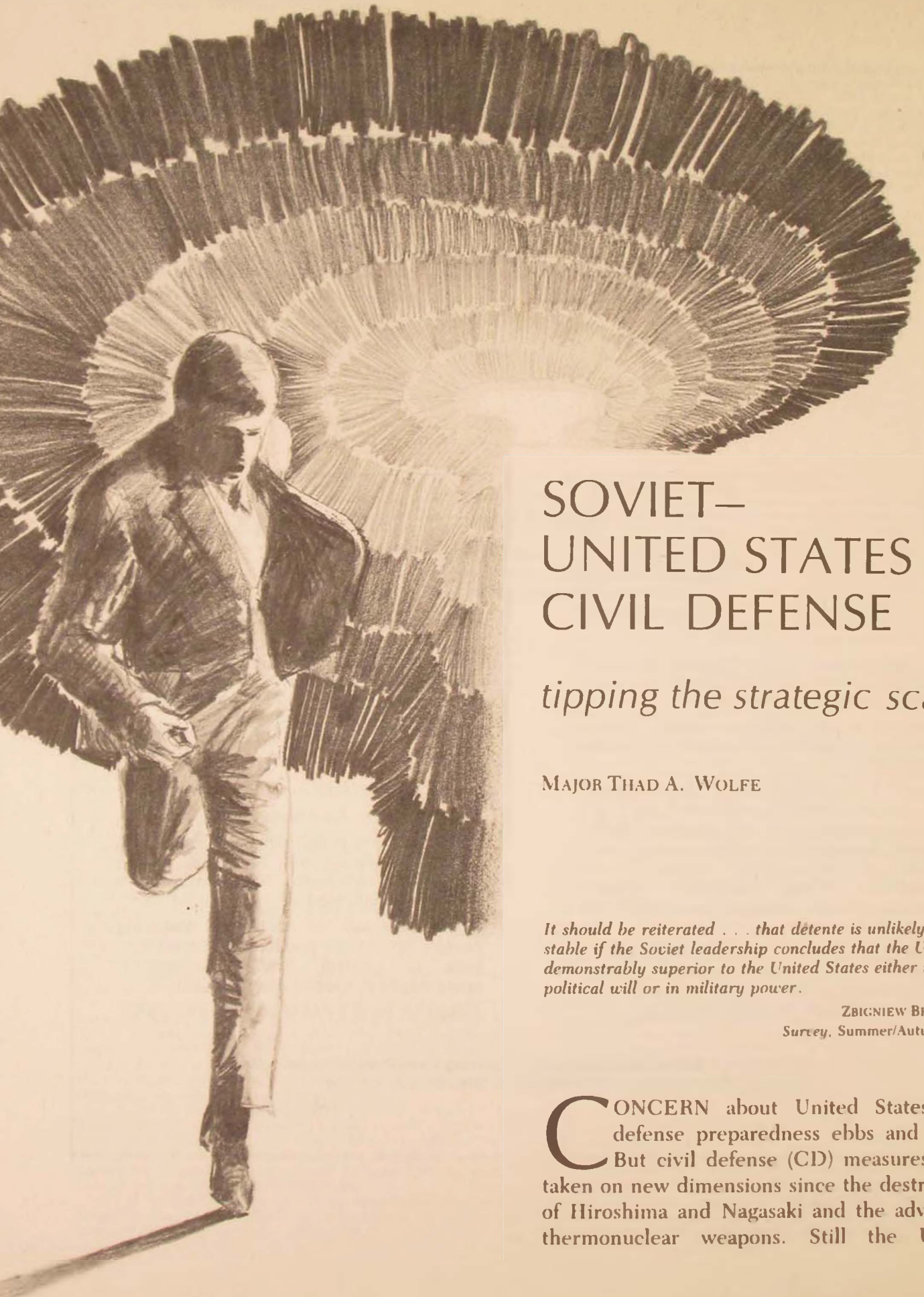
1 copy for each office listed in Chapter 1, HQ USAF Headquarters Pamphlet 11-1, Directory of Air Force Representation on Committees and Non-Air Force Activities;

1 copy for each library in the following categories: master publications, academic, base or general, branch, contractor-operated, field, special and technical;

1 copy for each 89MAW and T-39 aircraft.

If your organization is not presently receiving its authorized copies of the Review, consult your Publications Distribution Officer.

The Editor



SOVIET— UNITED STATES CIVIL DEFENSE

tipping the strategic scale?

MAJOR THAD A. WOLFE

It should be reiterated . . . that détente is unlikely to be stable if the Soviet leadership concludes that the USSR is demonstrably superior to the United States either in political will or in military power.

ZBIGNIEW BRZEZINSKI
Survey, Summer/Autumn 1976

CONCERN about United States civil defense preparedness ebbs and flows. But civil defense (CD) measures have taken on new dimensions since the destruction of Hiroshima and Nagasaki and the advent of thermonuclear weapons. Still the United

States has no consistent civil defense policy or program that promises to reduce the scale of suffering if efforts to deter nuclear war should fail. Nuclear conflict has been potentially the most devastating yet the least likely form of modern warfare. Unfortunately, several factors make the chances of nuclear conflict more likely in spite of U.S. efforts. Nuclear proliferation may yield as many as thirty more nations to the nuclear club by the 1990s,¹ raising the probability of nuclear weapons' employment and increasing the abundance of nuclear by-products. These developments, coupled with the possibility of clandestine nuclear weapon construction and an increase in both the terrorist threat and aggression by proxy, could easily increase the chances for nuclear destruction. Therefore, it is appropriate and necessary to review those elements critical to survival and to address civil defense as one of those elements.

Weapons testing since World War II demonstrates that nuclear conflict would result in unprecedented devastation. Nonetheless, the broadening potential for the use of nuclear weapons suggests that the devastation could just as easily be localized as global. Even if each superpower employed the majority of its nuclear weapons against the other, life very likely would continue.² Benefits, then, accrue to maximizing the residual life, industry, and facilities for rebuilding society.

The belief on either side that you can survive a strategic thermonuclear war as a going society—when you can't—is the worst possible situation for the world to be in.

DR. HAROLD BROWN, Secretary of Defense
Interview, *Los Angeles Times*, December 26, 1976

... the fact of the matter is that if we used all our nuclear weapons and the Russians used all of their nuclear weapons, about 10 percent of humanity would be killed. Now this is a disaster beyond the range of human comprehension. It's a disaster which is not

morally justifiable in whatever fashion. But descriptively and analytically, it's not the end of humanity.

ZBIGNIEW BRZEZINSKI
Interview, *Washington Post*,
9 October 1977

Civil Defense Measures: Effectiveness

A fundamental aim of civil defense is to save lives. Other aims are the preservation of peace by rendering war less likely, enhancement of transwar production and services, postattack recovery, and restoration of social institutions. One's emphasis depends largely on his concept of CD. Wolfgang Panofsky, Director of the Stanford Linear Accelerator, differentiates between CD as "insurance" and CD as a "strategic measure." Viewed as insurance, CD represents efforts to reduce the effects of nuclear war without affecting the likelihood of war's occurrence. Viewed as a strategic measure, CD is an integral part of the total military effort. The former concept envisions a small CD effort while the latter implies a large-scale program.³ Reducing the disaster impact of nuclear attack requires consideration of immediate and delayed effects.⁴

blast and heat (immediate) effects

Casualties caused by blast were difficult to determine in Hiroshima and Nagasaki, but flash burns alone caused an estimated 20 to 30 percent of the deaths in those cities. The best protection against immediate effects is to be remote from the blast site. However, separation may not be possible for people in key cities, near vital industrial complexes, or on military facilities, particularly if warning time is limited. There may, in fact, be no protection near ground zero, but beyond this point blast shelters can provide significant lifesaving potential. The Congressional Research Service

(CRS), in *United States and Soviet City Defense*, estimates that a combination of blast protection in key cities, coupled with evacuation into less populated areas, could ensure 190 million survivors following a large-scale nuclear attack. The cost of such a program may approach \$40 billion or an estimated annual cost of \$5.5 billion through program completion. In the same report, the CRS indicated that a combination of limited blast shelters, fallout shelters, and city evacuation could save approximately 180 million people at an estimated annual cost of \$200 million.

radiation (delayed) effects

Fallout shelters can provide significant protection at a fraction of the cost of blast shelter construction. However, the primary advantage of fallout shelters would be at distances beyond the blast-damage region.⁵

The crucial points in most arguments that CD measures can reduce the disaster impact of nuclear war are that preparation is essential and that some population protection is better than none.⁶

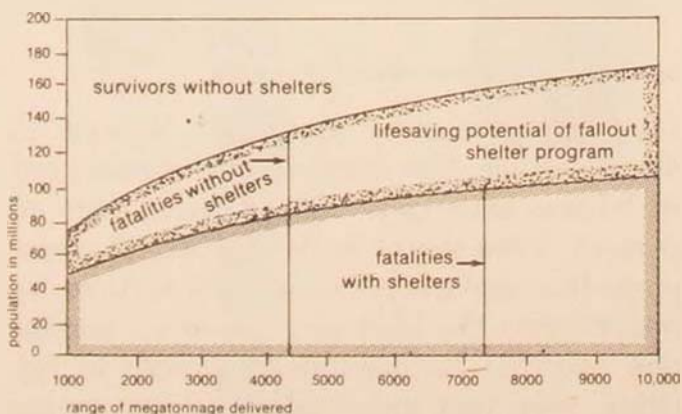


Figure 1. Lifesaving potential of a fallout shelter system in attacks against military-urban-industrial targets. In the event of attacks against military targets alone, total fatalities would be reduced and the lifesaving potential of shelters would be increased.

views opposing CD measures

There are several arguments against widespread implementation of civil defense measures, such as the primacy of offensive technology, warning sensitivity, problems of evacuation, and the social/political impact. The offense school contends that CD cannot be effective long enough to make it worth the cost because offensive technology could overcome widespread passive measures at a fraction of the cost. Further, defensive measures may invite an aggressor to launch a more intemperate attack than originally planned.⁷ Others have cautioned that casualty studies tend to ignore some immediate effects wherein society's interdependence is greatest and support would be minimized.

In the area of warning, some sources believe that the short flight times associated with missile attack could allow surprise and negate the value of most passive measures.⁸ Time compression would stress the system and could lead to chaos.

The Center for Defense Information (CDI) cites inherent problems in evacuation, especially under minimum warning conditions. It states that the evacuating population would be extremely vulnerable because of concentrated population centers, increasing numbers of Soviet weapons, and a resulting scarcity of fallout-free corridors. In CDI's view, evacuation would turn highways into death traps. Evacuation plans would require cadre training, host area preparation, and maintenance of supplies and stockpiles. CDI also cites mass transportation deficits, fuel shortages, repair difficulties, and the probability of irrational evacuee behavior as extreme problems. The crux of this argument is that timing for evacuation may be too critical: waiting too long is too late and moving too early is tantamount to crying "wolf."⁹

Social/political arguments contend that basic democratic values might be discarded in the interest of security and that a shelter-oriented

society would cause serious social problems and warlike attitudes toward other nations. Some sources warn that, in a crisis, CD will create a bias against negotiation and divert attention from alternatives to thermonuclear weapons. Others highlight the possible impact of CD on democratic values; that is, the issue of CD will cause polarization and conflict over the priorities of protection afforded different groups or regions. Further, necessary compliance with CD programs would decrease individual liberty and undermine U.S. faith in democracy, the government, and the scientific community. Several analysts feel that a large CD effort would increase U.S. vulnerability to psychological warfare based on feigned war preparations.¹⁰

An examination of some of the potential damage-limiting capabilities of civil defense suggests that many lives could be saved. Most arguments against CD programs do not specifically deny their potential for reducing the extent of a disaster. Rather, they warn against too much confidence in such programs and urge caution about the many assumptions made in casualty studies. Still, as a practical matter, Soviet efforts in CD indicate that the Soviet government perceives significant value in civil preparedness. Differing perceptions of CD and its security implications have led to vast differences in the role CD plays in U.S. and Soviet strategy.

The U.S. Civil Defense program should be sized and structured as an "insurance policy" hedging against the failure of our deterrence policy and attempts at escalation control.

DOD Planning and Programming Guidance
11 March 1977

Civil Defense Roles Compared: U.S.—U.S.S.R.

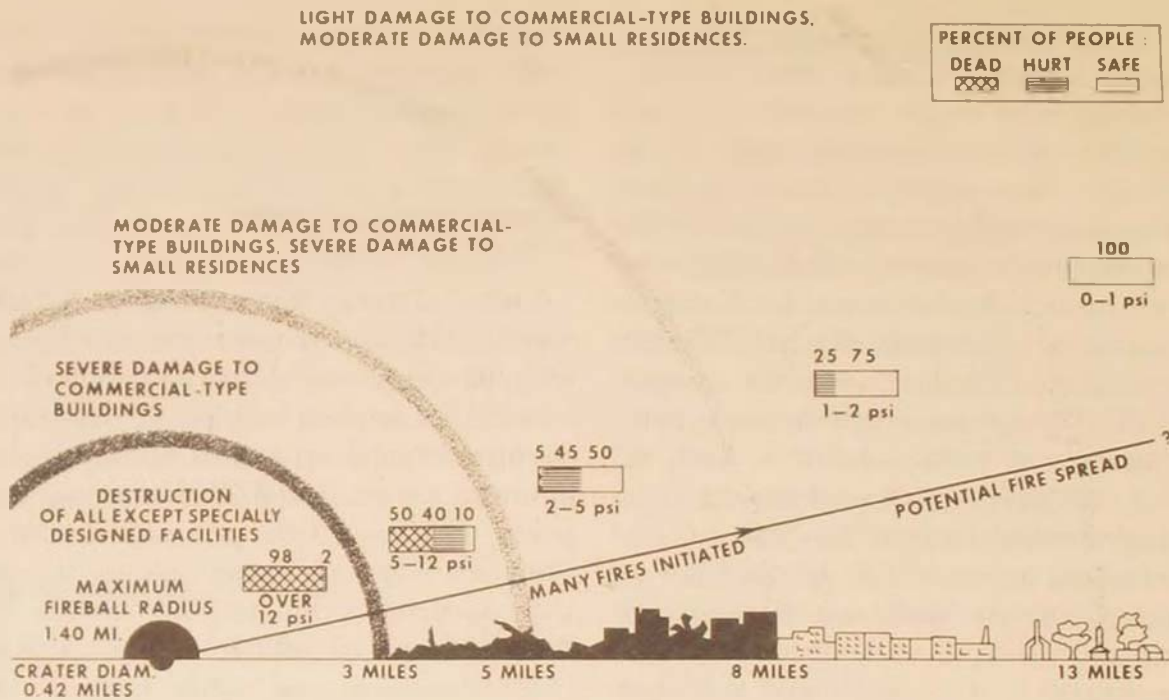
The United States has for some time considered CD an "insurance policy." To the Soviet Union, it is a "factor of great strategic significance." One can gain some insight into these

diverse perceptions by examining U.S. and Soviet national security objectives, policies, and strategies.

national security objectives, policy, and strategy

United States. The critical U.S. national security objective is to survive as a free nation with its fundamental institutions and values intact. This implies both physical security and an international environment in which U.S. interests are protected. U.S. national security policy requires both peaceful resolution of situations that could bring violence threatening U.S. security and deterrence of the use or threat of use of military forces against the U.S., its allies, and other nations deemed important.¹¹ The U.S. has developed a mixed military strategy that includes damage limitation and flexible offensive response options across the spectrum of conflict. Assured destruction resides at the strategic nuclear level and forms the cornerstone supporting U.S. deterrent policy.¹² U.S. planners believe that both assured destruction and damage limitation are guaranteed by invulnerable retaliatory nuclear forces capable of inflicting unacceptable destruction on the attacker. This mixed strategy is supported by a force sized to provide "essential equivalence" between the U.S. and U.S.S.R. in both conventional and nuclear forces.

Soviet Union. The Communist Party of the Soviet Union voices an interest in strengthening Soviet defensive capabilities, consolidating military alliances with other socialist countries, and protecting the achievements of socialism.¹³ Underlying these objectives, Soviet strategy appears to stress a war-winning capability supported by a superior military force. The Soviets do not recognize the U.S. concept of deterrence or assured destruction in their national security policy or strategy. The Soviet shift toward a war-winning strategy, which occurred in the early to mid-1960s, remains



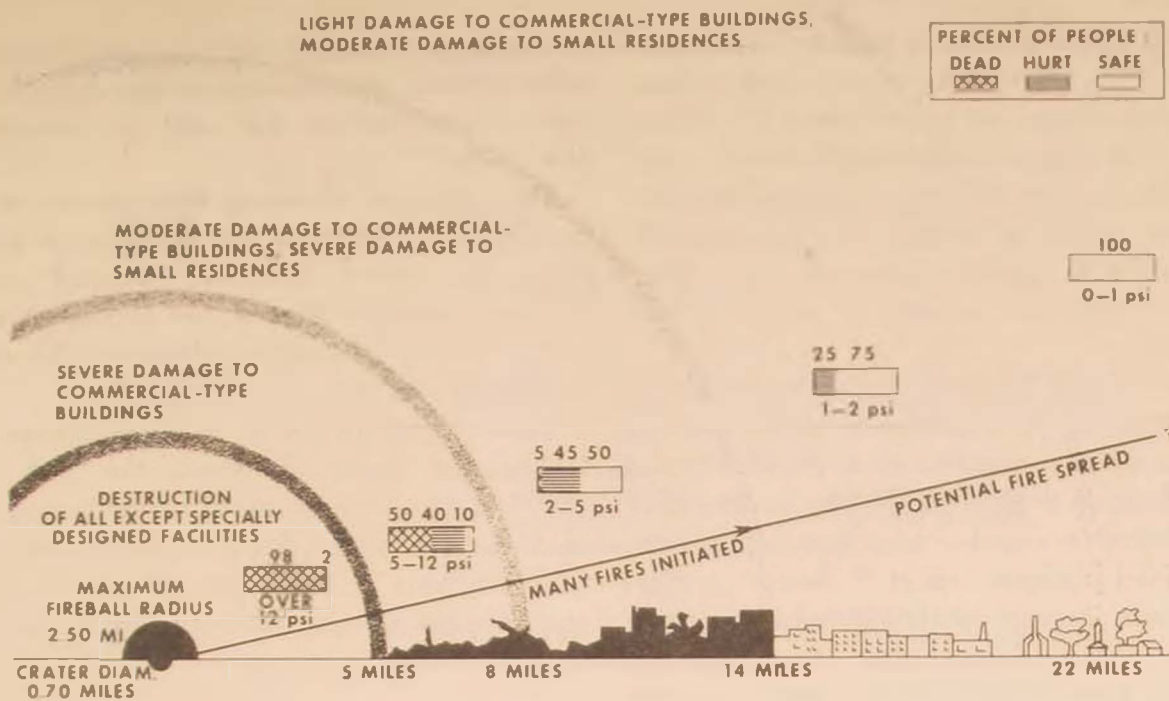
Direct effects of a five megaton blast (surface burst). If the burst is elevated to an altitude maximizing the reach of blast damage, moderate damage from blast and initial fires on a clear day are extended from 8 to 13 miles.

significant: a nuclear war between the superpowers became, in their view, a possibility. Furthermore, it could be won on the conditions that "... effective margins of strength were brought into play and, above all, that undue reliance on 'deterrence' in the Khrushchev style was no substitute for the assurance that the Soviet Union can realistically stand up to the risk of nuclear war."¹⁴

A factor that must be considered in U.S. damage-limiting efforts (of which CD is a part) is the possible Soviet targeting philosophy. Some experts feel that the Soviet Union is both skeptical of the limitability of nuclear weapons and makes no fine distinction between counterforce (military) and countervalue (population, leadership, and industry) targets in their integrated targeting.¹⁵

civil defense roles in national security strategy

United States. CD plays a diminutive role in U.S. strategy. This minor role stems from a dominant view in America that nuclear war is unthinkable. U.S. planners have viewed the mutual vulnerability of populations as a sure means of keeping war unthinkable. According to this logic, there is no reasonable alternative to a deterrent role for military force, particularly nuclear force.¹⁶ Certainly there were other considerations in the level of emphasis given to U.S. civil defense. Some of the arguments against the effectiveness of CD presented earlier in this article as well as threat perception, cost, and lack of public acceptance have collectively fostered the minor



Direct effects of a 25 megaton blast (surface burst). If the burst is elevated to an altitude maximizing the reach of blast damage, moderate damage from blast and initial fires on a clear day are extended from 14 to 22 miles.

role for CD. Nonetheless, a major determinant in the current status of CD is reliance on an offensive capability for assured destruction which deters war and, hence, protects the population.¹³ The U.S. has budgeted approximately \$2.6 billion for civil defense since 1962. The U.S. annual CD budget request from the Department of Defense was \$87 million for FY76 and \$71 million for FY77.¹⁶ The organization of the U.S. civil defense effort, ostensibly under the Defense Civil Preparedness Agency (DCPA), is somewhat diffused. Three federal agencies are involved in disaster preparedness planning and funding. These agencies include the DCPA under the DOD, the Federal Preparedness Agency under the General Services Administration, and the Federal Disaster Assistance Administration under the

Department of Housing and Urban Development.

Each state has its own internal structure for CD with varying subordination. The sprawling organization has been labeled "a body without a head" by the U.S. Congress Joint Committee on Defense Production.¹⁹ U.S. training and education in CD are largely up to each state and local authorities. If DCPA funds are available, state CD organizations can apply for matching funds from the DCPA for projects related to nuclear attack planning.²⁰ The CD program emphasis is on peacetime planning that provides for a rapid surge in crisis conditions. Estimates of the effectiveness of the current U.S. program vary significantly, depending on the postulated attack scenario. The JCS-sponsored "Post Nuclear Attack II" (PON-

AST II) study assumed a 10 percent evacuation of major U.S. cities and estimated 94 million American fatalities and an additional 35 million injuries.²¹ It attributed the high casualty figures to the number of Soviet weapons targeted on urban industrial areas, the concentrated U.S. population, and the absence of an effective U.S. program for civil evacuation and protection.

Soviet Union. The role civil defense plays in Soviet strategy is significant. Based on the view that nuclear war is a clear possibility and that civilization is protectable, the Soviets have implemented a massive and thoroughly integrated civil defense effort.²² Soviet leaders have shown interest in civil defense for many years, but they enhanced their efforts following the 23rd Party Congress in 1966. Despite SALT I agreements in 1972, the U.S.S.R. further intensified its civil defense program. CD currently ranks as a separate force organizationally equal to other Ministry of Defense Forces. The CD chief, General of the Army Altunin (four-star rank), is also Deputy Minister of Defense with three CD deputies of colonel-general (three star) rank serving under him. A Stanford Research Institute (SRI) study²³ in 1974 stated that there were at least 35 to 40 active list Soviet army general officers holding posts in the Soviet CD system, which is intricately organized in the 15 constituent republics of the U.S.S.R. The SRI report mentioned a three-year CD military officer candidate school that might indicate the Soviet interest in a continuing civil defense program.

The Soviets spend the equivalent of more than \$1 billion annually (the CIA in *Soviet Civil Defense* estimates approximately \$2 billion) on their CD program and have conducted some tests of their city evacuation plans. Although the extent of these tests is not fully known, they concentrate efforts on protecting political and military leaders, industrial managers, and skilled workers. Professor Richard Pipes of Harvard sees the CD organization under Altunin as "... a kind of shadow

government charged with responsibility for administering the country under the extreme stresses of nuclear war and its immediate aftermath."²⁴

The potential lifesaving effectiveness of the Soviet CD program is not a matter of unanimous agreement. However, several studies estimate casualty rates as low as two to three percent of the Soviet population in the event of nuclear war.²⁵

Table I provides a summary comparison of CD-related factors between the U.S. and U.S.S.R., including some apparent perceptions of U.S. and Soviet leaders concerning their CD programs.²⁶ This divergence in emphasis and perception may have an impact on U.S. national security strategy.

City Defense plays no part in US nuclear deterrent plans. Ballistic missile defenses are nonexistent, except for early warning. Air defenses are sufficient solely to ensure the sovereignty of peacetime airspace. Civil defense is a charade.

Congressional Research Service (1976)

The Civil Defense Imbalance and U.S. Military Strategy

The critical issue is whether the present actual or perceived CD imbalance will prevent U.S. military strategy from properly supporting national security objectives. That is, at the nuclear war level, can the U.S. still assure destruction of the Soviet Union and thereby deter the use or threatened use of military force inimical to the interests of the U.S., its allies, and other important countries? If a significant obstacle has been raised, then changes in strategy or policy may be necessary.

Soviet leaders believe that their CD program has eroded the U.S. assured destruction capability by limiting damage to their population and industry. Hence, they profess that nuclear war is a viable political element enhancing the overall correlation of forces in

Table I. Summary role of U.S. and U.S.S.R. civil defense compared

	U.S.	U.S.S.R.
National Security Objectives	Physical Security International environment wherein interests are protected	Physical Security Protect advances of socialism
National Security Policy	Peaceful resolution of threatening situations Deterrence of use or threat of use of military force against U.S., allies, others deemed important	Peaceful conditions for building communism in U.S.S.R. Peaceful conditions for development of a world socialist system
Military Strategy	Mixed —Flexible response anchored by assured destruction —Damage limiting Size forces for equivalence	War winning Damage limiting War survival vs. assured destruction Size forces for superiority
CD Role in Strategy	Limited —hostage population for mutual assured destruction (MAD) —MAD as deterrence CD only as "insurance" against failure of deterrence —evolving perception-as element in strategic balance	Significant —protection critical to war survival strategy Measure of strategic significance Decisive factor in correlation of forces
Organization Characteristics	Diffused —Federal agencies within departments —State agencies —Local programs Plan to consolidate —Federal Emergency Management Agency Uses some existing organizations (police and fire department) Essentially civilian	Centralized On an organizational level equal to other Ministry of Defense forces Headed by a Deputy Minister of Defense Essentially a military program
CD Education and Training	Cadre training Voluntary for others DCPA provides training assistance CD staff school States planning for crisis relocation	National education and some training mandatory CD Forces Officer Candidate School Cadre training and education Evacuation plans in existence

CD Protective Value	Warning sensitive Shelter spaces designated and marked for about 180 million—not stocked Crisis relocation possible with long warning	Warning sensitive, but less than U.S. Combination in-place sheltering and evacuation could save about 97% of Soviet population
CD Role as Perceived by Leaders	Keeps nuclear war unthinkable —CD may enhance deterrence and stability Peacetime planning for wartime surge U.S.-U.S.S.R. imbalance can be offset and deterrence maintained	Permits nuclear war as element of politics Denies U.S. assured destruction capability Leverage in other countries Permits risk taking
CD \$ (billion) Comparison (annual)	Estimated \$1-2B Some state matching funds	Estimated \$ 1 B

favor of the socialist camp. They also feel that their CD effort reduces risks inherent in projecting force and socialist influence. This provides them leverage in diplomatic crisis and a stronger position with nonaligned nations.²⁷ The Congressional Joint Committee on Defense Production examined several possible Soviet strategic motivations for seeking a CD imbalance: to speed worldwide communization through aggressive attack; to promote crisis or gain leverage in crisis resolution; to serve as a hedge against U.S. attack, use of tactical nuclear weapons by NATO, or a desperate attack by a lesser force; or to protect a residual capability to deny territorial occupation. The committee offered several nonstrategic motivations: low tolerance to external threats, institutional momentum, internal discipline and control, psychological reassurance following a long period of perceived inferiority, and a possible concession to military leadership for their support of arms control. The real moti-

vation that underlies the move toward a CD imbalance may not be entirely clear even to the Soviet leaders. But it can provide a framework for evaluating Soviet actions.

In the final analysis the value of the imbalance to the Soviet Union may not be determined by Soviet statements but by the leverage the U.S. is willing to allow them.

the imbalance and deterrence

There are varying opinions in the U.S. regarding the significance of the imbalance.²⁸ At one extreme is the tendency to attribute to the CD imbalance all that the Soviets wish to make of it. At the other extreme are those who rule out the effectiveness of any CD effort and, therefore, see nothing adverse in the Soviet protection program. The middle ground is covered by arguments mentioned earlier in assessing the effectiveness of CD measures.

Deterrence reduced. A central concern is

that the imbalance may, in fact, have convinced Soviet leaders that their loss projections and expected postattack position have reached an acceptable level. Such a belief would undermine the "assured destruction" foundation of U.S. military strategy and could encourage risk taking. Furthermore, their CD measures reduce the effectiveness of a given U.S. weapon and compound the U.S. targeting problem through target proliferation. Conversely, by not planning for dispersal, evacuation, and sheltering, the U.S. simplifies Soviet targeting problems, especially as the U.S.S.R. develops more warheads with greater accuracy. In addition, the prospect of a Soviet "free ride" to strike U.S. forces as defenses are downgraded may become an overwhelming temptation to the Soviet Union—encouraging, not deterring an attack. Some sources argue that the United States may become more inclined to a preemptive first strike or earlier first use of nuclear weapons, owing to the advantages a surprise attacker has against a country with high damage-limiting capability. In most of these arguments one must remember the fundamental role of perception in deterrence. The deterrent threat must be credible, and unilateral vulnerability may impair a convincing threat. Some allies, as well as enemies, may perceive that the U.S. would, through this vulnerability, deter itself from employing its power either on its own behalf or that of an ally. Similarly, perceptions of asymmetrical security between the U.S. and U.S.S.R. might lead third parties to concede an ascendant position to the Soviets in international relations. This could be a Soviet goal.²⁹

Deterrence unaffected. Herman Kahn, an early CD proponent, wrote that civil defense had very little to do with deterrence of direct attack.³⁰ His rationale: in an all-out surprise attack on cities, it is virtually impossible to hold down casualties to a level that would totally blunt the attack; CD measures do not directly contribute to military operations against an enemy; hence, they do not deter his

military aggression. Professor Thomas Etzold of the Naval War College highlights the probable ineffectiveness of Soviet civil defense measures under current U.S. general war-targeting doctrine. This doctrine would assure destruction by spreading retaliation over a significant period, perhaps weeks or longer. Etzold wrote that the U.S. also maintains the viability of its deterrence at the limited nuclear war level because of Soviet sensitivities even to minor disruption.³¹

Likewise, Dr. Sidney Drell, Professor and Deputy Director of the Stanford Linear Accelerator Center, writes in the *Bulletin of Atomic Scientists* that he sees no serious threat to deterrence in the Soviet CD effort. He believes that technical data and intelligence information can as easily be interpreted to show that the U.S. retains its retaliatory effectiveness. He cautions that the Soviet Union devotes primary emphasis to protecting leadership cadres and essential industry and that Soviet mass evacuation plans based on an inferior transportation system could fail. Drell notes the sensitivity of casualty studies to numerous assumptions and a mistaken tendency to judge the effectiveness of the Soviet CD program on the basis of their technical manuals.³²

A few strategists might argue that, in limiting its options, the U.S. has, in effect, made an initial strategic move that leaves no option but to fulfill the threat when the country is faced with imminent attack. In short, limiting the options secures the threat and makes the deterrent credible.³³ If the Soviets doubt the U.S. declared strategy of assured destruction, they would be taking a potentially catastrophic risk. The adverse effect on deterrence embodied in the imbalance of CD measures may not be conclusive. Its impact on stability is more pronounced.

the imbalance and stability

Stability in the context of this discussion refers to the U.S. desire for stability of the deterrent

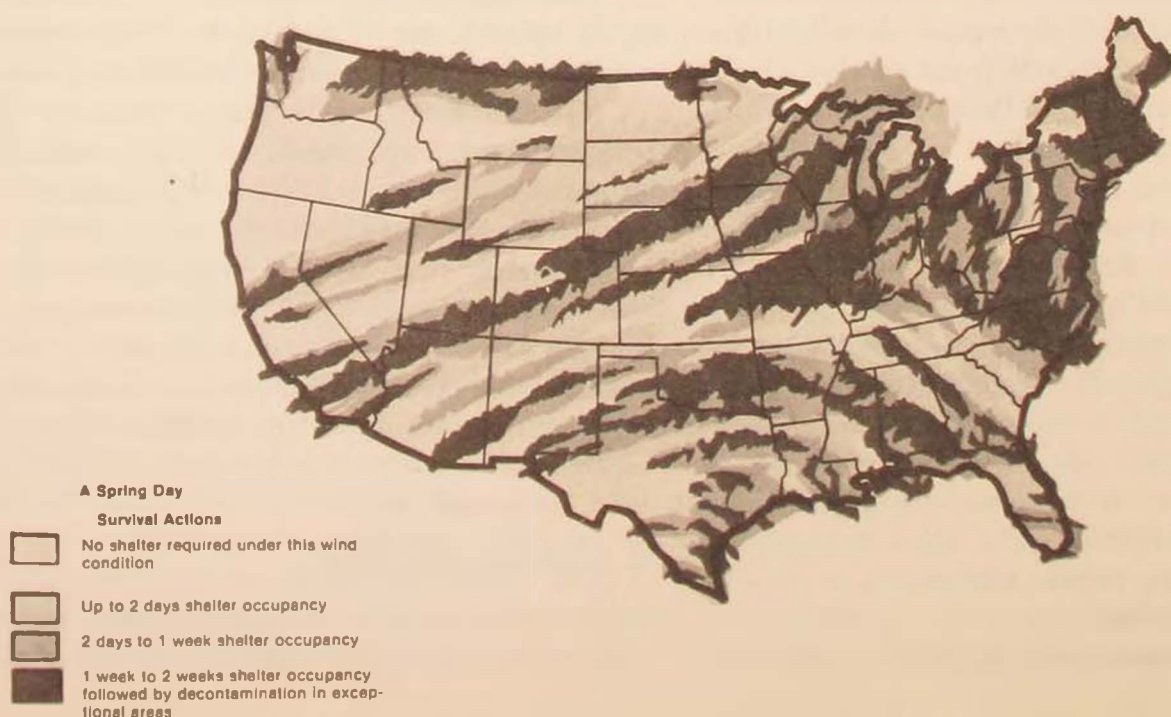
force, the world military situation, force levels, and nuclear nonproliferation. A workable definition offered in *Strategy and Arms Control* states generally that stability would exist in these areas if they were secure against shocks, alarms, perturbations, political events, misunderstandings, frightening intelligence, etc.³⁴ There are significant arguments about the destabilizing nature of a serious defensive imbalance. First, to maintain a stable deterrent with assured destruction, one would very likely develop new weapons or capabilities to offset the CD measures. Efforts to increase accuracy and payload or to expand the types of weapons could give rise to the growth in chemical, biological, or exotic devices to maintain deterrence. Pre-emption or first use of nuclear weapons could become a necessity. In times of crisis short of war, the imbalance may operate toward earlier increases in alert rates

enhancing the admittedly small chances of accidental war. A real security asymmetry could drive the U.S. to abrogate the ABM treaty in favor of active defenses while it builds up its CD program. Accelerated nuclear proliferation may also be an outgrowth of the imbalance depending on the perceptions of third parties.

Allied or those nonaligned countries important to the U.S. may perceive the need to acquire their own arsenal of nuclear weapons. Their aim could be to defend where they think the U.S. would fail; to secure spoils after a major power war; or to step into the power vacuum left by the U.S. and U.S.S.R.

In the diplomatic or political arena where many see the primary detriment of the imbalance, generally stable conditions could be replaced by a new testing of limits, brinkmanship, and possible reckless confidence by the

Fallout conditions from a random assumed attack against a wide range of targets (military, industrial, and population) on a spring day



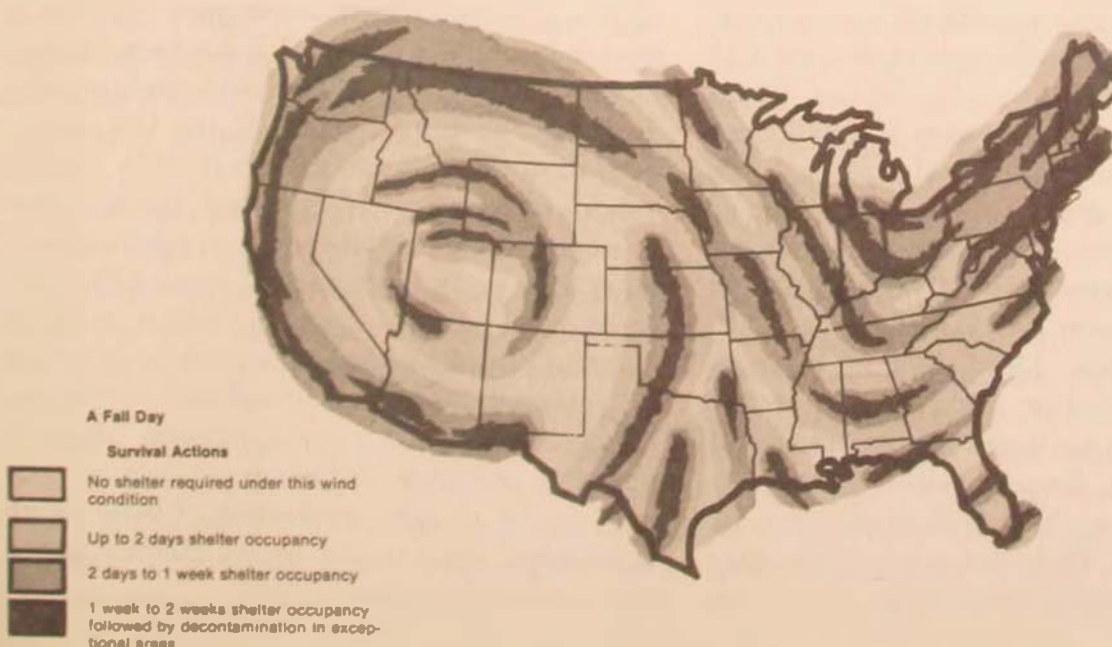
Soviet Union or their proxies. Some non-aligned countries may move into the socialist camp due to the perceived security asymmetry. It is probable that the imbalance is irrelevant to deterring low-level military, political, or diplomatic maneuvering or proxy involvement until U.S. interests are clearly threatened.

There is another factor equally important in the long-term quest for peace. The Soviet CD program acts as a constant promotion of the hostile adversary illusion without which their CD effort would be unnecessary. Some experts on the Soviet Union feel that the continued justification for Soviet economic priorities and the elaborate internal control system is based on the threat of a hostile external power.³⁵

Several points in the foregoing discussion need further emphasis in terms of U.S. deterrent objectives. The possibility of nuclear at-

tack may very well increase during the coming decades whether through nuclear proliferation, terrorist access, "proxy" aggression, or major power action. Should such a disaster occur, the weight of evidence shows that significant numbers of lives can be saved through CD preparation and action. The Soviet Union appears to understand these two points as apparent in their emphasis on a war-survival program which has, in part, led to the CD imbalance. It is not totally clear whether this imbalance will have an adverse effect on U.S. deterrence of higher levels of violence—it could. But the Soviet Union does not show a tendency to risk disaster when so many uncertainties currently cloud the war-survival issue. The effect the CD imbalance may have on perceptions could affect U.S. allies and non-aligned nations if they perceive real security asymmetries. Although the effect on deter-

Fallout conditions from a random assumed attack against a wide range of targets (military, industrial, and population) on a fall day



rence is unclear, the effect on stability is not. A perceived or actual security imbalance can only bring change to right the scale.

Hence to fight and conquer in all our battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting.

SUN TZU, *Art of War*

Maintaining the Balance

Uncertainties can cripple. The U.S. simply does not know with certainty how effective the Soviet passive measures are or whether they would be a decisive factor in a postwar balance. Nonetheless, the Soviets seem to believe in them. Hence, U.S. efforts should aim at blunting any advantage the Soviets may try to gain from the perceptual or real asymmetry.

political-military initiatives

U.S. response in the political arena may be the most critical. A necessary first step should be to reiterate periodically to enemies, allies, and nonaligned nations the effectiveness of the U.S. deterrent. Beyond that, extracting concessions in Strategic Arms Limitation Talks (SALT) for Soviet defensive measures would be both desirable and difficult. The louder the U.S. deterrent is praised, the more America argues against Soviet concessions. Conversely, the more the U.S. seeks concession for CD measures, the more credible the imbalance appears. Whether CD measures are addressed openly in SALT or not, they should certainly be placed on the agendas of the U.S. negotiating team and strategy planners. A significant concern to both Soviet and U.S. strategists will increasingly become the possibility of Nth power nuclear attack. The U.S. military strategy of flexible nuclear and nonnuclear response very likely addresses the deterrence of such an event, but not necessarily the greater chance of deterrent failure through terrorist access or accident. Thus, defensive means may become more critical. While the U.S. may

attempt in some measured way to redress the imbalance as much for the perceptual value as for real gain, it should in no way detract from U.S. resolve. The Soviet Union for all its military power has horrendous problems. It is strapped with an ideology that virtually blinds it to certain development options, not the least being its human potential. Agricultural shortages could undermine the party control system and erode party credibility. Basic climate, northerly latitude, and geography represent constraints with which Soviet assertive policies must always contend lest they overextend their means. The Soviets face the potential threat from China, possible tenuous control in Eastern Europe, and internally diverse races and cultures. Hence, their control system is not without its stresses. U.S. policies and supporting strategy should consider these factors in seeking moderation of Soviet-U.S. conflict.

population protection

In developing a civil defense program, one must keep its primary aim in mind. Herman Kahn notes that CD does not directly deter war or an attack. It is designed to reduce death and casualties *should* deterrence fail. The more compelling arguments regarding basic effectiveness of CD measures, as well as the effects of the U.S.-Soviet CD imbalance, call for a guarded movement toward some form of population protection. While mirror-imaging the Soviet program may not be in the U.S. interest, those considerations short of a Soviet attack such as nuclear armed terrorists or third-party nuclear strikes are relevant and must receive more consideration. CD measures may have little value against terrorist surprise use of such weapons, but there would be potential applications (blackmail, extortion, political concession, etc.) wherein warning might be available. Although national survival may not be at stake, protection of those living in affected areas would be worthwhile and a governmental responsibility.

The overlap between CD measures and the many facets of disaster preparedness (DP) suggest a means for gaining public acceptance of a CD effort as well as organizational and funding possibilities. The Joint Committee on Defense Production recommended in early 1977 that all emergency functions of the current Defense Civil Preparedness Agency, Federal Disaster Assistance Administration, and the Federal Preparedness Agency should be combined under a single independent agency, the Federal Preparedness Administration (FPA). The proposed new FPA should have central control and coordination responsibilities for the entire emergency preparedness effort of the federal government. The FPA director would have authority and budgetary control for specific preparedness programs of other departments and agencies; he would also have membership on the National Security Council as well as the ability to report through the Domestic Council on other than national security matters. A final means of breathing life into the proposed FPA would be the establishment of a single category in the federal budget for all emergency preparedness programs.³⁶ This could possibly justify removal of CD responsibility from the DOD. In a 13 November 1978 White House news conference, the Carter administration announced that Congress had approved an administration plan establishing the Federal Emergency Management Agency. The new agency's role is expected to be much like that of the proposed FPA.

Substantive movement by the U.S. in civil defense might reassure U.S. allies that the U.S. deterrent equation, including factors of capability, will, and credibility, was still vital. This is critical to the diplomatic support provided by U.S. deterrent forces. Such actions provide possible mid- to long-range ballast for U.S. deterrent objectives. The evaluation and timely alteration of U.S. strategic targeting doctrine provide short-term and continuing support of deterrence.

targeting doctrine

Operating under the general planning constraint eschewing a first nuclear strike, U.S. planners nonetheless have the flexibility that *does* permit, under extreme provocation, presidential authorization for first use of nuclear weapons. The caveat was again asserted in President Carter's 4 October 1977 speech to the United Nations. This is an unlikely occurrence but one that the Soviet Union and other adversaries must bear in mind. To bolster the assured destruction strategy underlying U.S. deterrent objectives at the strategic nuclear war level, U.S. planners must constantly reassess the targeting doctrine to be certain that the targets are significant in the Soviet psyche. Presently, those targets that would most disrupt party control both in the Soviet Union and elsewhere (e.g., Warsaw Pact-dedicated Soviet troops) represent probably the most frightening prospect to the party and government apparatus in the U.S.S.R.³⁷ Those targets most essential to control and the power base are not so numerous that U.S. retaliatory forces could not deliver unacceptable damage even after riding out a Soviet first strike. Such a targeting doctrine has been referred to as a countercombatant or counterpower.³⁸ These target sets would be flexible and sensitive to political winds between the U.S.S.R. and countries on its periphery as well as internal conditions that reflect cyclic degrees of vulnerability: party control, energy, food, transportation, border problems, etc. The counterpower or countercombatant doctrines are designed to retain assured destruction but are not tied to older concepts of specific levels of destruction utilized as planning factors in the early 1960s. The target sets may be influenced by SALT or other forms of restraint; the view should be toward assuring destruction at ever decreasing levels of violence. This implies not only reduced destructiveness of weapons but reduced numbers as well. These constraints do not alter the fact that if there is to be a balance of terror both sides must be equally terrified.

weapon development

Soviet dispersal and hardening dictate some combination of increased warheads, accuracy, or yield. It could require development and deployment of a different family of weapons. When seeking a stable deterrent, the planner must consider that these weapons will be employed as second strike retaliatory weapons. According to Dr. Harold Brown, 1979 represents the point at which surviving U.S. strategic forces still operational following a Soviet first strike against U.S. forces in a day-to-day alert would equal the number of retained Soviet weapons.³⁹ The implications for U.S. deterrence are significant. Clearly, short-term measures are in order. A consensus seems to exist in the value of improving offensive weapon accuracy while keeping the number of warheads as high as possible under current agreements.⁴⁰ The air-launched cruise missile (ALCM) may provide this renewed deterrent stability. Dr. Brown forecast a satisfactory postattack balance into the mid-1980s through development and deployment of the air-launched cruise missile coupled with the B-52 and existing or programmed forces (excluding the B-1 and the M-X).⁴¹ Continued development of the enhanced radiation warhead (neutron bomb), though conceived for use in response to a Warsaw Pact attack into Western Europe, could have some strategic deterrent utility in negating selected CD measures. It appears that increased accuracy and yields on existing systems in conjunction with ALCM development could be a reasonable counterbalance to the Soviet defensive effort.

The protection of satellite surveillance and warning systems as well as research and development in ballistic missile defenses seem critical as hedges against Soviet actions. Nearly all economically feasible forms of passive population protection are warning sensitive. Enemy ability to "blind" U.S. warning systems would be significant. Soviet ability to neutralize a U.S. retaliatory strike through a combination of warning cancellation, antiballistic missile capability,

and civil defense would clearly undermine U.S. national security objectives of deterrence by denying an assured destruction capability.

THESE suggested measures are by no means exhaustive. They simply point out that the potential security advantage the U.S.S.R. hopes to gain through passive defense activities can be offset without major alteration to U.S. programs or strategy. Whatever actions national leaders take to maintain the security balance, they must be consistent with the maintenance of stability and deterrence of war, coercion, and use or threatened use of force by U.S. adversaries. The costs of U.S. initiatives must be consistent with the country's priorities, bearing in mind that public acceptance is the fundamental link between American capabilities and the strategies that support our national objectives. Illegal weapons, a multibillion dollar blast shelter program, serious militarization of U.S. society, and forced population and industrial dispersal are examples that may fall outside reasonable bounds.

The *DOD Annual Report-Fiscal Year 1979* signals renewed interest in CD but reports little change from previous programs. Notably, the use of the "insurance policy" analogy against failure of deterrence was dropped. This may reflect an awareness that, like a life insurance policy, the cost rises sharply the longer one puts it off; and once deterrence fails it is too late to buy the policy.

... the President ... has decided upon a civil defense policy and program which basically states that civil defense is an element of the strategic balance in conjunction with our offensive and defensive forces and can serve to enhance deterrence and stability.

JODY POWELL, White House
news conference, 13 November 1978

Air Command and Staff College

Notes

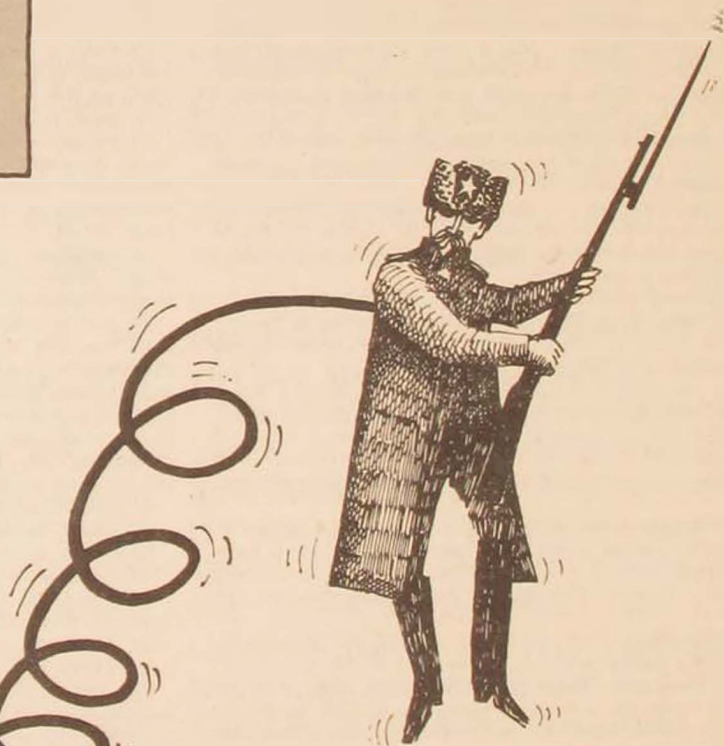
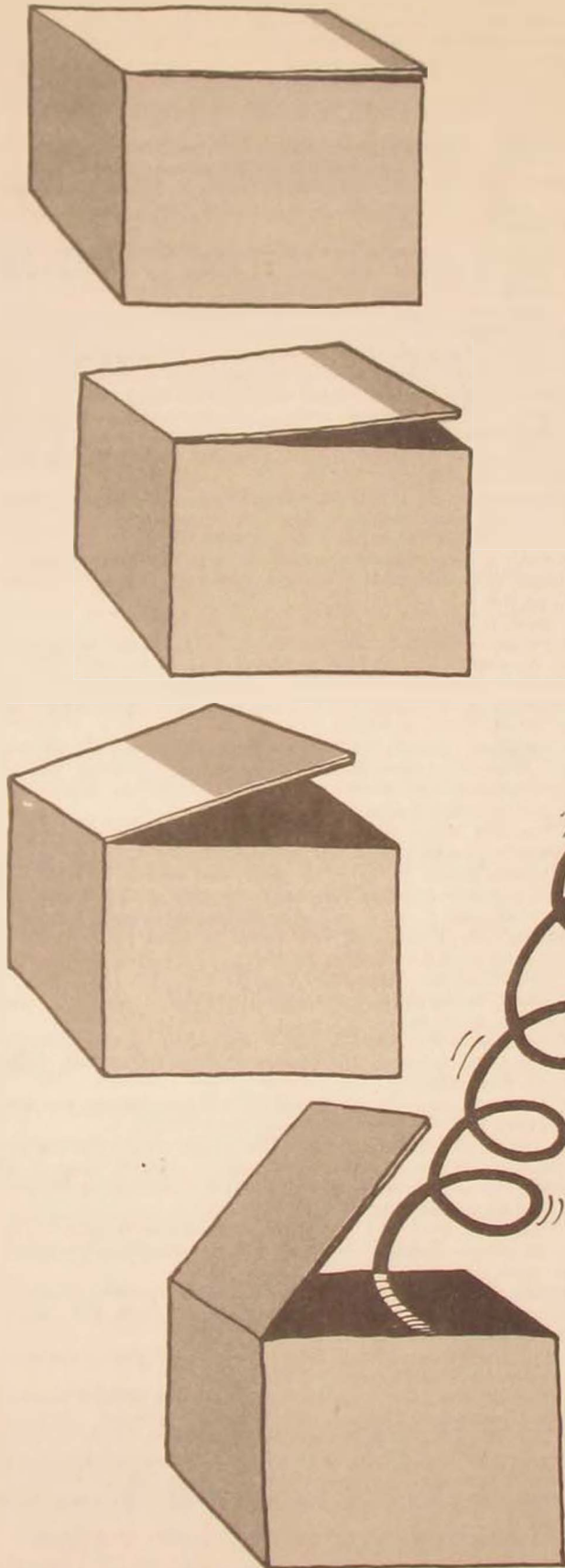
1. Lewis A. Dunn, "Nuclear Proliferation and World Politics," *The Annals of the American Academy of Political and Social Science*, Richard D. Lambert, editor (March 1977), p. 99. Thomas C. Schelling predicted that "Twenty or 30

- countries, using their own materials and people, could assemble nuclear explosives within the next few years." T. C. Schelling, "The Limits of Non-Proliferation," *The New Republic* (January 22, 1977), pp. 38-40.
2. Several studies are significant in their view that nuclear war will not mean the total destruction of mankind. The Joint Chiefs of Staff "Post Nuclear Attack Study" (PONAST II) was cited as yielding among its conclusions, "... although damage was awesome, both sides are calculated to have survived and to be capable of recovery," in U.S. Congress Joint Committee on Defense Production, *Civil Preparedness Review Part II Industrial Defense and Nuclear Attack*, 95th Cong., 1st sess., 1977, p. 105. See also Robert A. Conrad et al. *A Twenty Year Review of Medical Findings in a Marshallese Population Accidentally Exposed to Radioactive Fallout*, excerpts in U.S. Congress, House, Committee on International Relations, Hearings before the Subcommittee on International Security and Scientific Affairs, *First Use of Nuclear Weapons: Preserving Responsible Control*, 94th Cong., 2d sess., 1976, pp. 195-98. See also *Long-Term Worldwide Effects of Multiple Nuclear Weapons Detonations*, Washington, D.C.: National Academy of Sciences, 1975. This report investigated for the Arms Control and Disarmament Agency the long-term worldwide effects that might propagate through environmental and ecological processes. With critical caveats the Academy concluded that the biosphere and the species *Homo sapiens* would survive a nuclear exchange of significant magnitude (10,000 megatons).
3. Wolfgang K. H. Panofsky, "Civil Defense as Insurance and as Military Strategy," in *Civil Defense*, edited by Henry Eyring (Lancaster, Pennsylvania: Donnelley Printing Co., 1966).
4. *United States and Soviet City Defense*, Congressional Research Service, Library of Congress (Washington: Government Printing Office, 1976), pp. 33-36. See also Eugene P. Wigner, "The Possible Effectiveness of Civil Defense," in *Civil Defense*, edited by Henry Eyring (Lancaster, Pennsylvania: Donnelley Printing Co., 1966), pp. 35-36, for discussion of immediate survival considerations and a proposed shelter system. See the United States Strategic Bombing Survey, *The Effects of Atomic Bombs on Hiroshima and Nagasaki* (Washington: Government Printing Office, 30 June 1946), pp. 24-32 for discussion of weapons effects.
5. James C. Bresee and David L. Narver, Jr., "Improved Shelters and Accessories," in *Survival and the Bomb*, edited by Eugene P. Wigner (Bloomington: Indiana University Press, 1969), p. 199. See *United States and Soviet City Defense* for cost comparisons.
6. In John M. Collins, *Grand Strategy: Principles and Practices* (Annapolis, Maryland: Naval Institute Press, 1973), p. 105. See also Arthur A. Broyles, Eugene P. Wigner, Sidney D. Drell, "Civil Defense in Limited War—a debate," *Physics Today*, April 1976, p. 46.
7. *United States and Soviet City Defense*, p. 7. See also Herman Kahn, *Thinking about the Unthinkable* (New York: Horizon Press, 1962), pp. 86-91.
8. Sidney D. Drell, "Beyond SALT II—A Missile Test Quota," *Bulletin of the Atomic Scientists*, May 1977, p. 41.
9. "The New Nuclear Strategy: Battle of the Dead?" *The Defense Monitor*, July 1976, pp. 1-8.
10. Kahn, *Thinking about the Unthinkable*, p. 91. See also Arthur I. Waskow, *The Shelter-Centered Society* (Washington: Peace Research Institute, January 1962), pp. 4-14.
11. Department of Defense, *Planning and Programming Guidance*, 11 March 1977, p. 1-1.
12. Russell E. Dougherty, "Strategic Deterrence and the Strategic Air Command," in Air War College Associate Programs Vol. II, Ch. 1, 10th ed., Maxwell Air Force Base, Alabama: Air University, 30 July 1975, pp. 4-12. He stresses that "... the ability to assure destruction remains the cornerstone of our strategic deterrent, we build options from that assured base—we never relinquish it." p. 5.
13. V. D. Sokolovskiy, *Soviet Military Strategy* (New York: Crane, Russak & Company, Inc., 1975), p. xlv. See also "Improving Climate of Soviet-American Relations," *Congressional Record*, 123: S19079-S19080 November 15, 1977.
14. John Erickson, *Soviet Military Power: USSR Report 73-1* (Washington, D.C.: United States Strategic Institute, 1973), p. 41. See also Paul H. Nitze, "The Assured Strategic Stability in an Era of Detente," *Foreign Affairs*, No. 2, January 1976, p. 216. Nitze moves the Soviet shift in strategy back to the Cuban missile crisis. While the U.S. attempted to downgrade the role of nuclear weapons, the Soviet response was ambiguous but probably divergent. See Arnold L. Horelick, "The Strategic Mind Set of the Soviet Military: An Essay-Review," *The Rand Paper Series*, P-5813, Santa Monica, California, February 1977, pp. 10-11.
15. Herbert F. York, "The Nuclear Balance of Terror in Europe," *Bulletin of Atomic Scientists*, May 1976, p. 10. See also Horelick, pp. 9-10, and Leon Couré, *War Survival in Soviet Strategy: USSR Civil Defense* (Miami, Florida: Center for Advanced International Studies, 1976), especially pp. 6, 47, 50.
16. Herman Kahn, *On Thermonuclear War* (Princeton, New Jersey: Princeton University Press, 1961), especially Chapters III and IV. See also Bernard Brodie, *War and Politics* (New York: Macmillan, 1973), especially Chapter 9 on the utility of the nonuse of nuclear weapons. Richard Pipes provides an overview of the rise of deterrent objectives in "Why the Soviet Union Thinks It Could Fight and Win a Nuclear War," *Commentary*, July 1977, pp. 21-34.
17. James R. Schlesinger, *Annual Defense Department Report FY75*, p. 67.
18. U.S., Congress, House, *Department of Defense Appropriations for 1977: Hearings before a Subcommittee of the Committee on Appropriations*, 94th Cong., 2d sess., 4 February 1976, p. 313. Also see *United States and Soviet City Defense*, p. 11.
19. U.S., Congress, Senate, Joint Committee on Defense Production, *Civil Preparedness Review Part I Emergency Preparedness and Industrial Mobilization*, 95th Cong., 1st sess., 1977, p. 10.
20. Interview by author with CD official in Alabama State Civil Defense Office, 20 January 1978. Construction and equipping of emergency operations centers are types of projects that currently qualify for matching funds.
21. NCP (Nuclear Civil Protection) Briefing, Prepared by Defense Civil Preparedness Agency Region Three, 22 July 1976. Added casualty results were given in U.S., Congress, Senate, Subcommittee on Arms Control, International Organizations and Security Agreements of the Committee on Foreign Relations, *Analysis of Effects of Limited Nuclear Warfare*, 94th Cong., 1st sess., 1975.
22. Gouré, especially pp. 47-57 and *United States and Soviet City Defense*, p. 15. See also Central Intelligence Agency, *Soviet Civil Defense* (Washington: Government Printing Office, July 1978), pp. 1-13.
23. James T. Reitz, *Selected Aspects of the Soviet Civil Defense Program*, SRI Project 3275 (Washington, D.C.: Stanford Research Institute, 18 October 1974), pp. 3-6.
24. Pipes, p. 34.
25. Joanne Gailor and Dr. Eugene Wigner, "Civil Defense in the Soviet Union," *Foresight* (May-June 1974), p. 10. See also *United States/Soviet Strategic Options*, Hearings before the Committee on Foreign Relations and the Subcommittee on Arms Control, Oceans and International Environment, 95th Cong., 1st sess., 1977, pp. 112-13.
26. See Gouré, especially the Foreword by Foy Kohler, and Chapter Two, which explores Soviet perceptions of the CD program as a part of their war survival requirement, pp. 47-57.
27. *Ibid.* See also Sokolovskiy, pp. 329-33.
28. Thomas H. Etzold, "Soviet Civil Defense and U.S. Strategy," *Air Force Magazine* (October 1977), pp. 38-41. See also "The Real Paul Warnke," *The New Republic* (March 26, 1977), pp. 22-25, and Bernard T. Feld, "The Consequences of Nuclear War," *Bulletin of Atomic Scientists* (June 1976), pp. 10-13. Finally, see *First Use of Nuclear Weapons: Preserving Responsible Control*, pp. 118-19, for the effect the security imbalance may be having on allied perceptions of U.S. resolve.
29. *Civil Preparedness Review Part II*, p. 112.
30. Kahn, *Thinking about the Unthinkable*, p. 81.
31. Etzold, pp. 39, 40.
32. Drell, pp. 39-40.
33. Thomas C. Schelling, *The Strategy of Conflict* (New York: Oxford University Press, 1963), pp. 127-28.
34. Morton H. Halperin and Thomas C. Schelling, *Strategy and Arms Control* (New York: The Twentieth Century Fund, 1961), p. 50.
35. Marshall D. Shulman, "World Role of the USSR," *The National Security Affairs Forum* (from an oral presentation), Spring 1974, pp. 19-30, in Air War College Associate Programs Vol. I, Ch. 7, 10th ed., pp. 19-20.
36. *Civil Preparedness Review Part I*, VIII.
37. Robert H. Reed, "On Deterrence: A Broadened Perspective," *Air University Review* (May-June 1975), pp. 4-5. See also Bernard S. Albert, "Constructive Counterpower," *Orbis* (Summer 1976).
38. *Ibid.* See also Bruce M. Russett, "Assured Destruction of What? A Countercombatant Alternative to Nuclear Madness," *Public Policy* (Spring 1974), pp. 125-26.
39. Dr. Harold Brown, "What's Behind the B-1 Cruise Missile Decision?" *Commanders Digest* (September 15, 1977), p. 5.
40. Paul H. Nitze, "The Assured Strategic Stability in an Era of Detente," *Foreign Affairs* (January 1976), pp. 227-28. Albert Wohlstetter, "Threats and Promises of Peace," *Orbis* (Winter 1974), pp. 1126-27. See also Schelling, *The Strategy of Conflict*, p. 237, for the possible stability benefits that may accrue to having more than the bare minimum number of weapons. Schelling's point is that the larger system of arms is less subject to minor perturbations, breakthroughs, etc.
41. Dr. Brown, p. 11.

*Ah, what a dusty answer gets the soul
When hot for certainties in this our life!*¹

GEORGE MEREDITH

THE SEARCH for certainties in military affairs is a flourishing enterprise backed by thousands of quantitative studies that aspire to calculate, with precision, the latest issues in national security. Yet it is an enterprise characterized by debate between those who find different truths emerging from their differing approaches. This is particularly evi-



THE CALCULUS OF SURPRISE ATTACK

LIEUTENANT COLONEL A. L. ELLIOTT

dent in the context of debates concerning the nature of the Soviet threat and the requirements for U.S. security. In recent debates, the problem of surprise attack has become an issue of significance for which precise solutions are now being sought. However, only dusty, fragmented answers appear to those who want only the truth.

The dusty answers on the problems of surprise attack range between two views: (1) that Soviet/Warsaw Pact forces can, will, and wish to launch a surprise attack on Western Europe with such perfect political and military orchestration that, unless NATO makes drastic changes, Western Europe will be lost; or (2) that Soviet/Warsaw Pact forces face so many political and military operational constraints that surprise attack is not a credible option. Each extreme proposition, as well as those in between, employs laborious calculations, movement tables, indicator lists, political-military reliability factors, and citations from Soviet doctrinal literature to indicate the certainty of each thesis. But surprise attack, by its very nature, defies the certainties that military planners insist on. It is a condition that is not normally anticipated and is rarely deterred. In the context of modern military history, surprise attack is, for the defender, a political-military problem that has not been solved.

Solutions to surprise attack problems may lie in the ability to describe clearly the reasonableness of those activities that functionally constitute surprise attack capabilities. This approach is not limited to a recognition of the adversary's preference, nor does it impose on him our views of his ingrained hostility. Rather, in a systematic calculation, it describes the critical factors of surprise attack that the military planner must account for, be he optimist or pessimist. There are, in fact, theoretical and current operational facets of surprise attack capabilities that challenge most Western orthodox accounts of the surprise attack problem. The purpose of this article is to illustrate

selected theoretical and current operational facets of Soviet surprise attack capabilities and constraints in terms of their reasonableness as realistic challenges to the current NATO posture. The aim is also to categorize those Soviet challenges that present the most acute problems for NATO forces.

Nature of the Problem

The history of Pearl Harbor has an interest exceeding by far any tale of an isolated catastrophe that might have been the results of negligence or stupidity or treachery, however lurid. For we have found the roots of this surprise in circumstances that affected honest, dedicated, and intelligent men. The possibility of such surprise at any time lies in the condition of human perception and stems from uncertainties so basic that they are not likely to be eliminated, though they might be reduced.²

ROBERTA WOHLSTETTER

The uncertainties associated with surprise attack problems are receiving increased attention among Western military planners. The origin of this concern is most often associated with a new round of estimates and studies that occurred between 1975 and 1977. Studies from Department of Defense organizations, private research corporations, and individual defense intellectuals have played a role in sharpening the debate on the Soviet buildup and the possibilities of Soviet surprise attack. As a result of the review on Soviet surprise attack capabilities, the issues, implications, and problems of surprise attack have been identified at a rather high level of abstraction.

For example, the central issue has come to be the cost of deterring Soviet surprise attack capabilities. The dilemma that NATO planners face of either placing prime emphasis on the immediate readiness of the force structure or of emphasizing long-term strength is in both cases a resource problem.³ It appears that NATO cannot afford both long-term strength and constant readiness. Yet failure to do so

may facilitate surprise attack during crisis periods.

The debate over the cost to improve NATO readiness has, to some degree, obscured the requirement to examine the operational feasibility of countering surprise attack. While it may be convenient to focus on a single measure of effectiveness (cost), the various political-military responsibilities of NATO cannot be reduced to a costing formula. The cost arguments do not consider the methodological difficulties of calculating the adversary's military options and the unquantifiable political consequences of dealing only with cost-effective choices.

Calculating the political and military cost of deterring (or failing to deter) surprise attack requires analysis, initially unconstrained by cost considerations, of the following:

- the factors which facilitate surprise attack;
- the readiness factors, which increase an attacker's risks in conditions of surprise attack; and
- Soviet concepts and capabilities for surprise attack.

These factors need to be examined in terms of both theoretical and practical measures. In this article, a preliminary analysis is offered that deals with (1) the theoretical facets of surprise attack (primarily from the Soviet view), (2) the universal human factors which, in theory, complicate counters to surprise attack, and (3) the current capabilities (beyond theory) of Soviet forces for surprise attack.

Theoretical Challenge

In Soviet military doctrine, surprise in military operations is not an either-or situation but a question of degree. Surprise is seen as a product of a victim's ignorance, preconceptions, and gullibility as well as the attacker's ability to deceive. Soviet doctrine describes the attacker's success in concealing his intent

and timing as essential to strategic surprise. Misdirecting the opponent's calculations of the time, strength, direction, speed, and manner of attacks is a factor in operational surprise. Tactical surprise derives from the unexpected weapons, techniques, and skills that are actually employed in combat.⁴ From the *Soviet Dictionary of Basic Military Terms*, surprise (*vnezapnost'*) is:

One of the principles of military art, ensuring success in battle and in operations. Surprise makes it possible to inflict heavy losses upon the enemy in short periods of time, to paralyze his will, and to deprive him of the possibility of offering organized resistance.⁵

To the Soviet definition, we might add that a surprise attack is an attack with minimum or no warning, which comes with such suddenness and intensity as to promote a decisive, major, and quick victory. It is a form of attack that is only truly understood in retrospect.

Other military establishments have views on surprise beyond the Soviet definitions. In Asian military doctrine, which includes the experiences of the People's Republic of China, the Democratic People's Republic of Vietnam, and the Democratic People's Republic of Korea, the chief element of surprise is deception. Success in war is based on deception, full preparation, and the use of surprise, lightning attacks. Asian variants on the notion of surprise emphasize techniques and modes of battle as important factors. For example, the use of special tactics in guerrilla warfare, night combat, psychological operations, mountain warfare, ambush, counter-envelopments, and rapid movements are all essential elements of surprise in combat. The framework in which these elements become effective is the mask of deception. As Sun Tzu notes:

I make my enemy see my strengths as weaknesses and my weaknesses as strengths, while I cause his strengths to become weaknesses and discover where he is strong.⁶

To assess a potential adversary's ability and preferences for surprise attack and his con-

straints in executing such an attack requires an accounting of the conceptual or theoretical aspects of surprise in the adversary's military doctrine. Therefore, among the methodologies employed in the study of surprise attack, the historical approach may be useful at the outset in order to determine continuities and discontinuities in military thought. The historical data allow description of:

- the adversary's theory of surprise attack, and
- sources of military views on surprise attack.

The importance of analyzing historical case studies has been illustrated by the excellent Rand Report, *Timely Lessons of History: The Manchurian Model for Soviet Strategy*. This study illustrates the importance of military history and historiography in Soviet military planning and the current operational emphasis the Soviets place on historical models. The modern significance of the Manchurian case has been explicitly affirmed or commended by Soviet analyses of the campaign's strategic design. A considerable body of knowledge has developed in recent Soviet military literature that refers to the Manchurian model and other lessons of history on the importance of surprise. The common conclusions in the Soviet literature are that:

- strategic and tactical surprise can be achieved,
- strategic surprise yields a low-cost method for victory,
- surprise of time can be induced by deception, and
- surprise in the Manchurian experience is a model for procedures in modern combined arms operations and prewar mobilization.

Soviet emphasis on surprise has continued and is authoritatively set down in V. E. Savkin's book, *The Basic Principles of Operational Art and Tactics* (1972). Savkin describes the

theoretical results of surprise attack based on historical analyses:

As a result of the stunning effects of surprise attacks by nuclear and conventional weapons and decisive offensive operations by troops, the enemy's combat capabilities are sharply lowered and the correlation of forces changes immediately. He may panic and his morale will be crushed. In a vague situation his overall and particular systems of control are disorganized to a greater extent, and the will of his commanders and the regular activity of staffs are paralyzed to a considerable degree. As a result of this, the enemy's commanders and staffs are incapable of organizing timely and effective counteraction. They have to hastily make on-the-spot changes in their previous plans without clarifying the conditions and status of the sides properly. The changes at times will not correspond to the situation at all. They will have to assign new missions to troops and under conditions of unceasing influence by the side which delivered the strike unexpectedly.⁷

Savkin's work on surprise attack describes two critical points on the nature of surprise in modern military operations. First, since the modern battlefield (in the Soviet view) favors the rapid employment of forces in fast-moving operations, one can expect that the defender generally will not have taken steps to eliminate the consequences of surprise attack. Insofar as the defender has not taken "counter-surprise" action, surprise attack can be *the deciding factor in achieving total success*.

Savkin's second point seems even more significant. After illustrating Soviet success in World War II surprise attacks, Savkin notes that, "it is possible to count on the success of surprise actions only on the condition of their prior planning, preparation, and timely implementation."⁸ Given the Soviet emphasis on the importance of surprise attack, one might assume that the Soviets have already completed their planning and, it appears, most military preparations to execute surprise attack in Western Europe if necessary. At minimum, there is a Soviet doctrinal requirement to attain (1) a state of deployed readiness for defense and surprise attack, (2) forms of secu-

urity and concealment, and (3) counter-surprise capabilities. To the extent that NATO security, concealment, and counter-surprise abilities do not exist, Soviet surprise is facilitated.

In terms of military operational theory, surprise attack presents a significant challenge to the defending force. However, most military operational difficulties can be solved, or at least modified, to some level of tolerance. The human perception problems are not so easily solved. In theory, as well as in historical experience, the human perception (or misperception) problems have most often defied resolution. These problems, perceptions, attitudes, and assumptions may be grouped under the general heading of the "behavioral dimensions" of surprise attack. The best illustration of the behavioral problems can be found in the work by Robert Jervis on hypotheses on misperception. The following hypotheses on misperception are relevant to surprise attack problems:

- Decision-makers tend to fit incoming information into theories and images. Theories determine what they notice.

- A theory will have greater impact on an actor's interpretation of data (1) the greater the ambiguity of data, and (2) the higher the degree of confidence with which the actor holds the theory.

- Actors tend to overlook the fact that evidence consistent with their theories may also be consistent with other views.⁹

The hypotheses of misperceptions beg questions concerning current NATO views of the Soviet threat. Given the fact that there is great ambiguity in the data on Soviet capabilities and intentions, is it possible to describe the U.S./NATO theory of the Soviet threat, and is there a set of perceptions about the Soviets that is generally held with high confidence by the NATO members? In other words, is there perceptual orthodoxy in NATO which facilitates Soviet surprise attack abilities? In terms of general planning assumptions, at least three

orthodox perceptions appear to have existed for several years:

- A Soviet attack against NATO can occur only during a period of tension.

- Capabilities to obtain information on Soviet preparations for an attack will produce unambiguous signals that will alert NATO.

- NATO can make the appropriate response under conditions of surprise attack and successfully defend against the Soviets.

These assumptions may be entirely appropriate for the present; however, in the past, assumptions such as these have usually led to disaster. The analytical scheme that follows illustrates the danger.

The first step in this analytical scheme involves a careful review of the indications and warning environments and the abilities and disabilities of both attacker and defender in major crisis events of the past. The following crisis situations were reviewed: the opening of World War I, the opening phase of the German attack in World War II, Pearl Harbor, the Soviet Manchurian attack in 1945, the Korean War (to include Chinese intervention), Soviet intervention: Hungary and Czechoslovakia, and war in the Middle East: 1967 and 1973. The primary requirement of the analysis is to extract those factors which proved most critical, on the parts of both attacker and defender, in the success or failure of past surprise attack cases.

Abraham Ben-Zvi recently analyzed a number of case studies of surprise attack aimed at revealing a conceptual framework through which the general problem of surprise could be understood. He concluded that in all the case studies:

In their determination to give priority to the strategic assumptions of possibilities over the tactical assumptions of actualities, the decision makers of the state about to be attacked attributed their own line of reasoning to the adversary. Overlooking the possibility that the enemy might not follow a similar train of thought, they failed to

cross the conceptual boundaries that separated them from their opponent.¹⁰

Ben-Zvi also noted the need to evaluate tactical information on its own without interpreting tactical data only in the light of a priori strategic assumption. In fact of experience, the tactical indicators are probably more important. The Ben-Zvi conclusions are borne out by a central theme that is common to the case studies: that the behavioral dimensions of surprise attack are the most complicated and the least understood.

Further, an examination of case studies on surprise attack supports the view that surprise attack is primarily a behavioral problem. It is only after the behavioral dimensions have been recognized that military operational analyses have any meaning. Some of these dimensions are illustrated in Figure 1. The challenges of surprise attack have been developed in a format that illustrates the relationships between the attacker and the defender in a surprise attack. It illustrates the relationship in terms of these critical categories: behavioral, environmental, procedural, technical, and doctrinal. Tracking the asymmetries of the attacker/defender relationship through the critical categories leads to conclusions about the critical properties of surprise attack.

The figure presents an interactive model of the critical properties of surprise attack. The data in the model are based on this author's analysis of seven cases of surprise attack. The analysis consisted of documenting the behavioral aspects of the attacker/defender relationship in these seven cases. For example, in each case, attackers and defenders (in the opening phase of war) in World War I, World War II, Pearl Harbor, etc., indicated in written memos and messages, etc., their assumptions and perceptions regarding themselves and the defender. These indications were extracted, paraphrased under the heading attacker rationale, and categorized to illustrate how the attacker/defender behavioral relationship operates. Figure 1, therefore, is a behav-

ioral model of the critical properties of past surprise attacks. The term "critical," in this context, suggests the properties which caused the attacker to succeed and ensured the defender's failure. In terms of the theoretical challenges of surprise attack, it is held that these critical properties are operative today as much as they were in the past. Further, the model illustrates why, as Henry Owen has noted, surprise attack usually works.¹¹

The left-hand column of the model indicates the categories under which the critical properties of surprise attack have been grouped. During the analysis of the various elements of the attacker/defender relationship (in seven case studies), a pattern emerged that suggested the five critical categories. The critical categories may contain an internal hierarchical relationship in both degree of importance and difficulty to explain. Initial research indicates that the attacker pays more attention to the first three categories than the last two. This subdivision also implies the difference between long-term goals (strategic interest) and those of more immediate, practical value. Another internal relationship exists between the categories in that they are not rigid. There is spillover between the various categories and the groupings of attacker/defender rationale.

Across from the five different categories of critical properties are sets of attacker and defender rationales, behaviors, procedures, tasks, reactions, interpretations, etc. The relationship between the attacker and defender in each category is not parallel. However, the relationships imply a form of parallelism. For example, under the behavioral properties of attacker rationale, the first item states that "the risks are extremely great, but we must proceed." There is a parallel response in terms of the defender rationale: "The risks are so great that the (rational) enemy will not attack."

A specific example of the data in Figure 1 can be illustrated through the critical category of doctrinal activity. Today, according to many defense analysts, Soviet military doctrine is

CATEGORIES	Attacker Rationale	Defender Rationale
<p>Behavioral properties include perceptions, attitudes, cultural values and norms, roles, and the dynamics of group interactions</p>	<p>Behavioral assumptions The risks are extremely great, but we must proceed We have no other alternatives National survival is at stake, and we must succeed Political necessity dictates an attack at this time Military necessity dictates an attack at this time in order to gain an advantage at the outset of an inevitable war Success depends on open, honest assessments of our situation, creativity and innovation in our planning and accurate assessments of the enemy Be positive in the approach: we will win.</p>	<p>Behavioral assumptions The risks are so great that the (rational) enemy will not attack Military activity does not make political sense at this time If the enemy attempts attack, he will fail We have a credible defense (by our standards), and the enemy should understand that we are strong Our plans account for enemy capabilities: those of us who developed the plans are committed to them the plan is set our defensive strategy is sound Our power is so great, our ideals so high that no one would dare an attack</p>
<p>Environmental properties include elements of the political-military environment that are subject to exploitation through deception and misinterpretation.</p>	<p>Manipulative tasks Create political environment that least suggests the use of military force Negotiating forums will serve as the main mode of developing the surprise environment and assessing the mood of the enemy Political deception must be based on clear but false signals; capitalize on enemy's preconceptions and biases with the disinformation he expects Desensitize the enemy in those areas critical to your military plan by establishing new, long-term patterns of normalcy Secure and control the plan, even from top leaders Perform overt military operations or activities which tend to indicate that no military conflict is imminent</p>	<p>Standard preparation Give minimum attention to tactical indicators that do not fit with our frame of reference (perception of the international-political-military environment) The situation is normal Our intelligence is good. We have statistical evidence to support our views The tensions that do exist in this area are normal The serious nature of an adversary's political/diplomatic behavior proves he has no intent to use military force Our "indications list" is current and comprehensive Security demands the continued compartmentalization of sensitive intelligence</p>
<p>Procedural properties include operational behavior derived from action plans, organizational and managerial habits, and concepts of "time" in battle</p>	<p>Procedures Coordinate political deception with tactical deception in communication procedures, communications security (COMSEC), troop movements, and schedules prior to the first phase of mobilization. Pattern the assault sequences of troops on the line against the enemy in terms of his time requirements (exploit his mobilization through political and propaganda activities, etc.). Activate special plans network for the "surprise" mobilization schedule. Perform final check on enemy's on-the-line readiness Activate COMSEC and C² deception procedures to project normal signals profile for the season Perform final intelligence check for timing and direction of the attack. Criteria are the requirement to do the greatest damage, produce greatest overall shock, disrupt enemy alert process and defense readiness condition response</p>	<p>Reactions Some activity is developing, pay closer attention to strategic indicators Assure that our forces are responsive in accordance with current plans Avoid interservice disputes regarding our differences over the enemy activity; these differences can be worked out Our observations to date confirm the fact that our current plans are adequate. (We still know what the enemy will most reasonably do.) Standard defense readiness condition procedures will be implemented as required Imply that we may begin to mobilize, our mobilization capabilities will certainly deter the enemy from any thought of military activity Inform the headquarters that we are in the best position to determine what is going on.</p>
<p>Technical properties include employment of undetected weapon technologies, extraordinary intelligence collection means, and unexpected efficiencies in battle</p>	<p>Objectives Research, development, test, and evaluation (RDT&E) programs are test coordinated with deception programs to mask new weapons, improvements in old systems Weapon improvements and new efficiencies in training and firepower will be masked in exercises Technical deception data will be aimed at the enemy's technical collection systems. Test programs and technical literature will focus on the impossible and insignificant (however, minor improvements in combat efficiencies will, in the long run, prove decisive) Sophisticated deployment schemes for transportation and emplacement of troops, equipment, ammunition, communication networks, and other combat and support units that exploit the technical, environmental, and weather/daylight limitations of the enemy's indications and warning systems</p>	<p>Observations Systems intelligence data are static. There is no need to track technical improvements to existing weapon systems of the enemy The enemy cannot deceive us in RDT&E activity, he is too far behind us. Pay close attention to strategic RDT&E incremental improvements in firepower rates, mobility, etc., are not significant Our technical intelligence base is excellent</p>
<p>Doctrinal properties include the processes by which military doctrines are developed, articulated, and integrated into combat operational capabilities, interpretations of foreign military doctrines, and the accounting for deviations between declared doctrine and doctrine on the battlefield</p>	<p>Role of doctrine Authoritative sources and institutional literature articulate doctrinal preferences in continuity with past views (or at least not in contradiction with) and in a manner which presents a normal (acceptable) rationale for pre-emptive capabilities Technical training includes significant departures from doctrinal norms for the sake of surprise attack Special doctrines (closely held) deal with special subjects such as "surprise attacks" and "war conclusion roles and missions" (surprise attack preparation and profiles represent significant departures from doctrinal norms, yet doctrinal norms will be re-established after the initial stage of the battle). Technological breakthroughs in weapons and support equipment that do not necessarily produce doctrinal changes but do make possible substantial improvements in the execution of the doctrine may not be revealed until the surprise attacks take place</p>	<p>Interpretations The adversary's doctrine is consistent. We know the sources of his doctrine, and the processes that impact his doctrine are similar to those which impact ours The enemy will not depart from his doctrine No dramatic shifts have occurred in hardware and technology, therefore, no need for changes in doctrine The minor changes that have occurred in technology and in training habits will probably be incorporated into the main body of doctrine</p>

Figure 1. An interactive model of surprise attack

both a body of technical military knowledge and an indicator of Soviet preferences for forms of attack. According to the research model, prior to the time of a surprise attack the sources of adversary doctrine would continue to articulate current doctrinal norms in a way to suggest that:

- No shifts in doctrinal views have occurred.
- Doctrinal preferences of today indicate continuity both in thought and in behavior.
- Doctrinal prescriptions suggest the ideal toward which progress is being made.

Yet, the attacker has in the past, through special planning mechanisms and organizational relationships, departed from his ideal doctrinal norms in order to execute the surprise attack. This form of doctrinal interaction and perception reinforces the defender's faulty assumptions and creates new options for the attacker. After the initial phase of war, the attacker's operational style is usually based on his normal doctrinal standards and operational habits. However, doctrinal revolutions can occur during conflict also.

There are those who will not allow the Soviets enough flexibility to execute surprise attack. The Soviet style is characterized as too rigid and, therefore, too vulnerable for innovation on the battlefield. However, it may be worth noting that the current Soviet commitment to the utility of surprise attack is also a commitment to flexibility not unlike the flexibility that Soviet armies did, in fact, demonstrate during WW II. The challenge to the defender (NATO) is to anticipate the reasonable means and conditions under which the Soviets can achieve flexibility and depart from (maybe exceed) normal operational and doctrinal standards.

Beyond Theory: The Deployed Challenge

The Soviet military buildup in Eastern Europe—whether one dates its origin to the first

five-year plan, 1928, or to 1968–69, when a new group of Soviet forces was added to the Pact—is a concept that has escaped definition in recent defense literature. This has been the case in part because an inappropriate question has driven the search for revelations about Soviet intentions. The question has been, Is the current Soviet deployment in Eastern Europe offensive or defensive? Some answer “defensive,” because history shows that Russia must always be concerned with her defensive posture or suffer another large-scale invasion. Others say “offensive,” because history also shows that Russia has continually expanded during the last ten centuries. What is missing from both positions is the recognition that the Soviet buildup, while currently a capable defensive force, is also developing characteristics which go beyond either offensive or defensive requirements. It may also be characterized as a pre-emptive deployment in terms of gross numbers, organizational arrangements, and operational style.

For the purpose of this hypothesis, one can confine the assessment to Soviet forces only and consider the following propositions:

- Current Soviet forces in Eastern Europe have achieved an in-place reinforced status (the classical indicators of attack will soon be permanently present with or without crisis conditions).

- A lengthy mobilization is no longer required, nor is it politically feasible.

- The doctrinal emphasis for the “pre-emptive deployed” Soviet force is on high-speed operations in an unrelenting offensive, in the context of a surprise attack.

- The performance characteristics of the deployed force include capabilities to execute surprise attack either in the conventional or nuclear mode, but they increasingly emphasize the requirement to maintain the conventional for an advantageous period as well as to change from the conventional to the nuclear mode.

These propositions are not meant to suggest that the Soviets prefer the surprise attack or,

for that matter, the military solution in Europe. However, the nature of the political setting in Eastern Europe and the Soviet perception of military threats in the area simply require the development of pre-emptive capabilities to (1) provide for the defense of the East European and Soviet heartlands and (2) ensure the credible representation of Soviet interest in the mid-European buffer zone. In other words, these pre-emptive capabilities bear on the political as well as the military balance in Europe.

The deployed threat, however, does consist of a certain numerical strength in the form of 58 Soviet and East European divisions. The operational deployed threat would most likely consist of 27 to 30 Soviet divisions (in the initial phase) and, in John Erickson's terms, certain "earmarked" forces of the East German and Polish forces. The total pre-emptive force of 30-32 Warsaw Pact divisions is, by almost any firepower/manpower equation, adequate to

the task of presenting to NATO a critical security problem.

The maintenance of a pre-emptive force is also a critical problem for Soviet commanders. They no doubt must deal with a great number of operational problems and political constraints. However, Soviet perceptions of their operational problems and constraints have become the basis for substantial improvements in the forces. For example, there have been increases in artillery strength, greater resources for mobile air defense, and improvements in command and control.¹²

Significant changes have also occurred in aircraft deployments: increased performance of older aircraft, increased performance in all-weather capability, introduction of third-generation aircraft for ground strike missions, and modernization of air defense aircraft for secondary roles. The impact of these changes indicates that in terms of Western military planning, in the event of a surprise attack by Soviet forces, there will no longer be an adequate warning period. With the newly introduced aircraft, the Soviets may be able to launch an immediate offensive from their initial positions without a gradual buildup and without dependence on the "wave" principle of air attack.¹³ The combined improvements in air deployments and ground forces constitute a set of refinements that ensure the defensive, offensive, and pre-emptive utility of Soviet forces in Eastern Europe. Further, there is a continual emphasis on organizational and operational readiness factors to ensure the utility of the Soviet forces, whatever their assignment.

Among the current factors on the Soviet readiness utility listing, one finds the following requirements:

- Preparations for short, intensive operations
- Examination of theater command and control coordination demands
- Organizational arrangements for the management of multiple breakthrough zones

Figure 2. The deployed threat

Forward area:	58 divisions
	- 760,000 combat troops
	15,500 battle tanks
	2,500 tactical aircraft
GDR: Soviet troops	- 20 divisions
National	
People's Army	- 6 divisions
	1,000 tactical aircraft
CSR: Soviet troops	- 5 divisions
Czechoslovakia	
Socialist	
Republic	- 10 divisions
Poland: Soviet troops	- 2(3) divisions
Polish People's	
Army	- 15 divisions

Source: *International Defense Review*, February 1975, pp. 175-86.

- Establishment of superiority ratios in armor (5:1) and artillery (8:1) and provision for delivering superiority in manpower, mobility assets, and air defense to breakthrough zones
- Planning for reconstitution of divisional elements (replenishment and resupply in combat)
- Establishing time-critical criteria for the performance of each operational task
- Provisions for massive deception operations.¹⁴

In view of the readiness activities associated with Soviet forces in Eastern Europe, NATO military planners should consider how the Soviets view NATO's postures. Is it not possible that the Soviets recognize, as we do, that NATO's shallow rear, maldeployments, and dependence on mobilization and reinforcement facilitate the Soviet surprise option? Is it not also worth considering the minimum requirements for NATO forces to achieve an efficient state of readiness that specifically increases the adversary's risks in attempting surprise attack without intensifying tensions in specific crisis situations?

At minimum, both the consequences of Soviet surprise attack and an analysis of Soviet constraints must be displayed in a way that illuminates options other than the "either" of investing in long-term stability or the "or" of fixing the force for present security.

The potential consequences of the Soviet pre-emptive posture demand greater attention from the analytical community and from Air Force planners. The Air Force needs to state its own concept for the "initial phase" of defense, which clarifies the following operational issues:

- What is the USAF's role in deterring surprise attack?
- How will the Air Force consume its warning time in Europe?
- How will the Air Force operate under the conditions of surprise attack?
- What planning factors should govern the

employment of U.S. Air Forces in a short-warning scenario?

Air Force planners are now considering these operational issues and their implications in terms of budgetary considerations, short-term and long-term consequences, U.S./NATO political constraints, and trends in the Warsaw Pact. However, the actions of the future, whether under the rubric of readiness or modernization, require some overarching objective to guide Air Force priorities. If our planning experiences of the past reveal anything, they show that we have not placed sufficient planning priorities on clearly developing trends in the Warsaw Pact forces. The developing pre-emptive characteristics of Warsaw Pact forces may be only dimly understood today. However, today's trends have a way of maturing rapidly. The Air Force can keep pace with the maturing threat by allowing some planning excursions that deal with trends. In terms of readiness planning, the Air Force can accommodate this need by organizing the readiness business into categories of effort, such as the following:

- Category I—Readiness initiatives for improving the initial effectiveness of TACAIR in Europe
 - Mobilization/deployment innovations
 - C³ enhancements
 - Logistics changes
 - Indications-warning alert procedures
- Category II—Readiness initiatives for quick-fix
 - Munitions programs
 - Training
 - New equipment integration
- Category III—Readiness initiatives for the long-term (extended readiness planning)
 - Long-range readiness requirements
 - TAC/TRADOC joint planning

There may be other organizational forms for the future management of Air Force readiness plans and programs. One should expect change in the management approaches to readiness as changes occur in U.S. perceptions. For the present, however, the Air Force will increasingly be relied on to solve many of the initial defensive problems in NATO. The Air Force

has an opportunity to define a major role for itself in deterring the Pact's pre-emptive power or providing the main, initial defense should deterrence fail.

Whatever resource solutions we finally apply to NATO's posture, we must constantly note the conceptual difficulties in developing strategies for defense. Our strategies and operational plans are governed by sets of assumptions, regionally oriented perceptions (or misperceptions) which, in a sense, institutionalize both the behavioral and operational factors that facilitate surprise. For example, the process by which regional strategies are decided and attendant operational plans are determined is based on sets of expectations both about the potential attacker and the defender. These expectations may be, and usually are, biased by several external forces, such as political and fiscal priorities. Yet the expectations in strategies and plans eventually prescribe the acceptable behavior of those who must participate in their development and implementation. Therefore, conceptually, surprise can result when an adversary's actions fall outside a set of orthodox expectations. And, to the extent that military planning functions omit the continuing need to test expectations and trends and understand the differences between operational reality and political constraints, military establishments can become reactive bureaucracies unable to support either political initiatives or unorthodox operational requirements. Yet there exists no calculus that accounts for institutional factors, self-deception, and the impact of planning techniques.

IN DISCUSSING the theoretical and operational elements in the calculus of surprise attack, it is easy to drift into the hysteria of uncertainty and fear so often associated with descriptions of the Soviet threat. This tendency may be unavoidable. However, it should be understood that no attempt has

been made to provoke unfounded fears. In terms of Soviet designs on Western Europe, or any other region, there may be no need to worry about Soviet military aggression. As Hannes Adomeit has noted:

What is remarkable in Soviet foreign policy over the past decade is its failure to fulfill Western predictions that the newly-won status as a super-power somehow required expansionist behavior and risky ventures "commensurate" with it.¹⁵

It would be easy to make the case that the Soviets will avoid the risks associated with either political or military confrontations with the West. This risks-avoidance behavior is not only characteristic of Soviet risk-taking history but also recognizes the political constraints imposed by the current state of affairs in Eastern Europe.

However, to dismiss the need for comprehensive military planning on the basis of the Russian past and the uncertainty of recent trends is to miss the major fact recognized by the Soviet deployment in Eastern Europe. That is, the Soviets recognize both the need to avoid military confrontation and the requirement to deal with unexpected, unplanned for crises promptly and successfully. They also apparently recognize that the conflict potential between the U.S.S.R. and the individual East European states will be greater in the future, not less. And, in the context of evolving internal crises, the Soviets may be forced to employ military forces.

The Soviet Union has invested much treasure in the East European buffer zone since 1946. It is a zone of strategic importance to the Soviets, yet it is increasingly a difficult area to manage. It is a management problem that may require extreme solutions. It is a management problem that could involve Western Europe; indeed, it has been affected by West European political and military postures for decades. Finally, it is the type of management problem which, on the military level, can be dealt with best by the existence of and ability to use pre-emptive capabilities.

As the Soviet Union has recognized that the more likely military confrontation in Europe may be borne out of a sudden crisis which must be quickly resolved, so must NATO planners admit to the need to deal with unorthodox, surprising events. As the calculus

of surprise attack suggests, the greatest challenge in planning to deal with the unorthodox is not the discovery of fixed military operational solutions. The challenge is to learn how to deal more precisely with uncertainty.

Office of the Secretary of the Air Force

Notes

1. Cited in W. T. Jones, *A History of Western Philosophy: Kant to Wittgenstein and Sartre* (New York: Harcourt, Brace, and World, Inc., 1969), p. xxiii.
2. Roberta Wohlstetter, *Pearl Harbor: Warning and Decision* (Stanford, California: Stanford University Press, 1962), p. 397.
3. In this context, "long-term strength" refers to both the process of improving NATO's general posture over time and the specific ability to build up forces in a crisis period and sustain combat power for a longer term than the adversary.
4. John Despres, Lilita Dzirkals, Barton Whaley, *Timely Lessons of History: The Manchurian Model for Soviet Strategy* (Santa Monica: Rand Working Note 9151-NA, July 1975), p. 80.
5. General-Colonel A. I. Radziyevskiy, editor, *Dictionary of Basic Military Terms* (Moscow: Voenizdat, 1965), p. 35.
6. Sam C. Sarkesian, editor, *Revolutionary Guerrilla Warfare* (Chicago: Precedent Publishing, Inc., 1975), p. 169.
7. V. E. Savkin, *The Basic Principles of Operational Art and Tactics* (Moscow: Voenizdat, 1972), pp. 232-33 (Translated and Published by USAF in Soviet Military Thought, No. 4.)
8. Ibid.
9. Robert Jervis, "Hypotheses on Misperception," *World Politics*, April 1968, pp. 454-79.
10. Abraham Ben-Zvi, "Hindsight and Foresight: A Conceptual Framework for the Analysis of Surprise Attacks," *World Politics*, April 1976, cited in *DOD Current News* #112, 10 June 1976, p. 8.
11. Henry Owen, "Surprise Attack It Usually Works," editorial, *Washington Post*, November 10, 1976. Mr. Owen's work begs the question: When has surprise attack not worked? Very little has been done in military histories/case studies to show how surprise attack has failed. However, it seems most appropriate to understand how surprise attack works before investigating how it fails.
12. John Erickson, "The In-Place, Unreinforced Soviet Attack," *Soviet Military Digest* (University of Edinburgh), October 1976, p. 5.
13. Peter Borgart, "The Air Attack Potential of the Warsaw Pact," *International Defense Review*, April 1976, p. 43.
14. From Erickson, op. cit.
15. Hannes Adomeit, "Soviet Risk-Taking and Crisis Behavior: From Confrontation to Coexistence?" *Adelphi Paper No. 101*, International Institute of Strategic Studies, 1973, p. 37.

AIR UNIVERSITY REVIEW AWARDS PROGRAM



Colonel Robert D. Rasmussen, USAF, of the Europe/NATO Division, Directorate of Plans, Hq USAF, has been selected by the Air University Review Awards Committee to receive the annual award for writing the outstanding article to appear in the *Review* during fiscal year 1978. His article, "The Central Europe Battlefield: Doctrinal Implications for Counterair-Interdiction," was previously designated outstanding article in the July-August 1978 issue.

"THE SHASTA DISASTER"

forgotten lesson in interservice relations

DR. MURRAY GREEN



General Douglas MacArthur, Army Chief of Staff, and Admiral William Veazie Pratt, Chief of Naval Operations, signed an agreement in January 1931, the validity of which was to be strained in the S.S. *Mount Shasta* exercise the following summer.

A FEW months after Billy Mitchell resigned from the U.S. Army in 1926, the Army Air Corps Act came into being. As it offered a less than half-a-loaf solution to the air leadership's vision of a proper national defense, the law did not still the clamor for a unified organization in which air, land, and sea forces would serve as equal partners.

A fresh opportunity was inadvertently provided by the so-called MacArthur-Pratt Agreement, signed in January 1931 between two sovereign military powers. The Army and Navy had carved up the territory to lessen interservice friction between them and to cut off the air zealots before they regained the momentum lost when Mitchell retired to Boxwood, his wife's estate in Middleburg, Virginia.

The agreement, signed by General Douglas MacArthur, who had just taken office as Army Chief of Staff, and Admiral William Veazie Pratt, who had just come aboard as Chief of Naval Operations, proclaimed their respective domains—the one over land operations, the other over the seven seas. Between the cracks of their empires, however, an aggressive Air Corps leadership saw a new opportunity to assert its right to participate in the coastal defense of our shores against invasion. And that right included the training of long-range bomber crews to search the seas and attack an enemy armada before it could land.

That mission interpretation was not exactly shared by General MacArthur. In fact, the Chief of Staff expressed a willingness for all military aviation to be eliminated by treaty, if that could be arranged at the World Disarmament Conference soon to convene in Geneva. Admiral Pratt vetoed that idea, however. It seems that Navy planners had just begun to appreciate the potential offensive power that the carrier task force could add to the fleet.

In this setting, in the summer of 1931, just a decade after Mitchell's triumph over the German warships off the Virginia Capes, the air advocates saw their chance to grab the limelight and strike a public relations blow for freedom and equality and to regenerate among congressional supporters a fresh surge of legislative action. In July of that year, Major General James Fechet was the lame duck Chief of Air Corps preparing to turn over the controls to Major General Benny Foulois in just a few months. An idea was born and given impetus in the executive staff Office of the Chief of Air Corps (OCAC), headed by Lieutenant Colonel Frank Andrews, to test bomb a steel cargo ship of World War vintage. The S.S. *Mount Shasta*, declared surplus, was to be sited off the Virginia Capes, then set on a slow, straight course. Bombers from the 2nd Bomb Group, commanded by Major Herbert

"Bert" Dargue stationed at Langley Field, Virginia, were to fly to sea, search out the *Shasta*, and bomb it to the bottom, thus demonstrating the Air Corps capability to meet its obligation for coastal defense.

There seemed to be little reason to doubt that the exercise, scheduled for mid-August, would be a success. When staff planning papers trickled across Constitution Avenue from the Munitions Building, Navy supporters hastened to discount any larger significance that might be attached to the exercise.

Nor were there doubts among Air Corps sponsors. Dozens of reporters, including crews from Fox Movietone News and Paramount News, were invited to record in words and pictures the spectacular destruction of the S.S. *Mount Shasta*.

The mission started confidently, perhaps reminiscent of the first Battle of Bull Run, where spectators came from Washington in carriages bringing their picnic lunches. Shiploads of observers, regaled with food and drink, had been invited to witness the sinking of the *Shasta*.

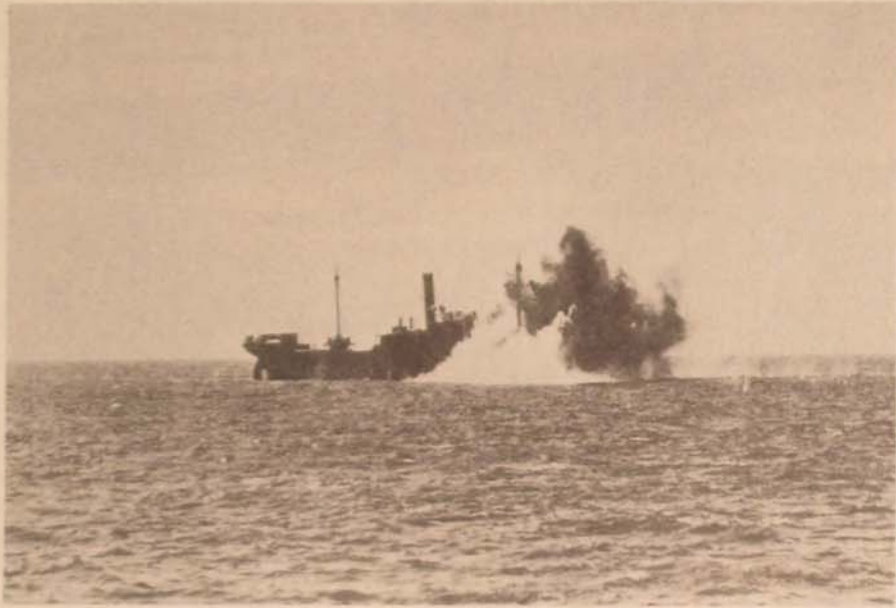
But first it had to be found. On August 11, starting day, the weather was less than ideal, but everything was in place. Second Bomb Group planes went out and searched and crisscrossed their tracks, but they could not locate the *Shasta*. At first observers were surprised, then aghast, and finally smirking with delight that the bombers were unable to locate a slow-moving target on a known course. By afternoon, the weather socked in, frustrating further search efforts.

Three days later, the skies cleared enough for a second mission. But according to the post-mortems filed with headquarters, the bombers came in at 5000 feet instead of 12,000 feet, as they had been trained to do. Officials in charge had been persuaded to change the mission so the news photographers could get better pictures. In addition, the bombers were

The Shasta Misadventure

Ambitious officers of the fledgling Army Air Corps sought to establish a role in coastal defense with the bombing of the surplus S.S. Mount Shasta in August 1931 off the Virginia coast. In the thwarted exercise, it was a Coast Guard volley that finally sank the Shasta, to the chagrin of the Army and its eager new Air Corps.







In May of 1938 the Air Corps proved itself in a more difficult mission—by flying three B-17s some 700 miles over the Atlantic and breaking from the clouds to engage the Italian liner Rex, this time with camera—but even success did not please the Army Chief of Staff, General Malin Craig.

armed with smaller bombs than they had originally trained with.

So it was stated, but neither reason seemed valid.

The fact is that the bombers found the *Shasta* only belatedly, but then they could not sink it. The Navy's public relations apparatus leaped to the offensive. Writing under the headline "Naval Supremacy in Defense Found Upheld by Air Bombers' Failure to Sink Mer-

chant Ship," Captain Dudley Knox, USN, gloated in the *New York Herald Tribune*. "For three days, the lightly constructed, entirely unarmored, and otherwise defenseless merchant ship, the *Mount Shasta*, survived efforts to sink her by bombing." Afterwards, Captain Knox wrote, the vessel "was then finally sunk by a few shots from one-pounders, scarcely more than pop-guns, fired from an attending Coast Guard vessel to prevent her from be-

coming a derelict menace to navigation."

The *New York Evening Post* remembered Mitchell's test-bombings off the Virginia Capes a decade earlier and said "the Navy evened up an old score." Edward Folliard, a young reporter covering the story for the *Washington Post* from a nearby Coast Guard cutter, wrote: "The Air Corps took a terrible beating out here today."

General Foulois, Air Corps Chief-designate, was called to account by the fuming General MacArthur. Foulois disclaimed personal knowledge of the affair, saying he learned of it in the press. Years later, Foulois was more forthright in his autobiography, writing that he was "against the idea because I saw it as nothing more than a reopening of . . . controversy." He said the project had been approved by the General Staff—not likely if the details had been disclosed in advance—and that "Jim Fechet overruled me and took charge of the preparations."

While others busied themselves protecting their flanks, Frank Andrews accepted responsibility for the mission. Hap Arnold was worried "because the newspapers all over the country have lambasted us," but Andrews replied, "What worries us most is the possibility that something is wrong with our training and our ability to attack targets at sea." Arnold, at Wright Field, Ohio, was slated to command the First Bomb Wing at March Field, California, with a coastal defense mission identical to the one so badly bungled by Bert Dargue and his group. Arnold feared the War Department might relinquish the mission and abort his new job.

Captain Dudley Knox had called it "the *Shasta* Disaster," but its dimensions were larger than the canvas on which he painted it. The immediate consequence was that General Foulois displaced Lieutenant Colonel Andrews and six other officers from Air Corps headquarters when he took command. At higher levels, the Navy was concerned lest the MacArthur-Pratt Agreement, as interpreted by the Army

Air Corps, could erode the Navy's traditional control of operations on or over the high seas. When Admiral Pratt retired in July 1933, the Navy pressed General MacArthur to rescind the offending agreement on grounds that it was a "purely personal" arrangement that should not be honored by Admiral William Standley, successor to Pratt.

MacArthur at first took exception to the view. He told a congressional committee that he regarded the issue of coastal air defense as "completely and absolutely settled." But it became somewhat less than settled for him as well as for the Navy in August 1934 when Arnold daringly led ten B-10 bombers in formation 950 miles diagonally across the North Pacific Ocean from Juneau, Alaska, to Seattle, Washington. Newspaper headlines that followed the triumphant fliers as they made their way back to Washington, D.C., proclaimed the beginning of a new style of warfare.

The Navy called an urgent meeting of the Joint Board (predecessor to the Joint Chiefs of Staff). MacArthur, representing the War Department as senior member of the board, found consistency of position a lesser virtue than joining the Navy in shoving the upstart Air Corps back into its place. First, MacArthur directed in his own hand that no awards or other recognition be accorded the offending fliers. And, further, the Chief of Staff agreed on 26 September 1934, to redefine service roles and missions as follows: the Navy would have "paramount interest" in air operations at sea when the fleet was present and free to act, while the Army should have "paramount interest" in operations over land. Neither service was to build or operate planes intended to duplicate the functions of the other.

That last sentence of the restated agreement hurt the Air Corps by undermining the rationale for buying in quantity the B-17 Flying Fortress, which was just coming off the drawing board. The B-17 was to be the centerpiece of Air Corps designs for a strategic air capabil-

ity, and that included extended flying over water.

Two months later, in November 1934, the Federal Aviation (the Howell) Commission, established by President Roosevelt to survey the soundness of America's civil and military aviation, heard closed-door testimony by Rear Admiral Ernest J. King, Chief of the Bureau of Aeronautics (BuAer), that the Army should be restricted to building only planes it needed for overland flying. According to Captain George C. Kenney, who sat in at the hearing, Admiral King said: "In case we need some Army bombers out there, we'll have a Navy airplane fly out there with them and show them how to get back to North America." Admiral King, years later as Chief of Naval Operations, denied having made such a statement.

The upstart Air Corps refused to stay in place. By 1938, Douglas MacArthur was safely away from Washington, sent to reorganize the defense of the Philippines. Major General Frank Andrews, back in power as General Headquarters (GHQ) Air Force commander, was still willing to take chances to stretch the military air mission, even if it meant stepping on sensitive toes. In May 1938, three B-17s, commanded by Major Caleb V. Haynes, flew from Langley Field to search for another ship, this one far out

to sea. The Italian liner *Rex* was more than a day's journey from New York Harbor, about 700 miles away. Despite heavy weather en route, First Lieutenant Curtis LeMay, flight navigator, headed those planes right to their target. As they broke out of the clouds, Major George Goddard, father of American aerial reconnaissance, turned on his equipment, producing sensational pictures from just above masthead height of dozens of passengers waving from the deck. Goddard's pictures made the front page of the *New York Herald Tribune* and many other newspapers around the country.

The following day, General Andrews at Langley Field received an irate call from General Malin Craig, successor to MacArthur as Chief of Staff. Henceforth, all GHQ Air Force planes were to be restricted to flying not more than 100 miles out to sea—for safety reasons.

Those restrictions were not lifted in some instances until nearly the eve of America's entry into World War II. The suppressed hostility that showed itself between the services during "the *Shasta* Disaster" now elicits a few smiles among survivors. But it was nothing to laugh at on 7 December 1941, when real disaster struck at Pearl Harbor and the Philippines.

Silver Spring, Maryland

. . . safety will be the sturdy child of terror,
and survival the twin brother of annihilation.

SIR WINSTON CHURCHILL
House of Commons, March 1, 1955

THE CHALLENGE OF CLAUSEWITZ

GROUP CAPTAIN R. A. MASON, RAF

IN HIS introductory essay to the recent Princeton edition of Clausewitz's *On War*, Michael Howard concluded.

It remains the measure of his genius that, although the age for which he wrote is long since past, he can still provide so many insights relevant to a generation, the nature of whose problems he could not possibly have foreseen.*

To an airman in the last quarter of this century, Clausewitz presents a particular and very important challenge. It is not simply to read and understand him, which in all conscience may well seem challenge enough. Nor is it even to identify and use those insights that transcend the 150 years of mechanized warfare, evolution of air power, thermonuclear deterrence, and the increasingly complex weapon systems of a rapidly advancing micro-technological revolution. I suggest, however, that a survey of some of the insights, in light of contemporary military problems and circumstances, can lead ultimately to a very clear recognition of what the challenge actually comprises.

the political objective

No thinking Western airman would disagree that war must belong to policy and that "Policy is the guiding intelligence and war only the instrument, not vice versa." (p. 607) Sadly, even the most cursory survey of international

relations in our own generation will confirm that war, or the threat of war, remains a ready, if uncertain, instrument of policy at all levels below that of direct superpower confrontation. Indeed, it may be plausibly argued that the very presence of nuclear power stalemate places a high, if riskier, premium on more traditional, conventional habits of wielding the military instrument. It may also be that the Soviet government has learned that particular lesson rather more easily than the more liberal minded, diffident Western democracies.

But we would also agree that war is "to be fully consonant with political objectives, and policy suited to the means available for war." (p. 608) How would Clausewitz assess the political objectives of the Western alliance? As an allied airman, I only offer the questions rather than give the answers, which are the prerogative of my political masters.

Yet, are we seeking to check the spread of Communist ideology? Are we seeking to protect the territorial integrity of alliance members? Are we seeking to reduce the existing control and influence of Communist regimes? Are we seeking to preserve essential economic resources or interests? Is any one objective paramount, or is there a blend of more than one? If there is a blend of more than one, there may also be a conflict of priorities, and before an appropriate instrument of policy is selected, either a clear-cut decision must be made or the consequence of conflicting interests accepted and understood. A few moments' reflection over events in Europe in 1945 and more recently in Southeast Asia will illustrate what can happen when the military instrument

*Karl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton, New Jersey: Princeton University Press, 1976), p. 44. All quotations in the article are from this book, and the page numbers follow the quotations. For an extensive review of this new edition of Clausewitz, see Lieutenant Colonel David MacIsaac, "Master at Arms: Clausewitz in Full View," *Air University Review*, January-February 1979.

is not wedded to clearly defined political objectives.

Nor is it sufficient for political leaders to argue that real life is not like that; that shifting international relationships and changing perceptions of interests cannot be expected to produce such simplicity. Is it too critical to suggest that the evaluation and selection of long-term priorities is the primary responsibility of the statesman?

the centre of gravity

Assuming that the political objective has been clearly defined and assuming that the instrument of policy is to be military, we see that Clausewitz explained quite clearly what the next step should be.

One must keep the dominant characteristics of both belligerents in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed. (pp. 595-96)

In the event of an East-West confrontation, where would the centres of gravity be located? I have an uneasy feeling that ours may not be in our military strength, conventional or nuclear, but in the fundamental nature of democratic Western society or in the sources of economic power that sustain it. If so, then the energies of a shrewd potential opponent might be best directed against our public opinion on the one hand and against the heart of our internal and external economic resources on the other.

The potential opponent's centre of gravity may well be very different. It is unlikely to be the national will in the U.S.S.R. Some may argue that it could be one of Clausewitz's other options: the capital city, especially in a highly centralized bureaucratic state in which there might be national minorities and others resentful of the centralized control. This option, however, would presume that an attack on the capital city would also destroy the central

government, and, in any event, such a policy would have horrendous implications for all the nuclear powers and many others as well.

Would alliance cohesion be a likely centre of gravity? Perhaps, but it may well be argued that the first attack, nuclear or otherwise, on Polish, Czechoslovak, or Hungarian territory would immediately validate thirty years of Soviet propaganda and convert potentially patriotic Eastern-European armed forces into bitter opponents of the West. How far, one wonders, would this speculation be borne in mind when nuclear strikes against targets in Eastern Europe were being considered?

Or should we accept Clausewitz's most favored assessment and assume that the centre of gravity of Soviet strength does, in fact, lie in her armed forces and, in the most likely scenario, in those forces intended for use as a military instrument in Central Europe? If we consider the fundamental, original, and enduring roles of the Red Army to be the midwife of the Bolshevik Revolution and mainstay of both external policy and internal structure, then perhaps the idea has much to commend it. It is intriguing, if a little mischievous, to reflect that a catalyst of revolution in 1917 was the military collapse of the previous regime.

what kind of war

There is, happily, no evidence that Western policies of defence, deterrence, and détente are about to fail. There are certainly no envisageable circumstances in which the Western allies would wish to initiate a war of any sort with the Warsaw Pact forces. Nor, indeed, is there any evidence to suggest that the political leadership of the Soviet Union desires anything other than peaceful coexistence; although their definition of that condition may be open to different interpretations.

Assessments of intention, the essential ingredients of a "threat," are again the responsibility of the statesman. But no government in an uncertain age can afford to be vulnerable to

the whims of another, and military men in both East and West must plan accordingly. In so doing, they should bear one thought very much in mind:

The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish by that test the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something that is alien to its nature. (p. 88)

In short, let us plan for the war we are quite likely to have to fight, which is not necessarily the war we would like to fight.

In any foreseeable scenarios, war is likely to occur at a time and place of the enemy's choosing. He is likely to possess the advantages of at least an element of surprise and initial concentration of force. Nor may he be deterred by the prospect of heavy losses. He is likely to attack with great speed, seeking specific political objectives. If, on the other hand, war should ensue as the result of a spasm reaction to internal pressures or from any other act of political desperation, Clausewitz's idea of war as an act of violence "without logical limit" would assume a reality that would make the rest of his teaching irrelevant.

So, assuming the first case, rationally explicable in Clausewitzian terms, have we in fact placed sufficient emphasis on detecting surreptitious Soviet military deployments? Have we ensured that enough of our forces would survive a surprise conventional attack along the lines explained in Soviet military literature? Have we adequately identified the essential ingredients of blitzkrieg as speed and concentration of force and prepared our defences and counterattacks accordingly?

If our assessment is correct, our military objective may well be to neutralize the Soviet military forces in the blitzkrieg as an instrument of Soviet policy. Ideally, that would be done by destruction, but it may be accomplished equally well by stopping, blinding, dispersing, or, within the framework of NATO Strategy 14/3, slowing them down sufficiently

for appropriate allied political decisions to be taken.

Having reached this point, have we stressed sufficiently the irreplaceable contribution of allied air power to this scenario? In the geographically restricted territories of Western Europe, it may well be that air power, using the third dimension, could most speedily evade a first attack. And, certainly, only air power can concentrate firepower, either its own, transported or distributed, quickly enough both within a theatre or from beyond it. Air power offers survivability, speedy reaction, and the ability to concentrate counterforce with a high degree of accuracy, using a wide variety of precision and aerial weapons delivered, if necessary, from outside the range of terminal defences—provided that our aircraft are not dependent on several thousand yards of runway on a small number of airfields lacking hardened facilities for ground crew and engineering support.

resources

Such reflections prompt further questions about the provision and management of our resources, not just for the opening of a conflict but for its continuation. "We must gauge the strength and situation of the opposing state. We must gauge the character and abilities of its government and people and do the same in regard to our own." (p. 586) We must consider "the governments' strength of will, their character and abilities." Note, *all* governments, etc.—ours and theirs.

How much effort and resources are our countries prepared to devote? Are our military strategies in harmony with that assessment? The assessment is difficult to make and, even when sought, may prove to be inaccurate. There is reason to assume that President Johnson and his advisers acted very circumspectly between 1965 and 1967 in Southeast Asia, partly because of memories of Chinese intervention in Korea and fear of Soviet re-

sponse to heavy blows against North Vietnam. But the subsequent policy of carefully graduated escalation seems to have hardened North Vietnamese resolve, allowed for equally graduated responses, and, above all, sapped the determination of the American population to support what appeared to be an interminable conflict with no "victories." It is, therefore, just as essential today that our choice of military instrument is appropriate to the character of our governments and people. The corollary of military subordination to political control would, however, seem to be the military right to seek assurance from those political leaders that the military instrument, once chosen, will be given the resources and support it requires to discharge its responsibilities effectively.

offence and defence

If we are to be the chosen instrument, we must then carefully assess, with Clausewitz, the relative merits of offence and defence. Could we, for example, choose to wait for a "culminating point" in a Warsaw Pact offensive? If our political objective is to preserve Western European territory, can we afford to fight conventionally westward and then back again, perhaps with nuclear weapons eastward? Would Clausewitz select a strategy that had a good chance of stopping an offensive at the outset but with minimum risks of nuclear escalation?

How will the new generations of precision munitions affect the relative merits of defence and offence? For example, bearing in mind the likely size of a Warsaw Pact massed attack and the attrition rate which it is likely to accept, can we provide an effective defence based on one-to-one weapon characteristics, or should we be emphasizing area submunitions or air-dropped mines? If, on the other hand, we are planning to reinforce rapidly threatened areas, are we paying sufficient attention to counter-measures against area submunitions and air-

dropped mines? And how can the effects of low yield nuclear devices and perhaps chemical weapons be balanced in the equation? Overall, would Clausewitz, as a European, consider that we are in danger of fighting a defensive war for the enemy's objectives on or over our territory at a time of his choosing while our ability to strike at his heartland is inhibited by optimistic arms agreements?

friction and fog

But however we choose (or are forced) to fight, we can be certain about two ideas as about no others from Clausewitz: "Friction" and "the Fog of War." Friction is the "force that theory can never quite define" which "is everywhere in contact with chance" (p. 120) and is "the resistant medium" that distinguishes real war from the theory itself. Fog is "the general unreliability of all information," which acts like twilight or moonlight "to make things seem grotesque and larger than they really are." (p. 140) The two will interact in future wars as never before.

Bad enough with World War II radios, landlines, and signals—how much worse in an environment saturated by electronic warfare. Never will the individual airman have need to call on so much inner strength and common sense; never will he have been so required to understand and remember exactly what is demanded of him.

Clearly, modern command, control, and communication equipments are powerful force-multipliers, but we must ensure that in war, as opposed to commercial displays or simulated peacetime exercises, they really do enhance our strength without imposing a rigidity of operation and dependence that would make us vulnerable to blinding and paralysis. Indeed, if we believe that the potential opposition is heavily dependent on close control for its military effectiveness, are we in fact devoting sufficient effort to projecting fog and friction in his direction?

leadership

If there is to be political uncertainty, the need to identify centres of gravity and, at the tactical level, decisive points, to assess the defence/offence equation, and actually to fight a war impeded by friction and enshrouded by fog, then what qualities should we be seeking to inculcate in our generals? Perhaps even the potential Pattons and Montgomerys can benefit a little from advanced training on their way to the top.

In his chapter "On Military Genius," Clausewitz asks for a "harmonious combination of elements" (p. 100) that is almost superhuman: courage, determination, imagination, intellectual gifts of "a power of judgment raised to a marvelous pitch of vision, which easily grasps and dismisses a thousand remote possibilities which an ordinary mind would labor to identify and wear itself out in so doing." (p. 112) One wonders how often that catalogue of qualities has appeared on an officer's efficiency report.

Nevertheless, it presents quite an educational and training target; perhaps more edu-

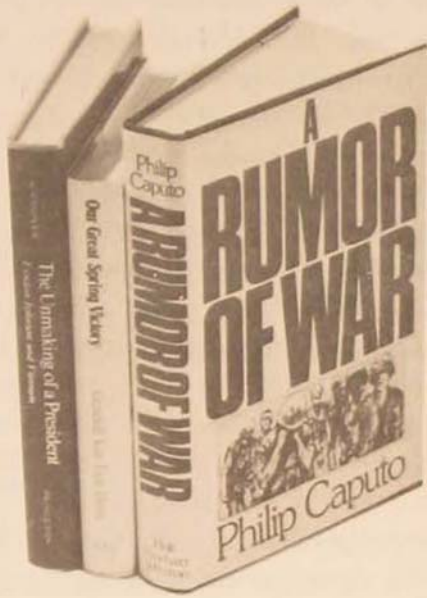
cational than training. Perhaps the general's mind is indeed best formed by "the knowledge and the direction of ideas it receives and the guidance it is given," perhaps, indeed, "Great things alone can make a great mind, and petty things will make a petty mind unless a man rejects them as completely alien." (p. 145) I should like to think the training and education that we provide bear that distinction in mind and encourage the emergence of leaders of who Clausewitz would be proud.

THE RECENT edition of Clausewitz's *On War* by Professors Brodie, Howard, and Paret offers airmen the opportunity to read and reflect on Clausewitz a little more easily. If we do, his fundamental challenge will quickly become evident. His importance to us will be measured not so much by how deeply we think about him as by how deeply he makes us think. The value of *On War* is not to help us decide precisely what he meant but to help us decide precisely what we mean today.

Royal Air Force Staff College
Bracknell, England

Group Captain Mason writes as an individual Royal Air Force officer and not as a spokesman for any department of the British Ministry of Defence.

R books and ideas



THE SOUTHERN DUCK WANTS TO LIE DOWN

COLONEL JAMES L. MORRISON, JR., USA (Ret)

ANGERED and bewildered, I, an American adviser, watched Nguyen Cao Ky's airplane take off from the Qui Nhon airstrip and disappear in the distance. For no fathomable reason everything had gone wrong. Generally, the staff of my Vietnamese division could be counted on to outdo itself in staging elaborate "dog and pony shows" for VIPs. Yet on this occasion—a visit by the head of state, no less—the performance had been so perfunctory and shabby that it bordered on insult. The

commanding general had boycotted the entire proceedings; the honor guard had turned out looking like "Coxey's army," and the section chiefs had delegated their briefing responsibilities to giggling, bashful aspirant-lieutenants. Furthermore, the instant the last speaker had finished his fumbling presentation, the prime minister and his entourage had been hustled back to the airstrip without even being afforded an opportunity to visit the latrine. The more bemused because a week earlier the staff had put on an impressive production for the American ambassador, I turned to my ARVN counterpart and demanded an explanation. With unaccustomed sharpness, the Vietnamese officer snapped, "Ky might look like George Washington to you Americans, but to us he's just another small-time warlord." That comment jarred me into an unsettling realization. Despite lengthy preparatory schooling and eight months on the job, I still did not understand the people with whom I was working.

Unfortunately, such ignorance was the norm. Practically every commentary on the war makes it clear that few, if any, of the Americans involved, from the President down to the private soldier, had more than a cursory appreciation of the Vietnamese people or the complexity of the task we were attempting in their land. The books discussed here are no exception. Each differs from the others in aim, chronology, and scope, but all convey one common message: the chief attribute of the disaster unwittingly concocted by those who made and those who executed American policy throughout the years of our involvement in Vietnam was a deep-seated, persistent ignorance.

PHILIP CAPUTO† first went to Vietnam in 1965 as a rifle platoon leader in the

†Philip Caputo, *A Rumor of War* (New York: Holt, Rinehart, and Winston, 1975, \$10.95), 346 pages.

9th Marine Expeditionary Brigade; ten years later he returned as a newspaper correspondent to cover the fall of Saigon. While touching on the unfortunate finale of the war, Caputo devotes most of his book to the year he spent in combat during the initial stage of Americanization. In some respects, his story is merely one more, all-too familiar account of an idealistic, "Camelot-generation" youngster undergoing the pain of progressive disillusionment as he slogs through the jungle. Predictably, beloved comrades suffer mutilation and death; generals make stupid and insensitive demands; military tedium becomes excruciating; and atrocities lose their capacity to shock. In a word, the corrosive effects of time and reality transformed what in prospect had seemed a brave crusade into a meaningless nightmare.

Far more disturbing than the banality of the narrative is the taint of self-service that permeates the book. Caputo strains to convince the reader that the murder of two innocent Vietnamese civilians, an incident in which he played a major part, was the work of some impersonal, battle-spawned demonic force rather than the result of such human frailties as frustration, poor judgment, and lack of discipline. Similarly, he shamelessly plays for sympathy in an effort to vindicate the disreputable means he used to extricate himself from conviction by a court-martial for the heinous offense. Moreover, the author occasionally assumes an irritating Olympian pose, smirking at the social and intellectual faux pas of his associates and demonstrating with ill-concealed delight his disdain for the humdrum of military life. Yet, when an opportunity arises to separate himself permanently from the environment he finds so uncongenial, Caputo unaccountably elects to remain on active duty with the Marine Corps. Such dissemblance

and arrogance raise serious questions about the author's motives and values.

Notwithstanding these weaknesses, the strengths of *A Rumor of War* set it apart from the standard protest narrative. A compelling writer with an acute descriptive eye and a keen understanding of soldier mentality, Caputo imparts a realism that literally transforms the reader into a frontline "grunt." In addition, the author employs black comedy with a skill seldom found among commentators on Vietnam. Who can ever forget the colonel's order to exhume dead Vietcong and arrange them in parade formation in order to impress a visiting general? Of still greater singularity is the honesty with which Caputo views the combat experience. Even though horrified by the suffering and dehumanization the war evoked, he nonetheless acknowledges the close camaraderie, the narcotic exhilaration, and the haunting nostalgia that were also its by-products.

HAD Lieutenant Caputo and his marines read Herbert Schandler's *The Unmaking of a President*,[†] they could at least have enjoyed the solace of learning that the highest American officials shared their perplexity about Vietnam. With the 1968 Tet offensive as a base point, Schandler surveys the varied and complex forces that influenced the conduct of the war, his goal being to portray the intricacies of presidential decision-making in an era of prolonged crisis. Combining exceptional expository talent, scholarly research, and insights gained from service in the Pentagon at the time, the author advances a thesis which, though dispassionate in tone, is frightening in its implications. As he sees it, there was no coherent, agreed-on national strategy for prosecuting the war from the earliest days of

[†]Herbert Y. Schandler, *The Unmaking of a President: Lyndon Johnson and Vietnam* (Princeton, New Jersey: Princeton University Press, 1977), 419 pages.

American intervention until after the Tet offensive. Up to that point, strategy had evolved largely by default. In the absence of useful guidance from the President and the Secretary of Defense, the military professionals had at several critical junctures sought to impose their own schemes for victory. In each instance, however, the civilian leadership demurred, neither approving nor disapproving the plans of the military but at the same time refusing to suggest workable counterproposals. The result was chaos, with bureaucratic whim, executive hubris, domestic politics, and other peripheral considerations determining the manner in which the war was fought. It was in this climate of indecisiveness and confusion that the nonsensical on-again, off-again bombing pauses, the crazy quilt approaches to tactics and pacification, and the cavalier disregard for the strategic requirements of other important areas were all engendered. Small wonder that Caputo and his men failed to see the logic in what they were doing!

According to Schandler, the Communist attack launched during the New Year's holiday of 1968 proved to be a turning point. A costly tactical blunder for the North Vietnamese, the assault nevertheless served their strategic purposes well. At one fell swoop the ambiguity, ineffectiveness, and duplicity of American policy were laid bare. The outcome was a loss of public confidence, which neither President Johnson nor his successors could regain. Ironically, the pain inflicted by this exposure forced the President and his advisers to devise a strategy that, given sufficient time, might have eventuated in victory, but by then it was too late; the military and political leadership had irrevocably forfeited their trust.

The foregoing synopsis makes it clear that Schandler's book contains little new information. Rather, what makes *The Unmaking of a*

President valuable is the author's facility for isolating, analyzing, and explaining with lucidity the labyrinthine factors that affected decision-making in the Johnson White House. Schandler also displays a remarkable capacity for exploring the abstract without losing sight of the human. For that matter, his judicious depiction of the ways in which sycophancy, jealousy, fear, and ambition prejudiced what should have been disinterested judgments would of itself be sufficient to warrant careful study of the book.

This is not to say that *The Unmaking of a President* should be taken at face value. Schandler is unduly kind to the military leaders with whom he deals, particularly with regard to their professional integrity. To be sure, he dutifully records the sometimes sordid machinations in which the Joint Chiefs engaged to win the support of civilian politicians, but the author appears to believe that altruistic ends somehow justified their clumsy Machiavellianism, an untenable premise in this reviewer's opinion. In a related vein, he passes lightly over a question which is of fundamental significance: What is the correct course for an officer to follow when called on to execute policies he knows to be unsound? An inexperienced civilian scholar might be forgiven for failing to appreciate the relevance of that question, but not Schandler. A "Duty, Honor, Country" West Pointer and a hard-bitten regular himself, he knows better, and his reluctance to deal candidly with the matter vitiates the quality of an otherwise excellent piece of work.

AT FIRST glance it might seem that *Our Great Spring Victory*,[†] written by the commander of the Communist forces that conquered South Vietnam in the summer of

[†]Van Tien Dung, *Our Great Spring Victory: An Account of the Fall and Liberation of South Vietnam*. Translated by John Spragens, Jr. (New York: Monthly Review Press, 1977, \$15.00), 275 pages.

1975, would prove a worthwhile supplement to the books by Caputo and Schandler; however, this is not the case. General Van Tien Dung's primary aim is less to illuminate than to tout his ideology, his party, and himself. Only inadvertently does the general shed light on the strategy and tactics that culminated in the surrender of Saigon. Thus, the professional reader in search of clues to the astonishing swiftness of the North Vietnamese success will find himself sifting through page after page of puerile bombast only to discover he could have spent his time more profitably studying a field manual.

Dung begins with the assault on Ban Me Thuot in early March. He follows this with a brief and superficial exegesis of the 55-day onslaught that swept the ARVN forces from the Central Highlands, engulfed the major coastal enclaves, and finally overwhelmed Saigon. In classic Marxist-Leninist style, he attributes these lightning victories to the justice of the cause, the spirit of the North Vietnamese people, the élan of the troops, inspired leadership (presumably including his own), and to that mystic strategic sixth sense with which Communism allegedly imbues its disciples. Not surprisingly, Comrade Dung either discounts or denies the importance of several other factors that tipped the scales in his favor: a demoralized and poorly led enemy army, a Saigon government abandoned by its only ally and plagued by impotence, a South Vietnamese population paralyzed by despair, and, certainly not least, a bountiful supply of captured materiel.

Obsequious cant is by no means the only serious flaw in *Our Great Spring Victory*. Whether through ignorance, gullibility, or political affinity, the American editor disregards gross distortions, fails to explain esoteric military terminology, and refrains from reducing the reader's burden by excising repetitive and irrelevant passages. For example, he sees fit to point out that "Ho Chi Minh was especially fond of leading groups in singing 'Unity'" but

does not bother to define "special technological unit." A competent editor like Liddell Hart, Burke Davis, or Martin Blumenson might have been able to salvage Dung's memoir; in its present form, however, *Our Great Spring Victory* is almost worthless.

CAPUTO, in *A Rumor of War*, foretells that future generations of West Point cadets will not be taught the truth about the Vietnam conflict. To permit the fulfillment of that prophesy would constitute the ultimate folly of the whole dismal venture. Admittedly, now that Comrade Dung and his cohorts have re-educated the girls on Tu Do Street and Dr. Spock's young paladins have exchanged their jungle boots for platform shoes, it is tempting to consign the bitter experience to oblivion or write it off as an aberration that never should have occurred. But the professional soldier cannot afford such indulgences. Wars similar to the one in Vietnam are being fought in many areas of the world today, and if, as all the evidence attests, the trend continues, the United States, sooner or later, may again find itself embroiled in another murky and exotic struggle. Faced with that likelihood, the military officer is duty-bound to learn all he can about the kind of warfare Vietnam typified, especially why the Herculean American effort went for naught. Granted an accurate comprehension of the reasons for our downfall in that particular conflict will not necessarily provide a blueprint for operating successfully in some future struggle, but, even so, a searching, objective analysis of the Vietnam debacle should, by enhancing the student's perspective and sharpening his powers of judgment, enable him to think more creatively and act more effectively when the time comes.

It is in the hope of prompting just such contemplation that this reviewer presents the reflections that follow. In no sense are these musings definitive, nor, for that matter, are

they entirely original. Instead, they embody a synthesis of the experience, thought, and study of one fallible man. As such, they invite challenge from others more knowledgeable and perceptive. Indeed, if the ideas do provoke reasoned criticism, an important mission will have been accomplished.

Leaving aside such egregious military sins as piecemealing forces and dividing command responsibility, those who guided the American effort in Vietnam committed several other blunders that, if perhaps less flagrant, were equally devastating. As observers like S. L. A. Marshall and Frances Fitzgerald have noted, and as Caputo and Schandler imply, the force structure from beginning to end was not tailored for the job at hand. Nor were the commanders chosen because of their ability to deal with the special requirements that the situation necessitated. On the contrary, while paying lip service to counterinsurgency, the United States and its clients fought the entire war with conventionally organized units, utilizing techniques designed to combat a technologically advanced enemy on the continent of Europe. Likewise, American generals in Vietnam, with rare exceptions, were men whose experience and professional education predisposed them to think in terms of World War II and the Korean conflict. Under conditions that called for a George Crook, a T. E. Lawrence, or an Orde Wingate, the field commands were given to hard-charging paratroopers, officers whose simplistic, "can-do" attitudes made it veritably impossible for them to understand the ambiguities and subtleties of the upheaval in Vietnam. These fallacies of organization and leadership were then magnified by adopting mechanistic and immaterial yardsticks for measuring success. At best the emphasis on body count and "increasing the blue spots on the map" produced a dangerously unrealistic picture of progress; at worst it gave rise to false official statements and atrocities, indelible blots on the honor of the officer corps.

With similar persistence American policy-

makers relied on force alone to solve a problem that was as much political as it was military. All but ignoring the transcendent issues of pacification and governmental effectiveness, the Americans waged war in a manner that more often than not seriously impeded the feeble efforts that were being made to restore tranquility and maintain order in the countryside. Surely, no great degree of sensitivity is required to see that destroying an Asian peasant's ancestral home, driving him off his land, and leaving him to the tender mercies of inept and rapacious bureaucrats is hardly the most efficacious way of "winning his heart and mind." Sad proof of this contention is to be found in the stark truth that at the end of a ten-year period, during which the Armed Forces of the United States won every battle they fought, pacification and governmental effectiveness were no further along than they had been at the beginning.

In a way it would be comforting to maintain, as Fitzgerald and other commentators do, that an unbridgeable culture gap foreordained the disaster. However, the fact of the matter is that the failure stemmed from two deficiencies that common sense and proper education could have prevented. On the one hand, present-mindedness blinded Americans to the revolutionary and counterrevolutionary streams flowing deep through their own past, thereby depriving them of the historical perspective needed to place the modern-day, Vietnamese counterparts of those streams in proper context. How ironic that twentieth-century Americans felt obliged to coin the ugly phrase "counterinsurgency!" How incredible that military educators could construct courses to prepare American officers for this so-called "new" form of war without once calling to mind Francis Marion, Tecumseh, Osceola, or Aguinaldo!

On the other hand, cultural myopia distorted the American perception of the way the Vietnamese viewed themselves. One fatuous outgrowth of this defect was our ceaseless demand

for increasing participatory democracy in a nation fractionalized by anarchy. Another was the childish assumption that those Vietnamese who related well to Americans were the best men to command their armies and head their government and, further, that they were recognized as such by their compatriots. Reminiscent of the manner in which agents of the United States government had once appointed Indian chiefs, the Americans in Vietnam sustained those native functionaries who spoke good English and drank martinis, meanwhile overlooking honest, dedicated patriots who may have lacked these accomplishments but who, given the chance, might have unified the country and expelled the Communists.

IN KEEPING with the keynote of this article, it seems appropriate to close with an anecdote epitomizing American ignorance. On a visit to

Saigon in the early days of our intervention, Secretary of Defense Robert McNamara gave a speech honoring General Khan, the current winner of the "coup sweepstakes." Lifting the general's arm in the boxer's salute, the Secretary proclaimed in English, "Here is the little guy who is going to win this war!" Then, carried away by the well-rehearsed cheers of the crowd, McNamara shouted, "Long live Vietnam!" in what he thought was the indigenous tongue. But the Secretary, as unversed in the language as in Vietnamese politics, missed a couple of tonal inflections and actually bellowed, "The southern duck wants to lie down." Had the Communists not destroyed the allied war memorial when they overran Saigon, they could have inscribed McNamara's malapropism at the base. It would have made an eloquent epitaph for the American experience.

York, Pennsylvania

POWER, CONTROL, AND LEGITIMACY

COLONEL RAYMOND E. BELL, JR., USAR

RUSSELL W. Howe and Sarah H. Trott give us a carefully researched and very detailed picture of "how lobbyists mold America's foreign policy" in their book *The Power Peddlers*,† a "who's who" in the world of lobbyists working on behalf of foreign governments in Washington. With the help of the Fund of Investigative Journalism, and that of

Jack Anderson particularly, the authors provide as objective a look as may be possible at the world of foreign lobbyists.

For the professional soldier or militarily oriented civilian scholar, however, this book has relatively little relevance from a military point of view. This is especially surprising considering that many foreign governments lobby for money or credits to obtain weapons and equipment for their armed forces. The book is more of a "people book" or even a "bank account book," highlighting the names of lobbyists and their finances, both of which are extreme enough to dazzle the eye. In fact, it seems at times that this is more a personnel register than an attempt to explain how our

†Russell W. Howe and Sarah H. Trott, *The Power Peddlers: How Lobbyists Mold America's Foreign Policy* (New York: Doubleday and Company, 1977, \$12.50), 569 pages.

government is influenced by gift seekers.

Only two military personalities are discussed in the monograph: the late General George S. Brown, as Chairman of the Joint Chiefs of Staff, and General Andrew Goodpaster, Superintendent of the United States Military Academy at West Point (in the grade of lieutenant general) and formerly Commander at Supreme Headquarters, Allied Powers, Europe (SHAPE). The two generals share a common misfortune: comments they made moved lobbyists to frenzied activity.

As might be expected, General Brown's comments to a Duke University audience found a place in the book, and the handling of the incident by the authors bespeaks their objectivity. The proffered explanation also helps to clarify the turgid situation. The scene is lobbying in the context of the "Mideast conflict," and the action is a description of "the white heat of a full Israeli lobby campaign against a single individual." The campaign is aimed at refuting the comments about Jewish control of the banks and the press. Control of the former was rather easily disproved, but the latter was tougher to handle since Jews head "two of the three major TV networks and own the *Washington Post*, the *New York Times*, and the *New York Post*." The pressure by the Israeli lobby was intense. But, the writers argue, wiser heads prevailed who realized that if General Brown lost his job, the general's point would be proved, and the pressure, as a result, dropped off precipitously.

The description of the Brown incident thus provides an interesting perspective of the risks of lobbying. Another perspective is the danger of backlash. While the furor raged over the criticism of Israeli proponents by General Brown, there were individuals in the Israeli camp who feared that gloating over the effectiveness of Jewish pressure could boomerang against Israel. Hyman Bookbinder, an influential Israeli lobbyist, set about calming any Jewish reactions by taking this line.

I told people: "Here's an intelligent, thoughtful,

civil guy who helped save Israel in 1973 by running down U.S. Air Force stocks in Germany. If he can be provoked into saying things like that, we have reason to be worried. . . . We should not overreact. Getting his scalp would . . . give credence to his charges."

General Goodpaster's presence in the book results from less-publicized remarks about the Greek armed forces in 1974, when the military-installed junta government was in power. At that time the United States had adopted a more distant stance from the regime, and, when General Goodpaster praised Greece for "maintenance of her forces to an excellent level of training and to a high degree of readiness," he was called to task by the United States ambassador in Athens, Henry Tasca, who cabled Washington about the breach of the State Department's hands-off policy.

The Greek lobby in Washington, in opposition to the junta, launched a campaign expressing "shock and dismay." Goodpaster was summoned to Washington for a personal appearance on 20 May 1974, before the House of Representatives Subcommittee on Europe, to clarify his statement. In his testimony to the subcommittee, General Goodpaster explained he was "chagrined" that what he had said had been used as proof of American support of the Greek dictatorship. There was no objective Greek lobbyist around to buffer General Goodpaster against the storm, but then the public outcry to the Goodpaster incident was minimal compared with the uproar over General Brown's comments.

Aside from short discussions of Generals Goodpaster and Brown and the outward appearance of the book being a catalogue of names and numbers, *The Power Peddlers* takes an exhaustive look at the foreign lobbies, starting with the China lobby and ending with that of the South Molucca Islands. The book literally takes one around the world through Asia, South America, Africa, Europe, the Mideast, Armenia, Tibet, and to the South Molucca Islands (still regarded as Indonesian). By the end of the book, the reader knows all the foreign

and American lobbyists on Capitol Hill pushing their particular causes, but one wonders just why this is important.

If the book is significant for the military reader, it has to be that it points up the intricacies of how a relatively unknown part of our governmental system works and that, as part of a soldier's overall education, he should recognize how persuasive lobbying is. But the book is not one that needs to be in your library. Should you run for Congress, however, I recommend you hasten to the nearest bookstore and purchase a copy.

ON THE other hand, *Civilian Control of the Military*† could very well occupy a place on your professional bookshelves. It is a refreshing book in a couple of important respects.

First, for a book consisting of chapters by a number of commissioned authors, this is a remarkably cohesive book. The style is straightforward and the material well presented so that the reader obtains a clear view of the ramifications of civilian control over the military in a wide selection of countries. These countries are important because of the spectrum they cover and include India, Guyana, Malaysia, the Philippines, Japan, China, Finland, Mexico, Lebanon, and Chile. Claude E. Welch, Jr., who edited the book, excluded Africa because with the exceptions, as of late 1975, of Tunisia, Senegal, Kenya, the Ivory Coast, and Zambia, "newly independent African countries have yet to establish means of civilian control that have stood the test of time."

Another aspect of the book is that although its authors are not well known they represent a great deal of experience, included among

their number are two military professionals: Colonel Franklin D. Margiotta of Air Command and Staff College and Dr. James H. Buck on the Air War College faculty. At a time when civilians are not only emphasizing their control over the military but seem to be the only ones who are publishing much about it, it is refreshing to see professional military men contributing to books being written about their profession, if not writing the books themselves.

Welch starts his preface with a quote from Clausewitz, arguing strongly for civilian control over the military. Clausewitz states that subordination of the military point of view to the political is the only possible relationship since war is an instrument of state policy and not vice versa. Unfortunately, he notes Clausewitz's belief in the supremacy of politics as being increasingly disregarded while the "man on horseback" has become more prominent. This historical background sets the framework for Welch's effort; that is, an exploration of those exceptions to military rule while at the same time showing the means for civilian control that states might adopt. He concluded that the chief instruments for ensuring civilian control are a widely supported political party coupled with a self-imposed sense of restraint by officers and politicians alike.

Of particular interest in this respect is that Lebanon, discussed in the book, has, since publication, had the underpinnings of a parliament and a self-imposed sense of restraint by politicians knocked from beneath it. At the same time, the military has played an inconsequential role in the conflict between Lebanon's warring factions. So emasculated was the military that it was incapable of exercising any influence on the situation. As a result, one can ask legitimately whether the army was simply the victim of "overcontrol" by civilians, a danger that is not discussed in the book but

†Claude E. Welch, Jr., editor, *Civilian Control of the Military: Theory and Cases from Developing Countries* (Albany, New York: State University of New York Press, 1976, \$20.00), 337 pages.

which represents a very real danger to the security of a state.

The excellence of Colonel Margiotta's contribution on Mexico is typical of the chapters in this book. He has chosen a country that is much neglected in the military literature. For most Americans, the military scene in Mexico ends with the storming of Chapultepec in the War with Mexico, though there are still alive today some few who rode with General Pershing in 1916 against "Pancho" Villa. Mexico is a major exception to the principal trend in Latin America, where the military plays a powerful role in the majority of governments. This is important, the author points out, because Mexico has had a "long history of predatory military intervention into politics." As late as 1929 there was a revolt in the army. However, the political role of the military has become smaller since then.

Margiotta advances two schools of thought on the role of the Mexican military: its removal from politics and its viable but very diminished role. The latter role is further explained by the military's apparent acceptance of the psychological and material situation, which means improvement of the status is unnecessary and that certain lesser political awards have reduced the potential incentive for the military to intervene in politics.

The author has selected for further examination that relatively narrow area of psychological, material, and political rewards received by the Mexican military since 1946, when the first civilian president was elected. He does so in an effort to bring about a better understanding of the special and peculiar military-political patterns in Mexico, and the reader will agree that he succeeds.

Margiotta provides an excellent picture of the degree of involvement, both voluntary and mandated by custom, of the Mexican president. Using a number of tables, he presents information on the allocation of resources to the military. For example, a table of particular interest shows how much attention the presi-

dent gives the military in his speeches; between 1946 and 1972, he gave "effusive attention" to the military in 11 of his 13 speeches.

Margiotta makes the point that although the military has not received an inordinate proportion of the country's resources, what has been received has been skillfully managed to "provide economic incentives to political loyalty." For instance, military expenditures dropped below 10 percent of total government expenditures after 1950 (from 1938 to 1941 the military portion represented 16.6 percent of total government expenditures versus 8.7 percent from 1960 to 1965), yet pay has steadily increased, and the Mexican officer ratio of earnings to average per capita income is at least three times that of his United States counterpart.

Margiotta emphasizes that the military still plays an important role in the political arena. The point, however, is that there is a very noticeable transition from military to civilian participation, even though the military holds important "civilian" jobs in the executive branch; in 1972, the military held a state governorship, and there are military members in Congress.

What emerges from this examination is a picture of subdued, yet real, military participation in national politics. It is also clear that the Mexican military receives benefits and recognition that greatly lessen a more active role in trying to manipulate civilian control.

Civilian Control of the Military is worth the professional soldier's reading, especially in light of General Brown's controversial remarks, those of General Donn A. Starry, about the possibility of future war, and Major General John K. Singlaub about Korea. In counterpoint to this book, the reader might be interested in John W. Finney's article "The Military Has Always Known Who Is in Charge," in the May 4, 1977, issue of the *New York Times*. Regarding the Singlaub incident, Finney notes that the "principle of civilian control is much better

understood and complied with than it was when President Truman fired Douglas MacArthur." Reading Welch's book will further enhance the understanding of what Finney is talking about.

WHEREAS *Civilian Control of the Military* can be recommended as a mind-broadening experience for the professional military man unfamiliar with the control of the military in various nations of the world, endorsement of *The Military and the Problem of Legitimacy*† must be more guarded.

The book, edited by Gwyn Harries-Jenkins of the University of Hull (United Kingdom) and Jacques van Doorn of Erasmus University (Rotterdam, Netherlands), is one of the Sage Studies in International Sociology, sponsored by the International Sociological Association. Contributors to the book include the editors as well as Morris Janowitz, who writes on "Military Institutions and Citizenship in Western Societies," and international authors from Communist countries, the United States, and Western countries. The international flavor of the book, although excellent in theory, is one thing about the work to be criticized. It should be noted, however, that these contributions were selected from a limited number of papers presented at the Eighth World Congress of Sociology, in Toronto in August 1974, where 50 sociologists from 24 countries took part in sessions of the Research Committee on Armed Forces and Society.

First, the title and the contents do not match. It appears that a book *had* to come out of this conference, and the title was the best one found to cover such divergent themes as "The Role of Mass Communications in the Political Socialization of the Hungarian Armed

Forces" by Emil Nagy and "Greek Service Academies: Patterns of Recruitment and Organizational Change" by George A. Kouvetaris. The introduction attempts somewhat unsuccessfully to justify the inclusion of all the entries. For example, this reviewer found inclusion of the piece by Nagy (from the Military Academy, Budapest, Hungary) hard to justify within the scope of the anthology: whether the traditional legitimacy of the military is still acceptable in today's society, where some see the military performing a destructive function. In his unevenly translated essay, Nagy seems to be saying the Communists have finally decided that television has merits in indoctrinating the armed forces. (Although it is not intimated, Nagy could also be saying that television can be manipulated so that reception from Austrian television stations just over the border will have a minimal impact on Hungarian viewers.)

There seems to be a distinct attempt at balance in the book between Communist and Western contributors. Although the purpose of this review is not to "roast" Nagy, the following quote makes one very suspicious of the value of including selections on the basis of "balance."

The sublime and deeply humanistic aims of socialism can be achieved by an historically high standard of creative activity and by the ceaseless flow of the initiative of the mass of people. It is from the very essence of socialism that people's interest and political and public activity are gradually growing. We make every effort to develop social democracy and involve masses of people in the immediate direction and management of public affairs.

It is regrettable that party-political implications have to appear in a volume that has excellent potential, but the reader must realize that not everything is viewed from a Western ethical standpoint.

†Gwyn Harries-Jenkins and Jacques van Doorn, editors, *The Military and the Problem of Legitimacy* (Beverly Hills, California: Sage, 1976, \$12.00), 217 pages.

The international aspect of the book is flawed by poor translation. One no longer "heals up" wounds, nor does one talk about "picture-going." On a different level the term "not classified" has given way to "unclassified." These small, seemingly insignificant examples are hardly earth shattering, but when combined with polemics and ponderous sentence structure, which can be hard to avoid in translation, such vocabulary has the effect of frustrating the reader to the point of "tuning out."

The editors have been only partially successful in their efforts. They raise questions for further consideration, and they do point out the complexity of the relationship between the military and the parent society that demands continual analysis and questioning. The studies are not exhaustive, as the editors indicate, nor do the authors present solutions to the problems. But in spite of the distinguished multi-

national authorship, it is hard to agree that the analyses are objective or, when the involved vocabulary and sentence structure are stripped from the writing, that the contributions are really that scholarly.

IT IS necessary to point out, however, that a serious attempt has been made to deal with a very tough problem and one which obviously is of concern. The military professional has a vested interest in the military establishment, and he naturally looks askance at those, especially at those not themselves in the military regardless of how close their relationship to the military is, who even suggest questioning their livelihood. But there is no question that the book gives the military professional a different perspective, which could lead to improving the quality of his or her professional calling.

Washington, D.C.

Potpourri

Jane's World Armoured Fighting Vehicles by Christopher F. Foss. New York: St. Martin's Press, 1976, 437 pages, \$25.00.

This volume deals with "all types of armoured fighting vehicles," including scout and armored cars, armored personnel carriers, self-propelled artillery pieces, and tanks. A section is devoted to each type of contemporary armored fighting vehicle. Within each, the vehicles are presented by country. Some of the major nations considered are China, France, West Germany, Great Britain, Israel, Japan, the Soviet Union, Sweden, Switzerland, and the United States.

Foss's treatment of each vehicle begins with information on the manufacturer and a table of basic data on the vehicle, such as weight, armament, and

speed. Then follows a brief review of the vehicle's development, a description of the vehicle, and a discussion of the variants of the basic machine.

Jane's World Armoured Fighting Vehicles contains a vast amount of material about a host of fighting machines. The accessibility of the information is greatly enhanced by an index that enables one to turn rapidly to the page containing tabular data on the various vehicles. This book should be helpful to anyone who is seeking a quick answer to a question about a current fighting vehicle.

Major Donald R. Baucom, USAF
Department of History
USAF Academy

Roosevelt and Churchill 1939-1941: The Partnership that Saved the West by Joseph P. Lash.

New York: W. W. Norton & Company, 1976, 528 pages + index, bibliographical note, references, \$12.95.

The number of works covering World War II, or the events leading to it, continues to grow. As one might expect, the quality of these volumes varies, yet each offers the mythical general reader something. Joseph Lash uses the techniques of both an oral historian and a bona fide researcher to present a well-balanced narrative of two individuals who contributed much to the war's efforts in all arenas.

Covering the period from the outbreak of war in Europe to Pearl Harbor, the book is an excellent synthesis of both personal and well-researched insights by an author who was present at many of the events described. Basically, the author set out to present a history through the personalities and policies of two men, Franklin Roosevelt and Winston Churchill. Often, attempts to draw parallels between the two are overdone. Still, Lash manages to stress the differences in their temperaments and show the intricacies of the political systems in which both labored—one working in a checks-and-balances system of democracy, the other wielding power in a constitutional monarchy. Churchill appears to have dealt with a free hand, while Roosevelt played a role within a constitutional framework that required his getting the American public on his side before acting decisively.

Clearly portrayed are the ingenious minds of both men as one tried to involve the United States in a war to save Great Britain, and the other protested coquettishly while taking measures that eventually led to that same end. The manner in which both men used the available powers bestowed on them is a marvelous presentation of research and writing. Roosevelt, the bargainer, is shown at his best while building policies out of the divergent views of advisers and shaping (although often in the background) the policies that led inexorably to more and more aid for the beleaguered Britains. Churchill, always one who sensed his greatness, is depicted as a man carefully working with the English language to promote a solidarity in his nation; his flair for the dramatic (heroic perhaps) in the many speeches before Parliament is well portrayed.

Although at times one feels that the author may have overreached himself in describing how much the two men complemented one another, there can be little doubt as to the amount of research that went into this well-written book, one that should be on the shelves of those who work in this field.

Lloyd H. Cornett

Albert F. Simpson Historical and Research Center
Maxwell AFB, Alabama

A New Yorker in Egypt by Hans Koning. New York: Harcourt Brace and Jovanovich, 1976, 265 pages, \$10.95.

I was taught to believe that a travel book tells something about the culture and society of a people and that the account is credible only when the insights the author offers correspond to the growth he experiences in the course of the encounter. If this is so, Hans Koning's book represents the worst kind of travel literature. Nowhere does the reader get the impression that the author understands Egypt or Egyptians at all. So imbued is Koning with the journalist's slavish devotion to the immediacy of the present that he reduces the Egyptian landscape to a uniform shade of gray.

Prominent in this book is the author's obsession with Egypt's wretchedness, to the extent that it haunts him wherever he goes. At every turn, the specter of squalor rises to assault his sensibilities. No understanding of the sociology of poverty can temper his disgust or evoke his compassion. Bitterly disappointed at the inability of the Egyptians to live up to his expectations and the rhetoric of Egypt's own revolution, Mr. Koning lapses into the racism of the disenchanting liberal: he is forced to explain away poverty as a self-inflicted vice. This he does with all the chic catch phrases at his disposal, the mordant jibes, the caustic barbs, the smugness of his own urban parochialism.

In support of these observations, I feel it necessary to point out a number of inaccuracies and half-truths which, no doubt, contribute to the author's bias and compound his ignorance. Mr. Koning dismisses the decadence of the port of Alexandria with the assertion that the Arabs were never oriented toward the sea. (p. 19) What impulse then, one wonders, compelled the Arab navies to dominate the Mediterranean basin for most of the Middle Ages? Although Koning is correct in contending that Cairo stands symbolically for all of Egypt, Cairo is not called *Misr*, as he suggests, but often *Masr*, *Misr* being the word used for the country itself. (p. 60) Anyone who had bothered to study a little Arabic before embarking on a trip to Egypt would have been aware of this fact.

The author claims, furthermore, that before Napoleon brought his armies and a printing press to Egypt in 1799 the country wallowed in primeval darkness. (p. 63) From the Western point of view, dominated as it is by a linear Idea of Progress, Egypt cannot compare to Europe. But is it fair for the author not to recognize Egypt's paramount position in the Middle East, for instance, as the intellectual capital of Islam since its founding in the tenth century—or perhaps he simply doesn't know this?

One remark, however, stands out among the rest as illustrative of the author's prejudice. He asserts that "one of Allah's epithets is the 'Merciful One,' but killing is a part of Islam." I should like to suggest that the history of Islam with respect to its treatment of non-Muslims is exemplary compared to the barbaric punishment inflicted by the Inquisition on dissenters, Christian and non-Christian alike. Familiarity with basic historical data is sufficient to prove the point.

One wonders why the book was published, misinformed as it is and often bordering on the distasteful. The reader would be well advised to look elsewhere for an introduction to Egypt and its culture.

Dr. Lewis Ware
Air War College
Maxwell AFB, Alabama

Spitfire at War by Alfred Price. New York: Charles Scribner's Sons, 1977, 160 pages, \$10.95.

Few warplanes have earned the fame of the Supermarine Spitfire. In the emotional environment of the Battle of Britain, this nimble fighter became the virtual symbol of British resistance. Since World War II, the Spitfire has been the subject of many volumes by respected aviation historians. A recent volume by Alfred Price, *Spitfire at War*, is essentially an anthology of articles written from various viewpoints by men who knew the British fighter in war.

Spitfire at War is by no means a complete study of England's most famous World War II fighter. It is, however, a new perspective on an old topic, and a refreshing one at that. Price's volume examines some of the lesser known aspects of this popular warplane's history. Few people, for example, remember the Spitfire as a naval artillery spotter for the Normandy invasion or as a counterinsurgency aircraft in the Malayan conflict of 1948. These are but two uses of the Spitfire covered in the book.

Price's book avoids the standard, perhaps over-used, sources such as Douglas Bader and Alan Deere. In an approach that enables the author to bring new material to light, Price turns to test pilots, aerodynamicists, and armorers who worked with the Spitfire. The amount of material already published on the aircraft makes this new approach the most pleasing aspect of the book.

The wealth of photographs contained in *Spitfire at War*, many of them not published previously, gives this work aesthetic as well as historical value. It should be noted, however, that Price overuses illustrations at times. His chapter on the birth of the Spitfire, for example, is composed of six photographs with no text other than six picture captions. To cover three years of an aircraft's development in such an offhand manner is something of an injustice.

Another weakness of the study is a distinct lack of continuity in that the author neglects to integrate his collection of short accounts into a unified text. For example, in one chapter the reader is presented with a description of Spitfire accidents and in the next with an account of a mock combat between the World War II fighter and the modern mach-2 BAC Lightning. The author makes no attempt to bridge the gap.

However, readers looking for a new perspective on an aircraft about which much has been written will find it in Price's volume. Yet the reader who is seeking a complete, authoritative account of Supermarine's Spitfire will be disappointed. Nevertheless, the flaws of Alfred Price's book are outweighed by its positive aspects. *Spitfire at War* should be a welcome addition to the library of the aeronautical historian as well as the air power buff.

Cadet James R. Smith, USAF
USAF Academy, Colorado

Prelude to Disaster: The American Role in Vietnam, 1940-1963 by Weldon A. Brown. Port Washington, New York: Kennikat Press, 1975, 278 pages, \$15.00.

The Last Chopper: The Denouement of the American Role in Vietnam, 1964-1975 by Weldon A. Brown. Port Washington, New York: Kennikat Press, 1976, 359 pages, \$15.00.

The so-called "Vietnam era" has already been described in a multiplicity of books. More often than not the authors have taken sides, pro or con, on America's involvement and used sources to back up their particular theses. Whipping boys have ranged from presidents, through the military establishment, and even to the sometimes-violent college student. Apparently, there is no middle ground; each writer's position seems destined to justify the camp of either the "hawks" or the "doves." Readers

are caught between in their quest for accurate knowledge.

It is refreshing to discover a comprehensive look at Vietnam that is as nearly unbiased as possible yet sufficiently sprinkled with the author's summations and opinions to be interesting. These two books by Professor Weldon A. Brown were published a year apart, yet they are actually two halves of the same loaf. In the earlier book the author narrates the U.S. presence in Vietnam since 1940 and ends with the massive American involvement of 1963. He concludes his story in the second book by chronicling, in almost painstaking detail, the "gradualism" of American involvement and final withdrawal.

Brown has surveyed a vast amount of previously published material. His organization of it is brilliant, and his reportorial honesty in acknowledging his sources is commendable. So pat is the journalistic detail with which incidents such as the Gulf of Tonkin, the Geneva Talks, and Linebacker II are reported that the pages begin to read like yesterday's newspaper. Though the reading may occasionally plot a bit, the end result is worth cheering.

The volumes are not totally impersonal, however. The author characterizes the Gulf of Tonkin action as taken in "inexcusable haste" and the congressional support of the war at that time as "popular emotionalism, spurred on by executive persuasion" that caused its members to vote the way they thought the people felt rather than their "honest convictions." However, he explains, his task in writing is to record "what was, not what ought to have been." Professor Brown agrees that it will "most likely be decades before the full story can be told."

He reconciles the ultimate fall of South Vietnam by summarizing:

Surely eighteen years of aid and the sacrifice of fifty-six thousand lives were enough. If freedom failed there [South Vietnam] the fault would have to lie with the people of South Vietnam. Aid and men we could give for a limited time, but the will we could never supply.

The Vietnam conflict is still too fresh to permit the author access to all the classified materials generated from it. When declassification comes, it is hoped that Professor Brown will still be available, for he has the talent to take the myriad details and assemble them into an understandable whole. Such a talent will be needed and sorely tried before the final story of Vietnam satisfies the historians, the antiwar liberals, or the many participants.

Meanwhile, the most unbiased and informative two volumes on Vietnam and America's role there are these written by Weldon Brown. Readers will find them the best basis from which to judge the

entire Vietnam era, its heroes and its villains. The carefully documented sources will provide scholars with a solid starting point for that inevitable but distant definitive work on Vietnam. Future creditable works on the subject will have to include these volumes in the bibliography.

Dr. John H. Scrivner
El Paso Community College
Colorado Springs, Colorado

Guernica: The Crucible of World War II by Gordon Thomas and Max Morgan Witts. New York: Ballantine Books, 1977, xix + 283 pages, \$1.95.

This is another in a series of documentaries by Thomas and Witts dealing with selected episodes of twentieth-century tragedy. In the tradition of their *Shipwreck* and *Voyage of the Damned*, *Guernica* breathes new life into events that have been smothered by time and the sterility of history. By re-creating the events of two days in a Basque town during the Spanish Civil War, the authors present a world war in microcosm. Their purpose, though, is more than symbolic. They present a clear, hour-by-hour account of how and why the spiritual center of Basque independence was destroyed by Franco through the German Condor Legion. The myth, born out of nationalist propaganda, that the carnage was undertaken by Basque separatists has long since been discredited, but still the issue has been obscured by tight-lipped governments in fear of embarrassment. Thomas and Witts, primarily through interviews with local survivors and German participants, have reconstructed a touching human story of war's tragic inefficiency.

The aerial bombing of Guernica, a small-scale blueprint for the raids of World War II, marked the beginning of a new era in modern warfare, but the authors are less concerned with historical movements than with their victims. The purpose of the book is not so much to inform as to move its readers, and the subtle use of contrast is its vehicle. The juxtaposition of the innocence and silent courage of Guernica's citizens with the tactical calculations and bravado of the Condor Legion creates a powerful effect. There is little doubt as to which is more admired by the authors. The stories of the townspeople are also woven in pairs—a technique which adds meaning to their fate. And always looming in the background is the specter of Franco with Hitler at his side. Despite the inevitability of

the terrible ending, the authors evoke the same false hopes of well-being in the reader as those held by the townspeople themselves.

The book is supplemented with notes, bibliography, an excellent index, several photographs of people and places before and after, and an especially helpful list of characters. The appendices add perspective by revealing the authors' methods of research and the obstacles they encountered. Despite the "official strictures" imposed primarily by Franco's bureaucracy in Guernica, it is not likely that the product would have been substantially different had the authors conducted their research in the more liberal atmosphere of present Spanish politics, for their primary sources were not forbidden archives but people with "hands that shake with emotion, eyes that shed tears over events no human being has heard before." In view of all this, Thomas and Witts are amazingly fair in their interpretations.

Guernica is a story that deserves the devoted work its authors display. Packed with emotion, rich in literary technique, and faithful to its sources, the book does justice to "a chain of events that is still thrashing in the lives we lead today."

Lieutenant Scott W. Brennan, USAF
Loring AFB, Maine

Brassey's Artillery of the World edited by Shelford Bidwell. Boulder, Colorado: Westview Press, 1977, 274 pages + index, \$39.95.

Reportedly, Napoleon once said that "God fights on the side with the best artillery," and, as in the nineteenth century, there are those of us even today who think artillery still can be decisive. *Brassey's Artillery of the World* seeks to provide "the military man, the defence-oriented general reader, the military commentator, and the defence correspondent" with a comprehensive survey of artillery currently in service worldwide. The work also attempts to define the "method of employment" for several general classes of artillery weapons.

The editor includes chapters on towed and self-propelled field artillery, mortars, surface-to-surface missiles, antitank guns and missiles, air defense guns and missiles, and coast artillery, for the term "artillery" is broadly inclusive. Additionally, two short chapters are devoted to air defense and field artillery support equipment. The author, Brigadier Shelford Bidwell, prefaces each section with a short essay that comments on the general tactical employment, design features, and system operation for that

weapon type. The book covers more than 170 weapons and 40 pieces of ancillary equipment. The significant physical and operational characteristics are listed for each weapon, and its unique features are summarized in a paragraph or two. A photograph of each piece of equipment accompanies the written description. The book also contains a glossary of artillery terms, a 15-page chart that outlines by country the artillery weapons in service today, and an easy-to-use index.

Brassey's is a reference work, and its primary strength is that it surveys every artillery weapon currently in the field. The editor has done a sound job in selecting which characteristics to include. However, if one is looking for the most detailed source available, one should refer to *Brassey's* major competitor, *Jane's Weapon Systems of the World, 1977*, which covers fewer weapons but does so in far greater detail. *Brassey's* is intended to be a catalogue of all artillery weapons in service today. It fulfills this charge, and its comprehensive coverage should earn it a place in the reference section of every library.

Major E. Paul Semmens, USA
Air Defense Artillery
USAF Academy

Rise, and Fight Again by Charles Bracelen Flood. New York: Dodd, Mead & Company, 1976, 464 pages, \$12.95.

In the afterglow of our Bicentennial celebrations, it is both refreshing and gratifying to discover Charles Bracelen Flood's *Rise, and Fight Again*, a balanced, colorful, and readable history of the rebellion and civil war that was our American Revolution. Written, no doubt, to take advantage of the Bicentennial market, Flood's narrative of the war is well conceived and well researched. The genre and caliber of the book promise to place Flood in the ranks of such noted writers of historical literature as Hervey Allen, Kenneth Roberts, Thomas Fleming, and Allan Eckert.

Rise, and Fight Again is popular history. It is an easily mastered, well-integrated composite of geography, war strategy, battle tactics, personality sketches, and delightful anecdotes. The reader will also find numerous examples of the vagaries of war: courage, bravery, self-sacrifice, and camaraderie as well as cowardice, desertion, looting, and atrocity. Characteristic of these vagaries is the dramatic description of those who fought and those who ran

at Camden—from the gallant Major General the Baron de Kalb, who remained in the fight until he dropped from the effects of eight blade and three bullet wounds, to the ignominious flight of General Horatio Gates.

Not only is Flood's work a realistic portrayal of the leaders and soldiers who fought throughout the war but it is also a testimonial to the spirit and faith that motivated certain American commanders and their men, who, after enduring starvation, cold, capture, prison, and exchange, returned for the next engagement. It was these qualities of élan and endurance that kept the ranks of those ragtag armies filled and eventually wore down the world's greatest military establishment to win independence for the United States. With its emphasis on hardship rather

than glory, *Rise, and Fight Again* goes a long way toward destroying many of the myths surrounding the sunshine patriots of the Revolution. As Flood clearly demonstrates, the war was a long and arduous affair, pitting patriot against loyalist, and volunteer militia against professional regulars in a series of American defeats that should have tolled the death knell for the patriot cause. But this was not to be because of the spirit of those who concurred with Nathanael Greene's assessment: "We fight, get beat, rise, and fight again." It was this indefatigable spirit that was the essence of the Revolution, and Flood's masterful account of the war recognizes this.

Captain Walter T. Hitchcock, USAF
Department of History
USAF Academy

the contributors



First Lieutenant John W. Jenson (USAFA, M.A., University of Michigan) is a Minuteman missile combat crew commander evaluator, 341st Strategic Missile Wing, Malmstrom AFB, Montana. At Malmstrom he has been a deputy missile combat crew commander and a Minuteman missile combat crew commander instructor, and he serves as base community services program officer. Lieutenant Jenson is an avid student of military history, strategy, and tactics.



Major Tyrus W. Cobb, USA, (M.A., Indiana University) is an assistant professor in the Department of Social Sciences, United States Military Academy. His assignments have included tours in Vietnam and as an adviser with the Italian Air Force, he has been on the Army Staff in Intelligence and Operations Directorates and a member of the Chief of Staff's Strategic Assessment Group. Major Cobb has published articles on Soviet politics, military strategy, and air defense, and he is a Ph.D. candidate, Georgetown University.



Major Thad A. Wolfe (USAFA, M.S.E.E., University of Wyoming) is with the Readiness Measurement Group, Directorate of Operations and Readiness, Hq USAF. He has had assignments in England and Vietnam as a signals intelligence officer, Scientific and Technical Intelligence Directorate, Defense Intelligence Agency, a tour as T-38 instructor pilot and flight commander at Vance AFB, Oklahoma; B-52 commander, standardization/evaluation instructor pilot, and squadron operations officer, 325th Bomb Squadron, Fairchild AFB, Washington. Major Wolfe is a Distinguished Graduate of Air Command and Staff College.



Lieutenant Colonel Alton L. Elliott (M.A., St. Mary's University) is Deputy Chief, Policy Analysis Group, Office of the Secretary of the Air Force. He has served as an intelligence officer at Headquarters TAC and USAFSS, an EC-121 crew member in Thailand, served on the faculty of Squadron Officer School, and as a political-military affairs officer, Hq USAF. Colonel Elliott is a graduate of Air Command and Staff College and a Ph.D. candidate, Georgetown University



Colonel Murray Green, USAF (Ret), (B.S.S., M.S., City College of New York, Ph.D., American University) is living in retirement in the Washington area after thirty-four years as a civilian employee of the Air Force, including service in the Office of the Air Force Secretary. He has published numerous magazine articles, including "Major General Hugh J. Knerr, Hard Campaigner for Airpower," *Air Force*, October 1978. Dr. Green is currently working on a biography of General H. H. Arnold.



Group Captain R. A. Mason, RAF, (M.A., St. Andrews University and London University) is Director of Defence Studies, Royal Air Force Staff College, Bracknell, England. He has served in the Education Branch of the RAF, on the staff of the Air Officer Commanding in Chief, RAF Training Command, Brampton; as RAF Exchange Officer to the Department of History, USAF Academy, and as Command Education Officer, RAF Support Command. He has lectured at several British universities and had articles and reviews published in journals on both sides of the Atlantic, including the *Review*. Group Captain Mason is a graduate of USAF Air War College and the RAF Staff College.



Colonel James L. Morrison, Jr., USA (Ret), (Ph.D., Columbia University) is an associate professor of American History at York College of Pennsylvania. He has taught history at the U.S. Military Academy and served as an adviser with the 22d Infantry Division, Army of Republic of Vietnam. Colonel Morrison is editor of *The Memoirs of Henry Heth* (Greenwood Press, 1974) and a previous contributor to the *Review* and other military and historical journals.



Colonel Raymond E. Bell, Jr., USAR, (USMA, M.A., Middlebury College) is a student at the National War College and a research consultant on leave from the Historical Evaluation Research Organization, Dunn Loring, Virginia. He also heads a team studying defense postures in West Germany, and he teaches Army Command and General Staff College courses to active and reserve component officers at West Point. Bell is a graduate of the Army War College Correspondence Study Course and a previous contributor to the *Review*.



The Air University Review Awards Committee has selected "Master at Arms: Clausewitz in Full View" by Lieutenant Colonel David MacIsaac, USAF, as the outstanding article in the January-February 1979 issue of *Air University Review*.

editorial staff

LIEUTENANT COLONEL DAVID R. METS, USAF

Editor

MAJOR THEODORE M. KLUZ, USAF

Associate Editor

JACK H. MOONEY

Managing 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

WILLIAM J. DEPAOLA

Art Editor and Illustrator

RUDOLPH W. MORGAN

Financial and Administrative Manager

advisers

COLONEL ROBERT J. O'BRIEN, JR.

Hq Aerospace Defense Command

MAJOR GENERAL JOHN W. HUSTON, Chief

Office of Air Force History

DR. HAROLD M. HELFMAN

Hq Air Force Systems Command

COLONEL RICHARD A. INGRAM

Hq Air Training Command

DR. KENNETH J. GROVES

Hq Air University (ATC)

LIEUTENANT COLONEL LOUIS A. TORRACA, JR.

Hq Military Airlift Command

FRANCIS W. JENNINGS

Air Force Service Information & News Center

COLONEL DAVID O. SCHILLERSTROM

Hq Strategic Air Command

LIEUTENANT COLONEL STEPHEN B. HINDERLITER

Hq Tactical Air Command

LIEUTENANT COLONEL ROBERT W. HUNTER

Hq United States Air Force Academy

COLONEL GLENN E. WASSON

Hq United States Forces, Japan

PROFESSOR I. B. HOLLEY, JR., *Duke University*

Major General, Air Force Reserve

attention

The *Air University Review* is the professional journal of the United States Air Force and serves as an open forum for exploratory discussion. Its purpose is to present innovative thinking concerning Air Force doctrine, strategy, tactics, and related national defense matters. The *Review* should not be construed as representing policies of the Department of Defense, the Air Force, Air Training Command, or Air University. Rather, the contents reflect the authors' ideas and do not necessarily bear official sanction. Thoughtful and informed contributions are always welcomed.

Address manuscripts to Editor, *Air University Review* Division, Bldg. 1211, Maxwell AFB, AL 36112. Printed by Government Printing Office. Address subscriptions

to Superintendent of Documents, GPO, Washington DC 20402; yearly \$11.60 domestic, \$14.50 foreign; single copy \$2.00. Air Force Recurring Publication 50-2.



The Professional Journal of the United States Air Force



AIR UNIVERSITY **review**

MAY-JUNE 1979

