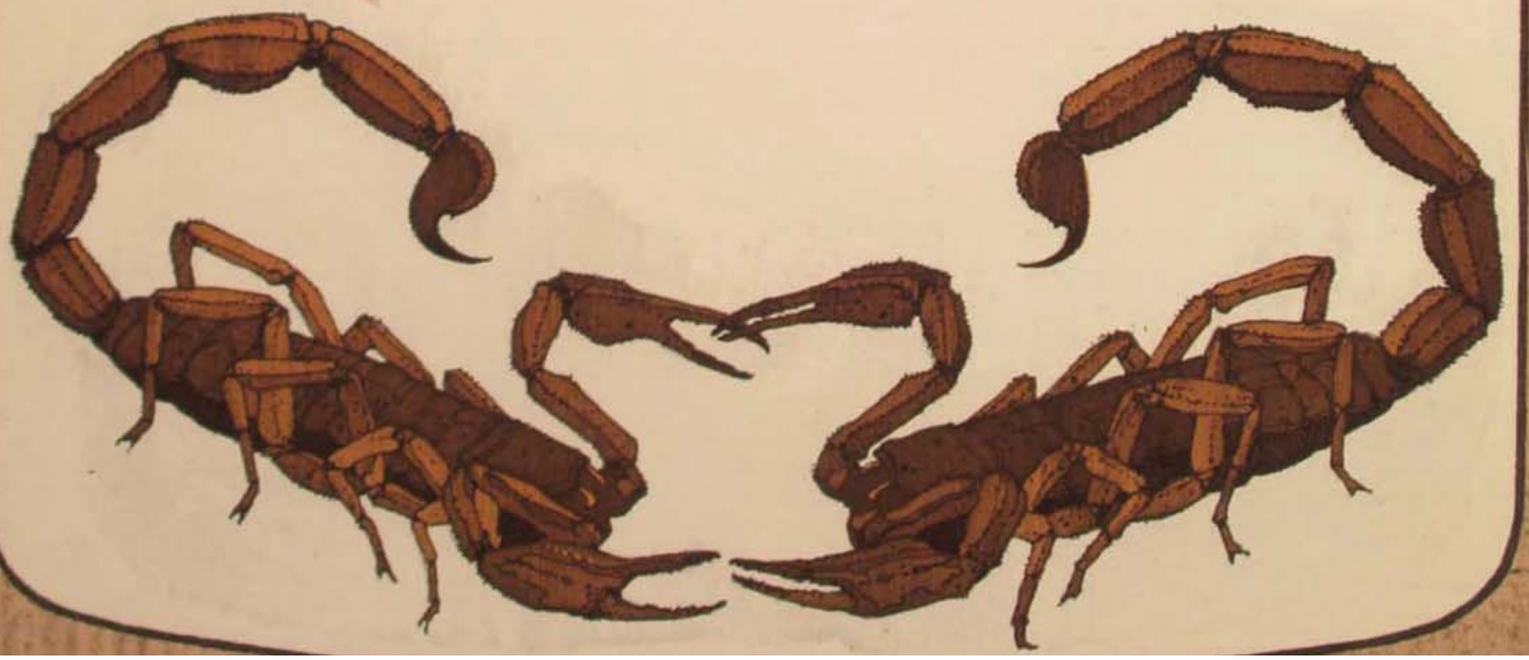
# AIR UNIVERSITY review

MARCH-APRIL 1983



# changing the guard

This marks the seventeenth occasion and last for this Editor's words to appear here. By the time they appear in print, I will be a civilian, working for Rice University as a researcher, writer, student, and teacher of military history.

Looking back across some twenty years as soldier, Air Force officer, and student of the military art, I am struck by the dominance of a single figure, Robert Strange McNamara, whose influence as Secretary of Defense on the Vietnam War is well recognized. But the durability of his influence is even more remarkable. The pervasiveness of that influence can be summed up in two familiar acronyms: MEI (management effectiveness indicators) and PPBS (Planning, Programming, and Budgeting System).

Statistical analysis of "hard" numerical indicators to monitor progress and to assess and predict operational effectiveness did not begin with McNamara. The philosophical distance between his cost effectiveness concepts and Secretary Charles ("Engine Charlie") Wilson's byword of the Eisenhower years—"more bang for the buck!"—was small. But McNamara pushed things further; just how much so is evident in his insistence on fixed performance/fixed cost research and development contracts and the Zero Defects program. The former explicitly assumed the ability to accurately—and competitively—predict the cost and performance of high-risk items of military technology that had never been built before; the latter assumed implicitly that there was no uncertainty concerning the desired outcome of our military activities or how to achieve it.

In the brave new era of scientific military management, friction and the fog of war could be overridden and military genius ignored. Clausewitz's reaction would have been at least as sour as those of hard-core military operators who were "encouraged" to sign Zero Defects statements. The idea that signing a pledge to make no errors bore any relationship to the realities of battle seemed absurd to them. Perhaps it was, but in a perverse way it was the utterly logical reductio ad absurdum conclusion of the argument that the mechanics of war could be quantified in toto. The Air Force seems to have accepted McNamara's philosophy with fewer reservations than our sister services, perhaps because sortie rates and tons of bombs dropped are more easily quantified than infantry battalion morale or the efficiency of a ship's company. As the realities of Vietnam fade from our institutional consciousness and—paradoxically—as the lessons of the conflict are learned and absorbed, we are left with much of McNamara's intellectual inheritance.

There is, of course, validity in the idea that quantitative data, properly collected, assessed, and presented, can aid military decision-makers. But do changes in the reenlistment rate, administrative discharge rate, incidence of Article 15s, and overweight program statistics *really* tell us, in isolation, anything about the combat readiness of the force? What do projected $P_k$ (probability of kill) statistics *really* tell us about the viability of a weapon system in battle? What do statistical order-of-battle comparisons tell us about the relative strengths of opposing military establishments?

They undoubtedly tell us *something*, just as sortie rates do. We cannot ignore them, but neither can we afford to be mesmerized by numbers alone. A far better indicator of the viability of military institutions over the long haul (though a fiendishly difficult one to assess) is the quality of professional thought. Historically, the force which thinks best fights best. The required exchange of ideas is invariably painful and difficult, but the internal intellectual battle which it entails must be won if we are to survive. Within an open society such as ours, professional military journals ride point in that battle . . . and the *Review* is such a journal. Point duty—being posted at the foremost point of an advancing force—is difficult, dirty, and dangerous, but it is regarded as a post of honor by those who understand the dynamics of battle. As Editor, it has been my privilege to serve on the point in the battle to expand and deepen our professional thought.

I am replaced by Lieutenant Colonel Donald R. Baucom, a historian of science with a doctorate from the University of Oklahoma and an officer of wide operational experience as a navigator and communications officer. He most recently served as Director of Research for the Airpower Research Institute, under CADRE (Center for Aerospace Doctrine, Research, and Education), here at Maxwell, another intellectual "point" assignment. His name will be familiar to readers of the *Review*, for he won a distinguished honorable mention in each of the two Ira C. Eaker Essay Competitions. His breadth and depth of military knowledge and commitment to the operational side of our business—combat effectiveness and the ingredients of leadership that produce it—are unmatched in my experience. I leave secure in the faith that our journal will continue in an effective and innovative manner.

J.F.G.

AIR
UNIVERSITY
# review

March-April 1983 Vol. XXXIV No. 3

# SELECTIVE INVOLVEMENT

*a national security policy for a changing world*

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IF IT is to be effective, national security policy—that blend of foreign and defense policy dedicated to coping with external threats to national interests—must be geared to the nature and rules of the international system. Currently that system is undergoing a number of changes, and the world by the year 2000 will be rather different than it is today. At the same time, though, while a number of the specific conditions are changing, the basic principles of international relations will be essentially the same, and these principles will continue to have as much validity as they do currently.

The purpose of this article is to suggest the skeleton of a general approach for a United States national security policy to the year 2000 and, within that approach, to suggest the outlines of an appropriate defense program. We call our approach "Selective Involvement." For any overall approach and its concomitant defense policy to be appropriate, they must be linked to and synchronized with the international system. Let us take as plain a look as possible at what that system will be like in the near future.

## The International System

*Wherever we turn, then, the central task . . . is to analyze anew the current international environment and to develop some concepts which will enable us to contribute to the emergence of a stable order.*

Henry Kissinger,
*American Foreign Policy*, 1969

The general nature of the international system over the next two decades, the basic international politico-military facts of life with which policymakers will have to deal, will be about the same as it is today.[1] Although nonstate actors occasionally will be important, generally states will remain the primary actors, and the most crucial problems will involve state versus state conflicts. Because there is not and will not be a central institution or set of institutions to make, interpret, and apply rules, to settle disputes or enforce decisions, and because there is not and will not be a widespread sense of community, the system will continue to be characterized by what amounts to decentralized anarchy, each actor suspicious of the others and concerned first and foremost with achieving or protecting his own national interests. While ideology, law, and ethics will often influence policymakers' deliberations, more often than not capability considerations will be crucial; while some relationships will be cooperative, some competitive, and some conflictive, it is those which are conflictive that will be dominant and have to be the most carefully handled. Because there are so many states and they are all different and have different interests, problems will continue to be many and complicated.

But although these general characteristics of the international system will not change dramatically, in a number of important specifics there will be significant alterations. The most meaningful, perhaps, will be the continuation of the current trend toward the diffusion and variability in the effective exercise of interna-

tional influence. Even in the era of bipolarity, the United States and the Soviet Union did not entirely control developments, of course, but today they have much less leverage than they did during the 1940s and 1950s. Over the next two decades, Washington and Moscow will find many cases in which they have virtually *no* effective influence. When dealing with problems of domestic instability in the less-developed countries (LDCs), for example, many of the United States military and economic elements of power simply will not persuade extreme nationalistic factions to alter course unless these instruments are employed on a vast scale, and maybe not then. And because of the political costs that major involvements produce both at home and abroad, only seldom will the United States find it advantageous to provide support to a friend at a level necessary to produce a favorable outcome.

Another factor is that many powers with strong political, economic, or regionally important military capabilities exist, and over the next several years that number will grow measurably. On certain issues and in certain regions, these states will be extremely influential, and sometimes they may be more important than either Washington or Moscow. Brazil's influence in South America and Israel's strength in the Middle East are examples. Not only are such states sometimes in a position to exercise influence themselves, they frequently are not susceptible to the exercise of influence (short of the use of overwhelming force) by others.

But it is not only the growth of middle power capability that will make the effective exercise of power more problematic. On some specific issues, small states, even LDCs, will be in a position to exercise some surprising amounts of leverage. Most states seeking to purchase military equipment already have so many potential suppliers that they can play one against another. Who exercises influence in that situation, the arms provider or the recipient? Moreover, because often the recipient knows the provider has an important interest in keeping the recipient strong, the recipient can act relatively independent of the provider. For example, in the area of security relations, United States influence with Israel will be relatively small as long as Israel knows that the United States thinks Israel is a major bulwark against Soviet expansion. In the economic dimension, control of strategic resources by LDCs and United States resource vulnerabilities often weaken the U.S. capacity to exercise influence effectively, although the interdependent nature of many economic undertakings suggests to some extent that this vulnerability works both on the supplier and the consumer. Nonetheless, states such as South Africa and Saudi Arabia, obviously, have much more power than they had previously; and, given growing consumer vulnerability, in certain instances LDC influence will grow. The list of examples illustrating growing LDC power could be extended, but there is no need. It is clear that states possessing many of the more tangible components of capability (military strength, economic power) frequently will not be able to employ their power in a way to induce other parties to alter their policies, or at least do so without often incurring disproportionate costs and risks. This trend does not imply that military and economic policies and programs are becoming irrelevant to international relations. Rather, it means that effective capability will be more and more situation- and issue-dependent, and in many cases supposedly "weaker" states will be able to protect their interests more fully and at less cost than states which conventionally would be perceived as "stronger."

Because effective capability will be so diffused as well as issue- and situation-dependent, the already inordinate complexity of most international problems will be increased further. It will be less apparent what relationships exist, who holds the key to the outcome, and so forth. Because more parties will have significant power, more states will have important roles to play; and the number of significant multidirectional interactions will increase, fur-

ther complicating the policymaker's task. Relationships will occur at various levels—global, continental, regional, and local—crisscrossing in a bewildering web. In such a setting, perceptions of issues solely in terms of United States-Soviet relations or any other single policy touchstone and any tendencies to charge ahead to solve problems quickly without regard to local sensitivities will produce severely detrimental effects. One result of this crisscrossing web of relationships is that issues will become even more overlapping, making it unproductive to deal with problems in isolation one from another. In the Middle East, for example, it just will not be possible to deal effectively with a perceived Soviet threat to oil supplies and vital sea lines of communication without fully taking into account Arab-Israeli and inter-Arab interests and effects, nor will it be useful to analyze military threats separate from their political and economic costs and benefits.

Adding to the increase in complexity, and itself both in part a cause and in part a result of the diffusion and variability of power, will be an increase in the willful international independence of some national policymakers with more unilateral policies being undertaken to support narrowly conceived national interests. This does not mean there will not be cooperation or various institutionalized arrangements such as alliances. What it does mean is that states will seek more independently to pursue their individual national interests, and those interests that are divergent from or counter to cooperative arrangements more and more will receive priority. Major multilateral alliances such as NATO will become even less cohesive, and both superpowers will find their alliances less and less manageable. In both Western and Eastern Europe, consensus will be hard to come by.

This enthusiasm for independence of action will carry over into bilateral arrangements also, and they, too, will become less stable. Because of the increased unilateralism, coalitions will become more issue-dependent and variable. States will join one coalition or another depending on its function and policymakers' calculations of costs and benefits, of course; but they will be more willing than they were in the 1950s, '60s, and '70s to change allegiances as conditions alter. And even less than today will states be willing to accept others' definition of the problems being confronted, the threat they face, what is at stake, etc. Germany will be less willing for Washington to determine what is at stake in Central Europe and what policies are appropriate even than it is today. And seldom will a state, the United States or any other, be able to count on "permanent friends" all working together for a common cause. To expect that such a situation will still exist, as it did in the era of bipolarity at the height of the Cold War, is a recipe for disillusionment and anger.

The diffusion of capability, increase in complexity, and increase in unilateralism are both cause and product of another developing phenomenon: an increase in conflict and competition. Because states all are different, have different perspectives and interests, because they operate in a system of decentralized anarchy where one's only sure ally is oneself, conflict always has been an inherent part of the international system. But changing conditions indicate that conflict will increase. As superpower influence declines relatively and individual states more vigorously pursue their own interests, as coalitions become less cohesive and issues more complex, the web of interrelationships will become larger and more variable, increasing the number of contacts and points of potential disagreement. Because of the fragmentation of alliances, more "intrabloc" disputes are likely as well as opportunities for "cross-bloc" influence. The balance-of-power threats in Europe and Asia, within the context of the United States-Soviet security relationship, seem likely to continue also and with them continuing opportunities for conflict and competition.

But it is in, and in connection with, the so-

called Third World that the number of conflicts will increase most. Change and ferment are and will continue to be the hallmark of the Third World. It is beyond the scope of this article to do more than list briefly a few of the major difficulties that will spawn increasing conflict, but a representative sampling follows:

- miserable economic conditions and great demands for improvement, but extreme difficulty in making noticeable progress;
- various kinds of domestic instability produced by internal political, demographic, economic, or social conditions;
- a wide range of transnational or subnational ethnic, racial, religious, or ideological loyalties that often exceed allegiances to the national state;
- growing North-South confrontation as LDCs demand an increasingly larger share of the gross world product;
- conflicts over access to and use of increasingly scarce critical resources and raw materials, and concerns about associated sea lines of communication;
- disputes over territorial waters and maritime rights;
- the increased capability of regional states to intervene in local disputes, and a growing willingness to do so; and so on.

The point: conflict and turmoil will increase in the next few decades, a time during which power will become more widely diffused in the international system, and it will be increasingly difficult to exercise effective influence.

## U.S. National Security Policy: The General Approach

*Everything in strategy is very simple, but that does not mean that everything is very easy. Once it has been determined, from the political conditions, what a war is meant to achieve and what it can achieve, it is easy to chart the course. But great strength of character, as well as great lucidity and firmness of mind, is required in order to follow through steadily. . . . It sounds odd, but everyone who is familiar with this aspect of warfare will agree that it takes more strength of will to make an important decision in strategy than in tactics.*

Carl von Clausewitz,
*On War* (1832)

Clausewitz's observation on war applies, in principle, to national security policy in general; not only may we expect individual strategic issues to be in a sense both simple yet difficult to resolve, we must also go beyond just charting a course. If our policy is to make sense at all, we must go back to the political conditions, interests, and objectives that will make such a general approach useful in the first place.

The changed nature and characteristics of the international system within which the United States will be operating have certain implications for the general national security approach that should be employed. Before we discuss that approach, however, two fundamental issues must be addressed: United States national interests and the situations which threaten them. On the broadest scale, it will remain the fundamental objective of the United States to preserve its political independence and territorial integrity and to protect its political, economic, and belief systems from externally imposed changes. In more specific terms, the United States will seek to deter attack against the homeland, prevent or counter hostile policies that might endanger vital interests abroad (including access to strategic resources and materials), and prevent any major region of the world from being dominated by a single hostile power.

Even by the year 2000, the only actor capable of mounting a sustained broad-scale threat to United States vital interests will be the Soviet Union. This means that the United States always must formulate its national security ap-

proach with the Soviet Union in mind. But this formulation most certainly does *not* necessarily mean that United States global leadership and forward deployment are called for. As our brief examination of the conditions spawning increasing conflict showed, many of the causes of regional and Third World difficulty are essentially unrelated to Soviet activity. The concern, of course, is that the Soviets will exploit local conflicts and become the "scavenger of revolution" by seeking to transform essentially local conflicts into an enhanced geostrategic position. But three trends in our changing world will militate against substantial Soviet success through involvement in Third World difficulties: increasing unilateralism of state policies discussed earlier, the counterproductive local and regional political effects which an excessive "foreign" presence often generates, and the different individual and regional perceptions of interests and problems which exist. Because of these trends, vigorous foreign efforts to become involved will more often produce distinctly negative effects and exacerbate the very problems one is presumably trying to resolve. Added to these trends is the fact that the diffusion of effective capability internationally reduces the possibility for any one party to bring about desired policy changes by others. Put simply, in many cases the costs and risks of United States or Soviet involvement are increasing, and the chances of long-term success are decreasing.

For all these reasons, a cautious, flexible, and selective approach would seem only prudent. There are other factors pushing in this direction, also. States usually resist vigorously efforts at foreign domination, and unless hopelessly outclassed in power or relieved of the need to do so, they will fight to protect their vital interests. This has been the basic nature of international relations for centuries. Moreover, in the view of most countries, one type of foreign control is about as bad as another. These two basic principles indicate that the United States does not always need to adopt a forward deployment stance to protect its interests; that other states, whether friendly to the United States or not, will have to act in ways beneficial to American interests just to protect themselves. Countries around the periphery of the Soviet Union have the most to lose if the Soviets expand, and they will resist (what Soviet planner would expect Americans to fight for Europe, but Europeans not?). Surrounding states may not have the power to halt the Soviets entirely, but if they combine together, which historic balance-of-power principles indicate they would do regardless of their formal alliance relationships, they surely could make Soviet expansion costly and give the United States time and space in which to react in whatever manner was most appropriate. We should note also that the capabilities of modern telecommunications to accelerate some sort of cooperative combination against a real, large-scale attack are becoming impressive indeed. Similarly impressive are the abilities of most modern air power to challenge any attacker's air superiority over his armed forces and to counterattack, disrupt, and delay a military advance long enough for the threatened states to increase their efforts at cooperation and resistance. Given the geopolitical situation of the Soviets—unfriendly folks all around the periphery from Europe through China and Japan—it is not certain that Soviet flanks would be protected no matter where the front was, another plus for Washington.

Very important, none of the foregoing is to gainsay the fact that on occasion the United States might have to become involved, or, if a general war were to occur, the United States would have to play a major role. It certainly is not meant to suggest that the United States should not develop the military capability to become involved effectively. Of course, it should. Nor does it mean that Washington should hesitate when a careful assessment has shown engagement is warranted. But it does indicate that a carefully selective, primarily supportive approach will usually be least costly,

most in tune with the changing international system, and most effective in protecting United States interests. The United States has a great advantage of flexibility due to its location; it usually does not have to be on the front lines unless it chooses to do so. The United States can be in a position to have time to think before acting, to assess the situation in terms of the general principles of international relations and the nature of the international system, and to project costs and benefits of various options carefully, all this before committing itself. By following a general strategy of selective involvement, with emphasis on caution and situation-dependent flexibility, the United States can maximize the protection of its vital interests with minimum cost and risk.

Still, even though involvements should be selective and few, it would be naïve and foolish to think they will never be necessary or useful. Although involvements may be infrequent, the United States must have sufficient power and skill to make them effective when they are undertaken, and military forces need to be built accordingly. Let us now turn to an examination of what these international environment and policy concepts might imply for U.S. military forces.

## National Security and Future U.S. Armed Forces

*If, in the past, we would sometimes afford the illusion that defense policy and foreign policy were unrelated—that military power was applicable only after diplomacy had failed—we can no longer.*

Alexander Haig,
4 November 1981

It seems quite likely that, by the year 2000, the changes in the international and national environments we have described will have made it prudent for the United States to have shifted its military strategy incrementally—away from countervailing flexible-response approaches with their efforts to develop a forward deployment global capability and toward a more selective and flexible strategy, a strategy we have termed *selective involvement*. Selective involvement responds to the probability of rapidly changing coalitions of states concentrated on specific and transient issues by capitalizing on the flexibility, selectability, mobility, and long-range rapid reaction capabilities of modern air power and sea power.

Against the background of the changing international environment and its implications for general U.S. national security policy developed earlier, we shall now examine the major programmatic elements of our proposed military strategy of selective involvement. We will look at the issue in terms of two key dimensions: (1) doctrine and ideas on force acquisition and use and (2) programs to acquire trained personnel, equipment, and weapon systems appropriate to long-term achievement of objectives despite probable threats.

A military strategy of selective involvement will lead to increasingly greater emphasis on flexibility and adaptability. One would expect that doctrinally such an emphasis would lead weapon systems acquisition processes away from the production and fielding of systems whose efficiencies are obtained from specialization and narrowly defined tasks toward systems with a multiuse capability that can be employed in varying ways and toward different ends, depending on the situation. By creating forces that emphasize adaptability, multiuse, and rapid projection and withdrawal, we shall make a strategy of selective involvement possible and find again the selective utility of adding military weight in specific state-to-state conflicts of importance to the United States. Such a strategy implies programmatic impact on offensive nuclear forces, continental defenses, general-purpose forces, and airlift/sealift.

The first and most important objective for U.S. military strategy in the twenty-first century will continue to be reducing the likelihood of national destruction from thermonuclear attack. Deterring such an attack will remain the premier task for the people and gov-

ernment of the United States for the simple reason that failing this task would make others irrelevant. Since the Soviet Union appears likely to produce the greatest military threat to U.S. interests and objectives in this area, and since a preemptive U.S. first strike would run counter to some deeply and closely held beliefs about ourselves, a secure nuclear retaliatory capability will remain the most important U.S. national security responsibility, just as it is today. Nonetheless, projected changes in the international scene will generate some changes in the U.S. nuclear posture by the year 2000.

Present U.S. nuclear doctrine (strategic, theater, and tactical) might be described as deterring a nuclear war through systems diversity and verifiable arms controls between the superpowers while developing the capability to fight effectively should deterrence fail. The forces to support this doctrine for the United States are embodied, in part, in the triad of ground-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and air-delivered nuclear bombs and missiles (the venerable B-52s with bombs and short-range attack missiles or SRAMs). Current U.S. nuclear capabilities also include growing numbers of the very accurate air launched cruise missiles (ALCMs). In addition, a variety of forward-based nuclear delivery systems, such as deployed Air Force and Navy aircraft and theater nuclear weapons, further enlarge and complicate the defensive and offensive tasks of any adversary. The nuclear picture is being filled in with what are usually termed intermediate-range nuclear forces or INF, such as the planned NATO deployment of ground launched cruise missiles (GLCMs) and Pershing II missiles.

The lessened cohesion of permanent alliances, as projected in this article, argues that there will be greatly reduced benefits from forward deployment and substantially escalated costs in terms of time and materiel—a situation that will call for changes in both forward-based and centrally based nuclear systems. Shifting international alignments and crosscutting issues will further weaken the large sense of community and commonality of purpose on which some forward-based nuclear systems ultimately depend. While allied diplomacy, U.S. leadership, and Soviet intransigence may well produce full implementation of the December 1979 NATO agreement on GLCMs and Pershing IIs, future forward systems will be more usefully concentrated on flexible, rapidly deployable (and redeployable) air power such as the B-1B, probably nuclear-attack-capable carrier-based aircraft, and possibly the advanced technology bomber (ATB or "Stealth"); but we expect the cruise missile portion of nuclear force structure to change even more.

In light of the international trends previously discussed, the physical characteristics of cruise missiles in combination with burgeoning political constraints on forward basing will modify both their usefulness and their use. The slow, undefended flight and presumably sluggish retargeting abilities of the first generation of very accurate GLCMs and ALCMs limit them to fixed targets at known locations and to mass assault tactics for overwhelming defenses in order to deliver most of their warheads.[2]

Operationally, these characteristics more resemble a mine field than artillery or air attack. Politically, it would appear that obtaining permission to fire this missile "mine field" would be a formidable task for any theater commander. Releasing this force against a rapidly moving opponent or quickly retargeting it to attack an unforeseen enemy would appear to be tasks that at times are practically impossible. Cruise missile technology has produced new, highly specialized abilities for accuracy and mobile basing, but future usefulness may depend more on flexibility, adaptability, and selectability. In short, the present cruise missile

characteristics make them very useful as a nuclear deterrent but a great deal less useful for war fighting. In our view, these missiles would be better if they were both perceived as and, in fact, were employable in a war-fighting contingency. Thus, there needs to be reduced emphasis on cruise missile range, warhead, and accuracy and a great deal more emphasis on acquiring a rapid retargeting capability and on improving target acquisition, target identification, and missile homing capabilities.

The arms control implications of the changes concerning centrally based and forward deployed systems are many and varied. Here we shall have to be satisfied with only enumerating a few of them. For example, arms control negotiations between the U.S. and U.S.S.R. should be somewhat facilitated by deemphasizing forward systems (over which we have never adequately agreed) and emphasizing central systems. At the same time, bilateral U.S.-U.S.S.R. arms negotiations will have to share the spotlight of public interest with an array of bilateral and multilateral arms negotiations with many other nations; and, as the number of parties who are negotiating increases, the potential obstacles to an agreement will also increase as will the chances of later disaffection and renouncement. Simply put, there will be a significant increase in the number of parties that will have to be satisfied before an agreement can be reached or kept. It may not be too much to say that a whole new order of negotiating structures and informed decision-makers will be called for from areas of the globe that have not seen quite this sort of diplomatic and national security concern in the past.

Current conventional wisdom usually describes nuclear weapon systems almost totally in terms of the superpowers, the United States and Soviet Russia; but such a fixation has already become unrealistic. We usually conceive of the nuclear weapons in Europe and Asia as under the tight control of the particular superpower responsible for their genesis. The independent nuclear forces of the United Kingdom, France, or the People's Republic of China (PRC) are viewed generally as somewhat exceptional and specifically as tied more to "theater" roles than to "strategic" ones. Without a great deal of public strategic dialogue on the topic, the situation is changing. In the near future, for example, a conflict in Southwest Asia might well involve nuclear threats from the U.S.S.R., the U.S., Pakistan, India, the PRC, and possibly even Israel and certain Arab states.

Such nuclear proliferation will place new responsibilities and emphasis on the triad, but we shall have to dip lightly into deterrence doctrine to see why that will be so. A party is deterred or not deterred from an activity by a complex host of factors that vary with time, national and cultural differences, the objective in view, third-party influences, alliance relationships, etc.; but one crucial element in the deterrence equation has always been the balance of nuclear weapon systems—a balance the analogy for which has been two scorpions in a bottle. Focusing for purposes of analysis on this important factor alone, consider what deterrence would be like in a proliferated world whose "bottle" might have 10, 20, or 50 scorpions of various sizes in it! Each scorpion will have to cope with two unpleasant but salient concepts: first, any sting anywhere may or may not set off a frenzy of attacks and death; and, second, as the number of armed participants goes up, the likelihood of accidental or deliberate attack also increases. Failing an opportunity to get out of the bottle, the sane scorpion will look both for ways to limit the stinging and for ways to increase its chances of surviving a sting or two. Limiting the stinging implies offensive nuclear arms reductions,[3] and surviving a sting or two implies defenses against attack, which will be discussed later. Both factors

will play important parts in the deterrence equation for the year 2000.

One aspect of nuclear deterrence that will continue in importance is a diversity of centrally based systems, currently epitomized by the triad. As discussed previously, the present diversity of U.S. systems also includes forward-based, nuclear-capable aircraft and short-range theater systems, and it is scheduled to include intermediate-range nuclear forces such as GLCM and Pershing II. Although an increased pace of changing alliance loyalties and interests may be expected to place severe strains on permanent forward deployments and to argue against their expansion or continuance, such rapidly changing and interest-specific coalitions may make the stability of secure central systems more attractive. Nonetheless, it is important to note that the survivability of systems like the triad depends to a considerable extent on diversity. By the year 2000, not only would one expect to continue to find a certain synergism wherein each leg complements the strengths or offsets the weaknesses of the other but central-system diversity will also continue to provide an important hedge against technological breakout. For example, if a conglomeration of computers and sensors were to become capable of isolating and locating SSBNs, that technological surprise would be precluded from becoming catastrophic by the inherent difficulty in attacking a newly vulnerable leg of the triad without incurring attack from the remainder. This stability through diversity of central systems will continue into the next century.

Certain features of the central systems will need to be modernized and upgraded over the next several years if we are to have confidence that deterrence will be maintained. Enhancing the survivability and security of the command, control, and communications systems ($C^3$, generally in this context referred to as "connectivity") will be especially important; developing rapid retargeting capabilities to support changing strategies and multiple options against a variety of threats will be important, too, as will increasing emphasis on weapon survivability (perhaps at the expense of rapid reaction time). With these features significantly improved, the triad could provide postattack firebreaks against protracted nuclear war for many years to come.

A key factor in central system survivability will be the decisions we make in the next decade concerning passive and active defenses. Greatly diminished in the United States for the last dozen years, continental defenses (including ballistic missile defense or BMD) should play a much larger role in the strategies and programs of the year 2000. If, as this article assumes, the international arena will be filled with a wider variety of powers with changing agendas of issues and conflicts, then deterrence will involve a hellishly diverse listing of paramilitary and military threats—including nuclear ones. The long-standing cycle of offensive or defensive superiority may be moving away from the offensive dominance begun with the nuclear armed ballistic missile and toward a period of offensive/defensive balance.

In our view a confluence of factors will make it both prudent and possible for the United States to enhance its defensive capabilities. On the one hand, there will be increased offensive capabilities for use against the United States as well as increasing potential for conflict from both Soviet and non-Soviet sources. On the other, there is an increasing possibility that military defense at a level of some significance may be becoming technologically feasible.

The primary offensive military threat to the United States will remain the U.S.S.R., and the Soviet buildup of military capabilities appears likely to continue. The steady and impressive aggregation of Soviet military might is a result with many causes, and its character and dimensions are well documented elsewhere. More to the point, it seems quite likely that the products of this buildup will continue to pose the most formidable single military threat to U.S. interests and objectives in the year 2000.

Nonetheless, in our view, the forthcoming

large increase in the dimensions of the non-Soviet threat to U.S. interests will make the planners and politicians of the next century long for the simple "good old days" of today. The reasons are complex but clear. By the year 2000, there will be a significant availability of highly lethal sophisticated weapons and a widening propensity to employ them. Arms sales, grants, and transfers are expected to continue at very high levels from the developed First and Second Worlds as well as from the graduated states of the more industrialized parts of the Third World. The international environment is changing in ways that make conflict more likely. Population, urbanization, and developmental pressures in the Third World decrease stability and increase the opportunities for conflict, and there is always the possibility of conflict spillovers from subnational to international levels via a variety of outside interventions. A tightening global economic interdependence will increase the number and deepen the interests of various national involvements of many states in international affairs. And there are residual colonial and tribal hatreds in much of the Third World that may be expected to decrease the cooperative aspects of interdependence that one might expect. All in all, we may anticipate that U.S. military, economic, and diplomatic initiatives in the future may well spend what we today would regard as a surprising amount of effort on non-Soviet threats.

As an example of just one of the many non-Soviet factors impacting on U.S. military defenses, the general increase in availability and lethality of sophisticated arms was graphically demonstrated by the destruction of the British destroyer *Sheffield* on 4 May 1982 by an air-launched Argentine missile, the French-made Exocet. In the words of a former British Navy officer who is a Senior Fellow at the Brookings Institution,

> . . . the real problem is proliferation of these missiles around the world. They give a picket-boat the punch of a battleship. Small coastal states can exclude major navies from their waters. They've never had this power before, and it's very important to international naval operations.[1]

But although there will be sophisticated lethality available for use by more parties in ways contrary to U.S. interests, burgeoning technological developments in air and sea power will also make it possible to develop a reasonable defensive capability. Rapidly deployable, multiuse forces available for selective involvement will be discussed later. Here we want to advocate the revival of continental defenses based on major advances in air- and seaborne electronics, directed energy weapons, and space-based systems.

Given its technological capability, the United States could capitalize on these technological advances and field some impressive strategic defensive systems. In the near term, examples of improved airborne electronics include using E-3 airborne warning and control system (AWACS) aircraft as area-controlling elements for flights of F-15 fighters armed with advanced medium range air-to-air missiles (AMRAAMs). The AWACS electronically processes radar-derived data to produce an extraordinary amount of information on objects within its range. This information provides the possibility for selective, long-range engagements using the beyond-visual-range and launch-and-leave characteristics of the AMRAAM; and the AWACS, F-15, and AMRAAM in combination make an exceptional destroyer of aerial attacks, whether used in deployment areas or on the periphery of the United States. A new munition with characteristics similar to AMRAAM (possibly a follow-on to the Navy's Harpoon) and an additional expansion of AWACS usage could produce the same formidable defensive system against infiltrating attacking land or sea forces.

Also in the near term, the U.S. Navy will be acquiring similar electronically based air defenses of potential general use. Naval electronic integration of air attack warning and engagement control will be accomplished

through the planned introduction of Ticonderoga-class Aegis cruisers and the continued deployment of E-2C early warning aircraft and F-14 fighters armed with Phoenix missiles. Additionally, some U.S. surface ships are being individually equipped with automatic, self-contained air defense consisting of a 20-mm Gatling gun, radar, and digital fire control system collectively called Phalanx. If it works as advertised, Phalanx provides a fast-reacting terminal defense against low-flying, high-speed antiship missiles, such as the Exocet.[5] Although procured to provide terminal defenses for fleet battle groups, these systems could provide a substantial amount of well-defended offshore airspace of value to a variety of defense schemes, and they and the AWACS/F-15/AMRAAM combination offer important counters to the general increase in the availability and lethality of sophisticated offensive weapons that were discussed earlier.

In the more distant future, defensive systems could expand on present U.S. capabilities to sense a missile attack with space-based infrared systems and ground-based radars by adding additional space-based sensors and detectors and space-, air-, and ground-based active defenses.[6]

Such defenses will probably include antisatellite and antimissile capabilities. Although the United States has deployed no BMD system since our single Safeguard site was closed in 1976, ground-based low-altitude defense systems conceivably could be combined with air- and space-based systems using directed energy weapons to produce the defense in depth necessary for reasonable attack attrition. Irrespective of the particulars, such systems would be best procured and deployed with a view toward countering multiple threat sources (not just the Soviets) and toward destroying a variety of attacks ranging from sophisticated fractional orbital reentry vehicles to fairly simple INF attacks from a variety of third parties.

To be successful, a strategy of selective involvement requires a strong general-purpose force capability, but not everyone realizes initially how very costly truly general-purpose forces are. Because of the enormous amount of detailed planning and preparation that must go into any useful military operation, it is far easier to plan and prepare for a few specific purposes rather than either general ones or a whole array of appropriate specific ones. The Rapid Deployment Joint Task Force (RDJTF) affords a good case in point. Although it was conceived in some circles as a go-anywhere, do-anything power projection force, the hard facts of planning and preparation have forced it to concentrate almost exclusively on one area at a time; the RDJTF has now evolved into the U.S. Central Command, focusing primarily on Southwest Asia. To be effective, a military force has to be appropriately trained and equipped. To be truly general, general-purpose forces must have some forces appropriately trained and equipped for every spot on the globe, and that would be very costly indeed.

But the United States does not need general-purpose forces such as we have defined so broadly here. As we explained earlier—as a result of the diffusion of international capability, the proliferation of sophisticated lethal weaponry, and the basic principle that states usually will vigorously resist efforts at foreign domination, plus the fact that the United States often will not have to be on the front lines unless it chooses to do so—at many spots on the globe *others inevitably* will bear a part of the U.S. costs just to protect their own national interests. Thus, in many instances, the United States will be allowed time and space in which to decide how to respond. The increased lethality, range, and flexibility of indigenous modern air power can play major roles in obtaining the time for U.S. deliberations. Air power can disrupt and delay any military advance by a party

that does not maintain air superiority over the battle because blitzkrieg warfare, in order to advance rapidly, requires mobile firepower support of a volume and type that is almost impossible to provide if challenged by far-ranging and flexible air attacks.[7] As a consequence, offensive counterair and air interdictive missions from indigenous air forces (and selectively used, rapidly deployable U.S. air forces) could significantly delay large-scale military advances, creating some time for the necessary political assessment and deliberation concerning U.S. involvement.

A major implication of all of the changes in the international political and military systems is that it just will not be essential to have American ground forces appropriately trained and equipped for every contingency. Moreover, the United States will be able to reduce significantly many of the most exorbitant of force preparation costs if it will decrease the efforts toward specialization and seek out the broad-gauged effectiveness of multiuse, room-for-growth weapon systems—including those mega-systems that constitute land-combat units.

IT IS BEYOND the scope of this article to evaluate the current debates between "reformers," such as Senator Gary Hart, and the traditional army. Arguments over firepower-attrition versus maneuver or quality versus quantity are certainly important facets of what we view as a healthy strategic discussion. But it is the mobility versus staying power issue that this article must address. The sort of world this discussion is projecting has certain implications for the mobility versus staying power issue as it relates to effective, multiuse weapons. Quite simply, a major change will be required by the United States through a substantial increase in both the quantity and quality of U.S. airlift and sealift—along with a concomitant decrease in the current enthusiasm for prepositioning. Presently, the emphasis is on only three primary conventional contingency areas—Western Europe, Southwest Asia, and Korea. In this context, the mobility equation would seem to be best satisfied by a balance of airlift, sealift, and prepositioned materiel. Nevertheless, in a Congressionally Mandated Mobility Study that was delivered to the Congress in May 1981, the Pentagon documented a 20-million ton-mile-per-day shortfall from the current intertheater airlift forces.[8] Within the context of the projections in this article, that shortfall will be many times greater. Issue- and situation-dependent requirements for military force deployment and employment will certainly call for more areas of interest than the three currently used, and the undeniable importance of quick-response capabilities will certainly require more and better use of airborne and seaborne mobility. After all, in those situations where the United States finds it advantageous to its interests to employ forces, employment too late or too little could conceivably be worse than none at all. Selective involvement as a national strategy will almost certainly place greater reliance on airlift and sealift than the present arrangements do, and mobility forces would reasonably be expected to command a greater share of the Department of Defense budget than the 3 percent they presently receive.[9]

*I have been struck by the congenital aversion of Americans to taking specific decisions on specific problems, and by their persistent urge to seek universal formulae or doctrines in which to clothe and justify particular actions.*

George Kennan,
*Memoirs 1925-1950*

Over the next several years, the world in which the United States formulates and implements national security policy will both change considerably and yet, in many important respects, remain the same. It will remain the same in that the basic principles of international relations will continue to operate and have as much validity as they do today. For example, since the states of this world operate in a complex multilateral system that amounts

to decentralized anarchy, they continue to be primarily concerned with conflict situations and will vigorously resist efforts to harm their vital interests.

But in a number of specific ways, the system will undergo great changes:

- there will be a considerable diffusion of power and an increase in the variability and uncertainty of attempts to exercise influence effectively;
- there will be an increase in the number of middle powers, some of them with significant military strength;
- on some issues, small states will be in a position to exercise surprising leverage;
- effective power will be more and more situation- and issue-dependent;
- there will be an increase in unilateral policies and a general decrease in alliance cohesion; and
- overall, there will be an increase in the system of both conflict and competition.

The only actor capable of mounting a sustained broad-scale threat to American interests in this changing global environment will continue to be the Soviet Union. Nevertheless, at the same time, there will be a large increase in the number and character of important non-Soviet threats. Given the changes in the international system noted earlier and the fact that often other states, just to protect themselves, will have to act in ways benefiting American interests, a cautious, flexible, selective approach —its precise nature dependent on the issue and situation—seems only prudent. Usually, the United States, because of its location and strength, does not have to be involved in a crisis unless it wants to be, and others often will have to bear much of the brunt if there is a major aggression.

Nonetheless, it still is true that involvements sometimes will be necessary, on a selective basis, and military forces need to be built accordingly. In the changeable international environment of the year 2000, flexibility, mobility, and adaptability will be at a premium. This situation implies an increased emphasis on the capabilities of modern air power and sea power, and it has implications for doctrine, force acquisition, and programs. Cruise missiles need to be configured so as to be employable in a war-fighting contingency and not be useful only as a nuclear deterrent; airlift and sealift capabilities need to receive very high priority and be enhanced enormously; general-purpose forces need to be redefined and costs decreased, with a greater emphasis on multiuse, room-for-growth systems; continental defenses, based on major advances in airborne and seaborne electronics, need to be enhanced against a multiplicity of potential threats; greater flexibility needs to be incorporated into theater nuclear systems as costs escalate and benefits decrease from forward deployment; and there were other changes implied.

But underlying all of the military programs will be the fact that the most fundamental objective will continue to be reducing the likelihood of national destruction from thermonuclear attack while still providing the capability to fight effectively should deterrence fail. In the increasingly proliferated world of the next several years, maintaining a highly diverse mix of survivable central strategic nuclear systems will be critical. Enhancing $C^3$ survivability and developing rapid retargeting capability are just two of the features we mentioned that will have to be modernized or upgraded. Active defenses also will become increasingly important. It is our view that burgeoning technological development in air-, sea-, and space-based systems will be such as to make it possible to field some very impressive strategic defensive systems, systems effective against a wide spectrum of both Soviet and non-Soviet threats.

With strategic forces built to maintain effective deterrence or fight effectively if deterrence should fail, and multiuse general-purpose forces highlighting mobility, adaptability, and flexibility available for other contingencies, the United States would be equipped to become involved (or not) in crises on a thoughtful, selective basis. Instead of universal formulas or the disposition of forces and capabilities dictating involvement, specific decisions could be made on the basis of the specific situation and issue. Thus, U.S. policymakers would have room to maneuver—time and space in which to take advantage of the basic principles of international relations as well as advantage of our uniquely favorable geographic location. With proper forethought in doctrine and programs, we could be secure in the knowledge that, if vital interests indeed were threatened and military force were required, the capability would exist to maximize our chances of achieving objectives with a minimum of cost and risk.

*University of Maine, Orono*
and
*Air War College*

**Notes**

1. This description of the international system is largely based on Robert L. Wendzel, *International Politics: Policymakers and Policymaking* (New York: John Wiley & Sons, 1981), Part One.

2. For the GLCM and Pershing II forward basing agreement, see the "Long-Range Theatre Nuclear Force Modernisation and Related Arms Control" communiqué of 12 December 1979 reprinted in *The North Atlantic Treaty Organisation: Facts and Figures* (Brussels: NATO Information Service, 1981), pp. 294-96; for an update on the U.S.S.R. SS-20 missile deployment effect on the NATO agreement, see the 24 March 1982 NATO Nuclear Planning Group communiqué cited in AFRP 190-1, *Air Force Policy Letter for Commanders*, 15 April 1982, p. 1. For details on the U.S. cruise missile program, see *Jane's Weapon Systems, 1980-81*, eleventh edition (London: Jane's Publishing Company, Limited, 1980), pp. 18-19 and 147-48.

3. "Limiting the stinging" might be achieved by a largely successful preemptive strike against one's opponents, but it seems likely that such an action would be at least as difficult and uncertain a course in a more proliferated world as it is now and probably even more so.

4. *U.S. News and World Report*, May 17, 1982, p. 28.

5. Organization of the Joint Chiefs of Staff, *Military Posture for FY 1983* (Washington: U.S. Government Printing Office, 1982), pp. 90-91.

6. Ibid., pp. 76-77.

7. For a discussion of blitzkrieg's firepower and air power requirements during the fall of France in 1940, see Len Deighton, *Blitzkrieg* (New York: Ballantine, 1979-80). For an analysis of its effects on the Luftwaffe, see Williamson Murray, *Strategy for Defeat: The Luftwaffe, 1933-1945* (Maxwell AFB, Alabama: Airpower Research Institute, 1983).

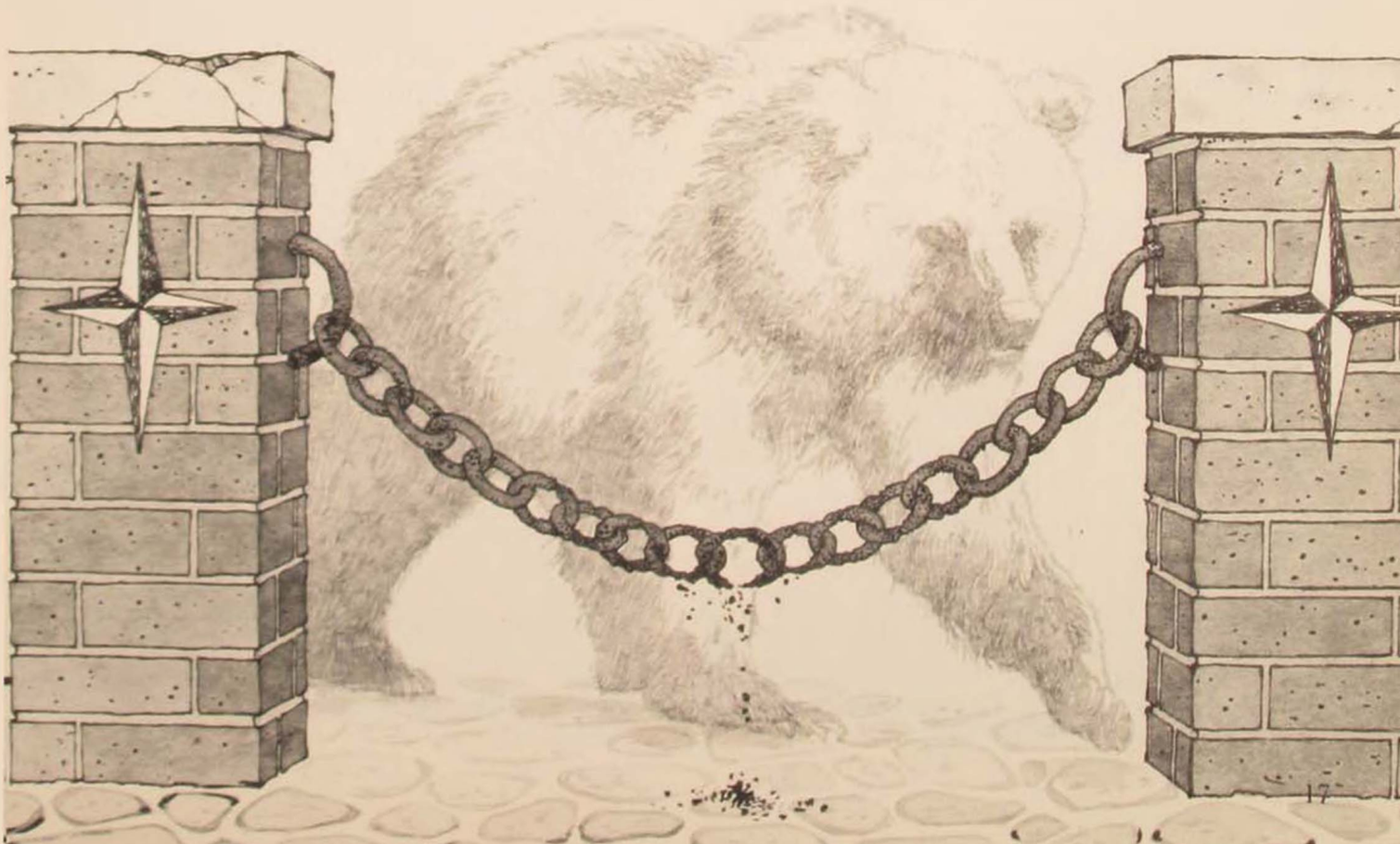
8. Organization of the Joint Chiefs of Staff, *Military Posture for FY 1983*, pp. 54-55.

9. Ibid., p. 56.

# GERMANY'S SECURITY POLICY OPTIONS FROM THE ELITE PERSPECTIVE

## *some implications*

WOLF-DIETER EBERWEIN



This article summarizes findings of a research project now under way at the International Institute for Comparative Social Research at the Science Center, Berlin: Security Policy Options of the West for the '80s.[1] The countries included are the Federal Republic of Germany, France, Great Britain, Holland, and the United States. The results and conclusions for Germany are presented in the form of theses, which are justified at some length; their justifications are simplifications of a much more complex picture. The choice for such an approach was determined in the belief that it may contribute to a greater clarification of some of the major problems of German security policy as we perceive them.

W.-D.E.

THE Western alliance is in trouble. This is the least one can say. Whether the present crisis is but a repetition of the crises NATO has experienced before is difficult to assess or whether it can be overcome is, to a certain extent, dependent on the political will of the allies to rediscover the simple fact that only the commonality about the basic goals the alliance should pursue, as well as how to achieve them, guarantees the survival of the alliance. This group of nations was originally brought together by the will to deter the Soviet Union. As successful as NATO was, the fact remains that today the allies drift apart: not only do they disagree about the evaluation of the overall security situation but they also disagree about the necessary steps to be taken to cope successfully with the present challenges.

The problem, however, is not just one of political will. All the governments included in NATO are operating under constraints today that limit their freedom of action. These constraints may force them to take a hard line vis-à-vis their allies in order to satisfy their respective domestic constituencies. Alternatively, the governments may not be in a position to satisfy alliance demands because of the domestic opposition this would bring.[2]

It appears that the governments' ability to control their internal as well as their external environments has declined. Thus here lie the causes of the problems policymakers seem to be increasingly unable to come to grips with. Before addressing the issue of the options for Western security, as perceived by the German security policy decision-makers, I will briefly sketch some of those factors that act as constraints in alliance politics.

Domestic opposition to the security policy of NATO is rising. People feel increasingly frightened by the possibility of a nuclear war in Europe. The intermediate-range nuclear forces (INF) deployment has definitely contributed to this widespread concern. And nobody knows yet how successful this movement will be politically. Nor does anybody know how the policymakers will react the closer elections come.[3]

Economic conditions have been deteriorating the last couple of years. High unemployment, high inflation rates, and increasing government deficits plague the governments and parliaments in the West. How these developments will affect the overall internal stability and thus threaten the successful achievements in the construction of the welfare state remains to be seen.

The causes for the economic malfunctioning are not only domestic in nature. The international economic system has developed a momentum of its own. Whatever individual nations do, such efforts are limited because of the tight interdependence network that binds them together. So long as overall international economic conditions are not improved by collec-

tive efforts, national economic performance will not get better.

One dire consequence of the present situation is that parliaments and governments are faced with a tradeoff situation. According to official wisdom, Soviet expansionism has gained new proportions, thus requiring increased Western efforts in building up their military capabilities to match those of the Warsaw Pact. But given the overall economic conditions and budgetary constraints, just the maintenance of the present welfare systems severely limits further increases of the defense sector. If the latter grows, the choice is either for guns or butter. If this choice is accepted, the risk is the loss of popular support and rising popular dissatisfaction. The latter may translate into a new wave of protest and thus domestic instability.[4]

This present discussion focuses on the question of the security policy options perceived by the German security policy elite: How does the German elite perceive its security needs and its present threats and evaluate the importance of the alliance? Furthermore, what options does this country have to enhance its security? I will try to answer these questions by formulating a set of simplified propositions, which will be briefly justified before some of the major implications are outlined. Also, a certain degree of simplification will be necessary. This strategy makes it possible to outline more clearly what some of the major problems the alliance and Germany are faced with today. A short outline of the research strategy used precedes the substantive discussion. One part of this comparative study consists of conducting a number of interviews with specialists both within and outside the administration of each country that is involved directly or indirectly in the security policy decision-making process.[5]

We have referred to these as elite interviews, and we chose this approach because public discussion does not necessarily reveal the complexities of the issues at stake nor does it reflect the breadth of the overall security policy problems. This assumption was borne out by the interviews. Therefore, we got some insight into the heterogeneity—and the homogeneity as well—of the perceptions, evaluations, and preferences held by the group interviewed. The results allow us to describe some of the variety of opinions held within the German security policy elite at large. How representative these opinions are is another question.

*The German security policy elite has a very sophisticated concept of security. This complex view contrasts with the perceived ability to control the domestic and the external security relevant environments.*

The results of our interviews indicate that there is a remarkable consensus within the elite. This unanimity is reflected in their views on the major constituent elements of national security. It should be pointed out that, contrary to widespread criticism and the charge of parochialism in these views, they tend to be broad and global in character. Security is generally defined in terms of two functional components, the political-military component and the economic component. These two components are related to two geographical components: the East-West and the North-South. Finally, there is the internal-external nexus. The elite generally believe that domestic stability is a necessary precondition of international security.

In political-military terms the East-West relationship clearly dominates. Germany alone cannot deter the East. It has to rely on NATO for that purpose. In economic terms, given the new phase of what one respondent called the phase of global interdependence, Germany is to some extent dependent on the Third World for supplies of most of its raw materials and oil. It cannot survive politically if it cannot trade.

When it comes to the question of the control of this complex environment, the overall feeling is of what one could call impotency. It seems as if this country's power is considered more a burden than a blessing. A go-it-alone

approach is not considered feasible. This, in turn, creates additional problems.

*The threats perceived relate directly to the interdependence structure in which Germany is embedded today. Part of it relates to alignment with the United States.*

Interestingly enough, no immediate danger of a military attack (i.e., a military conflict in Europe) is perceived. Yet there is a clear division with respect to the ability of the Soviet Union to blackmail Germany or to push it onto the path of Finlandization. This issue seems to be more related to the domestic political debate and the intention to question the reliability of the government than a real danger. Yet, as one respondent stated, the real problem is that such statements can contribute to the undermining of the psychological basis of support for NATO in the population itself.

The more imminent danger perceived is twofold: First, the danger of a renewed military conflict in the Middle East leading to another oil boycott; second, the danger of instabilities in the Third World in general, leading to the involvement of the superpowers. This situation in turn could lead to a direct confrontation between the United States and the Soviet Union. Some people expressed their fear that it could then lead to the "horizontal escalation" (to use a term of Defense Secretary Caspar W. Weinberger) of that conflict into Europe. This might explain why at least some of the respondents are skeptical about the Rapid Deployment Force (RDF).[6]

In very general terms, given the present state of global interdependence, the major apprehension is that any instability in the world leading to military conflicts not only affects Germany's economy directly or indirectly but also implies the danger of spillover of military conflicts into Europe.

In this respect the behavior of the United States is central. Since there is no alternative to alignment with the United States, the way the administration in power defines the Soviet threat and how it acts or reacts to the Soviet Union will directly affect Germany. This is what I would call the loyalty trap in which Germany's security policy is caught.

*The present discord in the alliance relates to the assessment of the Soviet threat and the prevailing military balance. Given scarce resources and domestic constraints, the alliance itself seems to be a greater source of instability than its environment.*

The belief is widely held that the military balance has not only contributed to peace but also will contribute to peace in Europe in the future. The point of divergence is the present state of the military balance, what can be done in the future, and what should be done in the future. A clear division becomes evident: On the one extreme we find the belief that the alliance is militarily clearly inferior to the East, in conventional terms and with respect to the theater nuclear forces; on the other extreme is the argument that at this juncture the balance is still satisfactory.

That more should be done seems to be widely accepted, especially in terms of ammunition stocks and spare parts. Yet this does not mean that the 3 percent standard set by NATO is accepted. As one person stated, such a standard is ridiculous because it does not specify the weaknesses in the military force posture. Even though more money should be spent, as many believe, the question is whether more money can be spent now. The need for more and more money for defense is a request the U.S. administration is continuously making. The tradeoff argument is not accepted in this context, but it is clear that more money for defense would imply even greater cuts in the welfare budget. At present the domestic debate centers around the isolated issue: How much is enough? Because of security considerations, all agree that the existing welfare system neither could be nor should be dismantled. On the other hand, they disagree about its actual scope: To some the welfare benefits go far beyond what is consid-

ered necessary; to others no major cuts are possible without destroying the system as a whole. One respondent who said that for security reasons the defense sector has to get what it needs is probably in the minority.

Everybody, especially the U.S. administration, is aware of the expectation that Germany should spend more. If she does, the country is caught in a fiscal trap, which will continue at least as long as the economy is in bad shape. If Germany spends more, the tradeoff is guns for butter. This tradeoff might satisfy the major ally, but it could erode the domestic basis of support for the security policy, maybe for the alliance as well. Yet if Germany does not spend much more, the oposition within the alliance, especially from the United States, may continue to rise. Unfortunately, the issue of the defense spending of the allies has become much more of an issue of domestic politics and less one of alliance politics. Therefore, no real solution is in sight.

*Alternatives as to how to improve NATO are seen but are not considered viable options.*

Some respondents expressed the belief that one way out of the present impasse would be to create a European nuclear deterrent. Such a deterrent force would make sense only if France would be willing to integrate its national nuclear forces into a broader European security system that implies the creation of a European state. Those in favor of such a solution recognize that it is anything but realistic.

The only realistic view, as all stressed, is that there is no alternative to NATO today. This, in a way, could be characterized as a lack of creativity on the part of the German security policy elite views. Little or no consideration is given to security policy solutions in Europe that exclude the United States. People simply refuse to believe that the U.S. will reduce its commitment to Europe. One core argument was that the defense of Europe is as crucial to the United States as it is to the Europeans, but this is more and more questionable.

A number of options or ideas were expressed about how to reinvigorate the alliance. Three different points of view showed up in the interviews. The first was to reduce the alliance to what it originally was, a military organization. This implies a reduction in the scope of NATO.

The second and opposite view was that NATO must at least politically enlarge its scope by operating under the premise of the global context of Western security. This amounts to an acceptance of U.S. leadership in the manner the present administration defines it or, by the same token, to accept any U.S. administration's definition.

The third view represents a hybrid of these two positions. That is, keep NATO basically limited in scope but top it with a set of bilateral arrangements for joint ventures outside of NATO territory and multilateral arrangements of the more powerful nations in NATO (the United States, France, Germany, and the United Kingdom). Regardless of the position the individual respondent took, all seemed to concur that some form of burden-sharing should be agreed on. Yet nobody could give any details as to what this entails.

*Unless far-reaching changes occur in Western security policy, Germany will be faced with mounting problems.*

The first point relates to the success or failure of arms control negotiations. The hope expressed by all elite members was that the INF talks in Geneva would lead to a successful outcome. If this expectation remains unrealized, the prospects are that popular opposition will mount once the Pershing II and the cruise missiles are deployed. At this juncture, skepticism seems to be growing within the German government that the United States is seriously willing to come to an agreement with the Soviet Union.

If this should happen, the German policymakers would lose some of their credibility with the public because they have always stressed the commitment of the U.S. govern-

ment to make a success of Geneva. It is questionable whether a strategy to blame the Soviet Union for such a failure could be credible and successful.

Probably even more relevant is a medium-term success in the force reductions talks in Vienna. Germany faces the problem of demographically induced "unilateral armed forces reduction." The number of conscripts will decline by roughly 110,000 as of 1990 unless conscription is raised drastically. Right now the plan is to raise the length of service from 15 to 24 months, but this would not be enough. Therefore, women and the children of foreigners working in Germany are also planned to be drafted. But additional financial resources would be needed as well in order to maintain the voluntary service component of the Bundeswehr, not to mention requirements for procurement, etc.

If conscription is prolonged, this could lead to discontent on the part of those having to serve for 24 months. Whether the prolonged conscription period is likely to raise the motivation level of soldiers is questionable. A secondary economic effect is also likely to result: Prolonged conscription results in a reduction of manpower on the labor market. This could have consequences for the economy at large, which would have to find other solutions to overcome the shortage.

All this points to the problem of political and psychological limits for the defense burden. If these limits are not taken into account, any German government will run into serious problems. At least as long as present economic conditions prevail, discontent is likely to come from a variety of sources: from the peace movement, the trade unions, within the parties, etc. The various dissatisfied groups may at some point join hands. If this should happen, then the current stability of Germany could vanish. The success of the alternative and green lists is a warning signal.

ONE POINT that came out very clearly during the interviews is the fact that Germany's elite do not envisage in any form a unilateral solution to its security problems. Its allegiance to Europe and to the United States is a fundamental principle to which the security policymaking elite sees no alternative. But if the present situation remains unchanged, its leadership will be in serious trouble. The American demand for Germany to spend more money on defense is not currently feasible. Nor is it acceptable to this country to engage deliberately in the embargo crusade against Eastern Europe in general and the Soviet Union in particular. Regardless of domestic contingencies, some of which have been briefly mentioned, the U.S. policy could seriously weaken the ally it considers as the most reliable and most important.

This situation would leave West Germany without any option whatsoever. A European security solution is anything but realistic at this stage. The worst that could happen would be a situation in which the alliance would crumble, not necessarily because of a purposeful policy but simply because of the inability of the allies to find commonly agreed-on solutions to their present problems. Germany definitely is a difficult ally, but some of its difficulties are not its own fault, today even less than in the past. The alliance today is probably endangering itself much more than the Soviet Union could ever dream of.

*Berlin, Germany*

**Notes**

1. This project is in part a joint venture with a similar one directed by Professor Catherine Kelleher. A book will be published early in 1983 reporting on the interviews and edited by Professor Kelleher and me.

2. Both types of behavior can be observed at present. The U.S. pressure on its allies probably has a strong domestic motive.

3. This will be interesting to observe in Germany as the elections are taking place in March. It seems as if the INF deployment will be one of the major issues.

4. Already, the German trade unions have started to build up a strong protest movement against the planned 1983 budget cuts in the welfare sector, which became even more intense after the coming to power of Chancellor Helmut Kohl and the new three-party coalition.

5. The interviews in Europe were conducted in November and December 1981. In Germany 44 persons were interviewed. Given our promise of confidentiality, we can only very roughly describe its composition. The sample included 8 officials from the foreign office and the defense ministry, 21 parliamentarians from all the 3 parties represented in the Bundestag, 3 former high-ranking officials from the defense sector (2 of whom are retired generals), 2 security policy specialists from the national parties' headquarters, 2 influential security policy consultants, and 8 legislative assistants and staff members from the pertinent parliamentary committees (e.g., defense, foreign affairs, and budget).

6. Whereas the Rapid Deployment Force is considered to be of some use for deterring the Soviet Union in the Gulf area, its value as an instrument to intervene in the case of domestic unrest in Saudi Arabia, for example, is questioned by a number of respondents.

# IRA C. EAKER ESSAY COMPETITION

Air University is pleased to announce the third annual Ira C. Eaker Essay Competition. Its purpose is twofold:

—First, to honor the continuing achievement of Lieutenant General Ira C. Eaker and his colleagues, aviation pioneers whose courage and spirit of innovation laid the foundation for American military greatness in aerospace.

—Second, to memorialize the indomitable martial spirit of these men, a spirit that nourishes the perception of military service as a calling.

Topic areas for the essay competition are professionalism, leadership, integrity, ethics and values, strategy and tactics, doctrine, esprit de corps, or any combination thereof.

ENTRY RULES

—Essays must be *original* and *specifically* written for the contest. Only one entry per person may be submitted.

—Entries must be a minimum of 2000 words and a maximum of 4000 words.

—Essays must be typewritten, double-spaced, and on standard-size paper.

—The competition is open to all active (duty) members of the regular Air Force, Air Force Reserve, Air National Guard, Air Force Academy and AFROTC cadets, and Civil Air Patrol.

—A separate cover-sheet should include the essay title, author's name, rank, duty/home addresses and duty/home phone numbers. The author's name must not appear on the essay itself. The title should be at the head of the first page.

—Send entries to the Editor, *Air University Review*, Building 1211, Maxwell AFB, Alabama 36112. All essays must be received or postmarked by 1 June 1983. For further details, call AUTOVON 875-2773, Commercial (205) 293-2773.

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The Ira C. Eaker Essay Competition is funded by a permanent grant from the Arthur G. B. Metcalf Foundation through the United States Strategic Institute, Washington, D.C.

# SOVIET OFFENSIVE GROUND DOCTRINE SINCE 1945

## *historical overview*

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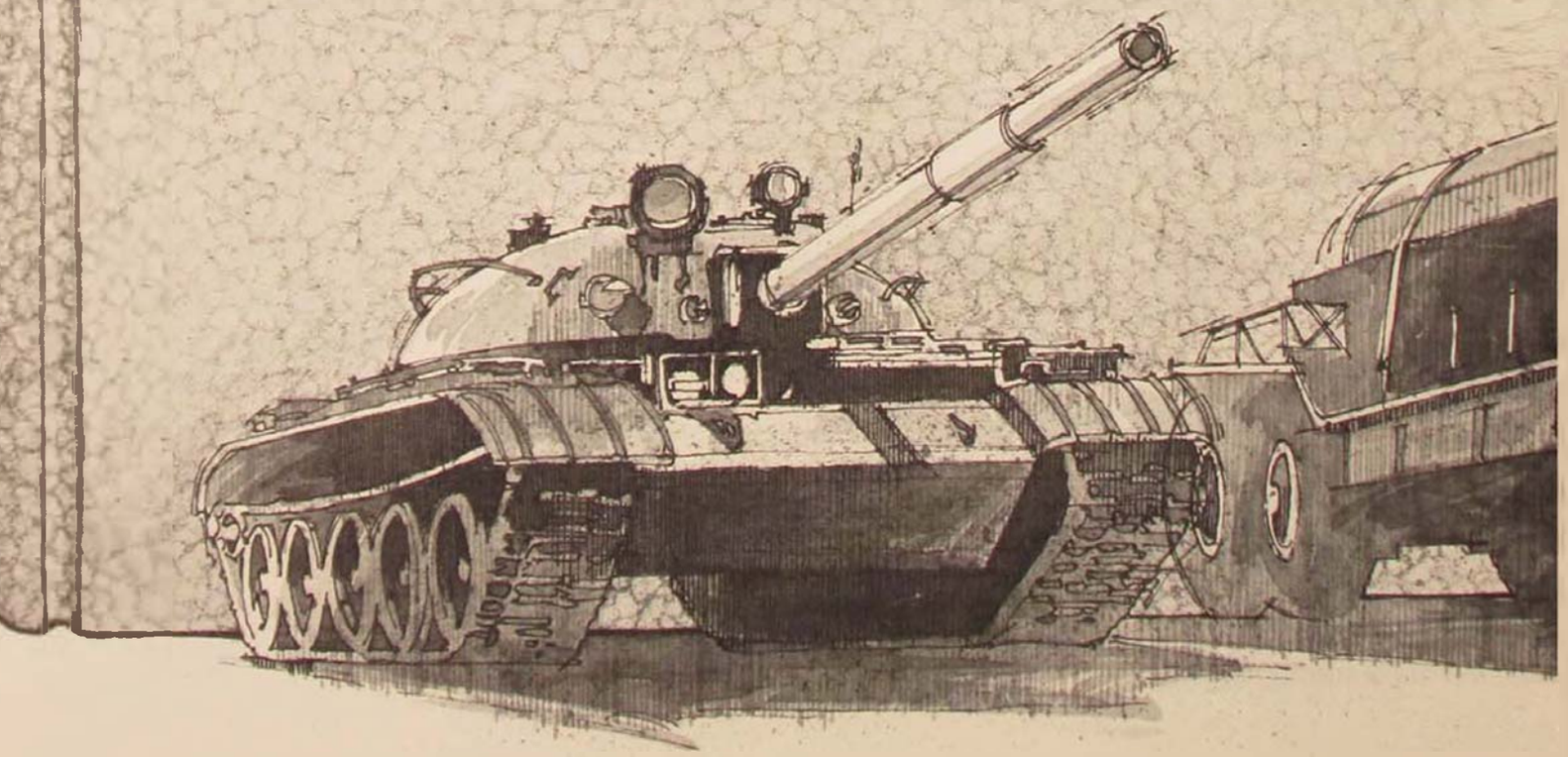
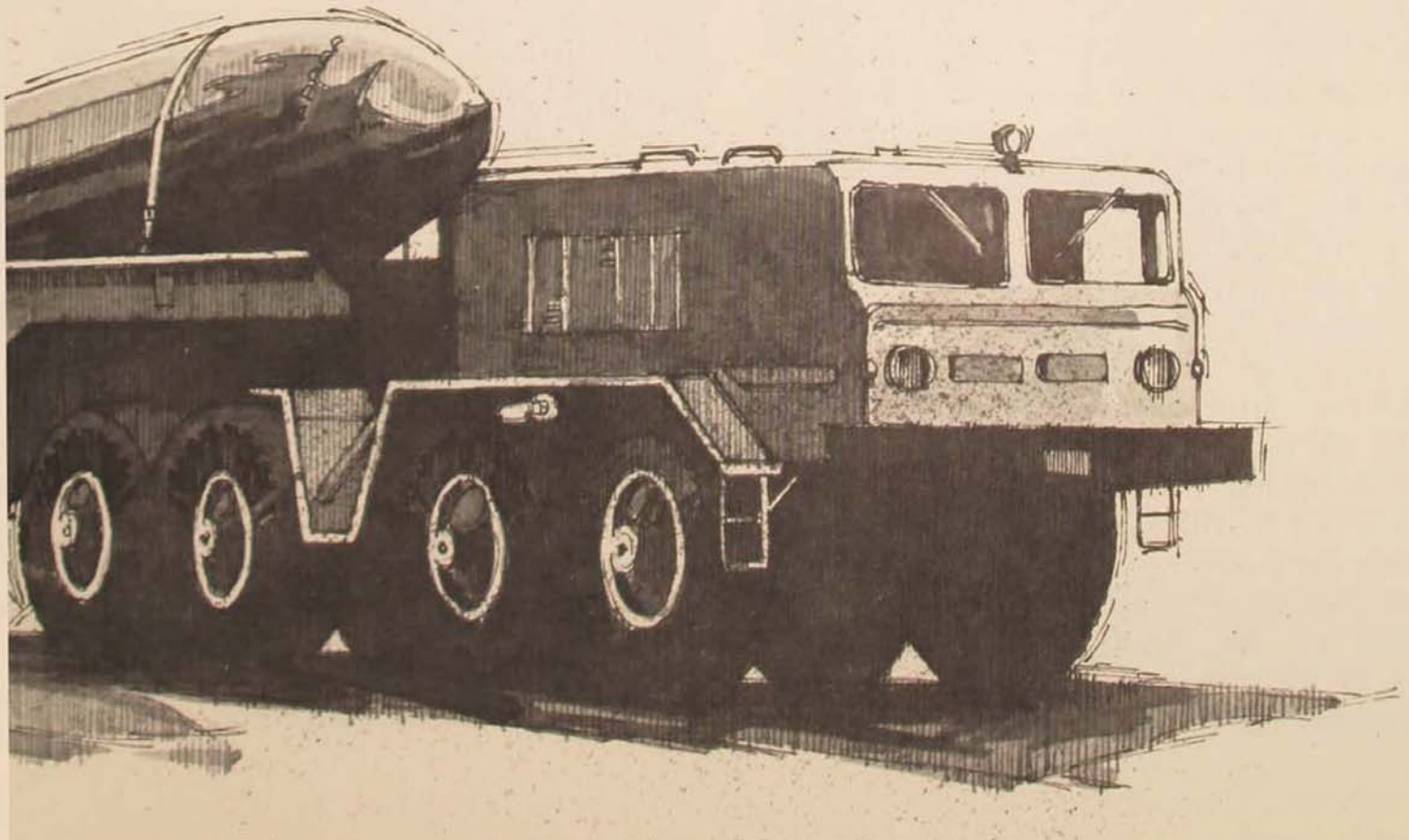


SINCE the end of World War II, Soviet offensive concepts have evolved in consonance with technological changes and changing geopolitical relationships. While adjusting to inevitable change, the Soviets have repeatedly tapped as a source of inspiration and knowledge their rich World War II experiences. Thus, the Soviets have altered their operational and tactical concepts by blending the lessons of the past with the realities of the present. Only combat can prove the validity of these changes. However, it is worthwhile to review the salient features of evolving Soviet operational and tactical concepts, if only better to understand the capabilities and potentialities of our major foe.

Such a review is imperative to challenge a stereotype of Soviet military performance that has been produced in Western minds for the past three decades. Most Westerners, Americans in particular, have an image of Soviet military performance as seen through German eyes. This image is a product of countless descriptions by German generals of their experiences in fighting the Soviets in World War II.[1] Most of these descriptions focus on the Russians of 1941-42, those who clumsily parried the German offensive efforts and crudely slashed back at the Germans with desperate expenditures of manpower. These accounts usually have less to say about the experiences of 1944-45 but tend to imply that the Russians continued their artless tactical patterns supported by overwhelming quantities of weaponry. According to these accounts, the sheer weight of numbers prevailed. The Germans recognize little finesse on the part of the Soviets.

This German view has been nurtured by numerous secondary accounts based on German sources.[2] Americans, caught in the Cold War, were particularly receptive to this view. Stalin's massive postwar army confirmed the German view by seeming to stress size and bulk over technique. Thus, the stereotype was born, a stereotype that lives on in part due to a lack of serious study by Americans of the Soviet World



War II experience and perhaps also due to wishful thinking in the West. After all, it is easier to contemplate battle with an artless, inflexible, predictable mass than with a competent, flexible foe.

In any event, a close look at the record, through Soviet sources and the archival records of her former enemies, quickly erodes the stereotype and casts light on the realities of the development of Soviet military power.[5] This article sketches the essence of that development.

The Soviets discuss the postwar years by dividing them into separate periods, each period characterized by distinct doctrinal and technological features that are reflected in the Soviet military force structure. Until the late 1970s, most Soviet writers divided the postwar era into two periods.[4] The first of these periods ran from 1945 to 1953, terminating with the death of Stalin and Soviet recognition of the importance of nuclear weapons. The second period (post-1953) saw a revolution in military affairs with a rise to prominence of nuclear weaponry. Some Soviet writers further subdivide the nuclear period into two subperiods, the first involving the emergence of strategic nuclear power and the second involving the growth of tactical nuclear weaponry.[5] Both are variations on the same nuclear theme. Soviet writers have only recently begun to describe what is in reality a new phase. This phase, emerging in the early to mid-1970s, recognizes the possibility of either nuclear or conventional war.[6]

In the immediate postwar period, the structure and doctrine of the Soviet army was a direct product of the final period of World War II, those years when Soviet doctrinal concepts and force structure grew into full maturity. The last years of Stalin were characterized by the maintenance of a large, efficient, and well-equipped standing army, an army capable of deterring Soviet enemies and defending the Soviet position in the postwar years regardless of the U.S. nuclear monopoly. These years produced little movement in Soviet military thought. The military experiences of 1944-45 were proof enough for the Soviets of the correctness of their doctrine and force structure. They undertook necessary measures to modernize the weaponry of their armed forces and to develop a nuclear capability of their own, while playing down the dominance of that weapon until they had completed their full development of it.

Soviet postwar military doctrine fully incorporated the doctrine expressed in the Field Service Regulations (USTAVs) of 1944, amended by the experiences of the campaigns of 1945 and in particular by the Vistula-Oder offensive and the Manchurian campaign.[7] That doctrine emphasized reliance on the offense, an offense characterized by maneuver and judicious use of massed armor, artillery, and air power to effect success on the battlefield. The offensive model was that of 1944-45, although infantry forces were gradually motorized and mechanized and the last cavalry formations faded from the scene. While the Soviet force structure retained the essential flavor of the latter two years of war, the postwar restructuring incorporated the more significant changes of the final war years. Wartime tank and mechanized corps became tank and mechanized divisions.[8] The brigades of those older structures became regiments in the new divisions. The wartime tank army was reorganized into a mechanized army, with 6th Guards Tank Army in the Manchurian campaign as a model.[9] The combined-arms army and the rifle corps continued their existence, as did the rifle division although all three entities emerged with tables of organization and equipment (TO&Es) stronger in armor and artillery.[10] Air armies consisting of air divisions and regiments provided air support for ground forces.

The offensive combat role of these forces remained that of World War II. Combined-arms armies of front first echelons created the penetration, and mechanized armies acted as front mobile groups to exploit success into the depths of the defense. At army level, rifle corps created the penetration, and mechanized divisions exploited success.[11] Air armies developed

further the wartime concept of the "aviation offensive," designed to support ground forces advancing through and beyond enemy defensive positions. The Soviet placed new emphasis on achieving air superiority and accorded Long-Range Aviation a greater role in aerial bombardment of military and industrial installations, command and control centers, and logistical facilities.

The death of Stalin in 1953 opened a new period of development, a period characterized by recognition of the importance of nuclear weapons and therefore the increased importance of the opening stages of any future war. Study of the beginning period of war became a major concern for the Soviets.[12] Focus was on how to structure and use forces to avoid initial defeat on the defense or to produce initial victory on the offense. In particular, the emphasis was on the attainment of surprise or the avoidance of being surprised. Doctrinal changes involved recognition of the nature of nuclear war and those techniques required to wage such a war successfully. Inherent in the reassessment was a rethinking of the traditional definitions of mass and concentration, a reassessment of firepower, and adjustments to maneuver. Structural and equipment changes were made to enable Soviet forces to wage war and survive in the nuclear battlefield. The first stage of these changes began in 1954 and lasted to about 1960. The second stage began about 1960 and lasted to the mid- or late-1960s, when another period of reassessment began.

The first wave of structural changes was begun by Marshal Georgi K. Zhukov in 1954 and 1955 and continued by his successors after his ouster in 1957. The Zhukov reforms reorganized the ground forces into smaller, more mobile, and hence more survivable entities. Units were fully motorized. Rocket artillery, new tanks, and a new generation of automatic weapons were incorporated into the force structure. Over the period from 1954 to 1964, the size of the army was reduced from 2.8 million men and 175 divisions (including 65 tank and mechanized, 97 rifle, 6 cavalry, 7 airborne) to 1.8 million men organized into 140 divisions. The ponderous mechanized armies and mechanized divisions were abolished, as were the rifle corps, the rifle divisions, and the cavalry divisions. The new streamlined tank army replaced the mechanized army, and the more flexible motorized rifle division replaced both the mechanized division and the rifle division.[13] The combined-arms army emerged as a balanced force of tank and motorized rifle divisions, and the tank division was cut in size as well.[14] Tactical missiles replaced heavy artillery at army level, and early surface-to-air missiles (SAMs) entered the arms inventory as did the T-55 tank.

As a result of Zhukov's program, the division emerged as the basic tactical entity, while the regiment developed greater self-sufficiency. The ground forces emerged as a mobile, useful adjunct to nuclear forces capable of flexible, semi-independent operations on a nuclear battlefield. The emerging importance of nuclear weapons on the battlefield increased the importance of air force aircraft as a means for delivering the new tactical and strategic weapons. To perform the basic missions of achieving air superiority and supporting ground forces, the Soviets equipped the air forces with a new generation of aircraft and missile weaponry.

The process of adjustment to the nuclear age accelerated in 1960. Khrushchev's speech to the Supreme Soviet on 14 January 1960 underscored his commitment to nuclear warfare. Khrushchev's "New Look" involved giving the preeminent position on the battlefield to the newly created Strategic Rocket Forces.[15] Future nuclear operations would involve a strategic nuclear exchange and operations by small conventional armies as an adjunct to nuclear operations. The role of such ground forces was clearly secondary, and the pressure to further reduce their size and limit their function continued under the "New Look." The force structure changed accordingly. The motorized rifle

division decreased in size as did the tank division to a lesser extent.[16] Equipment modernization continued with the introduction of the T-62 tank, antitank guided missiles (ATGMs), and tactical missiles at division level. New vehicles were planned to function more effectively in a nuclear environment (BMD, BMP). Although the Strategic Rocket Forces assumed much of the long-range nuclear mission of the air force, new emphasis was paid to air force destruction of enemy nuclear delivery means and command and control installations on the battlefield.

Although Khrushchev fell from power in 1964, the single (nuclear) option continued to dominate Soviet military thought. Soviet doctrinal writers saw war involving a strategic nuclear exchange and air and ground operations conducted within that nuclear context. Ground force operations would involve motorized rifle or tank formations, supported by air force and rocket forces, conducting deep operations at high rates of speed on multiple axes to the depth of defenses, essentially to clean up the theater after the nuclear exchange. Such forces were structured lightly to survive in a nuclear environment. Perhaps the best available translated description of Soviet doctrine in this period is found in V. D. Sokolovsky's *Strategia* (Strategy).[17]

In the late 1960s and early 1970s, there occurred a subtle change in Soviet doctrinal writings, a change perhaps indicating reassessment of Khrushchev's single option. Earlier writers had written at length about the nuclear aspect of war and tended to gloss over techniques of ground operations. After 1968 a number of important works focused on techniques of ground forces (while not abandoning the nuclear context). Reznichenko's *Tactics*, Savkin's *The Basic Principles of Operational Art and Tactics*, Sidorenko's *The Offensive*, Strokov's *History of Military Art*, Babadzhanian's *Tanks and Tank Forces*, and Bagramian's *History of War and Military Art* all paid lip service to the inevitability of nuclear war but also dwelt at length on the techniques of ground operations in far more detail than their predecessors.[18] Strokov summed up Soviet attitudes by saying:

> The main means of warfare will be nuclear, by strategic rocket forces with unforeseen effects . . . regardless of the means of war, war will require massive armies and a tremendous mastery of resources and popular support . . . in nuclear war rocket forces are of primary importance . . . in ground theaters highly mobile ground operations will occur simultaneously with the actions of strategic rocket forces . . . war will be characterized by maneuver. Nuclear weapons will open the door for offensive action . . . preparation time for war will be short. Operations may begin from a standing start . . . ground forces will conduct the offensive at high speeds in the absence of a dense continuous front usually on several axes . . . there are numerous forms for the conduct of operations. There is a new quality to combined arms battle. It is hard, severe, fast-paced and maneuverable. The basic mission of combined arms battle is to realize the fruits of nuclear strikes—the complete destruction of enemy troop concentrations and the securing of important regions. We reject as infeasible the older "gnawing through the dense" concept. Instead tank and motorized rifle forces overcome the defense from the march after use of nuclear weapons. The appearance of nuclear weapons has increased considerably the role and importance of surprise in battle and demonstrated increased demands for its achievement.[19]

These random thoughts from Strokov emphasized the nuclear nature of battle while delineating in great detail that which ground forces must do to achieve success. Reznichenko's detailed assessment in *Taktika* focused on such conventional techniques as the use of mobile exploitation forces, the role of air assault units, and the increased utility of forward detachments.[20] Perhaps the best evidence of evolving thought was found in Bagramian's *Military History*. His final comment read: "While working out the means of conducting war in the nuclear situation, Soviet military science has not excluded the possibility of conventional combat."[21] Other Soviet sources in the same generation contained the same qualification.

Writings of the period 1968 to 1972 seemed to

reflect patient and deliberate study of the issue of the nature of war and thus the issue of the duration of war. While Reznichenko, Savkin, and Sidorenko enunciated official doctrine, other writers generated articles and works focusing on the theory and practice of strategy, operational art, and tactics in World War II. Obviously these works considered conventional operations, and virtually all considered the relevance of those operations in a contemporary context. The journals *Voennaia Mysl'* (Military Thought) and *Voenno-istoricheskii zhurnal* (Military History Journal) published extensive studies of World War II and postwar trends in military art. A number of major studies appeared investigating the precise nature of warfare in World War II with particular emphasis on the third period of the war (1944-45).[22] Among these works was Ivanov's *The Beginning Period of War*, Kurochkin's *The Combined Arms Army in the Offensive*, Krupchenko's *Soviet Tank Forces, 1941-45*, Rotmistrov's *Time and Tanks*, and a multivolume study of tactics by combat example at every level from platoon through army, edited by General Radzievsky.[23] Publication of such studies continued unabated through the 1970s.[24] While these writings focused on all aspects of military art, certain topics received greater emphasis than others. A new series of studies appeared on the nature of the "beginning period of war." Writers continued to emphasize the value of the offensive and focused on the importance of surprise and deception; the value of encirclement operations and exploitation; the necessity to deploy and regroup forces efficiently for combat; and methods for solving the problem of affecting penetration of a defense. The role of mobile groups and forward detachments was investigated in detail and emerged as a major theme. Among the myriad of operations studied, certain operations received greater attention than others because of their apparent relevance to modern operations. The Vistula-Oder operation (January 1945) and the Manchurian operation (August 1945) received such emphasis, as did the Belorussian offensive (June 1944) and the Yassy-Kishinev operation (August 1944).

Soviet force structure and overall military posture began to change in the early 1970s, and those changes have continued unabated into the 1980s. The cumulative effect of these changes has been an overall buildup in conventional forces and an increase in the force capability of forward deployed forces side by side with a reduced readiness posture of forces within the Soviet Union. While the overall size of the ground forces has remained relatively stable, the number of divisions in the force structure has risen from 140 to 180. More important, the TO&E strength of those divisions and divisional firepower has significantly increased. This has markedly increased the combat capability of forward area divisions, which are kept at full combat readiness in peacetime. On the other hand, the Soviets have reduced the peacetime readiness status of divisions within the Soviet Union, a probable indication that the Soviets have deemphasized the feasibility and importance of prewar mobilization and reinforcement.

The motorized rifle division has increased in size and firepower as has the tank division to a lesser extent.[25] The tank army has picked up a motorized rifle division in its likely wartime TO&E.[26] A heavy artillery brigade and an air assault brigade now exist in the potential wartime front force structure, and assets to lift an air assault battalion are at the disposal of each army in the forward area. New tanks, artillery, and antiaircraft systems in increased numbers are found in motorized rifle divisions and tank divisions, and the Soviets have drastically increased their assault helicopter capability. Modernization of air force equipment in the 1970s and the introduction into the force structure of numerous heavily armed helicopters have improved the Soviet capability to engage maneuverable enemy nuclear delivery means and support rapidly moving maneuverable ground forces.

All of these changes, set against the backdrop of changing Soviet written views, seem to indicate a basic change in the Soviet view of war. While the Soviets still consider nuclear war to be a strong possibility, they increasingly indicate an acceptance of and perhaps a desire for a nonnuclear phase of operations. They seem to conclude that the existence of a strategic or tactical nuclear balance on both sides may generate a reluctance on both sides to use those weapons, a sort of mutual deterrence that increases the likelihood that conventional operations will remain conventional. At a minimum, the Soviets have prepared themselves to fight either a nuclear war or a conventional war in a nuclear-scarred posture. The Soviet version of "flexible response" emphasizes the necessity for expanding and perfecting the combined arms concept. It indicates Soviet willingness to fight a longer war while their precise force structuring and their military doctrine are aimed at keeping any war short.

Doctrinal writings of the past few years have begun to enunciate these views more clearly. The pages of the new eight-volume *Soviet Military Encyclopedia*, published between 1976 and 1980, are illustrative of these changing views. The signed articles on offensive operations, on fronts, armies, and tactics all consider both nuclear and nonnuclear operations.[27] They stress the increased capabilities of all types of units, the growth in the scope of the offensive, and the increased dynamism of battle. To a greater extent than earlier works, these articles delineate the role of units in the offensive, both in the nuclear and the conventional context. A typical passage from the encyclopedia reads as follows:

> In an offensive using nuclear weapons, after nuclear strikes by the enemy, commanders take necessary measures to restore combat effectiveness and specify or establish new missions to complete the destruction of remaining enemy forces. Divisions move forward on their directions of attack from regions where they have regrouped and decisively advanced forward. In favorable conditions the offensive can be begun by forward detachments. . . . During the conduct of military action with conventional means of destruction the enemy covering zone will be overcome by forces from the first echelon combined arms units after strong aviation and artillery strikes on the most important objectives in the entire depth of the enemy defense. Forward detachments from each division will destroy security and covering units of the enemy and secure important objectives and regions in the forward defense position. Their action is supported by artillery fire, aviation strikes and action by air assault units. Having overcome the security belt, forward detachments supported by other first echelon units (regiments) from the march penetrate the forward defensive positions. If it is not possible to create conditions for the advance of the main force, the positions are overcome after suitable preparations. . . . During army offensive operations, in all sectors of the army offensive or on separate directions meeting engagements can occur. The army conducts them with all or part of its forces. Meeting engagements can occur at the beginning or during the operation, during the destruction of counterattacking enemy forces or forces advancing from the depth to deblockade encircled forces or occupy new defensive positions.[28]

Thus, unlike earlier years, when the Soviets considered the meeting engagement to be a distinct category in its own right, it now is envisaged as a subcategory of the offensive in addition to its earlier categorization. Even more significant is the growing emphasis on a meeting engagement at the commencement of hostilities.

Several recent journal articles vividly display Soviet concerns over conventional operations and conventional techniques. A February 1982 article in *Voenno-istoricheskii zhurnal* described the dominance of nuclear concepts after 1954:

> From the beginning of the 1960s our military theory and practice conceded the conduct of combat using only conventional means though under constant threat of enemy use of nuclear weapons . . . There were conducted in the armed forces a large number of demonstrations, tactical and other type exercises and military science conferences. The Great Patriotic War experiences in penetrating a prepared enemy defense were widely used.

In conditions not involving the use of nuclear weapons, tank subunits [battalions] and units [regiments] attacking in the first echelon in appointed sectors realized penetration of the defense on a narrow front with subsequent blows against the enemy flanks. Tank subunits [battalions] of motorized rifle units [regiments] on exercises were used to penetrate enemy defense in close coordination with motorized rifle troops and artillery, acting like infantry support tanks of the war years.

The characteristic feature of the preparation of a penetration is the careful organization of combat with enemy antitank means. For that struggle we foresee the use of all fire means.

The means of using tank subunits [battalions] and units [regiments] as forward detachments has been improved. Unlike the first post-war period, in the second, forward detachments based on the experiences of exercises, did not begin their action from the boundary of their commitment during the penetration. They approached the enemy defense in advance of the main force, securing their [the main forces] movement and transition to the attack. In some instances, depending on conditions, forward detachments moved forward . . . at night before the transition of the main force to the offense. . . .

The overcoming of defensive positions in the depth of an enemy defense is realized from the march in dispersed precombat formation and sometimes in march column. Basically advanced guards or forward detachments must realize a penetration and the main forces plan to overcome that defense at a high tempo as in a normal offensive. . . .

Thus the methods of combat use of tank subunits [battalions] and units [regiments] during the penetration of an enemy defense in the post-war years have constantly improved. The basic tendency in that development is the constant striving to realize a penetration of defenses at high tempo, in short periods of time in order to create favorable conditions for a rapid offensive to the depth.[29]

THE Soviets have, for the past 15 years, addressed two fundamental military problems reflecting the realities of the times. The first of these is how one overcomes a contemporary defense, specifically the defenses of NATO and China. The Soviets recognize the impact of technology on antitank weaponry as evidenced by the 1973 Arab-Israeli War. The second problem concerns the issue of nuclear warfare. They recognize the likelihood of any major war's becoming nuclear, but at the same time they have sought ways to avoid nuclear conflict or reduce the effectiveness of nuclear weapons on their forces.

In seeking solutions to these problems, the Soviets have studied three basic areas. They have closely analyzed the nature of NATO's defenses, its coherence, the time it takes to form, and, most important, the time ramifications of political decision-making. The Soviets have intensely studied the nature of nuclear war. They have invested great time and expense to equip and train their forces to operate successfully in a nuclear environment. They assume war could become nuclear at any time, but they apparently hope that will not be the case.

The Soviets have also studied, in considerable detail, the operations of World War II in the East (Great Patriotic War), especially, the opening phase and the third period of the war. As a result of their study, the Soviets have renewed faith in the preeminence of the offense in achieving victory. They believe the tank still plays a key role in successful offensive operations. They recognize the folly of set-piece battle in a nuclear or potentially nuclear environment. This recognition precludes Soviet use of traditional massing of forces in deeply echeloned and patterned arrays. Their study of the last period of the Great Patriotic War has led them to conclude that many of the techniques developed during that period have applicability today in spite of changing technological conditions.

The Soviets understand NATO defense, and they respect its strength when it is fully in place. Though they still credit NATO with the ability to conduct a mobile defense, one must assume they understand the forward nature and limited depth of the defense and its lack of mobile reserves. The Soviets understand the real and potential problems associated with

timely establishment of NATO's defenses. And they also realize that if hard pressed, and if given the opportunity, NATO may choose to go nuclear. Thus, a cardinal tenet of Soviet planning is the necessity of preempting the defense or disrupting its formation. They also recognize the necessity of preempting use of or minimizing the effects of nuclear weapons. Above all, the Soviets, from their study on the theme of the beginning period of war, have concluded that surprise is absolutely essential; strategically regarding timing and operationally and tactically regarding the form and nature of the offensive.

Having reached these conclusions, the Soviets would aim to achieve surprise in the event of war. They would attempt to preempt or disrupt the defense and preempt the use or effectiveness of nuclear weapons by launching a rapid attack, by early neutralization of allied nuclear delivery means, and by attacking in a manner that causes utter confusion in NATO's ranks. Certain prerequisites must be met for the Soviets to hope to achieve these aims: forward area forces must be kept in a high state of readiness, their equipment must be first rate and backed up by a logistical capability to sustain operations for the duration of the campaign, and the Soviets must achieve parity or superiority in the strategic and tactical nuclear realm. They must renounce the necessity for advanced mobilization and reinforcement. Forces must be prepared to attack on short notice after limited redeployment and regrouping. Maximum use must be made of cover and deception, and forces must be structured and trained for high-tempo deep operations. Most of these prerequisites have been met.

In an offensive at the strategic level, the Soviets would commit a maximum of forces into action on a broad front after a limited period of preparations by forward area forces. A single echelon of armies at front level would give maximum force to the initial blow, achieve the necessary momentum to carry the attack through the enemy defenses, and reduce the nuclear risk by quickly intermeshing Soviet forces with those of the enemy. It would also offer no major target (large formations) in the front's second echelon.[30] The attack would use a maximum number of axes of advance, many of them deliberately traversing inhibiting terrain. Forces would be committed to combat on a time-phased basis, with concentration for the attack occurring probably at night at the last possible moment. An air offensive would accompany the ground offensive aimed primarily at neutralizing the nuclear delivery means of the enemy. In addition, diversionary forces operating in small teams would conduct disruption operations to the depth of the theater in the enemy's rear.

Operationally, army forces would advance to combat in the same manner as those of the front. Maximum forces would deploy on a broad front in a single echelon of divisions with an army reserve dispersed in the rear. Soviet forces would make maximum use of darkness, inclement weather, and marginal terrain to achieve surprise. Artillery and air force (as well as helicopter) units would provide suppressive fires to the depth of the enemy defense with fires concentrated in sectors where the penetrations were envisioned. Forward detachments of reinforced tank regiment (or brigade) size would lead the attack of armies. The mission of these forward detachments would be to attack prior to the commitment of the main forces to penetrate enemy-covering force positions and secure a position in the main defense zone, thus disrupting formation of the defense. The depth of mission for the army forward detachment would be from 30 to 40 kilometers. Army main forces would advance rapidly in march column on multiple axes behind the army and division forward detachments. An operational group of tank-division size would prepare to exploit either from army first echelon or army reserve, depending on the degree of success the initial advance has achieved. Air assault operations in brigade strength would be conducted at a depth of 30 to 40 kilometers in

support of an army ground forward detachment on one of the army's axes of advance. Diversionary forces would disrupt enemy rear areas to a depth of 180 to 200 kilometers.

In the tactical realm, motorized rifle and tank divisions would attack on regimental and battalion axes of advance (two to three per division) in two echelon formations. Forward detachments would lead the attack at division level and at regimental level. A forward detachment from division consisting of a separate tank battalion reinforced by motorized rifle and sapper units would attack at night in coordination with the army forward detachment before the advance of the main force. Its mission would be to cut through the covering force sector and penetrate into the main forward defensive positions to a depth of 15 to 25 kilometers, thus preempting or disrupting continuity of the defensive position. Air assault operations by battalion-size units will occur in tandem with operations of the division forward detachments. A forward detachment from each first echelon motorized rifle regiment, consisting of a reinforced motorized rifle battalion, will attack in concert with the division forward detachment with a mission similar to that of the division forward detachment. Division main forces will advance in precombat formation or march order following the forward detachments and capitalizing on the disruption caused in the enemy defenses. Artillery and assault helicopter units will provide fire support for forward detachments and main force units. After completion of these primary missions, forward detachments of army and division, if able, will continue to advance at maximum rates of speed. Each division will designate in advance an operational group or groups comprising the division tank regiment reinforced by at least one battalion of motorized rifle forces. This operational group will attempt to complete the penetration of the main defensive zone (to a depth of 60 kilometers) and to initiate the pursuit. Operational groups will be led by forward detachments.

The airborne forces under front control will be used in regimental or multiregimental size in conjunction with pursuit operations to secure key communication junctions and river crossings. The scale and scope of airborne operations will depend on the success of the ground offensive.

THIS DESCRIPTION represents my assessment of the Soviet definition of current military problems, their means of analysis, the sources they have used, and the conclusions I believe they have reached. The resultant portrayal of current Soviet offensive theory implies neither likelihood nor intention of the Soviets' going to war. It simply conveys the direction of Soviet military thought as conditioned by the circumstances of the 1970s and 1980s. Soviet military theory is neither stagnant nor rigid. It is ever-changing. The evolution of the past 35 years bears witness to those changes. Probably more so than in the case of any other nation, to understand what the Soviets might do is to understand what they have done in the past and the reasons why. The Soviets are products of their past. Their military theory and force structure are derived from the past and conditioned by the present. They must be understood in that context.

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**Notes**

1. Among the most popular are H. Guderian's *Panzer Leader* (New York, 1957); F. von Mellenthin's *Panzer Battles* (Norman, Oklahoma, 1972); and Erich von Manstein's *Lost Victories* (Chicago, 1958).

2. See A. Clark's *Barbarossa: The Russian-German Conflict,*

*1941-45* (New York, 1965) in which 80 percent of the book is devoted to 1941-43 and Paul Carell's (Schmidt's) two volumes: *Hitler Moves East* and *Scorched Earth* (New York, 1965, 1966). The volume in the U. S. Army Historical Series by E. Ziemke, *Stalingrad to Berlin: The German Defeat in the East* (Washington, 1968), also relies heavily on German sources. In fairness, this bias was due in part to the limited availability of Soviet accounts prior to 1965 and to a virtual absence of translated material.

3. For example, see *Japanese Monographs*, Nos. 154 and 155 (Military History Section, Headquarters, Army Forces Far East, 1954).

4. See I. Kh. Bagramian, editor, *Istoriia voin i voennogo iskusstva* (History of War and Military Art), Moscow: Voenizdat, 1970.

5. See V. Reznichenko, "Osnovnye Napravleniia Razvitiia Sovetskoi taktiki v poslevoennye gody" (Basic Directions in the Development of Soviet Tactics in the Postwar Years), *Voenno-istoricheskii zhurnal*, August 1971; and M. Cherednichenko, "Ob Osobennostiakh Razvitiia Voennogo Iskusstva v poslevoennyi period" (Concerning the Characteristics of the Development of Military Art in the Postwar Period), *Voenno-istoricheskii zhurnal*, May 1970.

6. Inferred in N. Kireev, "Primenenie tankovykh podrazdelenii i chastei pri proryve oborony protivnika" (The Use of Tank Subunits [Bns] and Units [Regts] during the Penetration of an Enemy Defense), *Voenno-istoricheskii zhurnal*, February 1982.

7. *Polevoi Ustav Krasnoi Armii* (Field Regulation of the Red Army), Moscow: Voenizdat, 1944, translated by the Office of the Assistant Chief of Staff, G2, GSUSA, 1951; and *Nastavlenie po proryvu pozitsionnoi oborony (proekt)* (Instructions on the Penetration of a Positional Defense [project]), Moscow: Voenizdat, 1944, translated by Directorate of Military Intelligence, Army Headquarters, Ottawa, Canada.

8. A tank division consisted of three medium tank regiments, a heavy self-propelled gun regiment, a motorized rifle regiment, and support units; its strength was 10,659 men, 252 tanks, and 63 SP guns. A mechanized division comprised three mechanized regiments, a medium tank regiment, a heavy tank self-propelled gun regiment, and support units; it numbered 12,500 men, 197 tanks, and 63 SP guns.

9. A mechanized army comprised two tank divisions, two mechanized divisions, and support units.

10. A combined-arms army contained three rifle corps, a heavy tank self-propelled gun regiment, and support units. A rifle corps comprised three rifle divisions or two rifle divisions and one mechanized division with support units. A rifle division consisted of three rifle regiments, a medium tank self-propelled gun regiment, and support units with a strength of 11,013 men, 52 tanks, and 34 SP guns.

11. The postwar combat formation of fronts and armies normally consisted of two echelons and a mobile group. The mobile group comprised a mechanized army (at front) and tank and mechanized divisions (at army). Most armor units were in second echelon.

12. For a survey of early articles, see P. A. Zhilin, editor, *Ocherki Sovetskoi Voennoi Istoriografii* (Features of Soviet Military Historiography), Moscow: Voenizdat, 1974, pp. 240-41; and P. Maslov, "Literatura o voennykh deistviiakh letom 1941 godu" (Literature about Military Actions in the Summer of 1941), *Voenno-istoricheskii zhurnal*, September 1966.

13. A tank army was comprised of four tank divisions and support units. The motorized rifle division consisted of three motorized rifle regiments, a medium tank regiment, and support units; its strength was 13,150 men and 210 tanks.

14. The combined-arms army comprised three to four motorized rifle divisions, one tank division, and support units. The tank division consisted of two medium tank regiments, a heavy tank regiment, a motorized rifle regiment, and support units; its strength was 10,630 men, 368 tanks, and 52 SP guns.

15. H. Krylov "Raketnye voiska strategicheskogo naznacheniia" (Strategic Rocket Forces), *Voenno-istoricheskii zhurnal*, July 1967.

16. By 1968, the motorized rifle division strength decreased to 10,500 men and 200 medium tanks. By the same date, the tank division converted its heavy tank regiment to a third medium tank regiment; its strength fell to 9000 men and 325 medium tanks.

17. V. D. Sokolovsky, *Voennaia Strategiia* (Military Strategy), three editions, Moscow: Voenizdat, 1962, 1963, 1968.

18. P. A. Kurochkin, editor, *Obshchevoiskovaia Armiia v Nastuplenii* (The Combined Arms Army in the Offensive), Moscow: Voenizdat, 1966; V. G. Reznichenko, *Taktika* (Tactics), Moscow: Voenizdat, 1966; A. A. Strokov, editor, *Istoriia voennogo iskusstva* (History of Military Art), Moscow: Voenizdat, 1966; A. Kh. Babadzhanian, editor, *Tank i tankovye voiska* (Tanks and Tank Forces), Moscow: Voenizdat, 1968; second edition, 1980; I. Kh. Bagramian, editor, *Istoriia voin i voennogo iskusstva* (History of War and Military Art), Moscow: Voenizdat, 1970; A. A. Sidorenko, *Nastuplenie* (The Offensive), Moscow: Voenizdat, 1970; and V. E. Savkin, *Osnovnye Printsipy Operativnogo Iskusstva i Taktiki* (The Basic Principles of Operational Art and Tactics), Moscow: Voenizdat, 1972.

19. A. A. Strokov, editor, *Istoriia voennogo iskusstva* (History of War and Military Art), Moscow: Voenizdat, 1966, pp. 608-16.

20. V. G. Reznichenko, *Taktika* (Tactics), Moscow: Voenizdat, 1966. Reznichenko gave a more flexible view of combat formations by describing the circumstances calling for a single and double echelon formation. The former was suited to overcoming a shallow defense while the latter was designed to overcome a prepared defense in depth.

21. I. Kh. Bagramian, editor, *Voennaia Istoriia* (Military History), Moscow: Voenizdat, 1971, p. 345.

22. The Soviets identify three distinct periods in the war. The first period lasted from June 1941 to November 1942, the second period from December 1942 to December 1943, and the last period from January 1944 to the end of the war.

23. I. E. Krupchenko, editor, *Sovetskie Tankovye Voiska 1941-45* (Soviet Tank Forces 1941-1945), Moscow: Voenizdat, 1973; P. A. Rotmistrov, *Vremia i Tanki* (Time and Tanks), Moscow: Voenizdat, 1972; S. P. Ivanov, *Nachal'nyi Period Voiny* (The Beginning Period of War), Moscow: Voenizdat, 1974; A. I. Radzievsky, *Taktika v Boevykh Primerakh: Vzvod, Rota, Polk, Divizia* (Tactics by Combat Example: Plt, Co, Regt, Div), Moscow: Voenizdat, 1974-76; A. I. Radzievsky, editor, *Armeiskie Operatsii* (Army Operations), Moscow: Voenizdat, 1977.

24. Among the most substantial are A. I. Radzievsky, *Tankovyi Udar* (Tank Blow), Moscow: Voenizdat, 1977; A. I. Radzievsky, *Proryv* (Penetration), Moscow: Voenizdat, 1979; O. A. Losik, editor, *Stroitel'stvo i Boevoe Primenenie Sovetskikh Tankovykh Voisk v Gody Velikoi Otechestvennoi Voiny* (The Construction and Combat Use of Soviet Tank Forces in the Years of the Great Patriotic War), Moscow: Voenizdat, 1979.

25. The 1980 motorized rifle division with three motorized rifle regiments, one tank regiment, and support units numbers 12,500 men and 250 tanks. The 1980 tank division of three tank regiments, one motorized rifle regiment, and support units has a strength of 10,000 men and 325 tanks.

26. In 1980 the tank army averaged four tank divisions, one motorized rifle division, and support units.

27. *Sovetskaia Voennaia Entsiklopediia* (The Soviet Military Encyclopedia), T1-8, Moscow: Voenizdat, 1976-80, hereafter cited as *S.V.E.*

28. M. M. Kirian, "Armeiskaia Nastupatel'naia Operatsiia" (Army Offensive Operations), *S.V.E.*, T1, Moscow: Voenizdat, 1976, pp. 239-44.

29. Kireev, "The Use of Tank Subunits [Bns] and Units [Regts] during the Penetration of an Enemy Defense," pp. 38-40, is representative of the changing emphasis in Soviet military writings.

30. The Soviets say the following about current combat formations: "In combat formations there may be one or several echelons

arranged one after the other," *S.V.E.*, vol. 8, p. 617. "Operational formations of combined arms units can consist of one, two and sometimes more echelons," *S.V.E.*, vol. 6, p. 58. A single echelon configuration within fronts and armies permits application of maximum force across a broad front in the initial attack. It is particularly effective against an unprepared or only partially prepared defense and a defense lacking depth (less than 40 kilometers). It also lessens the vulnerability to nuclear attack by providing no large second echelon target. The best examples of such an offensive in World War II were the Soviet Stalingrad offensive (November 1942), the Right Bank of the Dnieper offensive (Spring 1944), and the Manchurian campaign (August 1945). A two-echelon configuration permits sustained operations against a prepared defense organized in depth. Excellent World War II examples were the Vistula-Oder operation (January 1945) and the Berlin operation (April 1945). A single echelon formation seems to offer the best chances for success in a Soviet offensive involving limited preparations.

## AIR UNIVERSITY REVIEW AWARDS PROGRAM

Lieutenant Colonel Dennis M. Drew, 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 1982. His article, "Of Trees and Leaves: A New View of Doctrine," was previously designated as the outstanding article in the January-February 1982 issue. The other bimonthly winners for 1981-82 were Colonel Alton L. Elliott, USAF, "The Gatsby Effect in U.S. Strategic Affairs," November-December 1981; Dr. Barry J. Smernoff, "The Strategic Value of Space-Based Laser Weapons," March-April 1982; Group Captain R. A. Mason, RAF, "Western Deterrence: Posture and Rationale," May-June 1982; Dr. Donald Chipman, "Admiral Gorshkov and the Soviet Navy," July-August 1982; Major Stephen C. Hall, USAF, "Air Base Survivability in Europe" and Dr. David MacIsaac, "Eisenhower: A Reputation in Transition," September-October 1982.

# THE CHANGING ROLE OF AIR POWER IN SOVIET COMBINED-ARMS DOCTRINE

TOMMY L. WHITTON

IN SOVIET military thinking, the concept of combined arms has a dual meaning. In the organizational sense, combined arms refers to a ground forces unit consisting of elements from a number of arms and services as well as engineering and other special troops and rear support units. A combined-arms army, for example, might consist of one tank division and three or four motorized rifle divisions; artillery, air defense, engineering, and chemical defense troop units; and a full complement of staff and rear service units.

The purpose of this type of unit is to optimize both shock power and mobility and to provide the Soviet commander with sufficient forces of all types to afford him flexibility in accomplishing his complex objectives in the rapid pace of modern warfare. A combined-arms unit is prepared to perform a wide variety of combat functions: fire suppression, maneuver, organic defense, and combat support.

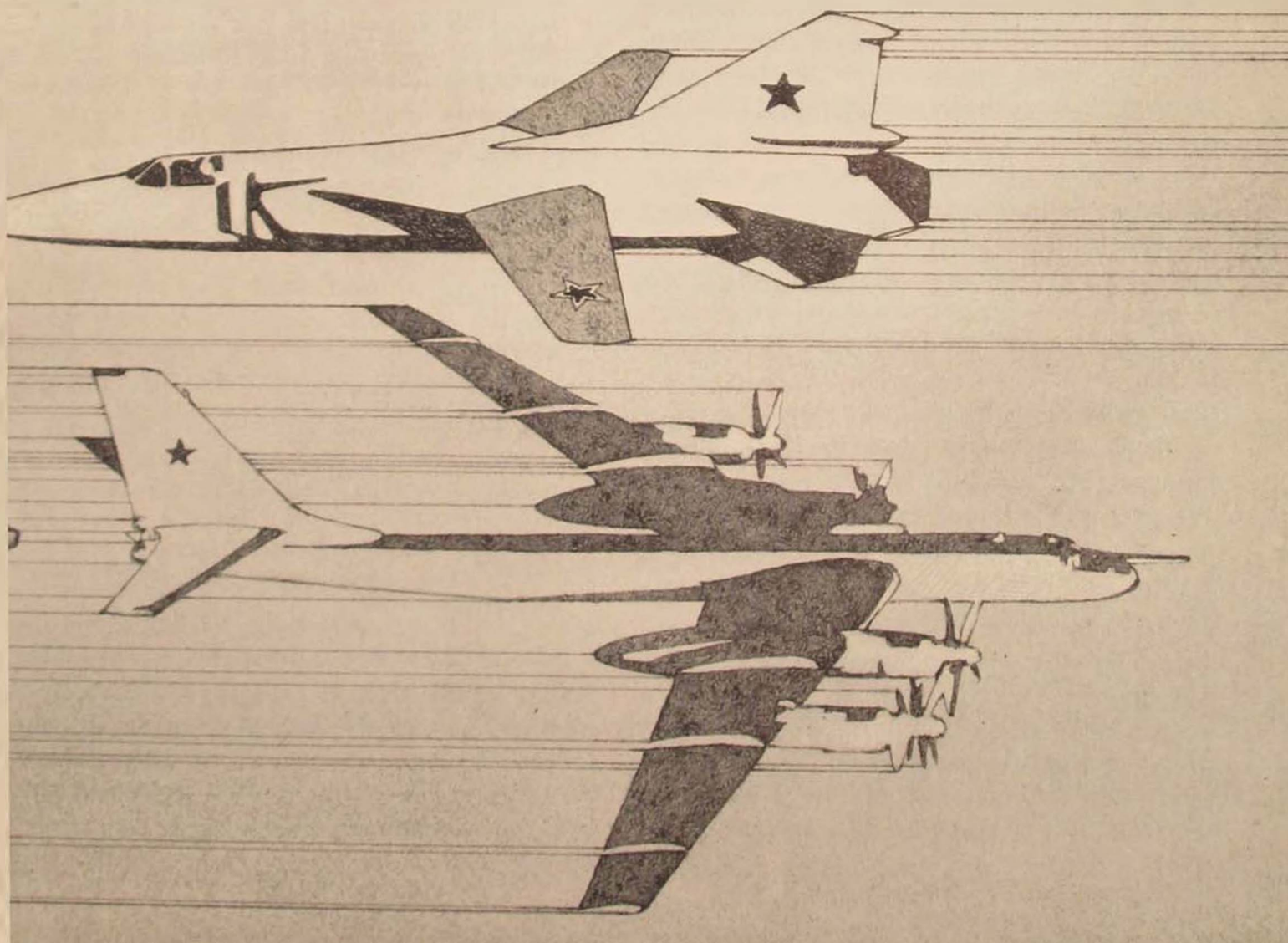
The concept of combined arms, at least in an organizational form resembling modern Soviet units, was first introduced in 1943, when Stalin

formed a combined-arms army consisting of several rifle corps, reinforced with tank and mechanized units, as well as artillery and engineering support. The organizational structure of combined-arms units was continuously in a state of flux during the time when Soviet infantry was becoming more and more mechanized, when artillery was becoming self-propelled, and when tactical battlefield missiles were entering the weapons arsenal. Air forces had not been an organic element of these units until only very recently. Rather, air power came into play in the second sense of the concept of combined arms—integrated, all-service operations.

The operational component of the combined-arms concept is manifested in combined-arms staffs, which direct combat operations generally through a front command or a high command of forces in a theater of operations (teatr voyennykh deystr—TVD). Assigned to these commands are air force representatives, who serve as liaison between the front commander/TVD commander-in-chief and higher level authorities and who control air assets allocated to the front/TVD. At the highest level, combined-arms integration is achieved through the Soviet General Staff, which plans and controls strategic operations according to one coordinated plan, employing forces from all five Soviet service branches.

## Air Power for the Strategic Intercontinental Mission

The operational combined-arms concept for intercontinental theaters integrates Soviet long-range bombers, along with intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs), into the Soviet version of the triad for strikes against the United States. Long-range air power has



also become a vital element of Soviet antiship operations far from Soviet shores and of Soviet power projection into the Third World. Ever since the mid-to-late 1950s, when the Bear and Bison were entering the inventory and refueling techniques for the Badger and Blinder were being perfected, the Soviets have seen a role for the manned bomber against the continental United States. The advantages that the Soviets see in having such a capability are the same ones we see with regard to U.S. manned bombers.

The development of the Backfire epitomizes the Soviet formula for weapons development manifested in new systems appearing since the early 1970s—one part specialization and one part flexibility. The Soviet requirement for manned bombers in an anti-CONUS mission has remained relatively constant since the creation of the other two legs of the Soviet triad. As a result, the Bear/Bison force has been able to fulfill the need for aircraft specifically dedicated to the intercontinental strike mission. Yet with the development of a Soviet "blue-water" navy and increasing Soviet emphasis on continental theaters, the requirements for bombers with sufficient range capabilities for long distance antiship and deep-theater strike missions substantially increased. Hence, there appeared the "one part flexibility"—the Backfire, which is best suited for these missions but which was designed with an intercontinental range capability to augment the specialized Bear/Bison force if the situation requires them to do so. Indications that the Soviets are developing a new long-range bomber specifically to replace the aging Bear and Bison in the intercontinental strike role suggest that the Backfire will continue to represent the flexibility ingredient of the intercontinental formula throughout its life cycle.

## Air Power for the Deep-Theater Mission

Over the past several years the Soviets have made major revisions in command and control affecting all service branches but primarily centered around Soviet air and air defense forces. These changes have had a significant effect on the employment of air power in theater missions. The reorganization has been molded around a fundamental doctrinal shift, which was instituted by Minister of Defense D. F. Ustinov and Chief of the Armed Forces General Staff N. V. Ogarkov shortly after their assumption of the two top posts in the Ministry of Defense in 1976 and 1977, respectively. The new doctrine was openly expressed by Ogarkov in an article in *Kommunist:*

> Front commands [now] have available destructive means (missiles, missile-carrying aircraft, etc.) and combat capabilities which significantly exceed the limits of frontal operations. Troop maneuverability has sharply increased and the ways of accomplishing many strategic and operational missions with formations of various force components have changed. As a result, previous forms of employing formations to a great extent have ceased to meet modern conditions. In connection with this, not the frontal but a broader-scale form of combat activity—*the strategic operation in a theater of military operations*—should be viewed as the basic operation in a possible future war.[1]

Colonel I. Vyrodov, in an article on high commands created during World War II, provided an indication of how extensively this new organization might affect the structure of Soviet forces:

> The experience of world wars showed that it became practically impossible for a supreme high command to exercise direction of military operations of major groupings of armed forces without an intermediate echelon and that both an overall system of strategic leadership and its echelons must be set up ahead of time, before the beginning of a war, and their structure must correspond strictly to the character and scope of upcoming military operations.[2]

The shift in focus from the front to the theater of military operations (TVD) and the emphasis on the need for an intermediary command element between the Supreme High Command (VGK) and the front commands received concrete expression with the creation of

a high command in Soviet Asia around the end of 1978, with Army General V. I. Petrov as the Commander-in-Chief of Forces in the Far East, the same title given Marshal Alexander Vasilevski for the Manchurian campaign in August 1945.[3] Petrov has subsequently become Commander-in-Chief of the Ground Forces and has been replaced by Army General V. L. Govorov.

There undoubtedly are plans for the creation of high commands in TVDs opposite NATO as well. However, the establishment of these commands in peacetime would mean that certain forces of the non-Soviet Warsaw Pact nations would come under the permanent control of a Soviet commander. While the East European governments have accepted the subordination of most, if not all, of their military forces to a Soviet-dominated joint armed forces command structure in wartime, they would be most hesitant about turning over such forces to the Soviets in peacetime. Hence, high commands in European TVDs are not likely to become permanent elements but would be ready to be activated whenever a serious threat of war arises.

Since the strategic operation in a TVD is now to be the primary operational planning element and this strategic operation is to be controlled by a commander-in-chief of forces in the TVD, then it becomes apparent that the high commands, upon being activated, must be given certain assets, which must include at least a portion of the long-range air assets to carry out the deep-theater strike mission.

Historically, the Soviets have made no organizational distinction between aircraft with primarily deep-theater strike missions and those with primarily intercontinental antiship missions. Both types of bombers have existed in geographically organized bomber corps subordinate to the Long-Range Aviation (LRA) arm of Soviet Air Force headquarters. However, while the Commander of LRA, Colonel General of Aviation V. V. Reshetnikov, continues to serve as a Deputy Commander-in-Chief of the Air Forces, the organizational name "LRA" has not been referenced in the Soviet press for the last two years, suggesting that the Soviet bomber force has undergone a degree of reorganization. Any new structure that subsequently appears will have to accommodate the requirement for the TVD commander-in-chiefs to have their own air assets for conducting deep-theater strikes.

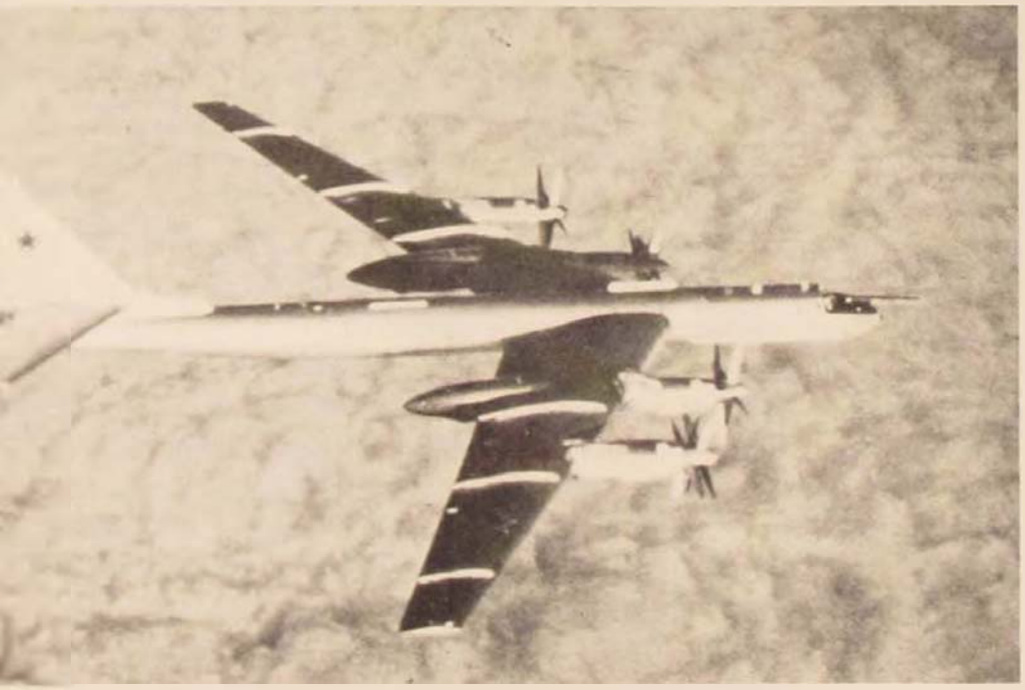
Another important factor affecting the employment of air power in a theater role has been the attainment by the Soviets of at least "essential parity" in strategic nuclear forces. This development has had the effect of decoupling these nuclear forces to a certain extent from a potential European conflict. Moreover, the acquisition of aircraft capable of striking NATO's rear with conventional munitions obviates the need to rely exclusively on intermediate- and medium-range ballistic missiles to destroy NATO's theater nuclear capability and, as a result, has given the Soviets a greater measure of escalation control.

The Soviets no longer believe that any NATO-Warsaw Pact conflict in Europe would immediately escalate into massive intercontinental nuclear exchanges.[4] At the same time, they believe NATO would probably resort to theater nuclear weapons (at least tactical ones) to counter a massive Warsaw Pact conventional offensive into Western Europe, thereby eventually leading to general nuclear war. However, the swift destruction of most of NATO's theater nuclear delivery systems using Soviet air forces armed with conventional munitions, followed by a massive conventional ground assault, would create a serious dilemma for U.S. decision-makers. The United States would be forced either to (1) fight conventionally in Europe, in which case the Soviets are confident they could prevail; (2) escalate the conflict using surviving theater nuclear assets, which would be considerably offset by the full arsenal of Soviet theater nuclear weapons; (3) escalate to strategic nuclear war, thereby assuring massive nuclear destruction of United States territory; or (4) capitulate.

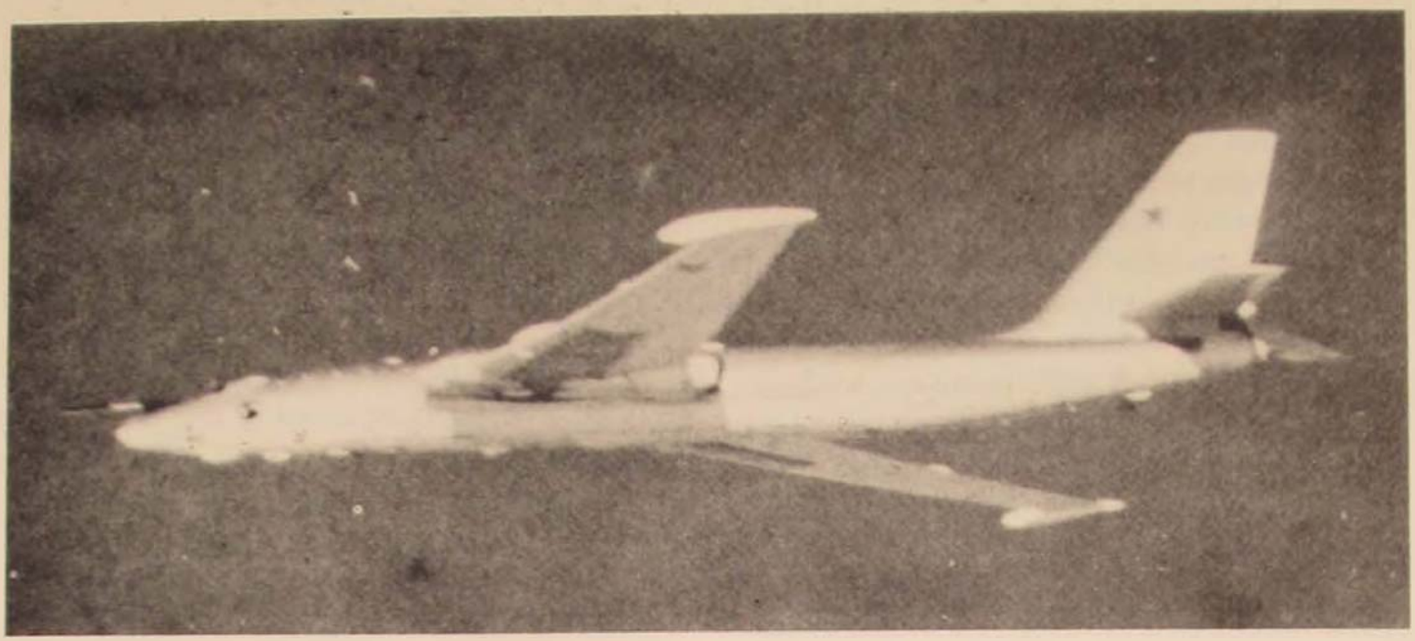
The Soviets—and we ourselves—are uncer-

tain how we would resolve this dilemma. Nonetheless, the acquisition of the capability to destroy NATO's theater nuclear assets with conventional air strikes would significantly enhance the prospects for achieving Soviet military objectives in Europe while minimizing the risks of escalation to general nuclear war. Indeed, the acquisition of a deep-theater, conventional counternuclear capability for Soviet air power has received high priority in recent years. This capability has been greatly enhanced with the introduction of the Backfire and Fencer in substantial numbers.

It is generally believed that if the Soviets hope to restrict NATO's ability to employ its theater nuclear forces without crossing over the nuclear threshold themselves, they would have to mount a massive independent air operation at the very outset of the conflict in Europe.[5] In this air operation, the Soviets presumably



*A contemporary of the B-52, the Tu-95 Bear (left) entered service in 1956. About forty Bear F reconnaissance bombers, like this one, serve in the Soviet Air Force. They are frequently photographed over the North Sea and en route to Cuba. . . . The Soviets say the Tu-26 Backfire (below) is intended for peripheral operations. The probe indicates that this plane, with one in-flight refueling, could reach targets in the United States.*



*A limited numbr of M-4 Bison long-range bombers served in the Soviet Air Force in the '50s and '60s. About 30 Bison As remain for in-flight refueling duties. Bison Bs (above) are used for strategic reconnaissance and electronic countermeasures missions.*

would use aircraft from strategic, theater, and frontal air assets to conduct strikes throughout the entire depth of NATO's European defenses. The primary targets would be nuclear delivery systems, airfields, C³ facilities, and major force groupings. In addition to severely degrading NATO's capability for waging theater nuclear war, the air operation would be designed to assure the Soviets of air superiority throughout the remainder of the conflict.

To achieve these objectives, the Soviets would use air forces in the western military districts (MDs) and the groups of forces in Eastern Europe to blast several air corridors through NATO's forward air defense systems, thus enabling the main bomber force to proceed through the forward area with a minimum of resistance. Top cover would accompany the main strike forces all the way to their targets to engage NATO's point defenses and aircraft that escape the initial attacks on West European airfields. In order to achieve any significant measure of success, the air operation must achieve strategic surprise, and each objective must be attained in rapid succession. As a result of these very substantial "ifs," there is much skepticism in the West as to the probability of its success.

If the Soviets intend to develop the concept of the independent air operation into a viable option, they must develop a command and control structure capable of orchestrating 1000-2000 aircraft into a highly coordinated attack. To establish command and control procedures, they would have to consider the following characteristics:

- The air operation requires the centralization of a large number of air assets at the theater and national levels, at least for the initial stage of the war.
- The importance of surprise and rapid action requires a minimum of both forward deployments and changes in operational subordination of assets immediately preceding the attack.
- During the air operation, requirements for air assets to be used in a territorial (i.e., U.S.S.R.) air defense role are diminished since the whole scenario is predicated on destroying NATO's capability for launching a large-scale air attack.
- Aircraft capabilities and crew skills re-

quired for the air operation are significantly different from those needed to perform at other stages of the war, and hence special training is required.

• While the independent air operation concept is designed with the use of conventional munitions in mind, the command and control structure developed for it would also be effective if a theater nuclear strike with strategic missiles, augmented with nuclear-armed aircraft, were to be launched.

Theater command links become an important element in this command and control structure. The establishment of TVD high commands and the allocation to them of deep-theater strike assets are designed to take advantage of the increased capabilities of Soviet aircraft and to give the on-the-scene commander greater flexibility in accomplishing his theaterwide mission. A recent article recounted Marshal Ivan S. Konev's criticism during the Great Patriotic War of front commanders who wanted to take fixed-wing air assets with them everywhere.[6] Konev's policy, which was discussed in favorable terms, was that such air power should be used en masse and in the decisive sectors, the implication being that at least a portion of fixed-wing frontal aviation should remain centralized at the theater/national level.

The concentration of a variety of air assets under the theater commander-in-chief's direct control could more effectively ensure adequate target coverage throughout the entire depth of the TVD. For a theaterwide air operation, MD/frontal air assets would be assigned missions directly by the TVD commander-in-chief for the period of the operation, then would again be turned over to the front/MD commanders.

The retention of deep-theater strike aircraft at the theater level would obviate the need for the front commander to use his air assets to strike deep in NATO's rear and, thus, allow him to concentrate more narrowly on sustaining the ground offensive and to employ his air assets to ways that have a more direct bearing on the attainment of his frontal objectives.

## Indications of Change in the Control of Air Power

The shift in emphasis from the front to the theater and the acquisition of a considerable deep-penetration, conventional-strike capability for Soviet aviation has led to a major restructuring of command authority for air assets dedicated to both deep-theater and ground-support missions. The evolving new structure has been partially revealed in the Soviet press through the use of new organizational terminology and the apparent resubordination of certain air and air defense components.

• At the beginning of 1981 the name of the air defense force component was changed from "Troops of National Air Defense" (Voyska PVO *strany*) to simply "Troops of Air Defense" (Voyska PVO).

• Of the ten Soviet air defense districts (ADDs), only two—Moscow and Baku—have over the years been referred to openly in the Soviet press. However, no reference has been made to the Baku ADD since 1980. Some of its officials, as well as other air-defense-related officers, have begun participating in military district activities. Also, the term "air defense of the military district" has begun appearing.

• Tactical air defense forces (Voyska PVO Sukhoputnykh voysk ) were a separate arm subordinate to Soviet Ground Forces Headquarters. However, since August 1980, this arm's commander, Colonel-General of Artillery P. G. Levchenko, has been referenced in activities associated exclusively with the Air Defense Forces component. His recent obituary revealed that he had, in fact, assumed a newly created position as First Deputy Commander-in-Chief of PVO.[7] In addition, sometime in early 1981 the name of the military academy created in 1977 to provide advanced training to tactical air defense officers was changed from "Military Academy of Air Defense Forces of the Ground Forces" to "Military Academy of Troop Air Defense" (Voyennaya akademiya voyskovoy PVO).

• Announcements for enrollment in higher military schools that appeared early in 1981 indicated that the five schools which train officers for troop air defense had been resubordinated from the Ground Forces to the Air Defense Forces.[8] In the same announcement, it was revealed that two of the three Air Defense Forces' fighter interceptor pilot schools had been resubordinated to the Air Forces.

• Since early 1980, the terms "air forces of the military district" and "air forces of the group of forces" have generally replaced the terms "aviation of the military district" and "aviation of the group of forces," respectively.

All of these observations taken together suggest that the structural relationship among air, air defense, and ground forces has been fundamentally altered at both the national and district levels. A concerted effort appears to have been made to improve force integration and expand force employment options by discarding the old organizational principle of dividing air and air defense assets according to whether they were offensive or defensive in nature. In the old structure, tactical surface-to-air missiles (SAMs) organic to offensive-oriented ground force units and offensive air assets fell into one chain of command (the MD) while SAMs for territorial defense and air defense interceptor aircraft were controlled through independent command channels (the ADD). Now it appears that the operative principle determining organization is whether the weapon systems are ground based or air assets. At the national level, troop air defense now apparently is to be the responsibility of Air Defense Headquarters, thereby unifying control of both tactical and strategic SAMs. Similarly, Air Force Headquarters has acquired greater, although probably not complete, authority over air defense (APVO) interceptors. APVO, however, still exists as an arm of the Air Defense Forces.

At the military district level, the new command and control principle is even more apparent. The terms "air forces of the MD" and "air defense of the MD," along with all the other recently observed changes and anomalies, indicate the incorporation of air defense assets into the military district command structure. "Air forces of the MD," therefore, would include both frontal air and APVO assets. Similarly, "air defense of the MD" would include SAMs dedicated to both troop and territorial air defense.

Under the new system, the MD/front commander obviously assumes a more critical role since his command includes assets for accomplishing both offensive and defensive missions, including a large share of the total air defense responsibility within the territory of his MD. Thus, while the TVD has become the basic focus for wartime strategic planning purposes, the military district/front retains, and has even enhanced, its critical operational role.

## Air Power in Direct Support of Ground Operations

Air forces, while traditionally not an organic element of Soviet combined-arms units, have nonetheless always been viewed by the Soviets as a vital factor in conducting ground operations. Air power supports the ground forces by providing cover against enemy air strikes, by airlifting troops and materiel to critical areas, by providing aerial reconnaissance of enemy troop formations and firing positions, and by serving as a highly mobile and responsive means of fire suppression. In recent years, the role of air power in the ground-support mission has been greatly affected by four major developments: the designation of the TVD as the primary planning element and the accompanying Air Force reorganization, the introduction of large numbers of modern helicopters into the inventory, the deployment of a wide array of mobile or semimobile ground-based air defense systems, and the development of dual-mission interceptors. As a result of these developments, the previous orientation of frontal aviation toward primarily defensive air operations has changed; fixed-wing assets

*Each month, fifteen new Mi-24 Hind attack helicopters join Soviet forces. These heavily armed choppers would provide a tremendous and, because they can move with advancing Soviet units, continuous source of firepower during any blitzkrieg into Western Europe.*

have acquired a more offensive character. In conjunction with this, the role of the helicopter in providing air cover for ground operations has increased immeasurably.

Many of the modern Soviet interceptor aircraft are dual capable, that is, while their primary mission is air defense and interdiction, they are also capable of providing some direct support to ground operations. The previous, somewhat artificial organization of air assets into fighter aviation of PVO and frontal aviation needlessly predetermined the number of aircraft available for various types of missions. Flexibility was lost. The command and control system made it difficult to rerole these aircraft since the MD/front commands and the air defense district commands represented relatively independent chains of operational authority.

If the independent air operation were to achieve any significant measure of success, the APVO assets remaining within the U.S.S.R. for defensive purposes might be underutilized since NATO's offensive air forces would have been neutralized. Consequently, if a conventional ground offensive was moving rapidly across Europe, there would be a greater need to deploy these aircraft with the advancing troops in order to extend the line of territorial air defense beyond the prewar boundaries and, if needed, to provide additional direct ground support. The release of these aircraft from the mission of air defense of the homeland would dramatically increase Soviet offensive air capabilities. The dropping of the term "national" from the name of the air defense force component suggests that this use of APVO assets in a troop air defense role beyond Soviet borders has become an accepted mission for this force.

The increasing capability of Soviet interceptors to operate independent of fixed ground control (GCI) support affords them greater opportunity to perform the forward air defense mission. The apparent inclusion of at least some of the former APVO assets into the new

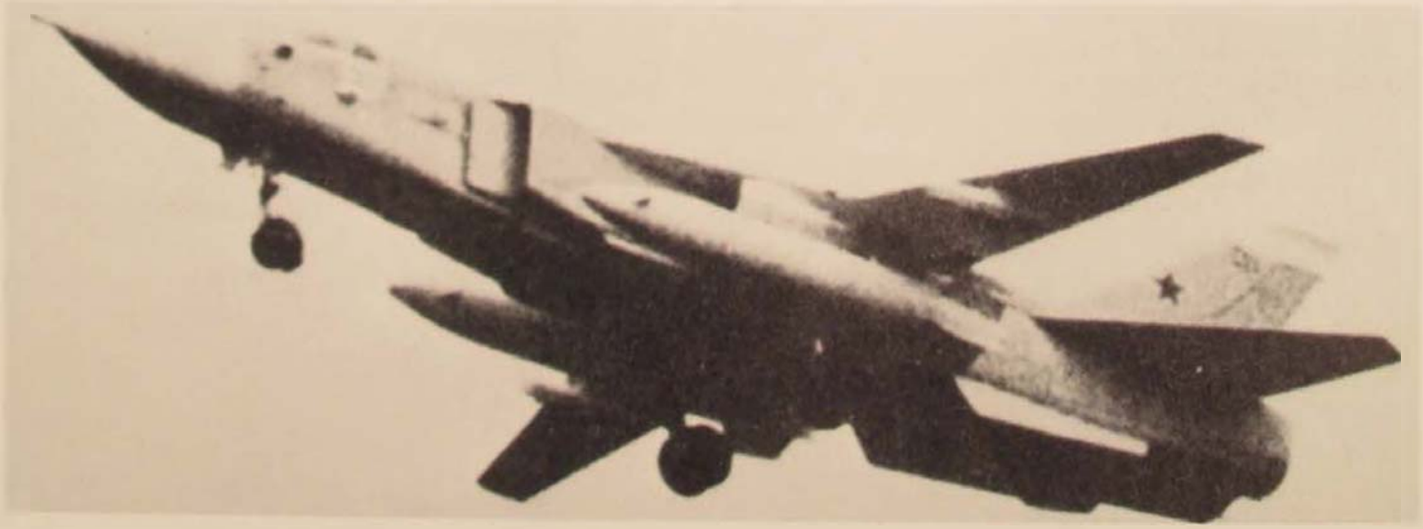
concept of "air forces of the MD" facilitates their use in both the forward air defense and ground support roles.

The incorporation of APVO assets into the MD structure does not preclude their use for the traditional strategic territorial air defense mission. It simply creates additional flexibility. This results in more effective use of air power in both combined-arms operations and strategic defense of the U.S.S.R. The integration of air and air defense assets at the MD level enhances capabilities for the mission of air defense of the homeland since, just as air defense interceptors have acquired alternate missions during offensive operations, SAM systems formerly dedicated to air defense of the troops can now be integrated with strategic SAM systems to augment defensive operations on Soviet territory.

Perhaps the greatest change in recent years in Soviet doctrine for the employment of air power has occurred in the use of helicopters for a wide range of missions. The Soviet helicopter force now serves as the primary air asset of armies in accomplishing airmobile, fire support, and antiarmor missions. It is also assuming greater importance in performing battlefield reconnaissance and airborne command and control.

Air power in general has become a more integral part of Soviet fire attacks, being interwoven with artillery in all phases of the fire support plan. Helicopters have steadily increased their contribution to this type of air support. Soviet helicopters, particularly the Hinds, have also become a major source of firepower for advancing Soviet divisions. The Soviets recognize the great advantage of rotary-wing aircraft in being able to move forward at the same pace as ground columns, thereby affording Soviet divisions a more uninterrupted source of air cover. Fixed-wing aircraft are still available to be called in for additional ground support near the forward edge of the battle area (FEBA) and for strikes farther in the rear. Because of their speed and range, they will always be a vital element in air support of ground operations.

A number of articles have appeared in recent years extolling the virtues of wartime army aviation, that is, aviation that was organic to ground force units. As indicated previously, in the postwar period air assets have not been an element in the organizational form of the Soviet concept of combined arms. Army commanders have conducted their "combined-arms operations" with their "combined-arms unit" *plus* aviation allocated by the front command.



*The Su-24 Fencer brings new flexibility to Soviet Frontal Aviation. Fencers can be used for all-weather interdiction as well as close-air-support missions. About 400 Su-24s are committed to the European theater.*

Now, however, a major development is occurring in Soviet combined-arms doctrine. A trend has developed for combined-arms units to have their own helicopter assets. Helicopter squadrons have entered the TO&E of both motorized rifle and tank divisions. The incorporation of rotary-wing assets directly into divisional structures has thus far been slow and limited to select units, primarily those located in the forward area. However, the trend is clearly toward increasing reliance of ground forces on helicopters to perform in a multiplicity of roles.

The Soviets have acquired considerable tactical experience in the combat employment of helicopters from their operations in Afghanistan. It did not take them long to see the benefits of rotary-wing aircraft in antiguerrilla operations, particularly in route security for both troop and supply convoys. Their tactics have undergone several revisions since the invasion, and much has been learned regarding the coordination of fixed-wing and rotary-wing aircraft in strike operations.

THE USTINOV-OGARKOV era has seen the most significant innovations in military organizational structure in the entire postwar period. Soviet doctrine for the employment of air power has been significantly refined as a result of new capabilities in both fixed-wing and rotary-wing aircraft and the changing correlation of strategic nuclear forces. Soviet military theoreticians have expressed great concern that strategy and tactics keep pace with technological advancements. The new organizational structure for air and air defense forces demonstrates the seriousness with which the Soviets view the need to develop the most effective means for integrating all the new weapon systems into an armed force capable of responding to a wide range of threats at all levels and in all areas along the periphery of the Soviet Union.

*Hq USAF*
*Washington, D.C.*

Author's note: This article was presented at the 14th Annual Convention of the American Association for the Advancement of Slavic Studies, 15 October 1982, in Washington, D.C.

**Notes**

1. N. V. Ogarkov, "On Guard over Peaceful Labor," *Kommunist*, No. 10, July 1981, p. 86. (Emphasis added.)

2. Colonel I. Vyrodov, "On the Leadership of Military Operations of Strategic Force Groupings in the Second World War," *Voyenno-istoricheskii zhurnal* (Military-Historical Journal), No. 4, 1979, p. 23.

3. In *Krasnaya Zvezda*, 29 December 1978, p. 1, Petrov was congratulated by Brezhnev on his new assignment. The exact title of this position was not revealed until over two years later in *Novosti Mongolii*, 20 March 1981, p. 6.

4. "Soviet military strategy allows that world war may begin and for a certain length of time be conducted with the use of only conventional weapons." (*Soviet Military Encyclopedia*, vol. 7, 1979, p. 564—under "Strategy, Military.")

5. Lynn Hansen, "Front Aviation in Soviet Combined Arms Warfare." A paper presented at the Air Force conference entitled The Soviet Union: What Lies Ahead? in Reston, Virginia, 25-27 September 1980, p. 14.

6. Marshal of Aviation S. Rudenko, "Born in Battles," *Krasnaya Zvezda*, May 5, 1982, p. 4.

7. *Krasnaya Zvezda*, August 29, 1982, p. 4. General Levchenko retired around January 1982 and was replaced as First Deputy Commander-in-Chief of PVO by Lieutenant-General of Artillery Yu. Chesbokov.

8. *Krasnaya Zvezda*, January 17, 1981, p. 4.

IRA C. EAKER ESSAY
SECOND-PRIZE WINNER

# A JUDGE ADVOCATE SHARES HIS VIEWS ON LEADERSHIP

COLONEL EDWARD J. MURPHY

AS I BEGAN to think about this important subject, I discovered that I did not have a personal philosophy of leadership! At least I do not have one that fits easily into a word picture. That is the surprising conclusion I reached after fairly serious introspection. Even more startling is the fact that I had the opportunity to study graduate management for two years at the Wharton School of Finance. I then served three years at the Air Force Leadership and Management Development Center and I am familiar with the works of Peter Drucker, Alfred Sloan, Harold Koontz, Frederick Herzberg, Abraham Maslow, and James MacGregor Burns (to name only a few).

Something was wrong. On reexamination I found that I really do have some sincere and deeply held views on leadership. However, I formulated these views from real life experiences, not academic treatises. My philosophy of leadership has four hallmarks: integrity, decisiveness, empathy, and communicativeness.

SOME years ago when I was a major, I was staff judge advocate to the base commander at one of our air logistic centers. It was a large base with 4500 military and 17,000 civilian personnel assigned. The base commander was a senior colonel with a reputation for being a tough disciplinarian. For nine months the base had a recurring theft problem. Someone was stealing batteries from cars parked on the base. Often the victims were young airmen living in the dorms.

One night, a security police patrol observed four dependent youths stealing a battery and apprehended them. Their ages ranged from 17 to 19. They confessed to the other thefts.

The base commander and I met the next morning to discuss appropriate disciplinary action. Two of the youths were the sons of senior noncommissioned officers who lived off base. The other two boys were sons of an officer and a senior enlisted man who lived on base. After reviewing the evidence, the base commander decided to withdraw the youths' ID cards and substitute limited-privilege ID cards, bar them from the base, and refer the case to the United States Attorney for prosecution. The element of continual victimization of young airmen weighed heavily with the base commander.

Although it might seem like a routine case, it

wasn't. The father of one of the boys was the Strategic Air Command wing commander. The next afternoon that wing commander visited the base commander. The wing commander was livid with anger. He verbally accosted the base commander. "What do you mean, evicting me from base quarters! Don't you know I'm mission essential. I'm required to be in constant communication with my command post. I have to live on base, etc." After about ten minutes, the base commander replied quietly, "Colonel, you haven't read my letter. I didn't evict you. I evicted your son. His base privileges have been terminated. As his father, you're going to have to make whatever arrangements are necessary."

The base commander later confided to me that he had thought of treating the wing commander's son differently from the other boys, but it didn't seem right or honest. All four boys were equally culpable. The base commander made a tough decision and he stuck with it.

I learned a lesson in *integrity* that week that I will never forget.

SOME months later, on a Sunday evening, while sitting at home with my family watching "The Last of the Mohicans" on television, the telephone rang ominously. It was my friend, the base commander. He quickly related that the FBI has just requested his assistance. A Delta airliner was on the ground in Macon, Georgia, some 25 miles from the base. Someone allegedly had placed a bomb in an aircraft toilet. A suspect was being held in custody at the terminal. Neither the local FBI nor the Macon police had any explosives experts. The air base did have an explosives ordnance unit.

My thoughts were already beginning to turn to the Posse Comitatus Act, which prohibits military personnel from engaging in civil police activity. However, before I could add anything, the base commander said he considered the Posse Comitatus Act and had quickly made the decision to dispatch the ordnance team. I then asked why he was calling me. He explained the team would be transported in police vehicles. Then he said they would pick me up in two minutes. "You want me to go?" "Of course," he said. "There may well be some claim for damage against the Air Force if our men are required to rip up much of that aircraft. I want to make sure we're protected." On reflection, he was quite right.

To complete the story, we thoroughly searched the aircraft at the direction of the FBI. The toilets were very carefully emptied. It was a difficult job. No bomb was found. It was ultimately determined that the suspect had a background of mental disorders.

The aircraft was not damaged, nor did Air Force personnel engage in police work. They never interrogated the suspect. They did not violate the Posse Comitatus Act. Their efforts were purely humanitarian. The base commander had not had time to request advice from higher headquarters. He acted decisively, intelligently, and quickly.

Once again, I learned a significant lesson in leadership. A good leader must be *decisive*.

MY RELATIONSHIP with the base commander grew into close friendship. Every afternoon, at 1600, he would walk down to my office and close the door. He would sit down, put his feet on my desk, and then we would chat for 15 minutes or so.

The base had a DOD elementary school. Base children in grades seven and above were bussed to school in a nearby community. In rendering legal assistance to base personnel, I heard several complaints about the administration of the junior high school attended by base children. It was alleged that military dependents received substandard treatment. Military parents who resided on the base got no satisfaction from school administrators. The school did not have a Parent-Teacher Association (PTA), nor was there a school in the entire county that had a PTA. Parents could not effectively voice their concerns.

The base commander had no children in the school system. He was not in a position officially to dictate suggested changes to the school administration. Yet he immediately felt a concern for those military children and their parents. He and I visited the school. We verified several of the allegations. Indeed, it was a rundown facility, without air conditioning or gym locker rooms, and it had quite an inadequate library. Teacher morale was poor—there were reports of classroom assaults on students—and the principal was adamantly opposed to any parent organization.

The base commander then met with the county superintendent of schools and a representative of the national PTA board of advisors. He next convened a meeting on base of interested parents. He invited the county superintendent, the PTA representative, and the school principal to speak to the group. The meeting was well attended.

Within three months the school had a PTA, and it was a tremendous success. The teachers appreciated it, the parents loved it, and the school principal became its biggest supporter. Discipline problems quickly disappeared. Funding became available for massive structural improvements. The level of education was noticeably uplifted. There was no longer a problem with off-base schooling. The base commander had solved it.

Once again I learned a valuable lesson in leadership: to take an interest in one's people. Know their problems. Try to help. It's called *empathy*, and it works.

ON MY MOST recent overseas tour, I served as legal advisor to the American Ambassador in Canberra, Australia. It was a delightful posting. The work was fascinating. The Australians were hospitable and congenial. For example, on Wednesday evenings my wife and I regularly attended a large prayer meeting at the Dominican Monastery. There were usually about 500 people there each week. It was so uplifting to meet with people in an atmosphere of serenity and prayer. Wednesday evenings came to be one of the highlights of the week.

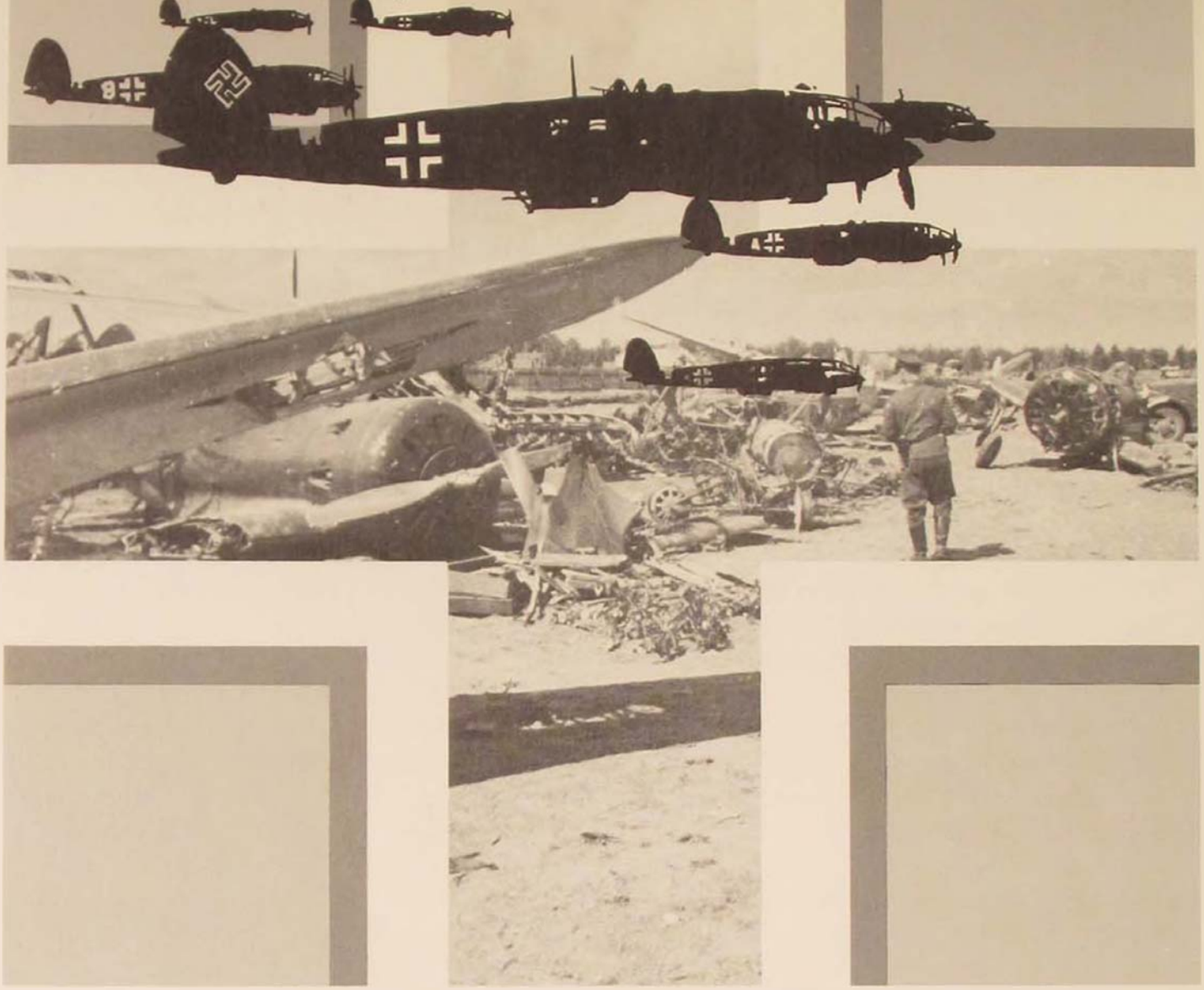
Quite unrelated, some six months after our arrival in Australia, it became necessary for the U.S. government to renegotiate the cost-sharing agreement for the sensitive joint space communication station in Woomera, South Australia. The United States negotiating team was from Washington. I was the sole embassy representative on the team. We had several preliminary meetings, for a difficult negotiating session was anticipated.

The Assistant Secretary of Defense headed the Australian negotiating team. I was genuinely surprised at our first meeting to learn that the Assistant Secretary was a man I had been praying with regularly for the past six months at the Dominican Monastery. While I knew he was employed in government service, I had not realized that he was so highly placed. The negotiations went remarkably well. Whenever we neared an impasse, he and I would retire for a cup of tea. We would quickly arrive at that point of compromise which best served both governments. I would then relay it to the rest of our team. We concluded a country-to-country agreement in minimum time. The atmosphere was cordial. The United States mission was well served.

The Woomera negotiations emphasized to me the importance of being communicative and personable. Thus, *communicativeness* has become an integral part of my philosophy of leadership.

THESE VIGNETTES reflect vivid learning experiences I have had through the years. My philosophy of leadership derives from them and rests firmly on these cornerstones of integrity, decisiveness, empathy, and communicativeness.

*Hickam AFB, Hawaii*



# A LESSON OF HISTORY: THE LUFTWAFFE AND BARBAROSSA

MAJOR LONNIE O. RATLEY III

**Barbarossa** *("red beard"), surname of Frederick I of Germany (1123-1190). It is said that he never died but is still sleeping in Kyffhäuserberg in Thuringia. There he sits at a stone table with his six knights, waiting "fulness of time," when he will come from his cave to rescue Germany from bondage and give her the foremost place of all the world. His beard has already grown through the table-slab but must wind itself thrice around the table before his second advent.*[1]

ALSO, Barbarossa was the code name for Germany's invasion of the Soviet Union starting on 22 June 1941. At 0340 on that date, the combined air assets of four Luftwaffe air fleets struck a devastating blow to the Red Air Force—a blow from which, in many respects, it has not recovered to this day. The Luftwaffe used 1280 operationally ready combat aircraft for the first series of air strikes in the war against the Soviet Union.[2] With these air

assets the Luftwaffe destroyed more than 2000 Soviet aircraft on the first day of the campaign in approximately 18 hours of combat,[3] against their own loss of 35.[4] In terms of the number of enemy aircraft destroyed versus the number of friendly aircraft lost, the initial Luftwaffe attack against Russia is the most successful operation in the history of air power. Of the 35 German aircraft lost, approximately 15 were noncombat related. The problem was the malfunctioning of fragmentation bomblettes that occasionally detonated while still in aircraft bomb bays or upon landing. If one takes only the losses of German aircraft to Soviet defenses, the ratio of German aircraft losses to Russian aircraft losses is approximately one to one hundred (1:100).

The first Luftwaffe strikes were conducted between 0305 and 0315 in concert with the German Army's ground attack. Twenty to thirty aircrews had been previously handpicked to deliver special fragmentation bombs (SD-2, 2 kg bomblettes and SD-10, 10 kg bomblettes) against key Soviet airfields, a flight of three aircraft being assigned to each field. The purpose of these early attacks was to cause disruption and confusion as well as to preclude dispersion of Soviet planes until the main blow was struck approximately 25 minutes later.[5]

There was considerable controversy between the German Army and the Luftwaffe over the timing of the first air attacks. The army position was firm: the ground commanders wanted to attack at first light to achieve the maximum amount of tactical surprise and avoid the problems of control in a night attack. The Luftwaffe, on the other hand, was tasked with destroying the Red air forces, so that the army could operate without fear of Russian air attacks and so the Luftwaffe could provide air support for the attacking German ground forces. If the army attacked first, then the Soviet Air Force units would be alerted and would most probably retire to airfields beyond the reach of the Luftwaffe.[6] The resultant compromise was the decision to select a few special crews for missions with times on target of 0315, the same time as the beginning of the army attack in the area of Army Group Center.[7]

## Luftwaffe Targeting Priorities

The initial mission of the Luftwaffe for the opening stage of Barbarossa was straightforward and specific: destroy the Red Air Force and its ground organization.[8] After completion of this task, the Luftwaffe was to concentrate on support of the advancing German ground forces.[9] These two missions can best be respectively defined as the first mission and the main mission of the Luftwaffe.[10] The Luftwaffe had to fulfill the first mission (elimination of the Red Air Force) prior to concentrating on the main mission, support of the German Army.

Regarding the first mission of the Luftwaffe in Barbarossa, destruction of the Red Air Force and its ground organization, the following priorities were planned:

- Destruction of modern aircraft and the Red Air Force ground organization.
- Destruction of production facilities for aircraft and aircraft engines.
- Destruction of aircraft with "M" (modern) engines.
- Destruction of other aircraft.[11]

Bombing of the Russian aircraft industry was not possible at the start of Barbarossa because the Luftwaffe had no bombers with sufficient range and payload to reach the Russian factories.[12] The highly successful attacks of the first few days against the Red Air Force were not an end in themselves. The Red Air Force had to be eliminated so that the German Army could move without fear of Russian air interference and so that the Luftwaffe could concentrate on supporting German Army operations.

In order to develop a clearer perspective of Barbarossa's concept, one must have an understanding of the strategic geography of Germany. Germany was, even in 1941, a relatively small country. Germany was resource poor

with no natural defensive borders. These factors—size, lack of natural borders, and insufficient resources—dictated the traditional Prussian-German military strategy; wars had to be short as there were not enough natural resources to support a war of attrition. The armed forces had to concentrate on quality and efficiency as the population base could not support expendable human resources. Finally, as space was at a premium, the military strategy had to concentrate on destroying the enemy forces; there was no room for long-drawn-out strategic maneuvering. All of these factors drove the Germans to develop the theory of the *Vernichtungsschlacht* or battle of destruction, the classic strategy that would quickly seek a decisive battle with the enemy to knock the opponent out of the war. Under these circumstances the concept of *Auftragstaktik* or mission tactics was a natural guiding principle of German military operations at all levels of command.[13] Essentially *Auftragstaktik* meant allowing decisions to be made at the lowest possible level in the chain of command. Furthermore, Germany had to make optimum use of its leaders as Germany could count on being outnumbered by its opponents. In *Auftragstaktik*, the higher echelon assigned the objective to the lower echelon. The lower echelon determined how the objective was to be taken. Orders were short, simple, easily understood, and often only verbal. A commander at any level, from squad leader to field marshal, was a real commander, not merely a telephone exchange or copying machine passing on the directives of higher headquarters to subordinate units.

The concept of *Schwerpunkt* or point of critical emphasis must also be understood, as Barbarossa's initial success was, in large part, due to careful selection of *Schwerpunkte*.[14]

Barbarossa, in its original form, was not a unique German military operation, just a good one.[15] It was one in a long series of successful operations, having been preceded by Königgrätz, Sedan, the Schlieffen Plan of 1914, and the Manstein Plan in 1940.

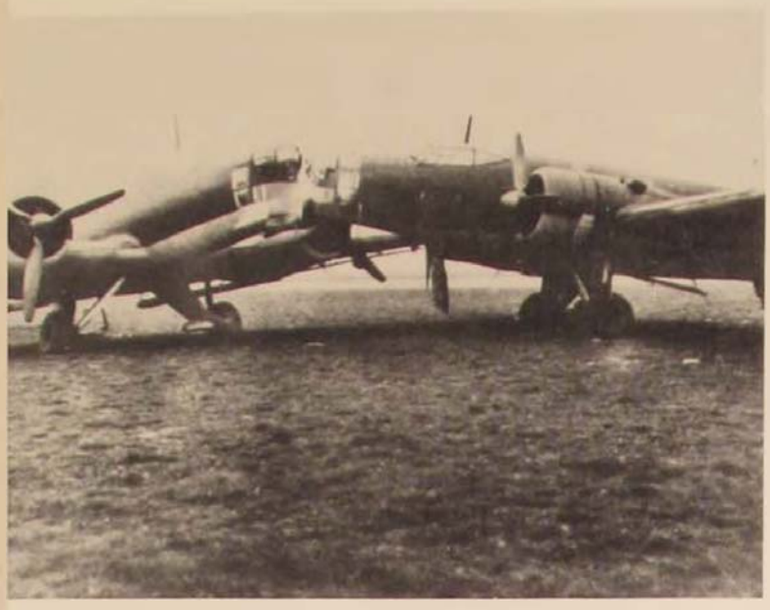
The Luftwaffe's military style was similar to that of the German Army. *Auftragstaktik* was a principle used as much by the Luftwaffe as it was in the German Army. The *Schwerpunkt* concept also manifested itself in the strong emphasis that the German Air Force placed on dive bombing as opposed to level carpet or area bombing. The Luftwaffe was flexible, aggressive, and tactically oriented. The failure of the German bombing campaign against Great Britain and its associated lessons were clear to the German military leadership prior to the start of Barbarossa.

The German air campaign in Barbarossa provides an excellent example of the Luftwaffe's operational style. Lower echelons—the squadron level and even flight level—decided the tactics, weapons, and size of formations to use in destroying the targets designated by higher echelons. Interference from higher headquarters was, in general, kept to a minimum, and *aircrew opinions were highly regarded.*

Selection of targets for the Luftwaffe was a logical application of traditional German strategy: namely, destroy in short order the enemy's ability to conduct warfare by destroying the enemy's military forces. The Luftwaffe was told to plan for a short war, and in Barbarossa, as originally planned, strategic targets for aircraft were irrelevant. The general concept of the operation was the destruction of the mass of the Red Army in the western part of the U.S.S.R. Strategic targets—factories, power plants, population centers—had no bearing on the outcome of a blitz or lightning campaign of short duration. The Luftwaffe in Barbarossa was totally committed to tactical support of the German Army. In the words of Field Marshal Kesselring: "I instructed my air force and flak generals to consider the wishes of the Army as my orders."[16]

## Target Planning

Major Rudolf Loytved-Hardegg was officially assigned to Air Fleet One as Chief of



*A modified version of Luftwaffe Ju-86 E-2 (above) was used for the preattack high altitude reconnaissance of Soviet airfields, one of which was shot down by a Russian interceptor in the spring of 1941. . . . Air and ground liaison was maintained and strongly supported at all levels of command. Below, General Wolfram von Richthofen (left) Commander, VIII Air Corps, and cousin of the famous Manfred of World War I fame, consults with General Hermann Hoth, Commander, Panzer Group Three.*

Intelligence in March 1941.[17] He was tasked with determining the order of battle of the Red Air Force and later the targeting of the Russian aircraft and ground installations. The units that came under his control for intelligence gathering consisted of two radio intercept sites, a long-range reconnaissance squadron (Lufthansa)[18] and a long-range reconnaissance squadron (regular Luftwaffe), and finally, access to *Reichsfuehrer* Heinrich Himmler's security service organization for screening émigrés from the Soviet Union.

The Luftwaffe High Command directed Loytved-Hardegg to investigate the following special points of interest:

- Is it true that 9000 Soviet aircraft are still in the western part of the U.S.S.R.?
- Were these 9000 aircraft supplemented with modern aircraft?
- Where were the industrial plants producing modern aircraft and modern engines?

It is noteworthy that the collection of intelligence data for targeting the highly successful

*The final Luftwaffe target list included supply line interdiction targets, in this case rail movement of petroleum, oil, and lubricants. This sequence shows a string of tank cars under attack (above), then burned out and smoldering (left). German economy of force and precision are suggested by the minimal damage to nearby rail lines and structures; postattack imagery (left) shows little cratering, suggesting mainly strafing fire.*

Luftwaffe operation during the first critical days of Barbarossa was handled by a major with a staff of three officers. The same staff also designated all Luftwaffe targets opposite the German Army Groups North and Center. The success of the Luftwaffe strikes makes a convincing argument for small, competent planning staffs.

Two incidents that occurred during this intelligence-gathering phase are particularly significant. The first involved a Luftwaffe long-range reconnaissance mission in a newly developed special reconnaissance aircraft, the Junkers Ju 86P, which was capable of reaching altitudes of 34,000 feet. On a mission deep into Russian territory, one Ju 86P was forced down by a Russian interceptor. This concerned Major Loytved-Hardegg, as the general impression in early 1941 had been that the Russians had no modern aircraft capable of intercepting German aircraft above 30,000 feet.

Another incident involved a recently emigrated engineer of German ancestry who had been allowed to leave the Soviet Union under the terms of the recently negotiated Russo-German Nonaggression Pact (1939). The engineer was screened because of his employment in an aircraft factory. The émigré was quickly identified as an expert in alloy technology. His engineering work in a Russian aircraft engine factory had produced such excellent results that the Russians paid him in gold. Loytved-Hardegg was astounded that a man of such talent had been released by the Russians and that Russia had such highly skilled personnel in their aircraft industry. These two incidents led Loytved-Hardegg to be more concerned about the technical capability of the Russians. Loytved-Hardegg was of the opinion that the Russians were not as backward and unsophisticated in certain technical fields vital to war production as many people in Germany and the West had been led to believe.

*Key command and control centers were in the target list as well; here a Soviet troop cantonment area burns after attack. Note that the preponderance of visible damage has been inflicted on the smaller, headquarters-type buildings while the larger troop barracks in the foreground are relatively unscathed.*

Loytved-Hardegg estimated that there were approximately 15,000 aircraft in the Red Air Force, of which 350 were considered by the Germans to be modern aircraft. The Loytved-Hardegg intelligence organization determined that there were about 2000 airfields in western U.S.S.R. This information, when presented to *Reichsmarschall* Hermann Göring, was not well received.[19] According to Loytved-Hardegg, Göring did not pass this information on to the Armed Forces High Command—it was not conceivable to Göring that a "primitive" people such as the Russians could have this many aircraft.

Loytved-Hardegg's reservations never had a chance of altering Hitler's decision to attack the Soviet Union. Although he was personally apprehensive about the chances of success, Loytved-Hardegg worked thoroughly and, as subsequent events proved, effectively in selecting targets for the Luftwaffe. The targeting priorities established by Loytved-Hardegg for the first day of Barbarossa were the following:

- New aircraft with associated ground organization.
- Production facilities for modern aircraft and modern aircraft engines.
- Aircraft with modern engines.
- Other aircraft.
- Red Air Force ground organization.
- Support of the Army.

The second of the priorities was impossible to fulfill as the factories were beyond the range of German bombers available at that time.

Approximately 2000 Soviet airfields within a 250 kilometer belt from the western border of the U.S.S.R. were known to the Germans at the start of Barbarossa.[20] Of these airfields, four in the north and seven opposite German Army Group Center had modern aircraft. Each occupied airfield had an average of 30 aircraft.

Major Loytved-Hardegg's organization prepared sealed target folders for each Luftwaffe group commander involved in Barbarossa. The group commanders passed the appropriate target information on to the individual squadron commanders, who in turn passed the data to their aircrews. Security was therefore compartmentalized. Many aircrews had only eight hours notice before they took off for their missions.[21] It was felt that more effect could be achieved by surprise rather than by detailed planning, which would entail probable security leaks. Extensive aircrew mission planning was also considered less critical as most of the crews were experienced and their training had emphasized flexibility. The principle of *Auftragstaktik* provided the Luftwaffe with the capability of flexible tactics and maximum utilization of aircrew skills. The Luftwaffe leadership did not consider the very short notification as any great liability.

After all the analysis was completed, targeting for the Luftwaffe was finalized. It is noteworthy that specific targets for missions after the disruptive and first-wave Luftwaffe attacks were not assigned.[22] The Luftwaffe waited for reports of bombing effects from returning aircrews and reconnaissance pilots before assigning subsequent air strikes—as some targets would need to be struck again, while others had been completely destroyed or were not worth striking at all. The final target list for the first wave of Luftwaffe air attacks in Barbarossa was as follows: 31 airfields, 3 suspected higher staff quarters, 2 barracks, 2 artillery positions, 1 bunker position, 1 petroleum, oil and lubricants depot, and the port facilities at Sevastopol.[23] The success of the Luftwaffe attacks was to astound both the Germans and the Russians.

## Execution

A total of 868 aircraft—637 strike aircraft (Stukas, bombers, destroyers) and 231 fighters (Me 109s)—took part in the first wave against the previously mentioned targets.[24] Results from air strikes against targets other than aircraft are not available, for an exact accounting was not made at the time of the attack. However, aircraft losses, friendly and enemy, are known.

Preliminary Soviet aircraft losses from first Luftwaffe strikes totaled (conservatively) 222 destroyed in the air and 890 on the ground.[25] German aircraft losses for the first wave were as follows: 2 Me 109s, 1 Me 110, 1 Ju 87, 8 Ju 88s, and 6 He 111s. This total of 18 German aircraft is somewhat misleading as a number of the losses were caused by weapon malfunctions with the SD-2 and SD-10 fragmentation bombs.[26]

Retired Luftwaffe Colonel Robert Poetter has given a personal account of the first mission flown by his unit in support of Army Group North.[27] At that time Poetter was a major commanding the I Group of Bomber Wing 76, equipped with Ju 88As. His unit was stationed at Jesau south of Königsberg. Poetter's target was the Russian Kadania airfield in Lithuania. Poetter had learned about Barbarossa and his group's mission the day before from his commander, Lieutenant General Foester, at a meeting of all wing and group commanders in I Air Corps.

Poetter had complete freedom of action relative to the tactics to use in destroying the Red Air Force aircraft and ground organization at the Kadania airfield. Using the target folders prepared by Major Loytved-Hardegg, Colonel Poetter's group planned a high-level entry (4000 meters altitude), with a low-level attack and low-level departure. The munitions used by the group's attacking Ju 88As were the SD-2 fragmentation bomblettes. Each Ju 88 was loaded with a total of 360 individual SD-2s. The airfield target area had been divided into three sections, each one allocated to one of the three squadrons in I Group of Bomber Wing 76.

The mission started with 0210 takeoff and ended landing at 0403. After approaching the Kadania airfield at higher altitude and sighting the targets, the Ju 88s dove to low (treetop) altitude and made one pass with the SD-2s. Colonel Poetter recalls seeing about 30 Russian aircraft at the field. The Luftwaffe group lost only one aircraft, a Ju 88 which flew into an airborne SD-2 that had been released from another Ju 88.

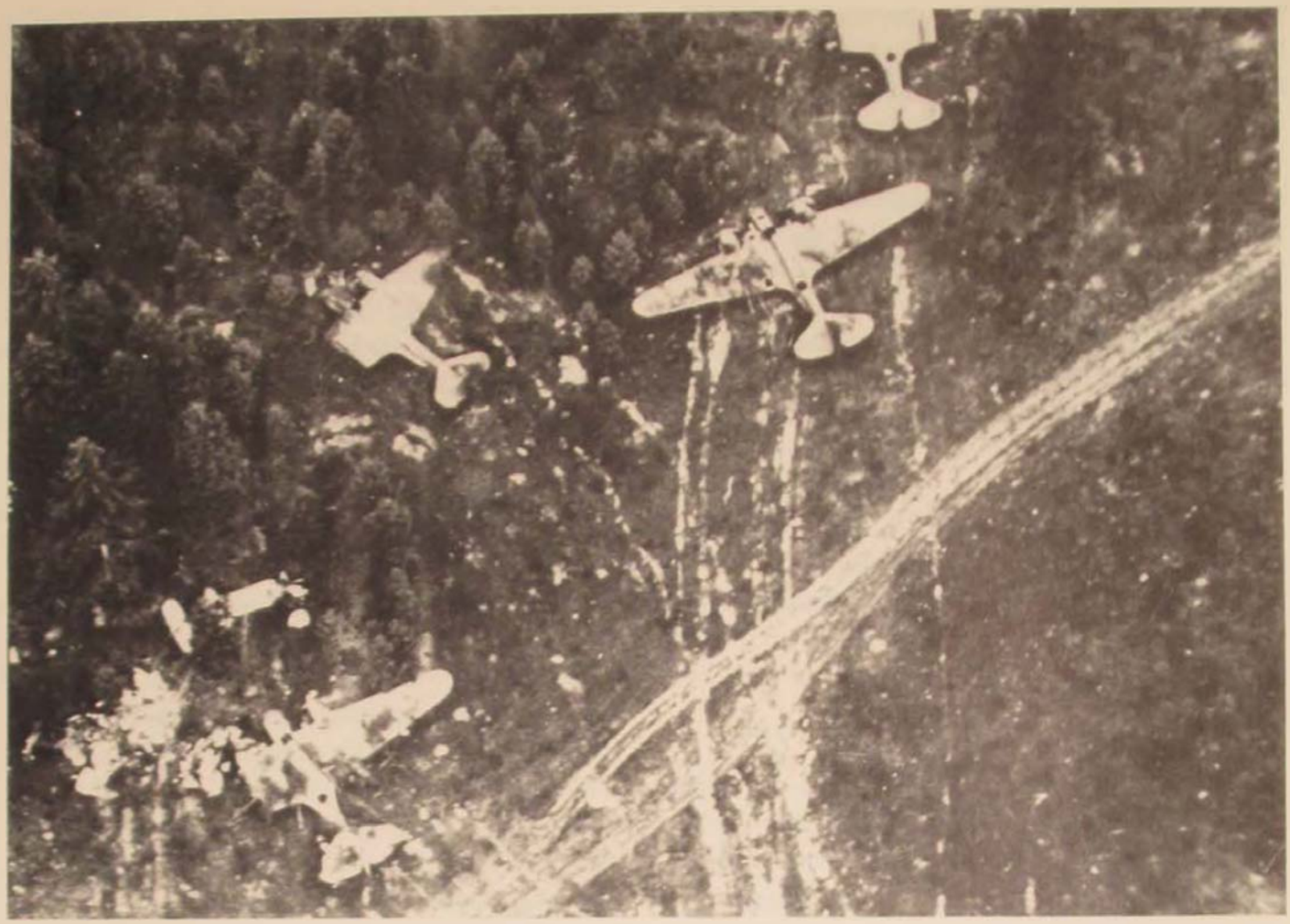
Poetter related that a bomber unit to which he had previously been assigned, working at that time (22 June 1941) with Army Group South, was severely restricted, by the air corps commander, as to the type of tactics to use in the first day's attacks with the SD-2s. Not only the target but the exact ingress, egress, and tactics were specified. In contrast to the relatively low loss rate for Poetter's group in the north, the other group's losses were extremely high using the rigidly specified tactics.[28] The losses suffered by the unit in the south were due mainly to small caliber fire, as ingress, egress, and attack were all conducted at low level. Target identification was very difficult, and exposure time to small caliber antiaircraft artillery (AAA) was longer. Poetter feels that one of the major reasons for his group's success, working under General Foester, was that Foester allowed his commanders to determine the tactics that they felt were best and did not dictate the manner in which operations were to be carried out. In Poetter's words: "We were told what we had to do, but not how to do it."

The enormity of the Luftwaffe success for the first few days of the campaign, and especially the first day, was dramatic. That first day the Germans traded 35 aircraft for approximately 2000 Russian aircraft. Russian aircraft losses then tapered off after the first few days of combat, illustrating the effect of surprise on enemy losses early in the campaign. It is noteworthy that the operational readiness rate of the Luftwaffe at the start of Barbarossa was only 70 percent.[29] Had the Luftwaffe taken more time and devoted less energy to eleventh-hour unit movements toward the east to participate in the campaign, they could have pushed the operational readiness rate much closer to 100 percent. However, a determination was made that surprise was a more valuable factor than mere numbers of attacking aircraft. The fact that only 868 combat strike aircraft, of 1280 available for operations, were used in the first wave of attacks supports this position. Commenting in his diary, on the success of the Luftwaffe,

General Otto Hoffmann von Waldau states that 80 percent of the success of the attack was due to surprise.[30]

As a result of the tremendous number of enemy aircraft destroyed during the first few days of Barbarossa, the Russians suffered a severe loss of self-confidence in their ability. Although tactics in general tended to be quite regimented, the Red Air Force was the largest in the world in 1941, and the U.S.S.R. had an equally large aircraft industry to support its air force.[31] At that time the Red Air Force was a


*The Luftwaffe's initial, meticulously planned attack wrought havoc among the unprotected and unrevetted aircraft of the Red Air Force. These photos, taken during a later, on-site survey ordered by Göring to check the apparently high early Luftwaffe claims, show a surprisingly comprehensive sample of Soviet fighters including the I-16 (right, above: an unusual two-seat training version facing the camera); MiG-1 monoplanes (right: note the German officer with clipboard and papers on the elevator and the Ju-88s in the background); and the I-15 and I-15bis biplanes (below: the more powerful I-15bis had a straight upper wing while the earlier I-15 version had a gull upper wing).*



*Part of the carnage left by the Luftwaffe's assault of 22 June 1941, these Soviet Tupolev SB-2 bombers seem to have careened off into the brush attempting to stay clear of wreckage blocking their landing area.*

power with which any potential aggressor had to reckon. The soldiers and airmen of the Soviet Union had been constantly bombarded with propaganda about the invincibility of the Red Army,[32] so one can imagine the tremendous shock that swept through the Red Air Force when the magnitude of the initial Luftwaffe successes against the U.S.S.R. became known: from the world's largest air force to one that could not even maintain *local* air superiority—all in one day. Throughout the war the Red Air Force improved, but man for man and machine for machine, it was never a match for the Luftwaffe. German close air support aircraft would often work without benefit of air cover for protection from Soviet fighters,[33] even when they became engaged with enemy aircraft.

The rigidity of Russian air tactics at the start of Barbarossa was almost unbelievable. Field Marshal Erich von Manstein described an incident at a bridge on the Duna River which had been captured intact by the Germans. On that occasion wave after wave of Russian bombers attacked the bridge at low altitude. At the end of the day, 64 attacking Russian aircraft had been destroyed by German fighters and flak.[34] In the Red Air Force, blind obedience to the flight leader was the norm. General Loytved-

Hardegg stated that only the flight leader in Russian bomber formations actually knew what the target was, and he was also the only crew member with an aeronautical chart.[35]

It must be reiterated that Barbarossa was supposed to be a short campaign. The Luftwaffe actions supported this concept. The Luftwaffe gained air superiority, but it did not eradicate the Red Air Force. The Luftwaffe was able to provide extensive support for German Army operations as early as the first day of the campaign, and this support grew daily. Then the Luftwaffe mission shifted quickly to interdiction and close air support, the latter being most prominent during all of 1941. The German Army, with Luftwaffe support for ground operations, was able to operate without fear of effective Red Air Force interference.

## The Luftwaffe in Barbarossa

Perhaps without realizing it at the time, the Luftwaffe air attack plan for the start of Barbarossa was probably the most efficient possible considering the air assets available to the Germans in 1941. Had the Germans opted for a strategic bombing effort against Russian industry—as opposed to concentrating on tactical air support—the highly successful first phase of Barbarossa might have miscarried.

At the time the Germans had no effective strategic air force so they concentrated on two tasks: the first mission and the main mission. The first mission was the destruction of the Soviet air forces and the main mission the support of the attacking German Army with all means possible. The main mission emphasized continuous air attacks against enemy defenses, especially in breaking down Soviet fortified positions and hindering the forward movement of Russian reserves by air attacks on highways and railroads. The continuous tactical air support of the spearheads of the attacking German Army had priority.[36]

The Luftwaffe became more and more involved in its main mission as the German front moved eastward. Initially there was some discussion of air assets being "saved for the final push against Great Britain after the Russian situation had been 'cleaned up.' "[37] However, as the Luftwaffe settled into a long, drawn-out war on the Eastern Front, such optimistic speculation was silenced.

Regarding the targeting of $C^3$, basically it can be stated that this targeting was not a policy of the Luftwaffe in the early stages of Barbarossa. However, the Luftwaffe did target three higher staff headquarters for the initial first wave attacks on 22 June 1941. Several factors may have contributed to the Luftwaffe decision regarding $C^3$. Basically, the Russian communications system, their transportation net, and their command structure were primitive by German standards. Lack of sophisticated communications even manifested itself in the air with the Red Air Force. For example, only the flight leader in a Russian bomber formation had navigation aids and target information.[38] None of the four former Luftwaffe officers interviewed here,[39] all of whom were involved in operations during the first four weeks of Barbarossa, can remember a Luftwaffe air attack against a higher headquarters or communication center.[40] Yet, all of them recall being very heavily engaged in attacks against airfields, railroads, railroad stations, and transportation chokepoints.[41]

Many $C^3$ targets were destroyed, but they tended to be destroyed as by-products of larger operations whose goal was the physical destruction of enemy military forces. Regarding communications, Colonel Poetter said they would often avoid destroying an enemy (lower echelon) command post as they could use transmissions from that command post for timely intelligence data.[42] Conversely, there was heavy emphasis on precluding the withdrawal of Red Army forces deep into the interior of the U.S.S.R., as well as hindering the reinforcement of front-line Soviet forces with manpower and materiel reserves.

Of all the documents researched for this

study, there was only one mention of $C^3$ targeting. The VIII Air Corps targets included interruption of enemy communications and elimination of enemy command structure by elimination of known battlefield command posts.[43] These targets followed the listings ordering the destruction of enemy air forces and support of forward armored units. General Loytved-Hardegg said that they would have attacked $C^3$ targets had they known where they were, but the primitive nature of the Soviet $C^3$ system in 1941 precluded this option.[44]

## Lessons Learned—German Viewpoint

There were three main reasons for the success of Barbarossa: surprise, *Schwerpunkt*, and *Auftragstaktik*.[45] To these factors stated by General Graf von Kielmansegg, Colonel Freiherr von Beust added the factor of flexibility.[46] Considering the equipment available and the resources allocated to the Luftwaffe, its contribution to Barbarossa can be considered near optimum use of available assets. In retrospect there were, of course, mistakes made by the Luftwaffe. One such mistake was that aircraft were held back for the future offensive against Britain in anticipation of the Russian campaign's being successfully concluded.[47] The Russian offensive was never concluded. However, the decision to hold back aircraft was made at the highest political level in Germany at that time and bears no relationship to the tremendous Luftwaffe success in Barbarossa's first phase. Another key problem was raised by General Loytved-Hardegg; he felt that staff agencies were often redundant, e.g., Air Fleet staffs, Air Corps staffs, and Wing staffs. These staffs tended to duplicate one another and often precluded timely action.[48]

The overall lessons learned from Luftwaffe support of the first stage of Barbarossa can be summarized as follows:

- The Luftwaffe was a tactical air force in effect subordinated to the Army.
- As a general rule, in the Luftwaffe responsibility for attainment of missions was delegated to the lowest possible level.
- Luftwaffe unit commanders were trained in the traditional German manner, and their actions reflected that training.
- The Luftwaffe effectively eliminated the Red Air Force for the *planned* duration of Barbarossa.
- After the elimination of the Red Air Force, the Luftwaffe concentrated its efforts on close air support and interdiction in support of Army operations.
- Effective strategic air operations were nonexistent during Barbarossa.
- Air reconnaissance was highly valued by the German Army; approximately 25 percent of the German combat aircraft were assigned to reconnaissance.

## Lessons Learned—Soviet Application

What did the Russians learn from Barbarossa relative to air power? First of all, had the Russians used their rather large 1941 military machine with some competence and finesse they would not have suffered the massive defeat they did in the summer of that year, nor would they have lost twenty million Russians killed over the following four years trying to recover what they had lost to the Germans in four months. The fact is that the Russians did not use their assets wisely or effectively during the first part of Barbarossa, and they paid a very high price for the incompetence of their governmental leaders. Stalin himself has been heavily criticized by his fellow Russians for the purges of the thirties which eliminated many of Russia's more competent military leaders, Marshal Mikhail N. Tukhachevski being among the most prominent. Stalin was personally unconvinced that the Germans would actually attack Russia. He had been warned repeatedly by his own intelligence organizations as well as by foreign powers of the impending German attack,[49] yet Stalin chose not to heed the warn-

ings. The Soviet dictator's one-man style of leadership permeated the Red Army and Air Force and was in part responsible for the needless loss of personnel and aircraft. Sycophantic leaders dominated the upper echelons of the Red Army in 1941.

The Russians were surprised by the Germans, and this caused the Soviets severe losses that were compounded by Russia's lack of an effective communications net. For example, at 0130 on 22 June, approximately two hours before the first German attacks, Stalin was finally convinced of a German invasion, and he ordered the alert of the army and dispersal of the Red Air Force units assigned in the western border areas of the U.S.S.R. Unfortunately for the Russians, this vital order was delayed along the Russian communications chain and did not reach the appropriate units until after the German attack.[50]

Lessons from the Russian's point of view, then, can be summarized as follows:

- Being surprised costs one dearly.
- Incompetent military leadership selected because of political loyalty alone precludes effective combat operations.
- Attacking first and seizing the initiative pays tremendous dividends.
- Lack of effective communication hinders the control and effectiveness of military forces.

In a blitz campaign the exchange ratios are very high in favor of the attacker and then go down rapidly with the passing of time as the effect of surprise wears off. If the attacker maintains the initiative and his momentum, the campaign is concluded before this favorable exchange ratio starts to drop off. The campaign against the Red Air Force is a case in point. The air battle was essentially won by the Luftwaffe in the first

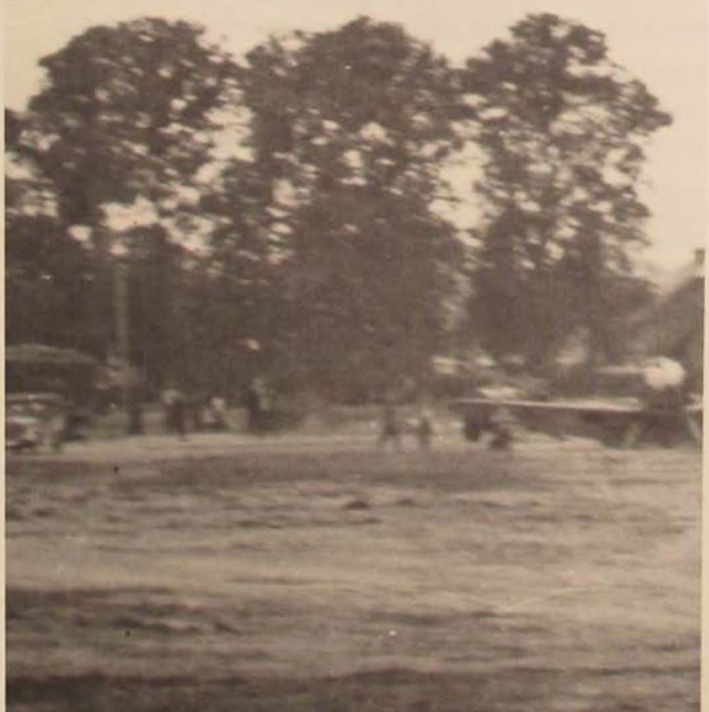
two days, after which the Luftwaffe had air superiority and operated essentially unhindered in its support of the army for the duration of the planned time for the Barbarossa campaign.

THE key questions now are: How will the Soviets be expected to conduct a blitz of their own aimed at the West European states? How has Russia's experience with the Luftwaffe in Barbarossa affected their thinking? *If* the Soviets follow the lessons learned from the Luftwaffe, then in a general conventional attack against Western Europe, they can be expected to do the following:

- Sacrifice total numbers available and instead opt for a surprise attack in the form of a lightning first strike.
- Attempt to eliminate the opposition air forces at the start of combat operations.
- Concentrate on destruction as opposed to disruption; i.e., disruption would only be a means to an end, which would be the destruction of enemy forces.
- Heavily commit air forces to aid in the support of ground operations.
- Improve the efficiency of their own communications.

If the Soviets attack NATO, will the results of Soviet Air Forces have the same effect as did the Luftwaffe's attacks against the Russians in the summer of 1941? Clearly the answer is no. To assume that the Russians could expect the same aircraft combat exchange ratio of 100:1, demonstrated by the Germans in 1941, is unreasonable. Large numbers of NATO combat aircraft are parked in blast-hardened shelters. A significant portion of NATO's air forces is in a

*The capable and flexible Luftwaffe ground support organization enabled German use of Russian airfields almost as soon as they fell to advancing panzer spearheads; a BF 110 Zerstörer (left) lands at a recently captured base. Note the Bf 109 on the right. . . . Few Soviet aircraft managed to get off the ground to oppose the Luftwaffe on 22 June 1941; an I-15 (below), shot down near a Soviet airfield, was one that did.*



constant alert status. NATO's early warning radar net is highly efficient and could be expected to preclude a complete surprise air attack against NATO airfields. In spite of all these differing conditions that have enhanced the defensive, a massive Soviet surprise attack could seriously, or even critically, hamper NATO's ability to defend Western Europe.

The Soviets do not need a 100:1 exchange ratio of aircraft, as the Warsaw Pact air forces already substantially outnumber the NATO air forces. At an exchange ratio of 1:1, the attacking Warsaw Pact would have many aircraft left over to support their ground operations. It can be further assumed that if the Soviets follow the lessons learned from the Luftwaffe in Barbarossa, the Russians will attempt to destroy as many NATO aircraft as possible at the start of the campaign.

One might consider himself in the position of the Warsaw Pact air force commander and pose this question: How can I best support the ground forces in this attack on NATO? Two factors immediately come to mind. The Warsaw Pact ground forces want protection from NATO air attacks and protection of Warsaw Pact logistics support from NATO aircraft conducting interdiction missions. These factors require air superiority, and the least expensive method for attaining air superiority is to destroy the enemy's air force on the ground. It must be remembered, however, that the Germans in Barbarossa did target three suspected higher staff headquarters for attack in the first wave of attacking Luftwaffe aircraft. It was apparently felt at that time that these staff headquarters were of such importance that a few sorties could be spared from the primary mission of obtaining air superiority.

One significant difference between the Luftwaffe case in 1941 and that in Europe today is that the Germans in 1941 did not know where all of the Russian airfields were. The Germans attempted to pinpoint the Russian airfields, but they were not certain of their locations. Conversely, it can be assumed that the Soviets today know the exact locations of all NATO airfields. It would appear to be a logical and tempting option for the Warsaw Pact air commander to allocate all of his combat aircraft assets for immediate and simultaneous air attacks against all of the NATO airfields at the start of combat operations.

Another option would be to allocate a portion of the attacking Warsaw Pact aircraft to key $C^3$ targets, while the vast majority of combat aircraft would be dedicated to destroying NATO's air forces. This second option would parallel the Luftwaffe attack in June of 1941.

LUFTWAFFE operations during the opening stages of Barbarossa were enormously successful and fulfilled the Luftwaffe's role in the overall design of the original German plan for the destruction of the Red Army. The ultimate result of the German decision to attack the Soviet Union was the total destruction of the Third Reich. It can be argued, however, that the German political initiatives after 1940 were not on par with the competence of German military operations. Furthermore, one of the primary reasons for the defeat of Germany in World War II was the failure of the German leadership to view military operations as "continuation of politics by other means" oriented toward political objectives. Notwithstanding these limitations, from a purely military perspective the Luftwaffe campaign against the Red Air Force and the subsequent support of the German Army during Barbarossa were successful by any measure.

*Ramstein AB, Germany*

**Notes**

1. As abridged from E. Cobham Brewer, *The Reader's Handbook: Famous Names in Fiction, Allusions, References, Proverbs, Plots: Stories and Poems* (Philadelphia: Lippincott, 1899), p. 88.

2. *Bundesarchiv—Militararchiv* Freiburg, Federal Republic of Germany, "Der Luftwaffenaufmarsh 1941 gegen Russland," from

Gen. Qu. 6 Abteilung.

3. Cajus Bekker, *The Luftwaffe War Diaries* (New York, 1975), p. 317.

4. *Bundesarchiv*, "Auszug aus den Lageberichten," OBd L. (Ic).

5. Bekker, p. 311.

6. Ibid., p. 312.

7. The special crews were selected for their abilities at blind flying and navigation as they would have to proceed to their targets at high altitude and before first light to avoid detection by the Russians. See Bekker, *The Luftwaffe War Diaries*.

8. Interview with Brigadier General Rudolf Loytved-Hardegg, Luftwaffe retired, Nürnberg, Federal Republic of Germany, 18 January 1980.

9. Major General Herbert J. Rieckhoff, Luftwaffe retired, "Geheimnisse um die Luftwaffe der Sowjetunion," *Flug Wehr und Technik*, Nr 8, August 1948, p. 182.

10. *Bundesarchiv* (Lw 118/44a) "Der Feldzug gegen Sowjetrussland," Major General (signature illegible) retired, March 1953.

11. This is a translation of the original German document which did not specify the tasks of VIII Air Corps. Other accounts are more specific; for example, see: "General Kommand VIII Fliegerkorps," Oberst v. Heinemann.

12. Ibid. Also see Paul-Werner Hozzel's *Recollections and Experience of a Stuka Pilot, 1931-45* (Columbus, Ohio: Battelle, 1978).

13. Germany's historical position was that of the bulwark of Western Europe, behind which Western culture was able to flourish and expand. Germany was Europe's forward defense against alien invasion. This role was dutifully fulfilled, in turn by the Teutonic knights, electors of Brandenburg-Prussia, kings of Prussia, and German emperors. This tradition was also very much alive in the Third Reich. It is no wonder, then, that Germany's "best and brightest" flocked to the officer corps. In a country with easily accessible borders, small size, and limited resources, national survival depended on having efficient and effective armed forces.

14. A *Schwerpunkt* is a point where the success of the operation comes into critical focus. In the French campaign of May-June 1940, the *Schwerpunkt* was at Sedan on the Meuse River on 13 May 1940. At that point the success or failure of the entire campaign was decided. Had Lieutenant Colonel Hermann Balck's First Rifle Regiment not secured the west bank of the Meuse, then the entire campaign would have been in serious jeopardy. As it was, the successful crossing and subsequent Panzer drive to the French coast assured the defeat of the Anglo-French forces.

15. The Germans were on the offensive, and it can be logically assumed that without the delays and vacillations of the civilian leadership at that time the German Army would have successfully terminated the war with Russia based on a continuation of the offensive from Smolensk toward Moscow in early August 1941.

16. Kenneth Macksey, *Kesselring: The Making of the Luftwaffe* (New York, 1978), p. 83.

17. Interview with Loytved-Hardegg. (All of this information is based on the Loytved-Hardegg interview, unless otherwise stated.)

18. Photo intelligence was gathered from Lufthansa civil aircraft which made scheduled flights over the Soviet Union.

19. *Reichsmarschall* Göring had a tremendous effect on the build-up of the Luftwaffe and was often instrumental in securing priorities (raw materials and personnel) for the Luftwaffe solely as a function of his position within the National Socialist hierarchy. Conversely, Göring tended to use his position as head of the Luftwaffe to influence political decisions, or more often to secure the favor of Hitler, which had disastrous consequences, as evidenced in Göring's boast that the Luftwaffe alone could eliminate the BEF at Dunkirk in 1940. One of the most painful consequences of having a major political figure head the Luftwaffe was the ill-fated attempt to support by air transport the surrounded German Sixth Army at Stalingrad.

20. Interview, Loytved-Hardegg.

21. Ibid.

22. Ibid.

23. *Bundesarchiv*, "Auszug aus den Lageberichten OBd L. Ic," Lage Ost, 22.6.41-28.6.41, p. 3, "Angriff der ersten Welle."

24. It must be pointed out that the entire strength of the Luftwaffe was not employed against the U.S.S.R. at the start of Barbarossa. In fact, only 61 percent of the Luftwaffe's strength was on the Eastern Front at the start of the campaign. See previously cited *Lageberichten*.

25. *Lageberichten*.

26. The SD weapons were essentially bomblettes carried inside of a canister, similar to numerous cluster-type munitions used by air forces today. However, frequently the SD bomblettes would not all release from the canister after having been armed. Occasionally a bomblette would detonate inside of the canister, or would fall out and detonate upon landing, or while taxiing after landing. These inadvertent detonations would destroy, or severely damage, the aircraft carrying the bomblettes. This was an especially acute problem for aircraft like the Ju 88 and He 111, which carried the SD canisters in an internal bomb bay. Shortly after the start of Barbarossa, the SD-type munitions were banned for all aircraft that had to carry them internally—as opposed to external bomb racks as in the case with the Stuka.

27. Interview with Colonel Robert Poetter, Luftwaffe retired, Kronburg, Federal Republic of Germany, 23 January 1980. In his interview Colonel Poetter made extensive use of his personal pilot's log book, which he kept throughout the war.

28. Ibid.

29. *Lageberichten*.

30. *Bundesarchiv*, General Otto Hoffmann von Waldau, Luftwaffe retired, "Tagebuch Marz '39 - 10.4.42 Chief des Luftwaffenfuehrungstabes."

31. Richard C. Lukas, *Eagles East: The Army Air Forces and the Soviet Union 1941-1945* (Tallahassee: Florida State University Press, 1970), p. 6.

32. Alexander Werth, *Russia at War, 1941-1945* (New York, 1964), p. 142.

33. Interview with Brigadier General Paul-Werner Hozzel, Luftwaffe retired, Karlsruhe, Federal Republic of Germany, January 1980.

34. Erich von Manstein, *Lost Victories* (Chicago, 1958).

35. Interview, Loytved-Hardegg.

36. Lieutenant General Paul Deichmann, Luftwaffe retired, *German Air Force Operations in Support of the Army* (New York, 1968), p. 160.

37. Interview, Poetter.

38. Interview with Colonel Hans-Henning Freiherr von Beust, Luftwaffe retired, München, Federal Republic of Germany, 22 January 1980.

39. Three were flying operational missions; one was on Air Fleet I staff.

40. Interviews, Loytved-Hardegg, Beust, Poetter, and Rudel.

41. Ibid.

42. Interview, Poetter.

43. *Bunderarchiv*, "General Kommando VIII Fliegerkorps" "Angriffe gegen Russland" (erste Einsatze), Colonel Lothar von Heinemann, Luftwaffe retired, Federal Republic of Germany.

44. Interview, Loytved-Hardegg.

45. Interview with General Johann-Adolf Graf von Keilmansegg, Bundeswehr retired, Bad Kronzingen, Federal Republic of Germany, 19 January 1980.

46. Interview, Beust.

47. Interview, Poetter.

48. Interview, Loytved-Hardegg.

49. Vladimir Petrov, *June 22, 1941: Soviet Historians and the German Invasion* (Columbia: University of South Carolina Press, 1968), Introduction.

50. Bekker, p. 312.

# ATTRITION AND THE LUFTWAFFE

DR. WILLIAMSON MURRAY

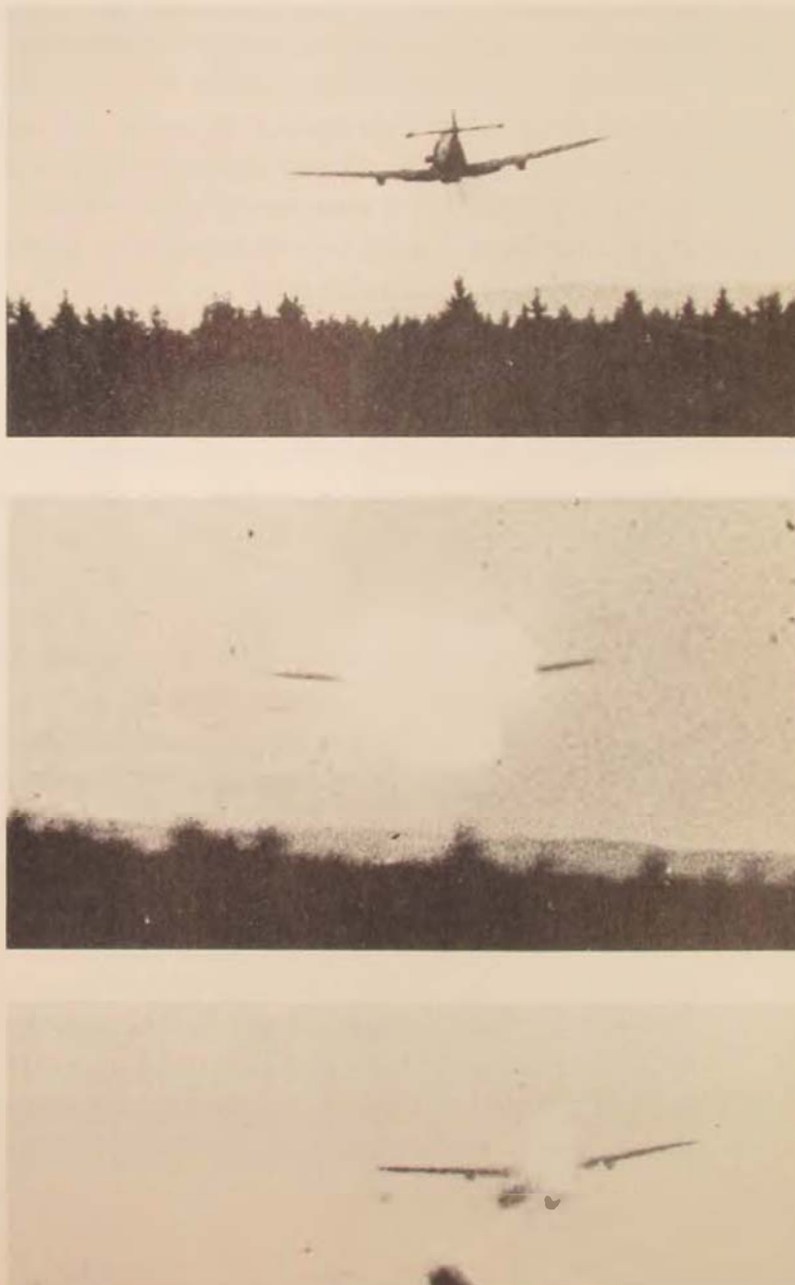
ONE of the great ironies in military history may lie in the claim of post-World War I air power theorists that aircraft would provide an escape from the horror of the last conflicts' trenches. In fact, as was apparent soon after the second great European conflagration had ended, the attrition of air forces in that war had reached enormous levels.[1] Moreover, the air war over Europe seemed to have even less clear-cut military victories and defeats than had the great land battles of the 1914-18 struggle. Nevertheless, while historians have understood that extensive attrition of crews occurred in the skies during World War II, they have unfortunately not taken a careful look at these losses and trends. In this article I will redress some of the gaps in our knowledge of what actually happened in terms of the attrition of the German air force in 1943 and 1944.[2]

By THE TIME the United States entered the war in December 1941, the Germans had lost the equivalent in aircraft of two whole air forces. From the onset of major operations against Scandanavia and Western Europe in the spring of 1940, the Luftwaffe had faced an appalling attrition rate. In May 1940, a month during which the Germans lost 20.2 percent of their total force structure and 27.4 percent of their bomber force, the Luftwaffe lost more aircraft in three weeks of heavy fighting than it would lose in any other month of that year.[3] By the end of 1941, sustained attrition of Luftwaffe units in Russia had brought German air power into serious straits, as production of new aircraft and the training of new crews proved incapable of keeping up with front-line demands for replacements. Adding to the seriousness of the situation was the fact that the German logistic system broke down in the depths of Russia. By January 1942, only 47 percent of bomber crews in front-line units were fully operational.[4] "In-commission" rates had fallen to 52 percent for fighters, to only 32 percent for bombers, and to 45 percent for the whole force structure.[5]

In 1942, the Luftwaffe enjoyed a partial recovery. As Field Marshal Erhard Milch regained control of the aircraft industry, increasing production helped matters considerably. But from January 1942 the Germans were never again able to forecast accurately what their training establishment would turn out; the attrition and the demands of combat squadrons for replacements were such that new pilots were rushed to the front with decreasing training time and often without the benefit of attending operational training schools.[6] For the moment, the Germans escaped the full consequences of their difficulties because the Anglo-American air forces found it difficult to come to grips with the Luftwaffe except in peripheral theaters, while the Red Air Force was still recovering from its catastrophic losses of 1941.

Despite a partial recovery in the first half of 1942, the Luftwaffe failed to realize the full potential of increasing German production. In the high summer of that year, Hitler embarked on a major campaign in southern Russia, the scale of which was out of all proportion to available strength, especially of the army after its first winter in Russia.[7] The Luftwaffe, as a result, had to support the army's efforts with a total commitment to ground operations, while the British challenge in the Mediterranean began to assume dangerous proportions. A steady aircraft loss rate in late spring and summer

*Trying to shake his pursuer, an Me 109 pilot hedgehops over the trees. The victorious American pilot fires his gun camera from below at the Messerschmitt.*



1942 (between 14 and 19 percent per month for fighters and 13 and 19 percent for bombers) chewed up German air resources at an alarming rate.[8] But in the fall of 1942, losses fell as the army had exhausted itself and offensive operations had come to a halt.

At this point the war's strategic pattern substantially shifted. Anglo-American forces landed in French North Africa while later, in November 1942, the Russians launched a massive counterblow around Stalingrad that aimed at the destruction of the German Sixth Army. In both cases the Germans reacted instinctively and aggressively to meet the Allies on their chosen ground rather than trade space for time. As a result they fought these battles on the periphery while facing enormous logistic difficulties as well as enemy air forces that were enjoying a growing quantitative superiority. The logistic difficulties forced the Germans to rely on their meager air transport resources and to augment those forces by shutting down navigation and bomber transition schools—a situation that served only to exacerbate the Luftwaffe's long-range problems.[9]

As 1943 began, the Luftwaffe was engaged in three major operational theaters: the Mediterranean, the Eastern Front, and the night skies over the Reich. No matter how serious the pressure on Germany's cities applied by Bomber Command, the Luftwaffe did not suffer unsupportable aircraft attrition of its night defensive forces until late in the war. In the other engagements, however, loss rates mounted while the Luftwaffe proved increasingly ineffective in its intervention on the ground or naval battles. Moreover, in the spring of 1943 the appearance of the U.S. Eighth Air Force in increasing numbers over Western Europe opened up a new operational theater. The trends of aircraft losses directly reflected the intensity of the struggle. In April, German squadrons in the Mediterranean wrote off nearly 600 aircraft, a direct reflection of the fact that the Luftwaffe by this point was wholly responsible for supplying the Tunisian bridgehead as well as providing air defense and close air support for hard-pressed Axis ground forces.[10]

July and August 1943 saw the final collapse of the strategy to slug it out with Allied air forces in peripheral theaters, while the pressure in the west exerted by American bomber crews became almost unbearable. In the great battle around the Russian city of Kursk in early July and then in a series of ferocious struggles in August as the Russians counterattacked, the Luftwaffe formations in the east suffered enormous losses. Similarly, the Anglo-American invasion of Sicily in July forced the Germans into major commitments in the Mediterranean. Finally for the first time, in July and August the American bomber raids reached toward the jugular of German industrial production. In those two months the Luftwaffe wrote off 1032 aircraft in the Mediterranean, 1030 aircraft in the east, and 1151 in the west. Thus, total losses amounted to 3213 from a force structure numbering 7080 aircraft (including noncombat aircraft) in early July.[11] (The magnitude and impact of these losses suggest a whole new frame of reference for analysis of the air war. Within this new frame of reference—to cite one obvious example—Eighth Air Force's unescorted daylight bombing campaign becomes something more than a tactical failure as it is usually presented.)

Total losses of combat aircraft reflect an even more depressing tale. In that two-month period, the Germans wrote off no less than 1313 single-engine fighters; at the beginning of July, they had 1784 single-engine fighters.[12] The result of such devastating attrition was that the Germans had to shut down most air operations both in the Mediterranean and in the east. For the remainder of the war, their ground forces would receive little or no air support. Nevertheless, the Luftwaffe now had more than enough on its hands in contesting American daylight raids over the Reich.

The following table indicates the pressures on the force structure throughout 1943.[13] (See Table I.) What these percentages emphasize is

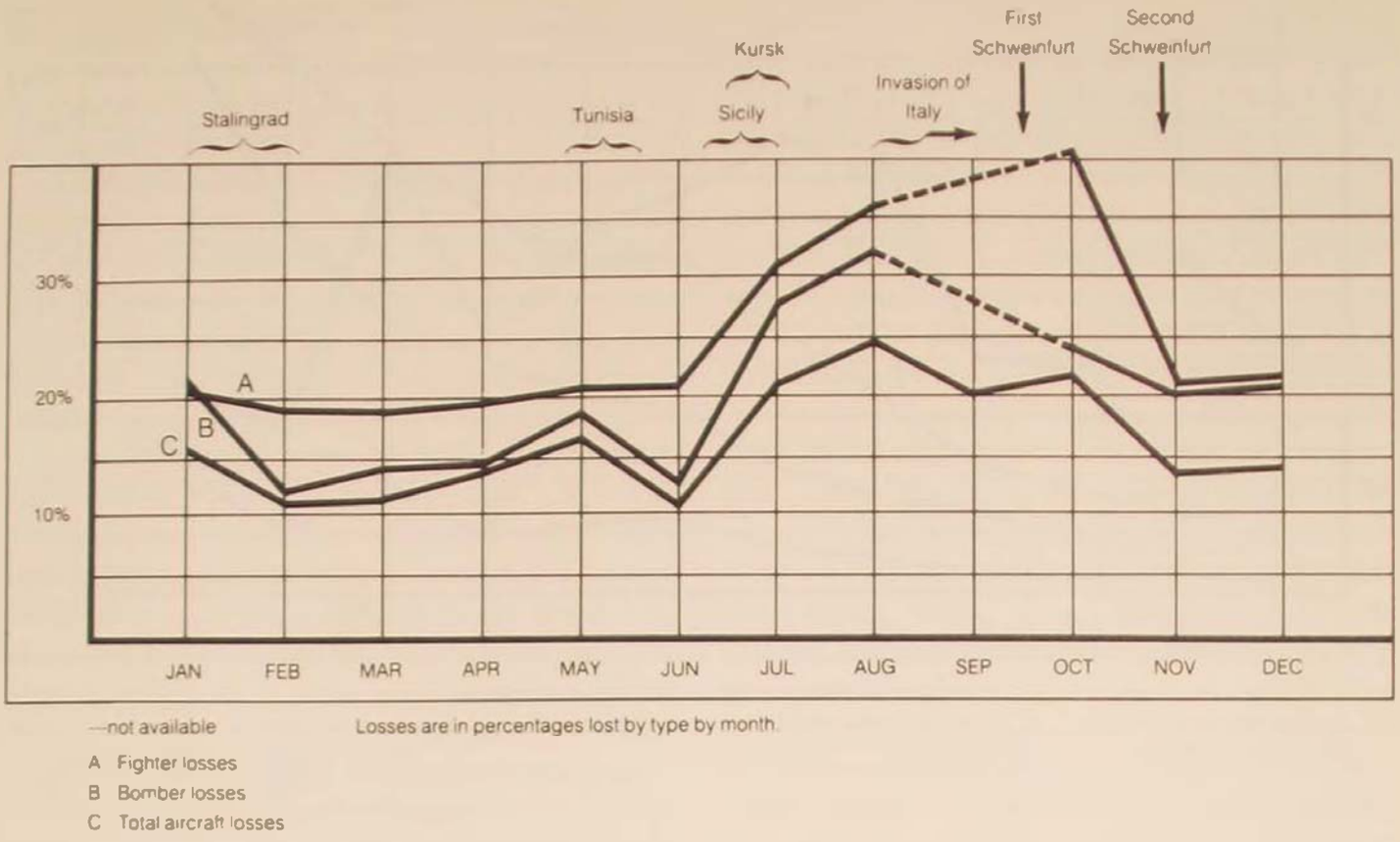
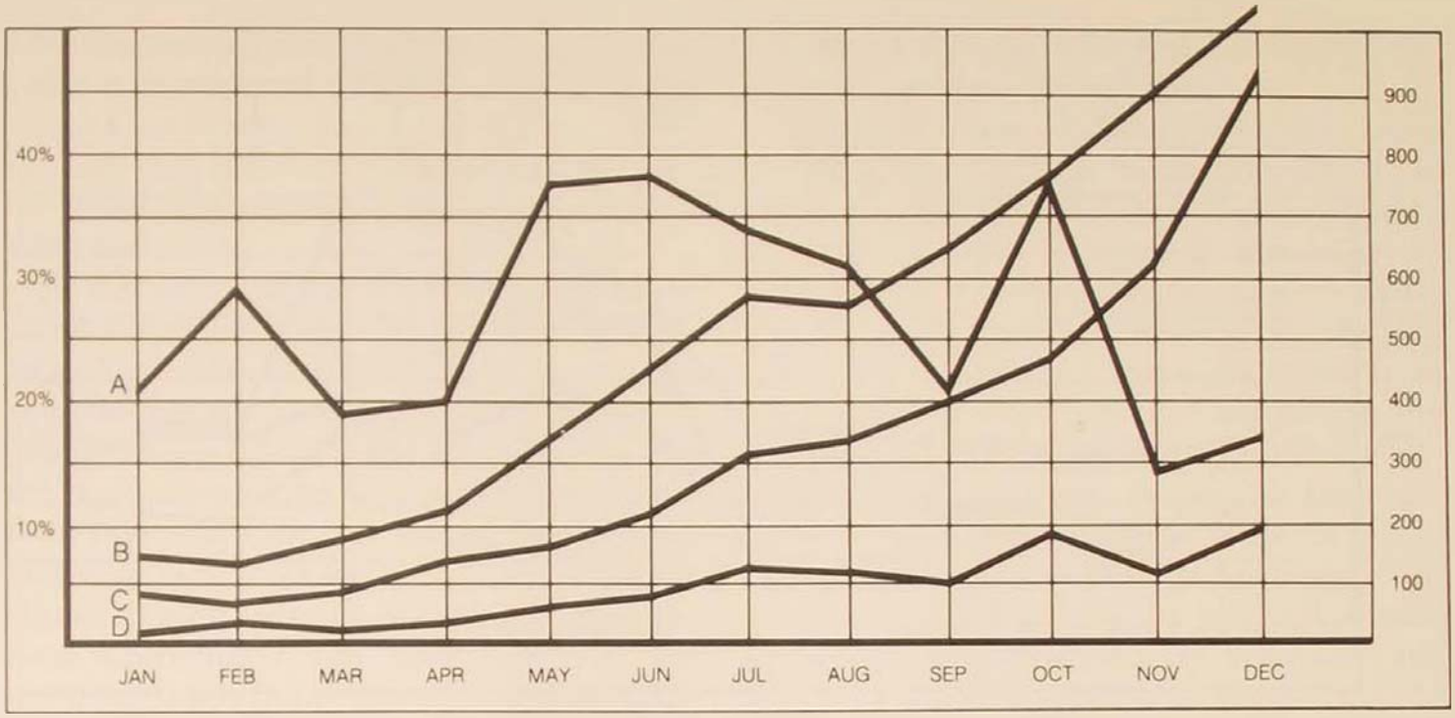



*Table I. German aircraft losses, 1943*

rising levels of German aircraft production had relatively little impact on the war. Allied production was climbing even faster, for the Americans and the British had decided to increase aircraft production well before the Germans. Thus, relatively speaking, the gap between opposing air strengths was growing rather than decreasing despite rising German production.

Nevertheless, the Luftwaffe extracted a heavy price from the attacking Allied air forces throughout 1943. While the trends may appear clear to the historian, they were not so clear to Allied commanders and certainly not to the aircrews who flew the bombers. Beginning in May, the Eighth Air Force launched raids deeper and deeper into Germany. Aircraft losses immediately reached 20 percent per month and remained at that level (with the exception of September) through October. In the latter month, the number of aircraft written off reached more than one quarter of those present at the beginning of the month.[14] Crew losses were even higher because there were fewer crews on duty than aircraft. Table II suggests not only the level of losses but the impact that overwhelming American production of trained crews and aircraft had on the balance of air forces in Western Europe.[15] Despite high monthly loss rates, the Eighth Air Force's strength steadily grew. Nevertheless, the second terrible drubbing over Schweinfurt in October forced a fundamental rethinking of American air strategy. For the remainder of the year, American bombers flew only as deep into Germany as their escort fighters could lend support. There were no longer any deep-penetration, unescorted raids.

Although German crew losses as well as operational sortie loss rates are difficult to establish (largely because most Luftwaffe records were destroyed at the end of the war), one can establish loss rates for pilots of the single-engine fighter force.[16] The percent of fighter




A % heavy bomber crews lost
B # heavy bombers on hand
C # crews available
D # aircraft written off

Figures represent heavy bombers on hand in tactical units and number of crews available for duty in numbers, and losses by percent lost by month

*Table II. Eighth Air Force heavy bomber strengths and losses, 1943*

pilots killed, wounded, or missing each month rose sharply in late spring 1942 with heavier operational commitments to a high of 9.4 percent in August but fell to a low of 2.4 percent in November. Thereafter, pilot losses began an ominous rise that continued unabated for the rest of the war. For the month of April 1943, the percentage loss was 10.9 percent of the fighter pilots present for duty at the beginning of the month. The loss rate would fall below that level during only one month (November 1943, 9.9 percent) for the remainder of the war. The heavy fighting and commitments over the summer of 1943 imposed a terrible attrition rate on the force structure. For the period from July through October, the Luftwaffe was losing between 14 percent and 16 percent of its fighter pilots *every* month. The average number of fighter pilots available in combat squadrons over 1943 was 2105. The number of fighter pilots killed, wounded, or missing over the course of the year was 2967 or 141 percent. The inescapable conclusions that such statistics point to is that the Luftwaffe was in desperate trouble by the end of the year; and that if it had managed to blunt the American daylight offensive in October it had suffered no less grievously itself in the great air battles of 1943.

HISTORIANS of air power, like other military historians, cast their work in terms of tidy, clear-cut decisions. Thus, the prevailing wisdom on the 1944 air campaign argues that in February of 1944 the Eighth Air Force returned to the skies over Germany, this time accompanied by fighter support, and in a great series of air battles that lasted one week (hence "Big Week") broke the Luftwaffe's back. The loss data on both sides suggest otherwise. They indicate that a great battle of materiel lasted over the three-month period from February through April 1944. Only in May 1944 did German air resistance crumble. More-

over, rising fighter pilot losses in January suggest that one should include that month in the period during which American air forces won air superiority over Europe.

American bomber loss trends lend support to the above contention. In absolute terms, bomber losses rose each month from January through April. They reached a high of nearly 25 percent of the force structure in April. Thereafter, our bomber losses began to fall to a level only slightly above 10 percent.[17] The sortie loss rate also indicates the same trend.[18] A noticeable drop-off in the sortie loss rate did not occur until the month of May. Although the major campaign to destroy the transportation system in France may have helped lower these loss rates since the bombers were not flying as dangerous missions, a clear trend begins in May that continues to the end of the war. It will see bomber losses fall by a factor of close to two.

The losses for the Luftwaffe in the four-month period from January through April 1944 make it difficult to understand how the fighter force functioned at all. Moreover, the terrible losses suffered by the fighter force in the first third of the year represented a culmination of rising attrition rates that had been heavy even in the first years of the Second World War. Losses in 1943 had been bad enough, with total pilot losses for the year in the single-engine fighter force equaling close to one-and-a-half times average monthly strength. The arrival of American bombing formations protected by fighters over central Germany was not entirely unexpected,[19] but the speed with which the Americans had extended the range of P-47s and the long-range and combat capabilities of P-51s came as a nasty shock. Luftwaffe fighter pilots soon found out that American fighters would contest attacks on bomber formations with great ferocity. Moreover, there were no safe havens that American fighters could not reach. Thus, slower aircraft, such as the Bf 110, which had proved effective in 1943 as a launching platform to lob rockets into the bomber formations, had no area safe from American fighters. The results were immediately apparent. The experience of *Zerstörergeschwader* "Horst Wessel" was indicative of what happened to twin-engined fighters in the new combat environment where American long-range fighters could get at them. At 12:13 P.M. on 20 February 1944, this unit scrambled thirteen Bf 110s. Six minutes later three more took off to join the first group. When they arrived at a designated contact point, there was nothing left to meet. American fighters had jumped the first group and shot down eleven of the thirteen. On 6 March of nine aircraft scrambled, two returned with mechanical difficulties, one received damage in air-to-air combat, five were shot down (four pilots wounded and one killed), and the commander landed his aircraft at another field.[20]

The impact of the American air offensive on the Luftwaffe's single-engine fighter force was no less severe. The number of single-engine fighters written off in January and February reached above 30 percent, while in March the level reached well above 50 percent. Thereafter, for the next three months the total each month was well above the 40 percent level.[21] Pilot losses were appalling by any standard.[22] (See Table III.) By March attrition had reached over 20 percent per month of single-engine aircraft crews, while losses for May reached one quarter of the pilots present at the beginning of the month. The losses in Germany's bombing force were hardly more encouraging. Committed to a series of revenge attacks on London as well as a series of wasting and operationally pointless missions on the Eastern Front, front-line bomber squadrons wrote off close to 30 percent of their aircraft strength each month from February through June 1944.[23]

One can see what this pressure meant in the war diaries and messages of the fighter squadrons. The 2nd *Gruppe* of *Jagdgeschwader II* scrambled sixteen aircraft on 13 March. Returning pilots claimed two Mustangs as certain and two as probable, but one of the squadron's aircraft had crashed on return (pilot killed),

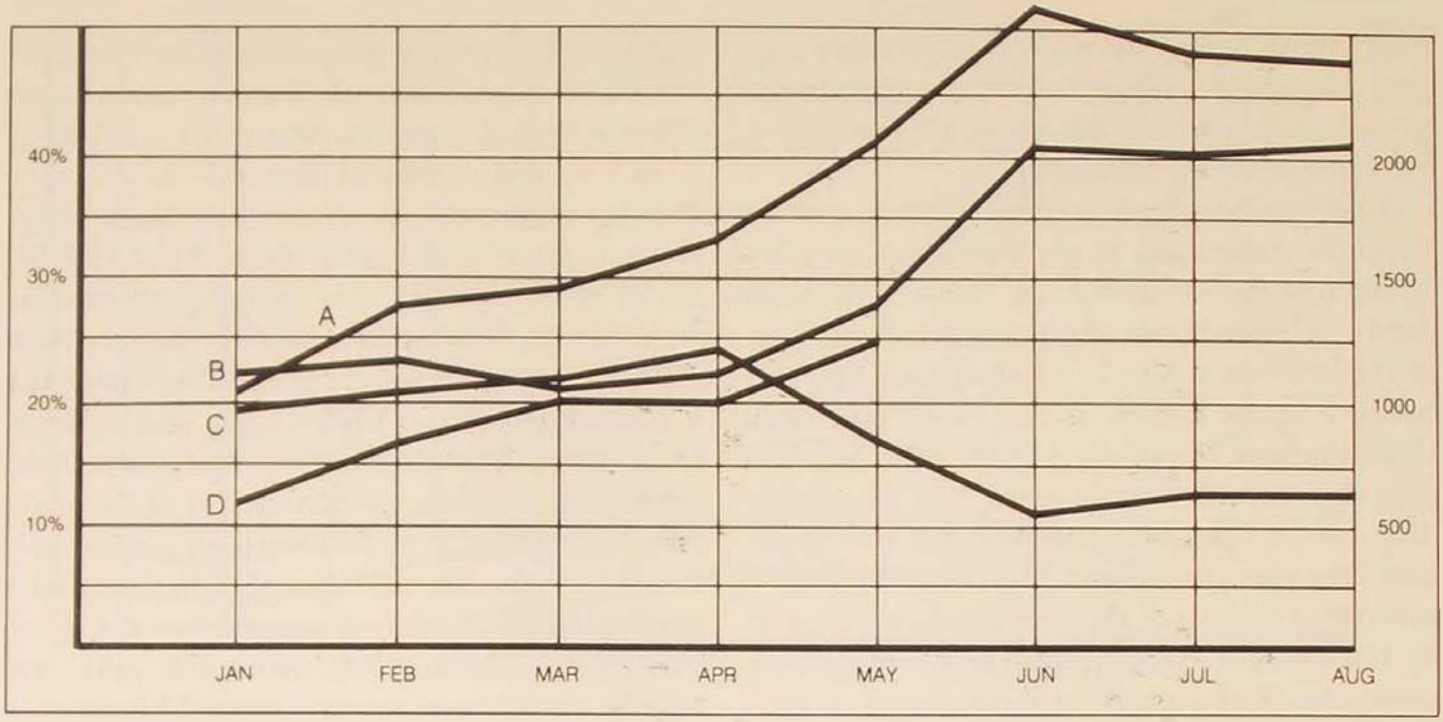



*Table III. Eighth Air Force strengths and losses, 1944*

two aircraft were missing, a fourth was lost when its pilot bailed out, and a fifth crashed near Lübeck.[24] The war diary of 3rd *Gruppe Jagdgeschwader U det* makes similarly depressing reading. On 15 March, the *Gruppe* launched twenty aircraft; two pilots were killed (aircraft destroyed), two pilots had to parachute to safety, and two crash landings took place. On the next day nine aircraft scrambled: two pilots were killed, four were wounded (one severely), and one pilot parachuted to safety unhurt. On 17 March, operations cost the unit one pilot killed and two more wounded (one severely). Thus, in a three-day period this unit with approximately twenty-five pilots had five killed and six wounded (two severely).[25]

One may suppose that a sizable percentage of pilots lost during these months were those who were just out of the training establishment. The pressure on the Luftwaffe over the past three years was such that the High Command had had to strip untrained pilots from the training establishment before they were ready. The results are shown clearly in Table IV.[26] German pilots at the beginning of the war had spent more time in basic and operational training than their opponents in the Royal Air Force (RAF). Thereafter, as the attrition rate spiraled, the ratio of training hours of German and enemy pilots increasingly favored the Allies. By the July 1943-June 1944 period, German pilots received barely half the training hours and only one-third the hours in operational aircraft that the RAF gave its pilots. The ratio was even more unfavorable in comparison with American pilots: one-half and one-fifth. The decline in German training levels was a direct result of the attrition taking place. The Germans had no choice but to man the cockpits with less and less skilled pilots in response to the increasingly savage losses Allied air forces inflicted on their combat squadrons.

The terrible pressure on the fighter force culminated in the five-month period between January and May of 1944. The Luftwaffe was already in serious trouble at the beginning of the year. On 31 December 1943 the Luftwaffe had 2395 single-engine pilots in combat squad-

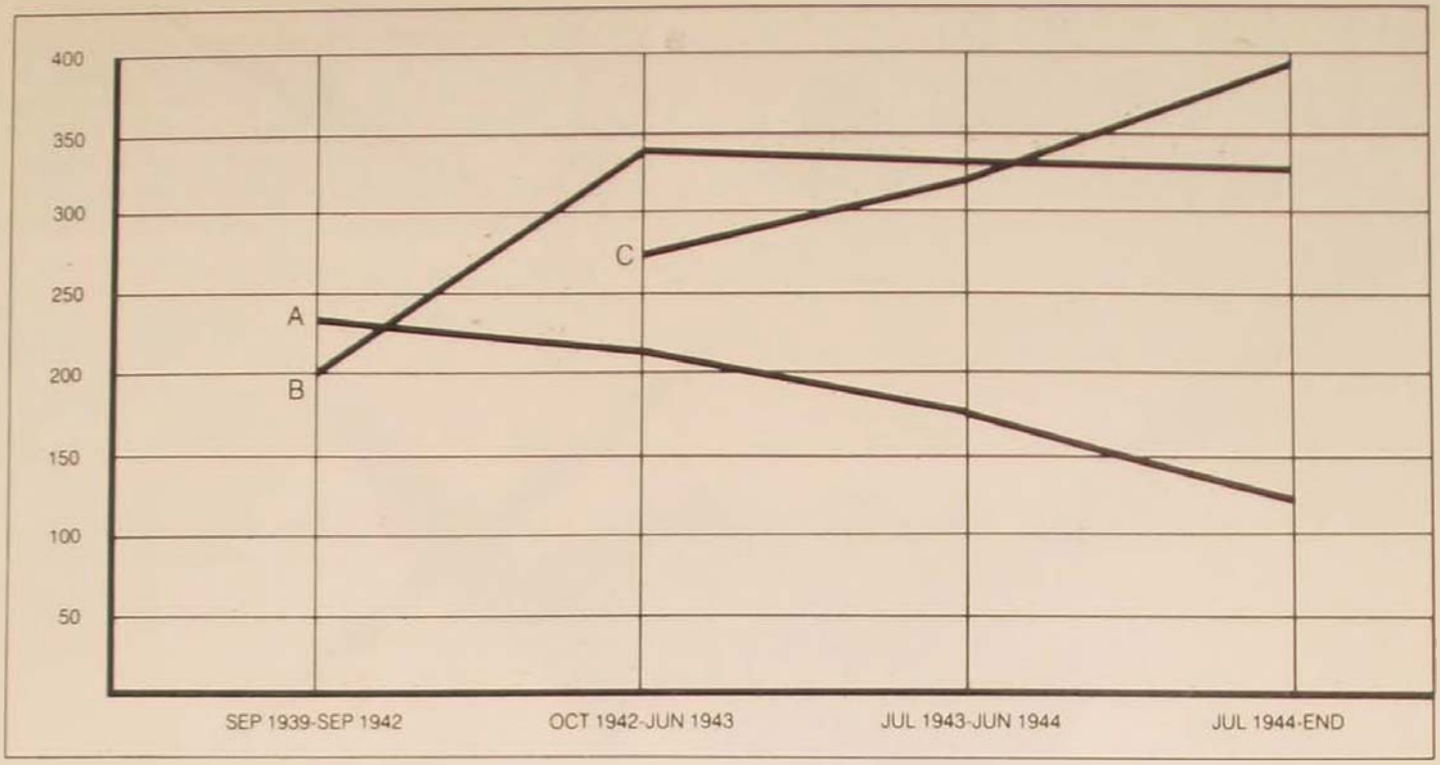



*Table IV Total flying hours in British, American, and German training programs*

rons deployed throughout Europe. Of these pilots only 1495 were fully operational (62 percent), 291 were partially combat-ready (12 percent), and 691 were not operationally ready under any circumstances (26 percent). This force lost no less than 2262 fighter pilots in the next five months—close to 100 percent of the number reporting for duty at the turn of the year.[27] In a conference with Hermann Göring in mid-May, General Adolf Galland admitted that *Luftflotte Reich* (responsible for air defense over northern Germany) had lost 38 percent of its fighter pilots in April, while *Luftflotte* 3 (responsible for air defense over France and southern Germany) had lost 24 percent of its fighter pilots.[28]

The laconic reports of II *Gruppe*/JG 53 indicate what happened to that unit in the months of May and August. In the former month the unit reported:

(A) Operations took place on thirteen days. Twenty-one scrambles, fifteen of which resulted in combats.

(B) Average aircraft strength thirty-four; average serviceability twenty.

(C) Fifty-three aircraft lost or damaged. Of these: (1) extent: thirty-four 100%, three over 60%, nine over 35%, seven under 35%, (2) reason: thirty-three through Allied action, four [through] technical faults, sixteen owing [to] servicing faults. . . .

(D) Personnel losses—Killed or injured: seven killed, five missing, three wounded (two bailed out), seven injured (of whom five bailed out). Two more injured not through Allied action. Seventeen parachute jumps, two jumped with wounds, two jumped twice without injury.[29]

In August the same unit lost 42 aircraft through enemy action, 18 more in noncombat accidents, 20 more abandoned or destroyed on airfields captured by the enemy, and a final 20 through other causes.[30] The impact of such attrition is indicated by the fact that in July 1944 *Luftflotte* 3 discovered that with few exceptions only its *Gruppen* and *Staffeln* com-

*Continued on page 76*

*During the battle for the skies, Allied pilots hounded the Luftwaffe at high and low altitude. A USAAF fighter strikes an Me 109, knocking off a piece of engine cowling and igniting its belly tank. . . . The Luftwaffe converted some Ju 88 twin-engine bombers to interceptors, designated Ju 88G (insert). Although they achieved success against slower Allied bombers, they were no match for single-engine fighters.*

*At the beginning of the war, Hitler promised that Allied bombs would never fall on the Reich. German defenses included fighters and antiaircraft (AA) guns directed by a sophisticated command and control system. This B-24 fell to a direct hit from a heavy AA gun.*

*As the Allies advanced, they found destruction at Luftwaffe bases. They also found that the Germans were experimenting with new aircraft designs to the end. This hangar at Bindbach Airfield, near Bayreuth, contained an experimental Dornier Do. 335, an Me 410 twin-engine fighter, and an unidentified aircraft.*

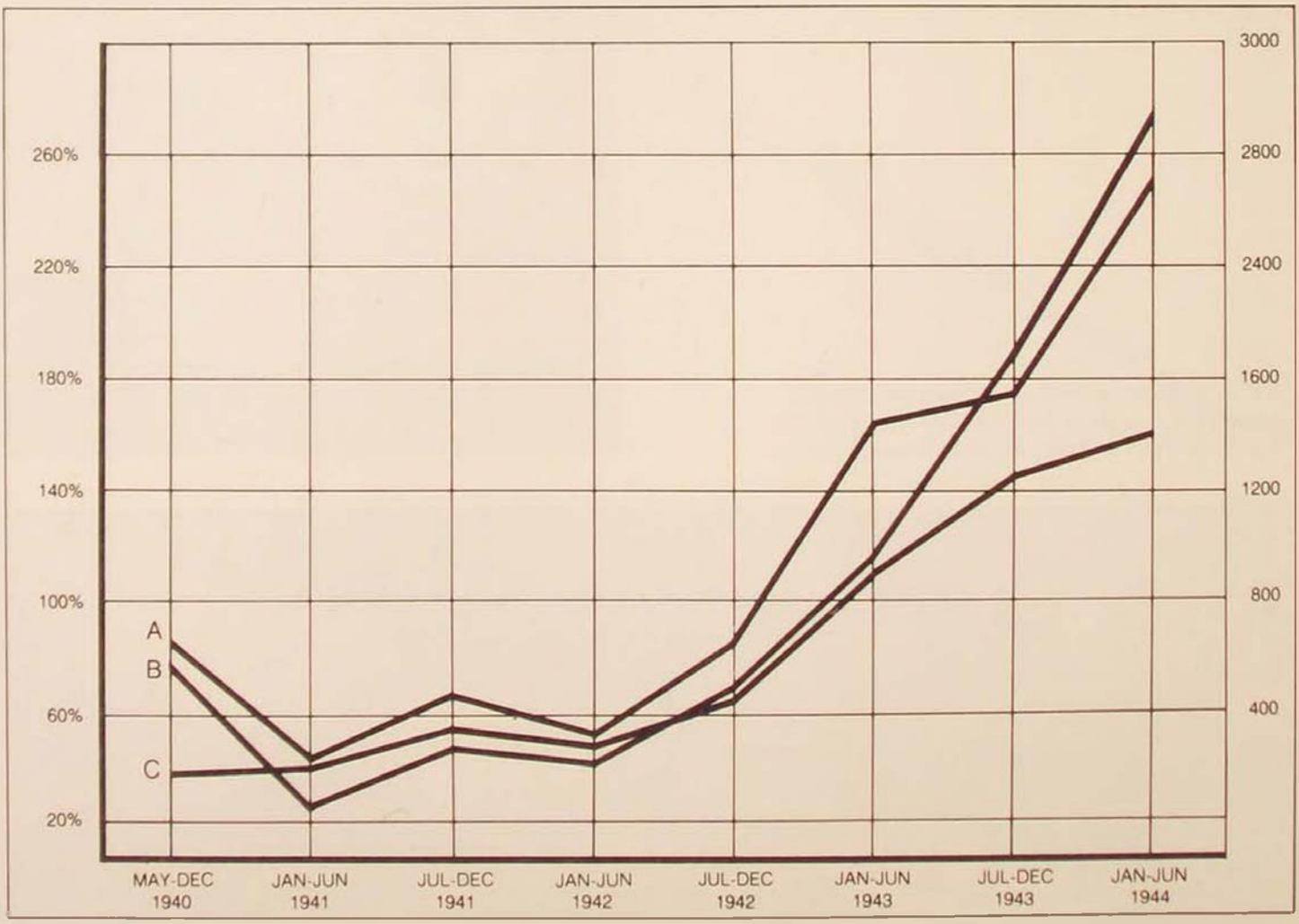
*Air-to-air combat tickles the fancy, but the best way to deal with enemy aircraft is to blast them on the ground.*

*A B-24 goes down during an attack on the railway marshaling yards at Münster, Germany. A 200-foot trail of fire emerges as the fuel tanks rupture.*

manders had more than six months' operational experience, a small number of other pilots had up to three months' experience, and the bulk of available pilots had between eight and thirty days combat service.[31] Their combat capabilities are not hard to imagine.

Table V summarizes what happened to the Luftwaffe over the course of the Second World War.[32] Whereas the German fighter force that embarked on the campaign against France in May of 1940 had been a well-trained and relatively experienced force, within a year-and-a-half German pilot losses had reached the point where the force had to depend increasingly on young and inexperienced pilots. Although Germany's opponents were in similar circumstances, their production totals gave them an increasing advantage. As losses on both sides rose (a reflection of massive and rising production totals), the Germans were less able to absorb the level of attrition taking place. They were then forced to take short cuts, particularly in the training program. Once entered on that slippery path, the Germans were in an impossible position. The change in the ratio of noncombat to combat losses in the last six months is probably not the result of any increased concern by the Germans for flying safety (in fact, there is no evidence to suggest such a possibility). Rather, the change in ratios reflects the

*Table V, German fighter losses by six-month periods*




A % of fighters lost each 6-month period
B # of fighters lost, combat related
C # of fighters lost, noncombat related

probability that American fighter pilots were shooting down their inexperienced opponents before they could crash the aircraft they were flying.

WE AMERICANS are not particularly interested in learning from the past, particularly when the events happened nearly forty years ago. Nevertheless, study of the air battles of the Second World War may have more relevance to our understanding of the shape and context of a major struggle with the Soviet Union than the air war over Vietnam or in the Middle East. To begin with, one must underline that the military history of the past 120 years suggests that war between major industrialized powers will not be short but rather has entirely depended on massive production, the mobilization of enormous financial and productive resources, and the ability to *sustain* operations, not over a matter of *months* but rather over a period of *years*. In World War II, the Germans, fortunately for their opponents, proved for the most part unwilling to accept that lesson from the American Civil War and from the First World War. We run the same risk if we also believe that the next war, if it comes, will be short.

*Ohio State University, Columbus*

**Notes**

1. See among others: Sir Charles Webster and Noble Frankland, *The Strategic Air Offensive against Germany*, Vol. II (London, 1961); Wesley F. Craven and James L. Cate, *The Army Air Forces in World War II*, Vol. II (Chicago, 1948); and Anthony Verrier, *The Bomber Offensive* (London, 1968).

2. Readers who wish to examine the author's conclusions and material in greater detail are urged to consult his soon to be published monograph on the Luftwaffe: *Strategy for Defeat: The Luftwaffe 1933-44* (scheduled for publication in 1983 by the *Air University Press*).

3. These statements are based on figures in the Luftwaffe Quartermaster General's reports on aircraft damaged and written off: Bundesarchiv Militärarchiv (BA MA), RL 2 III, Übersicht über Soll, Istbestand, Einsatzbereitschaft, Verluste und Reserven der fliegenden Verbände; RL 2 III 1025, Front-Flugzeug-Verluste; and RL 2 III, Flugzeugunfälle und Verluste bei den fliegenden Verbänden, Genst. Gen. Qu. (6. Abt.).

4. BA MA, RL 2 III 712, 713, 714, Übersicht über Soll, Istbestand, Einsatzbereitschaft, Verluste und Reserven der fliegenden Verbände.

5. "Luftwaffe Strength and Serviceability Tables, August 1938-April 1945," Air Historical Branch, Royal Air Force, Translation No. VII 107.

6. Conversation with Lieutenant General Hannes Trautloft, Retired, Baden Baden, Federal Republic of Germany, 7 November 1980.

7. See George Blau, *The German Campaign in Russia—Planning and Operations (1940-1942)* (Washington, D.C., 1955), pp. 135-39.

8. BA MA, RL 2 III 1025, Front-Flugzeug-Verluste.

9. Manfred Kehrig, *Stalingrad, Analyse und Dokumentation einer Schlacht* (Stuttgart, Germany, 1974), p. 219.

10. BA MA, RL 2 III 1185-1195, Flugzeugunfälle und Verluste bei den fliegenden Verbänden, Genst. Gen. Qu. (6. Abt.).

11. Losses based on BA MA, RL 2 III 1185-1195, Flugzeugunfälle und Verluste bei den fliegenden Verbänden, Genst. Gen. Qu. (6. Abt.). For German aircraft strength consult "Luftwaffe Strength and Serviceability Tables, August 1938-April 1945."

12. Ibid.

13. BA MA, RL 2 III 1025, Front-Flugzeug-Verluste.

14. "Statistical Summary of Eighth Air Force Operations, European Theater, 17 August 1942-8 May 1945," Albert F. Simpson Historical Research Center, Maxwell AFB, Alabama.

15. Ibid.

16. The following discussion of Luftwaffe single-engine fighter pilot losses is drawn from the tables, BA MA, RL 2 III 726-728, Übersicht über Soll, Istbestand, Einsatzbereitschaft, Verluste und Reserven der fliegenden Verbände.

17. "Statistical Summary of Eighth Air Force Operations, European Theater, 17 August 1942-8 May 1945."

18. Ibid.

19. See in particular the following intelligence report: BA MA, RL 2 II 365, Der Oberbefehlshaber der Luftwaffe, Führungsstab Ic., Nr 4611/43, 3.12.43., "Luftlagebericht West, Stand: 1.12.1943."

20. BA MA, RL 10 257, Kriegstagebuch Nr. 8 des Zerstörergeschwader "Horst Wessel" Nr 26 vom 1.1.-30.9.44.

21. BA MA, RL 2 III 1025, Front-Flugzeug-Verluste.

22. BA MA, RL 2 III 728-731, Übersicht über Soll, Istbestand, Einsatzbereitschaft, Verluste und Reserven der fliegenden Verbände.

23. BA MA, RL 2 III 1025, Front-Flugzeug-Verluste.

24. "Ultra, History of US Strategic Air Force Europe versus German Air Force," U.S. National Archives, SRH-013, p. 153.

25. BA MA, RL 10 639, Notizen zur Traditionsgeschichte der III. Gruppe des Jagdgeschwaders Udet.

26. United States Strategic Bombing Survey, "Overall Report (European War)," September 30, 1945, p. 21.

27. BA MA, RL 2 III 728, Genst. Qu. Gen. 6. Abt. (III A), Übersicht über Soll, Istbestand, Einsatzbereitschaft, Verluste und Reserven der fliegenden Verbände.

28. "Notes on Discussions with Reichmarschall Göring, Held on May 15-16, 1944, on the Subject of Fighters and Fighter Personnel," Royal Air Force Air Historical Branch, Translation No. VII 71.

29. Public Record Office (Great Britain), DEFE 3/165, KV 6476, 5.6.44., 1210 Z.

30. "Ultra, History of US Strategic Air Forces Europe versus German Air Force," National Archives, Modern Military Records, SRH-013, p. 251.

31. Air Ministry (Great Britain), *The Rise and Fall of the German Air Force* (London, 1948), pp. 316-17.

32. BA MA, RL 2 III 1025, Front-Flugzeug-Verluste.

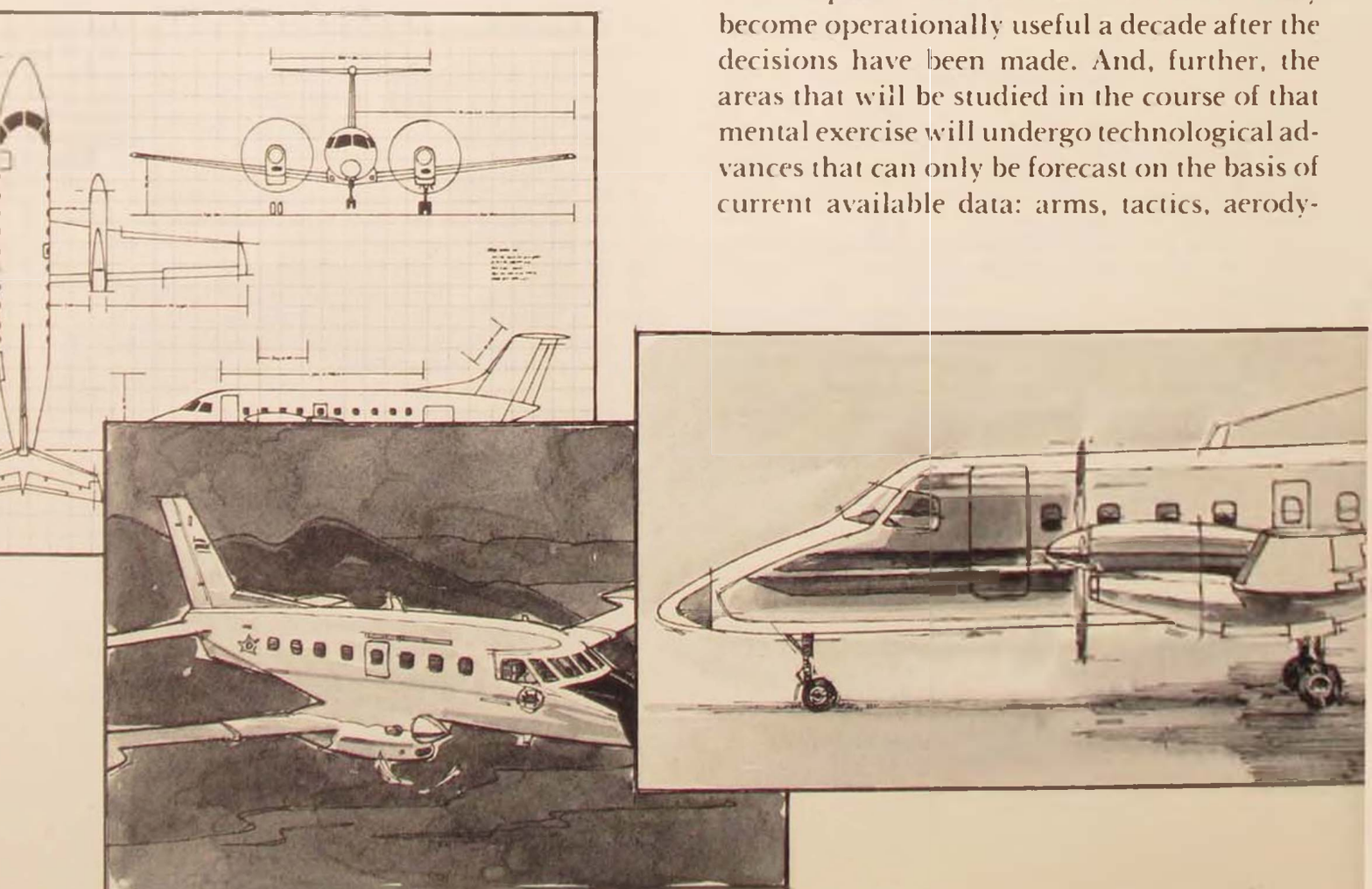
# SERVING THE NATIONAL INTEREST

## *a strategy for reequipping the Air Force*

MAJOR-GENERAL LAURO NEY MENEZES, BRAZILIAN AIR FORCE

DECISIONS concerning new programs and projects for the armed forces, despite whatever sophistication may be brought to bear on the approach to the problem, are always riddled with projections, estimates, forecasts, and, above all, extrapolations.

One must always bear in mind the ramifications of the fact that such decisions are made with respect to materiel that will most likely become operationally useful a decade after the decisions have been made. And, further, the areas that will be studied in the course of that mental exercise will undergo technological advances that can only be forecast on the basis of current available data: arms, tactics, aerody-



The process of acquiring military aircraft is a complex and often inefficient one, beset with political factors that figure prominently in what finally "shows up on the ramp." This is particularly true for developing nations without long-established aircraft industries. For those interested in the problem within this context, Brazil, with its remarkably robust aircraft industry, serves as a useful example for study. Brazil's promising young aircraft industry must grow rapidly to meet the defense needs of this emerging power. In this article, Major-General Lauro Ney Menezes of the Brazilian Air Force proposes an innovative strategy for producing and procuring modern aircraft. We encourage thoughtful reading of this article; perhaps we can bolster our own American know-how.

The Editor

namics, motors, metallurgy, and even geopolitics and geostrategy. Certainly the single constant factor in the whole process is *man and his behavior.*

Having mentioned these self-evident aspects, it is still essential to accept as constant certain rules established by experience in dealing with this kind of problem (long-term planning and projections), such as the following:

—The normal development period for a new arms system is at least five to seven years. To this must be added another two to three years to make the system totally operational: maintenance, training, and use.

—The aging process of an arms system begins at the very time that its operational use is at a maximum, due to the current pace of technological development reached in aerospace military products. This means that the lead-time and the onset of obsolescence overlap.

—Efforts to modernize aging arms systems have produced only a palliative and never definitive results. Modernization is usually attempted in the fields of applied electronics, armament, or automation; however, improved performance profiles are rarely achieved, or achieved to the degree of efficiency dreamed of by project directors and (especially) operators.

—Given the overlap of the various phases of the project (initial idea, concept, outline, specification, production, operational use, obsolescence, and mortality), it is tacitly accepted that an arms system has an updated life of at most eight years of its fifteen years of useful life, given that almost four years are development/maturity and three years aging/mortality.

—The financial process that underlies the process of reequipping the Air Force, due to the aforementioned cycle, is weighty and intimidating and is not easily accepted or understood by budget-planning authorities.

In spite of the incongruity of the process, the end result is irrefutable: advance planning is extremely difficult. By not planning, however, modernization becomes a painful, and often impossible, process.

—Badly executed or incomplete projections, estimates, and forecasts are at the source of the most rapid obsolescence of any arms system.

## Rebuilding the Fleet: "modus operandi"

The long and uncertain process of creating and designing a new product in the field of arms systems for the Brazilian Air Force can be reduced by the simple, direct acquisition of the finished product.

### *simple, direct acquisition*

This course of action is adopted whenever the time factor outweighs other considerations. When this is the case, the accepted practice is to resume planning for reequipment at the stage of selection and evaluation of equipment, adopting specifications already established as valid by others.

On the other hand, it is necessary to tacitly

accept that simple, direct acquisition proportionally shifts to the buyer all the financial burdens carried by the producer during the development period of the equipment. Moreover, acquisition of fleet packages is not an immediate solution, since this also entails a lead time that can be as long as 23 to 30 months!

For countries already in possession of a consolidated aeronautics industry, simple, direct acquisitions are an option of the government. Despite the seemingly reduced costs of such acquisition, it must be understood that only the *performance* of design and planning activities associated with new projects produces a *positive residual* result in this complex process. The rest is comprised of a simple commercial financial operation.

The question should be posed in terms of considerations such as the following: "Rather than in industrial parks elsewhere, why not invest in our own?" "Rather than creating jobs elsewhere, why not do so here?" "Why amortize the inflationary process of other countries?" "Why transfer the geographic seat of the decision-making process?"

#### *associate industrialization*

Another potential formula to adopt for reequipping is found in the form of associate industrialization: Brazilian enterprise foreign enterprise.

Such a partnership could be implemented with focus on either a finished product already tested by the foreign enterprise (and the specifications of which are adjusted to the formulation of the project of interest to the Brazilian Air Force) or a new product to be decided on by the consortium (based always on the specifications of the air force).

One aspect of the industrialization partnership formula (or binational enterprise) is the adoption of a vehicle created and designed jointly by two countries (Brazil and partner) that has operational requirements defined by agreement of the partners.

This method is widely used in Europe (Jaguar, Tornado, AlphaJet, Airbus, Atlantic, F-16 projects, etc.). They have never been characterized by rapid implementation, however. The long period required to create, define, specify, and produce makes the consortium's product vulnerable to internal policy changes in each partner-country, and it has been difficult to obtain partners with the same kind of operational needs.

One example of an industrial partnership with a finished product was that used by EMBRAER to launch the Italian Macchi-326GB aircraft, and that undertaking was unquestionably successful. The same course could be followed to produce combat aircraft for future decades.

On the one hand, this formula guarantees the elimination of certain steps in the process of manufacturing new products. It is also based on the premise that the specifications used by the foreign enterprise to produce its material are compatible with those set by the Brazilian Air Force for its new combat vehicle. It further results in a reduction of the time required for the finished product and, initially, a simplification of the new industrial program. And, most important, it allows the consultations needed for the administrative-technological transfer of the product of common interest to proceed at a tranquil pace. On the other hand, it requires careful study to define not only the product itself but also to evaluate the potential partner.

#### *industrialization in Brazil*

A third approach to rebuilding is to launch a new product, from drawing board to flight line, suited to current national needs.

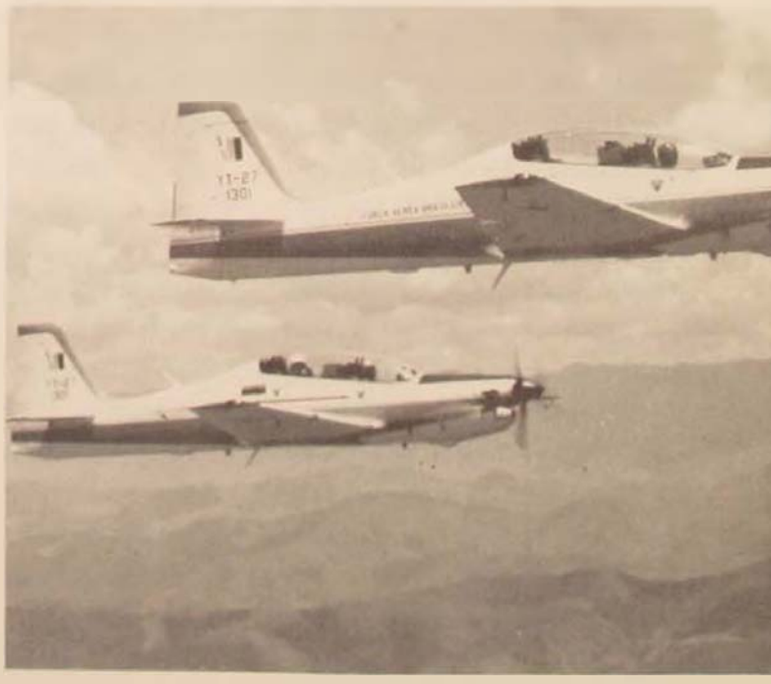
The development policy of the Brazilian aeronautics industry, which has been objectively guided and supported by the federal government, made possible the implementation of a program of adaptation of aircraft to the operational conditions of Brazilian infrastructure,


and met the need for reequipping of the Brazilian Department of the Air Force and of certain parts of the civilian market that are closely linked to the country's social and economic development.

As the principle instrument of the industrial policy of that sector of activity, EMBRAER will be actively involved in producing the Bandeirante, Xavante, Ipanema, etc., which fully meet the aforementioned requirements. It is also conscious of its purpose of promoting the development of the aeronautic industry and is always attentive to the real conditions of the Brazilian and international markets, and to the needs of the armed forces, with a view to being in a position to respond in a timely fashion to demand prospects as they arise.

The fiscal incentive given to EMBRAER in the law that established it has enabled it to grow rapidly and has ensured it sufficient resources for capitalization. This factor is of considerable importance for the future develop-

*The light fighter AM-X (above), in the development stage with the Italian firm Aeritalia, and the T-27 (EMB-312) advanced trainer (below) are examples indicating the viability of the Brazilian aeronautical industry.*



ment of EMBRAER, since it allowed it, by 1975, to build a modern industrial infrastructure that is highly productive and of a size compatible with the country's real needs in the field of aeronautic material. Thus, the introduction of new industrial programs, in the context previously described, is indispensable at this stage of guaranteed capitalization, which would bring EMBRAER the following advantages:

- diversification of its product line to enable it to meet the needs of broader sectors of the market;
- increased gross earnings, to keep pace with the growth of capital stock, ensuring a suitable rollover thereof, and the profit margin estimated for current programs;
- consolidation of an advanced technology of aircraft production, in a relatively short term, enabling EMBRAER to meet the challenges that arise from the country's rapid growth; and
- in the case of programs of interest to the Brazilian Air Force, the preservation and continuity of the line of military products.

ANALYSIS OF EACH of the options shows that the one most suited to the goal of both the federal government and the Brazilian Air Force itself is that of maximum nationalization.

That is the solution that will guarantee the desired, sought-after, and expected capability to keep decision-making within our national borders. It will guarantee the uncompromised survival of the capacity to manage Brazilian air power to the benefit of Brazil.

That is the way! That is today's strategy that will bear fruit into the next century.

*São Paulo, Brazil*

# A NATO DIVISION OF LABOR

LIEUTENANT GENERAL LOTHAR P. G. DOMROESE, GERMAN ARMY (RET)
COLONEL SAMUEL B. GARDINER

THERE was much talk a year ago about a division of labor in NATO, but it has quieted by now. We believe the United States should not let this happen. The Europeans have very important national interests outside the NATO area, and often these interests parallel those of the United States. Yet there is no question that collective interests can be protected better when nations work collectively.

The term *division of labor* is a German invention in its most recent context. Unlike many German terms, this one lacks precision. When we use it—and most people use it when referring to the current world situation—we are talking about a concept that means *consonance of purpose* for the alliance but a *differential application of military forces*, while viewing the *worldwide interests* of NATO nations.

Many point to Afghanistan when they talk of the origins of division of labor; one needs to be cautious about that. The Soviet military buildup in Afghanistan may have brought an awareness to Europeans, as well as Americans, but it is only one element.

One can trace the origins of the need for a division of labor to three trends in the world situation in the last fifteen years. The first trend is a political one. After the last Berlin crisis in 1962, the Soviet Union has tended to shift the focal points of East-West political competition

to places other than Europe. The second is economic. The basic fact is that economic centers of gravity have shifted. The final trend is a military one. We do not refer to the overall growth in Soviet military capabilities, we refer to a more specific aspect. Even more important to the overall growth in size is the growth that has taken place in Soviet capabilities to project power. One may conclude here that we are going to suggest that the United States military presence in Europe is not as important as it once was. As a matter of fact, we believe just the opposite.

We need always to keep in mind that the military threat to NATO is not in any respect less than it has been. It has expanded, it is more sophisticated, and indications are that it will expand and require more of us to counter. Because of this, we believe that the basic elements of the alliance must now and for the foreseeable future remain untouched.

Our basic point, and an important one, is that division of labor is not possible without a strong foundation. The first major element of the foundation is the continuation of our NATO strategy: forward defense and flexible response. The members of the alliance must have the forces necessary to implement this strategy. This means we must have adequate in-being conventional forces in NATO-Europe. There must be adequate reserve forces along with the mobility assets and an effective centrally directed air defense system; not just a wartime air defense system but an all-time air defense system. And we must have a tactical nuclear weapon delivery capability that does not invite preemption. Cooperation to deter the Soviet Union outside NATO must start with deterrence within the NATO area.

We do not believe that the solution lies in extending the geographical boundaries of the alliance; most people agree that this is not a good solution. The nations of the alliance do not have congruent interests outside the NATO area. Because of that, it is conceivable that the nations could not agree on a unified objective or unified course of action. Lack of agreement would in fact encourage the Soviet Union, and disunity would be reflected in the progress we have made in our current area of responsibility.

THE United States has the military capability and the broader national interests that clearly put her in the position to lead the nations of the alliance in protecting the collective and consonant interests outside NATO. There has been considerable discussion about the ground force level the United States should commit for operations outside NATO. The levels generally discussed are between three and six divisions. It would take quite some time to procure the resources for six divisions. For that reason, we base our concept on the lower and, for now, more realistic size of force.

If the United States dedicates three divisions for areas outside NATO, there are two questions that need to be answered. Is that force enough to establish a non-NATO deterrence? How should we replace these divisions to maintain the NATO deterrence? Most of us who have looked at Soviet capabilities in depth do not believe three divisions are an adequate force. We would like to explain how we believe this can be solved and describe some possible contributions to the divisions of labor of some members of the alliance.

- Americans generally underestimate the role France does and can play. France has capabilities to project forces, and she is accustomed to the role. As a matter of fact, the French Navy already makes a major contribution to projecting the military capabilities of the members outside NATO. For example, it is with the added French combatants that we are able to maintain approximately a 2 to 1 advantage over the Soviet Union in the Indian Ocean.
- The United Kingdom has forces, a tradition, and the inclination to represent the interests of the nations of the alliance outside the NATO area.

• Italy has some forces that could be deployed outside the NATO area but at the present time would not have the inclination to do so very extensively.

• Denmark and Norway would probably not provide military forces for out-of-area missions.

• Belgium has a history that would prepare her for non-NATO responsibilities, but her political problems would most likely keep her from doing so in the near-term. The present preoccupation of the Belgian government is with the country's economic and cultural problems. A request to support the deployment of forces would probably be rejected with financial arguments, though Belgium could provide some of the U.S. reinforcement capability. We would propose asking Belgium to form an additional reserve brigade, to make up for the loss of the U.S. divisions in Europe.

• The Dutch probably could not be counted on to support an operation out of the NATO area, but they could furnish a reserve brigade.

• Portuguese forces are incapable of conducting operations against a well-equipped enemy outside NATO, though Portugal does have a commando regiment, as well as other units, that could relieve the units of other NATO nations for duty on the continent during wartime, another portion of the offset for the three U.S. divisions.

• Turkey has an army of approximately one-half million. Although there are serious problems with equipment, this country offers an excellent source of manpower for the alliance. An increased military aid program for Turkey and Greece could not only strengthen the southern region, it could do more. It would provide a greater alliance deterrence close to possible problem areas; we must not forget Turkey's location. It could also, when combined with mobility assets from other nations, provide a force for out-of-NATO operations. We say mobility assets from other nations because of the obvious problem that could be caused within the alliance if the aid also included mobility assets.

• The Canadians might contribute to an out-of-NATO mission.

• The Federal Republic of Germany (FRG) could also probably participate in the division of labor.

Article 115 of the German constitution prohibits the employment and deployment of German forces outside the NATO area. There is little likelihood of a change in this basic law very soon, but we still see it necessary for the FRG to do its share in the division of labor. Our specific proposal for the FRG is to form six reserve brigades. The equipment, armament, structure, and training would correspond to active FRG brigades. They would be given identical tasks.

We would envision creating these units as units. Individuals would do their fifteen months of basic military service together, and when they go to standby readiness Category I, they would do so as a unit. The unit would remain as a unit for twelve months. During this time, the Minister of Defense could call within 48 hours, without mobilization. Also during this period, the next unit would be trained. After one year in readiness Category I, the individuals would go to Category II. In this status, they could be called on as replacements.

The advantage of our proposal for the FRG is that it would take advantage of the cost effectiveness of reserve forces. It would enable the creation of additional combat forces within the active duty manpower limits the FRG has. Finally, if we ever achieve a mutual and balanced force reduction (MBFR) agreement, it will most likely apply to peacetime force levels against which these units would not be counted.

THE NEED for a framework for cooperation could provide a forum to coordinate on the military and political aspects of protecting the collective interests of the individual member of the alliance.

About a year ago the European press picked up a report that the United States was consider-

ing assigning the Rapid Deployment Force (RDF) to General Bernard W. Rogers. This was misreported in *Die Welt* as well as in *Le Monde* as being a step toward expanding the NATO area. This incident highlights the sensitivity of the question of where military cooperative planning should take place. We are of the opinion that we cannot do this planning within any of the existing NATO military frameworks, either international or superimposed on an existing national framework. Our feeling is based on a strong belief that our actions outside NATO should not, in any way, weaken our military and political strength within NATO.

A framework for military cooperation should begin quietly, in a low key, and with U.S. leadership. It should be in the form of an invitation by the United States for appropriate member nations to become familiar with the planning of the Rapid Deployment Force. The United States could invite liaison officers to be located with the RDF. The next step could be joint exercises, which would mean building slowly on the U.S. organization.

The political framework is not quite so easy. We believe that the political framework used will be dictated by the situation. In some cases, the NATO political structure could serve for consultation. Where there is general agreement on an issue, consultations in this forum would strengthen the position. In some situations, the best forum would be bilateral discussions. Basically, there is strength in agreement, not disagreement. The forum should be chosen accordingly.

DIVISION OF LABOR does not start outside of NATO. It must have its foundation in the strengthening and renewing of deterrence we have built over the years. As for European responsibilities, we cannot expect the same from each nation: There are some who could and should substitute for U.S. reinforcements; there are some who could and should support operations outside NATO.

*Bonn, Germany*
and
*National War College*
*Washington, D.C.*

There will be no time should hostilities start, to correct mistakes in the types of forces that we have provided, the manner in which they have been organized and trained, or the way we fight.

General Lawrence Kuter (1954)

# EXTENDING THE BATTLEFIELD

## *an airman's point of view*

COLONEL THOMAS A. CARDWELL III

EXPERIENCE shows that we tend to ignore the lessons of history and sound organizational principles when establishing command arrangements. The problem was well illustrated by recent discussions of command arrangements for the Rapid Deployment Joint Task Force and command and control of U.S. Marine Corps tactical air assets during sustained operations ashore.

This article will present an airman's view of a similar situation that has recently arisen concerning command of the air-land battle. The U.S. Army concept of theater warfare is the extended battlefield approach that appears to be corps oriented. On the other hand, the U.S. Air Force approach to theater warfare stresses command and control of air assets at the theater level. My argument is that the concept of the extended battlefield, as currently articulated by the Army, is incompatible with realities of the modern battlefield and raises issues with regard to Army/Air Force coordination.

## The Concept

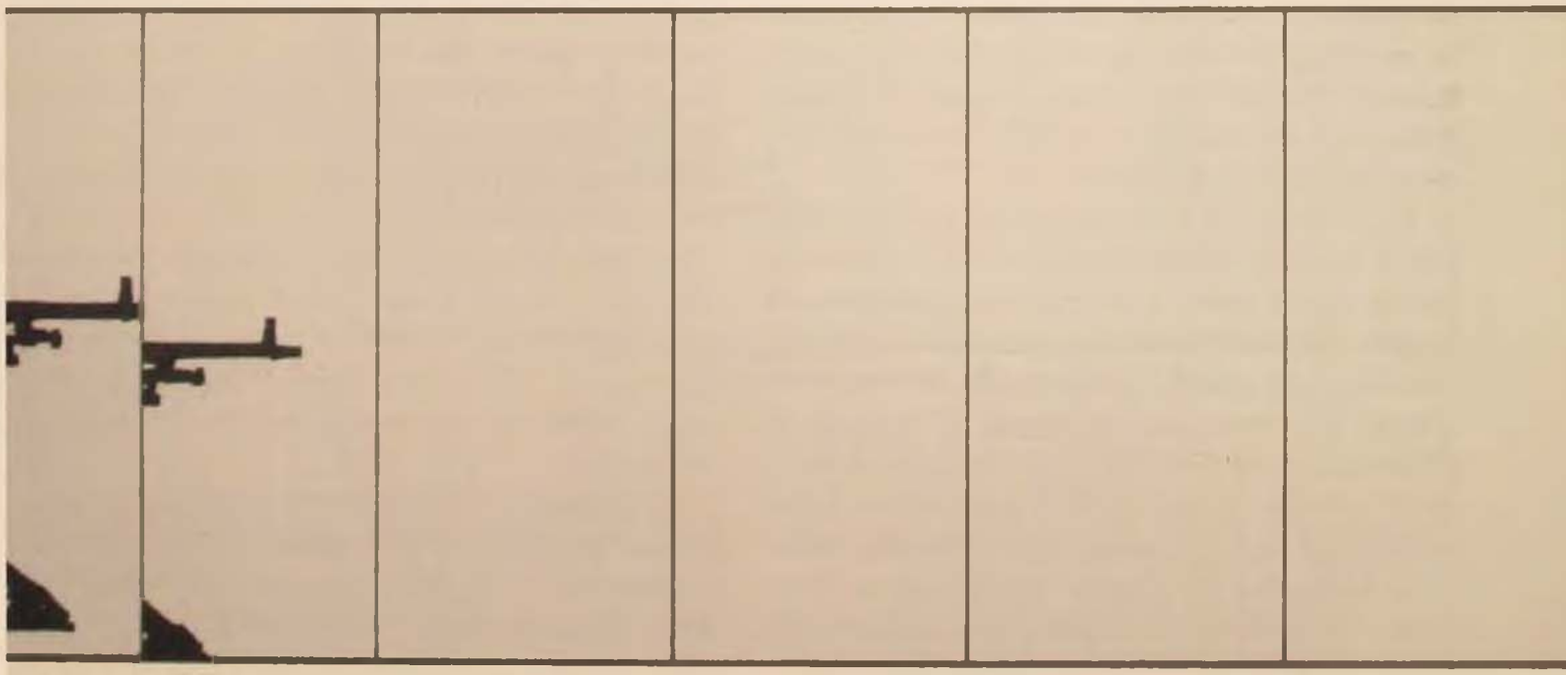
Perhaps the most concise exposition of the extended battlefield is an article in *Military Review* by General Donn A. Starry, USA, former commanding general of the U.S. Army Training and Doctrine Command.[1] This concept arises in direct response to Warsaw Pact-Soviet operational doctrine that centers on massive attacks by echeloned military forces armed at a relatively narrow front.[2] Since the forces attacking a division or corps front may be forming up 75 to 150 kilometers (km) beyond the forward edge of the battle area (FEBA), division and corps commanders must develop plans that go beyond those traditionally developed by ground commanders standing on the defensive. For example, a corps commander must now develop plans that command activities as far as 150 km to the enemy's rear and call for actions that may take place 72 hours in the future.[3] The extended battlefield concept was perceived as the extension in space and time of the corps and division commanders' planning horizon.

To fight this extended battle, three primary tools are required for a deep attack: (1) air interdiction, artillery, and special operating forces; (2) offensive electronic warfare; and (3) deception.[4]

In the execution of this extended land battle, the corps commander plays the vital role. The maneuver and an overall battle plan are the bases for the selection of targets to be attacked by both organic assets and resources other than Army organic.

The Army concept of the extended battlefield presents one way to fight the land battle against the postulated threat.[5] However, from an airman's point of view, the concept is seriously flawed.

While the concept of the extended battlefield raises several problems of a more or less minor nature, it contains at least two major difficulties from the Air Force perspective. The concept, as currently articulated, deals with only one corps on the line; as we shall see, difficulties occur when two or more corps are brought on line. Second, the concept raises serious questions about traditional roles in the acquisition of targets and the control and allocation of resources for attacking the targets. In addition to this command and control difficulty, there is also a problem with the coordination of



weapons themselves. The Army's use of weapons with ranges to 150 km (72 hours planning horizon), which is beyond the currently accepted fire support coordination line (FSCL), creates ambiguities with respect to what level weapon systems should be controlled.

The distance that the 72 hours planning horizon represents is not so important as the fact that the area beyond the FSCL has traditionally been an Air Force area of responsibility. The rationale is that targets beyond the FSCL may not be fully committed and not restrained by geographically controlled boundaries of any corps. The weapon system used to destroy targets is not relevant; it is the destruction of targets that should concern a specific corps commander. These uncommitted targets cut across the total battlefield and thus become theater targets.

The location of these targets dictates what level of command controls the air assets. For targets in direct contact with friendly troops, the air component commander distributes assets down to the corps where control is provided by the corps air liaison officer, forward air controller, and tactical air control party. With regard to interdiction targets, the Air Force controls its interdiction assets at the joint interface above corps level (i.e., the Army Group/Allied Tactical Air Force level). To provide control at the corps, as suggested by the Army concept, would require a change in Air Force doctrine, control mechanisms, and command structure; but, most important, it would require a sufficient increase in air assets.

As pointed out by General Starry in his article, the extended battlefield concept deals with war in areas where there are large numbers of forces that use Soviet-style operational concepts and tactics. Further, he states that the threat for which the concept is designed is for use in Central Europe, the Middle East, or Korea.[6] However, the corps perspective of the extended battlefield does not appear to fit into the existing command arrangements found in these areas. It is difficult to see how the concept would work where there is more than one corps on the line. With NATO as an example, there is an echelon above corps to handle the extended battlefield; this echelon is called the Army Group and Allied Tactical Air Force interface, the air and land component level.

The Army has recognized the need to adjudicate tactical conflicts in requirements for tactical air (TACAIR) at a level above the corps by developing a battlefield coordination element to effect the joint air-land coordination for execution of tactical air in support of the land battle. Although battlefield coordination element is at a level above the corps, current planning is for the chief to be a colonel. It would be difficult for a colonel to adjudicate competing corps commander needs. The Army is currently working this organizational problem, but the manning and exact level of "command" of the battlefield coordination element have not been determined.

## The Air-Land Battle

The extended battlefield, with its corps orientation, is incompatible with the USAF concept of theater control of air assets. From an airman's point of view the extended battlefield is, in reality, a theater war consisting of several corps battles. This view is based on history and pragmatic observation. Air Force doctrine has evolved stating that air forces are more effectively and efficiently employed by centralized control and decentralized execution.[7] Centralized control permits air power to be massed and directed toward an objective or to be redirected in response to contingency requirements—flexibility of air power. Decentralized execution allows lower echelons to plan and execute missions at the action level. These two concepts permit the economical use of very limited resources.

As applied to the employment of air power, this simply means that a single manager for air is responsible to the joint force commander. The air component commander has the re-

sponsibility to support the requirements of the joint force commander and surface forces in achieving theater objectives through the use of air assets. To support theater objectives, the air component commander develops the organization and employs the forces for gaining and maintaining general air supremacy, controlling vital air areas, providing tactical surveillance and reconnaissance, interdicting enemy forces and lines of communication, and furnishing close combat support to land forces.[8]

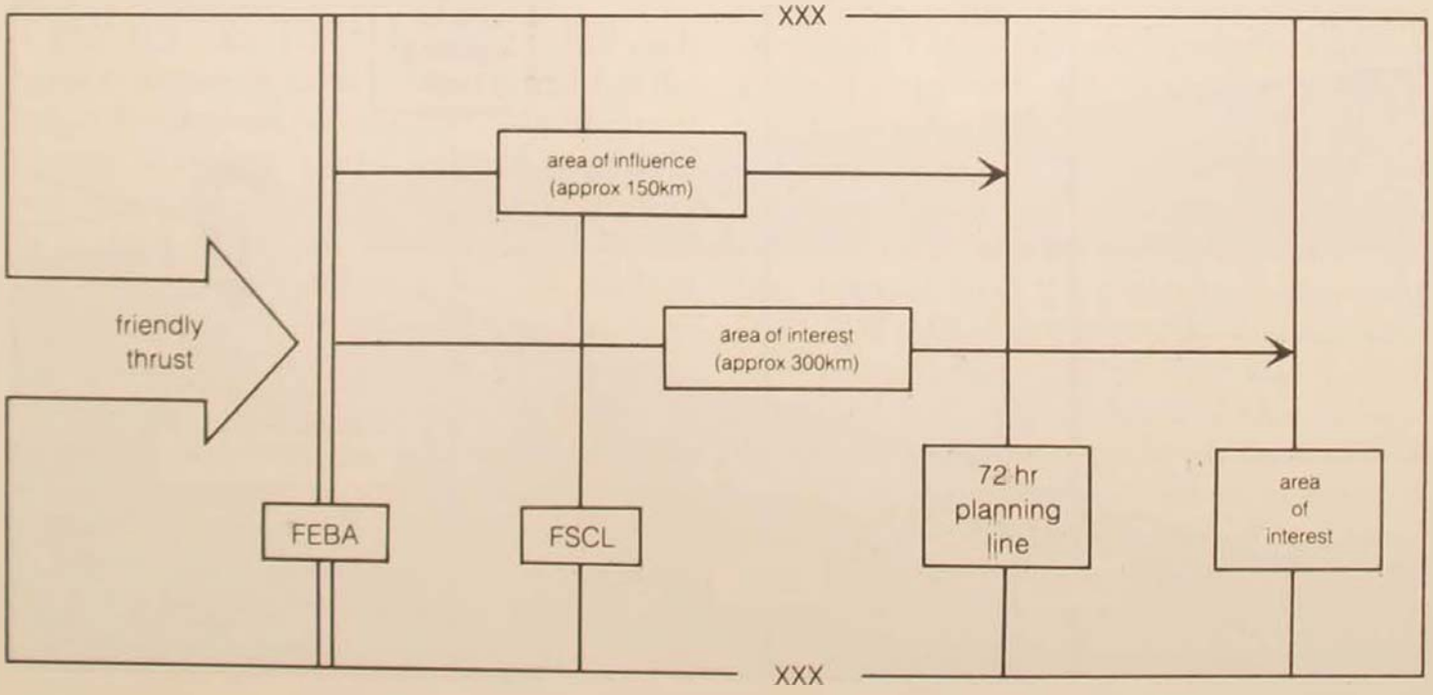
To ensure success of the war effort, the air component commander must be able to integrate, control, and direct all air resources in a coherent manner. The principles that apply are unified action of a joint team of land, naval, and air forces; decentralized execution so that component commanders can provide general tasking that allows executing commanders the latitude to carry out the plans as the battle dictates; and clear and direct lines of communication, authority, and responsibility.[9]

U.S. Army doctrine states that the corps is the highest echelon for tactical maneuver. There is an apparent inconsistency in that the corps is the highest echelon for tactical maneuver; yet when U.S. Army forces are employed, an echelon above corps exists. This dilemma has caused problems for Air Force planners. The Air Force is structured to fight a theater campaign, with TACAIR resources to support the land battle where two or more corps are on the line. It is hard to envision a theater with only one corps; however, the same Air Force structure is capable of handling only one corps on line.

Theater warfare planning, from the Army view, is based on this corps concept. The Army draws planning lines on maps and labels these lines as corps boundaries, the forward edge of the battle area,[10] the fire support coordination line,[11] the corps area of interest,[12] and the corps area of influence.[13] The lines are drawn as *parallel* lines extending in the direction of enemy-held territory. (See Figure 1.)

From a land perspective, these lines designate the geographical area of responsibility for a particular unit. Within these boundaries, the ground unit commander has freedom of fire and maneuver. Outside these boundaries, any activity must be coordinated with the unit having responsibility for the area.

*Figure 1. The Army's planning lines, U.S. Army view*



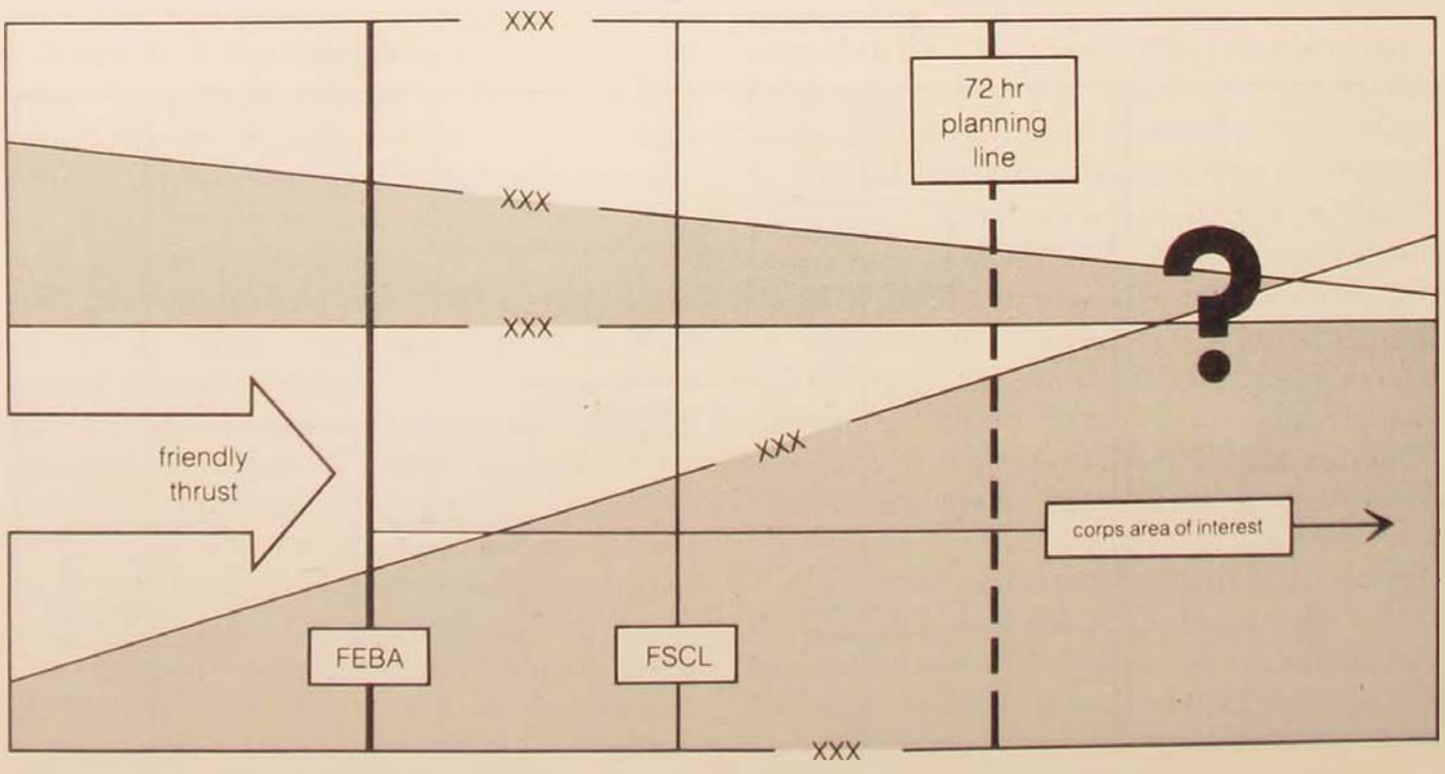
From an air perspective, these planning lines provide an indication of activity. The FEBA indicates where land forces are engaged with the enemy and where air forces provide close air support. The FSCL represents the extent of land force engagement with organic firepower and indicates the method of Air Force control (forward air controller required, for example). Beyond the FSCL, less control is needed as no friendly troops would be in this area (that is, forward air controller not required).

The Air Force view of the extended battlefield is from a theater perspective.[14] Since tactical air assets are limited and must be responsive theaterwide, the planning and execution of TACAIR is accomplished at the air and land component interface—an echelon above the corps level. Additionally, if the means to accomplish *deep attack* in the extended battlefield are air interdiction, artillery, special operating forces, offensive electronic warfare, and deception, then by definition the extended battlefield is a joint effort. The Air Force contribution is in the area of air interdiction, special operating forces, and offensive electronic warfare. For TACAIR to be responsive theaterwide—two or more corps on line—the planning and execution must be accomplished at the joint level above the corps level where the air and land component interface occurs.

Extending the battlefield, either from the Army concept or the Air Force concept, does not obviate the requirement for joint Army/Air Force coordination of limited resources at *all* levels. The coordination and execution for close air support, tactical air in direct support of the land battle, are accomplished at both the corps and the level above the corps. Coordination and execution for other tactical air missions (air interdiction) are accomplished at a level above the corps. The air component commander has to support not only each corps but he must also support the *total* requirement of the joint force commander.

Figure 2 depicts the planning lines as they would appear in a combat situation from a theater perspective. As shown, the lines when projected into enemy territory intersect and

*Figure 2. Planning lines, a combat situation*



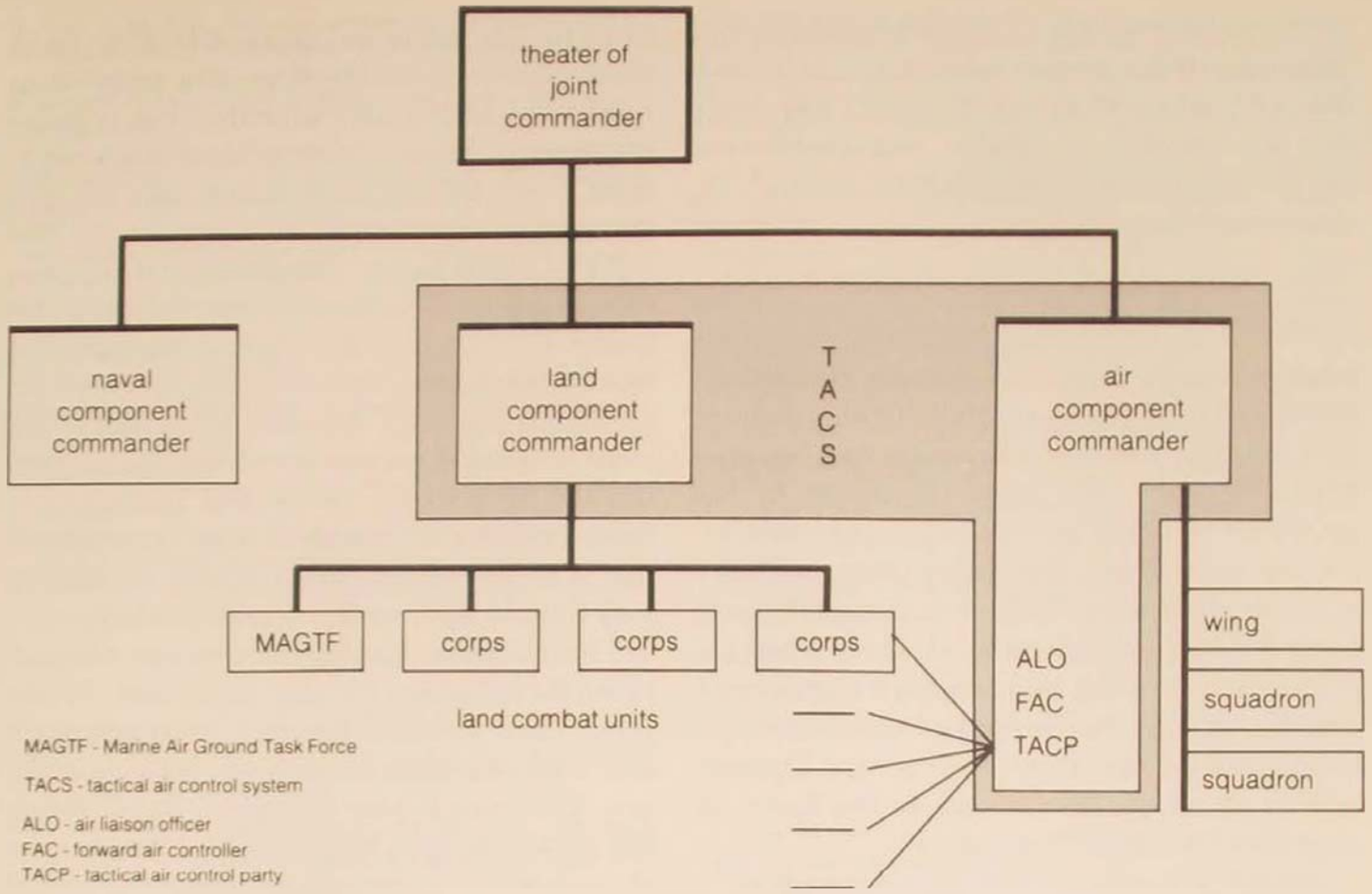



*Figure 3. Joint air-land interface*

create areas of overlapping responsibility with the corps, thus creating multiple authorities if no echelon exists above corps.

The U.S. Air Force recognizes that each corps commander must have an input into the target designation process.[15] The adjudication process is simple. Corps commanders nominate targets, which are then assigned priorities by the land component commander. From this list, the air commander assigns TACAIR to individual targets. The USAF tactical air control system (TACS), manned by Army and Air Force people, handles the execution phase in support of the land battle.[16] Elements of the tactical air control system exist at all levels of command, from the echelon above corps down to division level. The Army echelon responsible for solving the problems of adjacent and competing corps on the extended battlefield should be at a level above the corps. This allows the air component commander to ensure tactical air support of the land component commander in the planning phase and tactical support to the corps commanders in the execution phase.

Figure 3 depicts the joint command structure and the air/land interface. Taken together, the land and air component commanders shown in this diagram form the component command level. TACAIR assets are assigned at this level to targets appearing in the area in Figure 2 that is marked with a question mark. Also, adjudication of competing corps needs for TACAIR support in the other areas shown in Figure 2 occurs at the component command level to ensure effective application of scarce TACAIR assets.

If the extended battle is fought as described

in the Army concept, a major revision in the joint operations, service roles and mission, and weapons acquisition could occur. Although that is certainly a possibility, a discussion on the pros and cons of this aspect is beyond the purview of this article.

AIR POWER must be employed from a theater perspective under centralized control of a single air component commander for the apportionment, allocation, tasking, distributing, directing, and controlling of air assets. As air assets are limited, highly mobile, maneuverable, and firepower intensive, they must be directed at critical points and times from the highest tactical level. Only when air assets are controlled by a single air component commander can they be applied to the extended battlefield at the time and in the amount needed to affect the outcome of the battle in support of the land commander.

Moving the extended battlefield responsibilities to a level above the corps can and will accomplish the stated objectives of General Starry. The battlefield has always been extended in time to allow the commander to plan his maneuver to blunt an attack before it can be used against him. The extension is the theater battle, and the commander is the theater or joint force commander.

This airman's concept of extending the battlefield does not belittle the critical importance of the corps commander's scheme and maneuver or his plan to fight the corps battle. In fact, the theater approach enhances his ability to fight his battle by using TACAIR assets more effectively at the time and place most needed. To accomplish what the Army concept proposes—"increase the prospects for winning"[17]—a theater perspective, not a corps perspective, is needed.

The United States cannot afford the luxury of waiting until the next war is fought to organize for that war. We must be prepared for war when, as a military force, we are called on to defend national interests. One might ask what preparing for war has to do with extending the battlefield. The answer is simple—it has everything to do with it. The connection is that if we do not organize in peace the way we will fight in war, we are doomed to failure.

The extended battlefield concept presents unique challenges for the Army and the Air Force. The solution lies in a joint approach and understanding of each service's capabilities. The time is *now* to get our war-fighting organization right, with clear and simple lines of authority for the effective employment of our forces.

By working together, the Army and Air Force can develop the command structure to fight the theater battle. With a full appreciation of both services' view, the proper interface can be developed for the most effective employment of Army and Air Force assets on the modern battlefield.

*Mather AFB, California*

I wish to thank Colonel David R. McNabb, USAF, Lieutenant Colonel Donald J. Alberts, USAF, and Major Kenneth B. Hall, USAF, for providing additional research material for this article.

T.A.C.

Notes

1. General Donn A. Starry, "Extending the Battlefield," *Military Review*, March 1981, pp. 32-50. (General Starry is currently the Commander in Chief, Readiness Command.)

2. Ibid., p. 34.

3. Interview with General Donn A. Starry held at Maxwell AFB, Alabama, on 6 November 1981. Distances are terrain dependent and vary according to geographic region. For planning purposes, a 72-hour planning horizon equates to approximately 150 kilometers.

4. Starry, "Extending the Battlefield," p. 37.

5. Ibid., pp. 33-36. General Starry describes the threat quite accurately.

6. Ibid., p. 32.

7. AFM 1-1, *Functions and Basic Doctrine of the United States Air Force*, February 1979, p. 5-2. This doctrine was developed in response to the realities of modern war and is based on lessons learned in North Africa, Korea, and Vietnam. See General William W.

Momyer, USAF (Ret), *Air Power in Three Wars* (Washington, D.C., 1978), pp. 39-45 and 107-8, for a detailed discussion.

8. Department of Defense Directive 5100.1, "Functions of the Department of Defense and Its Major Components," 26 January 1980, pp. 10, 11.

9. Lieutenant Colonel Thomas A. Cardwell III, "Employment of Airpower—Control of the Air War," *Daedalogue*, Winter 1980, p. 15. See also Joint Chiefs of Staff Publication 1, *Unified Action Armed Forces*, October 1974, pp. 6, 28, 39.

10. FEBA is defined by JCS Pub 1 as "the foremost limits of a series of areas in which ground combat units are deployed, excluding the areas in which the covering or screening forces are operating, designated to coordinate fire support, the positioning of forces, or the maneuver of units." (p. 144)

11. FSCL is defined by JCS Pub 1 as "a line established by the appropriate ground commander to insure coordination of fire not under his control but which may affect current tactical operations. The fire support coordination line is used to coordinate fires of air, ground, or sea weapon systems using any type ammunition against surface targets. The fire support coordination line should follow well-defined terrain features. The establishment of the fire support coordination line must be coordinated with the appropriate tactical air commander and other supporting elements. Supporting elements may attack targets forward of the fire support coordination line, without prior coordination with the ground force commander, provided the attack will not produce adverse surface effects on, or to the rear of, the line. Attacks against surface targets behind this line must be coordinated with the appropriate ground force commander." (p. 138)

12. The generally accepted definition of *area of interest* is the area about which the corps commander must have information if he is to plan his maneuver and firepower requirements and implement his strategy (extended out to 300 kilometers by the Army).

13. The generally accepted definition of *area of influence* is the area which the corps commander must acquire information about enemy concentration so he can bring fire to bear against the enemy's forces (extended out to 150 kilometers by the Army).

14. The USAF view of the extended battlefield was presented to the U.S. Army Operations Research Symposium XIX in October 1980 and was subsequently printed in the Bulletin of U.S. Army Nuclear and Chemical Agencies *COMMANDERS NUCHEFLASH*, Issue 6, January 1981. See article by Lieutenant Colonel Thomas A. Cardwell III, "The Integrated Battlefield—A USAF View," pp. 4-6.

15. Ibid., p. 5.

16. Ibid.

17. Starry, "Extending the Battlefield," p. 32.

> The employment of land, sea, and air forces in time of war should be directed towards one single aim: VICTORY. If maximum effectiveness is to be obtained, these forces must act in co-ordination and perfect harmony . . . These three forces operate as components of one single product . . . Therefore, although the commander of the Army, Navy and Air Force should be given the greatest freedom of action in their respective sphere, it would be in the interests of national defense to have a supreme authority co-ordinating their various actions.
>
> General Guilio Douhet (1921)

in my opinion

# PLANNING TO WIN

LIEUTENANT COLONEL
JOHN A. WARDEN III

THE COURSE of the world would be far different if the ancient Greeks had resolved only to fight for restoration of any territory lost to Persian expansionism. Similarly, our heritage would differ substantially from what it is if the Romans had ceased their efforts the moment Hannibal left the peninsula. In both cases, the ultimately victorious states had a goal of so reducing their opponent's postwar power and position as to guarantee a substantial improvement in their own postwar position—not merely to return to a status quo ante. Conversely, those states like the Roman Empire after Augustus that entered war, by choice or necessity, with only a goal of not losing something frequently lost all.

A positive goal is virtually a prerequisite of

success in war. Not only is this historically demonstrable but it finds support in common sense and experience outside war. The football team with a superior defense and inferior offense may finish the season with relatively few points scored against it, but it is not going to win the championship. If winning the championship or coming close to doing so are the measures of success, then the overly defense-minded team has failed. The company with a strategy aimed at protecting its market share rather than increasing it quickly falls prey to competitors with a positive strategy. Man simply performs better when his goal is exploration or conquest of new territory.

Success in war is unlikely for the state wedded to protection of the status quo. This is not to say that aggression is justifiable or necessary, but when war is forced on a state by an aggressor, then it becomes imperative for that state to adopt a goal of ending the war in a better position than it was at the start. Without that goal, it will almost surely end up in a worse position. Additionally, there is something morally repugnant about expending great sums of blood and treasure merely to end at the starting line and just as vulnerable to renewed aggression.

Positive goals can range from a Carthaginian solution (total destruction of the enemy state) to border adjustments. The choice from within this range must depend on a number of factors including the aims of the enemy, relative capabilities, and a realistic view of the ensuing peace. The latter is perhaps most important, for wars should be fought for the peace that follows, not for the momentary triumph of arms.

There is nothing easy about selecting a war aim—as Americans we should be acutely aware of the difficulties. The Carthaginian solution is final, but it kindles the fiercest resistance and imposes terrible moral burdens on a civilized state considering it. At the other extreme, a border adjustment, unless carefully crafted after taking into account ethnic and historical considerations, is likely to lead to renewed hostilities as irredentism becomes the war cry of the defeated.

Through the ages the conquests that have been most successful and the peaces that have endured the longest have tended to fall into two categories. The first involves assumption, either directly or indirectly, of the key power positions within the conquered state while simultaneously respecting the religion and customs of the people. Alexander the Great was a master of this form while Hitler ignored it with fatal consequences. The second form requires the establishment of more or less self-regulating power centers, each strong enough to defend but not so strong as to be capable of attack. Europe after Napoleon is a good example of the latter.

The state whose enemy is an empire made up of forcibly assimilated peoples is in a position to capitalize on the possibilities immanent in both forms. The captive peoples, if promised a future wherein they can follow their own gods, will, with proper assistance, throw off the old yoke even if it means accepting a different one. At the same time, the disparate groups within the old empire can form the nucleus for autonomous states, which will balance each other at best and at worst not constitute a threat to the destroyer of the empire for some time to come. For the empire's enemy, the goal and the grand strategy to reach that goal are evident: first dismemberment through internal rebellion and then establishment of new, smaller states for the future peace. How rusty are the hoops of empire and how vicious the empire's repression of its captives will determine how much external force must be applied to start and conclude the enterprise.

It would be an act of folly and shortsightedness for a major power to accept war with an expansionist empire and eschew as a war goal the dissolution of that empire.

NOW THAT the war—or peace—objectives and the commensurate grand strat-

egy are identified, it is possible to address the difficult problems of planning and force structure within a coherent framework. These two areas, which are a large part of military strategy, have for some time become so confused as to create very real dangers. For example, it is not unusual to read or hear of a commander who says he cannot execute the war plan because there is not enough transport to get a particular unit to the front by a certain time. This is a classic case of confusing force structure (or programming) with current plans.

Two basic types of planning exist. The first starts with a long-range analysis of objectives and grand strategy compared with probable enemy strategy and forces. The second type centers around what is to be done if war starts tomorrow for whatever reason.

In the first type, the planner is most concerned with developing a force structure capable of executing a particular optimum strategy. By looking at enemy strength, he can decide how many air wings, army divisions, and naval battle groups are required to carry out his strategy. He can establish various time frames such as five, ten, or fifteen years into the future. He can then reference a point—five years, for example—and say that the present force structure is inadequate for the task and that so many more planes or ships will be needed or that so much more transport will be required to put a division in a particular place by a particular time after mobilization begins.

Of course, a force-structuring exercise is much more complex than that just outlined. Political constraints inhibit identification of optimum forces, and fiscal constraints that will apply until war is imminent dictate further scaling down of desired forces. Nevertheless, despite its limitations, the process provides a useful framework in which to develop future forces. However, when this process is confused with current operations, the result can be fatal.

At any given moment, a state has armed forces that consist of a precise number of personnel, planes, ships, and tanks. At the same time, it has the potential to acquire through construction, conscription, or purchase some additional numbers. At the time a war starts, only forces in-being exist, and those are the only forces a planner can intend to employ on day one of the war. It is obvious that the forces in-being today are rarely, if ever, going to be the same forces in quality or number that are desired to execute an optimum strategy five years in the future. It should be equally clear that if more forces than exist are required to carry out a particular strategy, then that strategy cannot be carried out until the forces materialize. In plain words, at any instant strategy must be consistent with force structure because strategy can be changed instantly whereas force structure cannot. The commander who tries to use a strategy or war plan designed to be executed with more force than he has is courting disaster; and the planner who fails to provide a strategy or war plan built around available forces has not done his job.

When optimum strategies are developed, they frequently include goals of an emotional and political nature, such as preventing the loss of territory or concluding hostilities within a fiscally attractive short period of time. Indeed, these goals can often be achieved if sufficient years exist to acquire requisite forces and build fortifications or whatever else is needed. Those same goals, in the absence of appropriate force structure, are unobtainable and cannot and should not be part of current planning.

The job of current planning is exceedingly difficult and, for many, distasteful, for it inevitably forces the planner to do things he does not want to do and may not be trained to do. As an example, the planner who for years has lived with a future "optimum" strategy which perhaps bars loss of territory may come to think of territory as an end in itself, rather than a means to achieve ultimate war aims. When faced with the need to plan for a situation where forces are inadequate to hold territory, he tends to put force inadequacy out of his mind and unrealistically hold territory as though the means to do so were at his disposal. Of course, politicians

will often goad him into following this fatal path, for the untrained have great difficulty in understanding that force structure, at a given instant, must determine strategy for that instant. The German experiences at Stalingrad and after come to mind.

The current planner must look objectively at all the forces at his disposal. He must be willing to trade space for time, and he must view space in three dimensions, not two. He must be willing to commit air, land, or sea forces independently or as a combined team. He must be willing to consider different approaches. Indeed, he must be flexible.

When attacked on a wide front by overwhelming enemy forces, retreat is the obvious move unless the sacrifice of significant portions of the friendly forces will buy the time to introduce enough new forces to go on the offensive. Otherwise, to stand fast in a vain effort to hold territory will merely end in the loss of irreplaceable men and machines and inability to prosecute the war at another time and place. How might World War II have come out if the British army had stood futilely at Dunkirk as the German army did at Stalingrad? The planner must remember that territory is just as much a means to the end as are his military forces.

Space in modern warfare is three dimensional. Air forces may attack the enemy hundreds or even thousands of miles ahead of surface forces. Theoretically, air forces can destroy enemy ground forces, but with great certainty they can slow and even stop advancement. In many ways, air forces, whether from land bases or from carriers, are the first line of attack. They are highly mobile and easy to concentrate. Air firepower can be moved much faster and with far less transport than can equivalent amounts of land firepower. Air power can control the third dimension while buying time to deploy ground forces to fight in the second dimension. This significant capability must not be ignored or denied. It may be the key to victory.

The fact that an attack takes place in one theater does not mean that the current planner must respond in that theater. He must consider strategic flanks as well as tactical flanks. If he is fighting an empire, as earlier discussed, and if the grand strategy is dissolution of that empire, he should consider whether there are vulnerable areas outside of the attacked theater. In general, an empire will be most vulnerable where it has made its latest conquests or where the religion or culture of the conquered differs most from the empire's core area. If the empire is made to collapse, early loss of territory in the first theater will take care of itself very quickly.

MANY VARIATIONS on a theme can be played by the planner faced with actual or imminent war. Most of the themes have been written and are to be found in the histories of the great commanders and planners. Alexander, the grand strategist, showed how a few could conquer many. The North Vietnamese demonstrated that toughness and resoluteness could prevail against qualitative and quantitative superiority unbacked by equal moral strength and resolution. Tiny Britain brought Napoleon's continental system to ruin by attacking its strategic flanks. Pantelleria surrendered to air forces. What can be conceived can be done.

A momentary inferiority in quantity or quality need not be fatal. For it not to be, however, plans must be bold and realistic. They must not confuse the real here and now with the optimum future. They cannot permit emotional attachments or inveterate antipathies to interfere with rationality. If done right and executed properly, plans lead to victory. And if the war goals were well chosen and a proper grand strategy adopted, then victory leads to a better peace—which can be the only justification for fighting.

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# THE FEDERAL REPUBLIC OF GERMANY AND THE SECOND WORLD WAR

## *history remastered*

DR. DENNIS SHOWALTER

READERS of *Air University Review* might well be taken aback when initially confronted with a review of two massive volumes totaling 1200 densely written, heavily footnoted pages—*in German*. Yet the value of these works to the Air Force officer is substantial for two reasons. First and foremost is the relative lack of scholarly studies of the Luftwaffe in the context of Nazi Germany's war effort. The wartime records of the German air force have been severely depleted: lost in bombing raids or destroyed to prevent their capture. What remains has been moved several times and is at best erratically catalogued, which in turn has left the door wide open for mythmaking. The numerous studies completed under the auspices of the U.S. Air Force Historical Division have

essentially been technical documents, whose authors took particular pains to present their roles and the role of the Luftwaffe in the Third Reich as narrowly as possible. On a more popular level, journalists and memoirists have described knights of the air fighting for their homeland against increasingly heavy odds, men too young and naïve to be aware of the true nature of the regime they defended but whose hearts were by and large in the right place.

The process was expedited by the general willingness of the postwar U.S. Air Force to forgive and forget. Its prisoners had on the whole been properly treated, at least while in Luftwaffe hands. Its dead had fallen in fair combat against enemies whose skill at arms commanded admiration. Its homeland had remained unscathed, and its erstwhile opponents were willing, indeed eager, to establish friendly relations. Men like Adolf Galland and Johannes Steinhoff, far from sulking in their tents, proved boon companions, equally interested in discussing current defense problems during the working day and sharing reminiscences over drinks during the evening. In this context, it is hardly remarkable that the least history-conscious of America's forces should form images of Hitler's Luftwaffe little more sophisticated than "There we both were over Schweinfurt at twenty-five thousand feet . . ."

A second reason for paying attention to these books is their status as the first two volumes of the nearest thing to an official history of World War II that West Germany is likely to produce. The Allies, especially the Western Allies, were early off the mark in this area. Germany, politically divided, initially lacked the stability, the underlying consensus, required to produce official histories. Not until the 1960s did the race between the Federal Republic of Germany and the German Democratic Republic (GDR) for control of the public images of World War II really get under way. The East Germans were first on the scene with a four-volume history published between 1974 and 1977. In the Federal Republic, the task fell to the *Militärgeschichtliches Forschungsamt* (Military Historical Research Center), located at Freiburg in Breisgau.

This agency plans a ten-volume work with an unusual format. Instead of producing a collective work on the GDR model or assigning each volume to a single author and a corps of assistants, the *Forschungsamt* chose a form of intellectual pluralism. Each section of the first two volumes was written by an individual scholar; then they coordinated their work as far as possible without altering substance for the sake of artificial harmony. This cross-fertilization produced stimulating, controversial volumes. Their value is heightened by the absence of that unspoken requirement to pay obeisance to military or political figures still active and influential that influences even the bluntest volumes of British or American official history.

THIS review has been structured for the *Review* in two ways. Few of the journal's readers, even those with some facility in German, are reasonably likely to tackle two volumes of German academic prose in addition to their other professional duties. Therefore, I have decided to concentrate more on summarizing than on critiquing the arguments presented, in the hope of encouraging further reading in specific issues. I have also highlighted air power questions wherever possible, focusing on the development and employment of the Luftwaffe in the Nazi system.

Volume I deals with Germany's road to World War II.† The National Socialists were determined to implement as soon as possible their program of comprehensive rearmament

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†**Wilhelm Deist et al. *Das Deutsche Reich und der Zweite Weltkrieg*, Vol. I, *Ursachen und Vorausselzung der deutschen Kriegspolitik* (Stuttgart: Deutsche Verlage-Anstalt, 1979), 764 pages.**

and comprehensive integration of the German nation behind an aggressive foreign policy. Hitler, however, was not working in a vacuum. Wolfram Wette brilliantly demonstrates that Nazi determination to create a militarized folk community depended heavily on attitudes formed during the Weimar Republic. The Versailles Treaty confronted Germany with a blunt alternative: either a policy of peaceful reconciliation with the victors or a drive to reestablish political power through military might. The pacifistic elements of German society—the Social Democrats, the trade unions, the peace movements—proved unable to sustain themselves against a rising tide of militarism. The churches continued to pay homage to Mars. The liberal parties moved ever farther right. A wave of books and films highlighted the "front experience" of 1914-18. After 1933 the Nazis were able to mobilize Germany's media behind their particular brand of glorifying the martial virtues. Wette is particularly effective in his analysis of the relationships among peace offensives, fear propaganda, and displacement of guilt feelings in the Nazi propaganda campaign. He recognizes, too, that neither the abstract militarism of the Weimar years nor the more concrete Nazi version was enough to generate war fever in the population as a whole. Instead the National Socialists depended heavily on a mixture of co-option and terror to secure compliance as the Third Reich moved toward its war of conquest.

Economic preparations for that war are presented by Hans Erich Volkmann. He describes Germany before Hitler as caught up in a world economic crisis that was essentially the crisis of a liberal economic system based on the principle of free international trade. As an alternative, the Nazis offered the concept of a self-sufficient economy oriented in every respect toward preparation for an eventual war. It was an economy of crisis, geared from the beginning to absorbing Germany's unemployed in a mushrooming armaments industry financed on the slenderest of bases. Germany was to become as independent of raw material imports as possible while absorbing the industrial capacities of such weaker neighbors as Czechoslovakia and Austria. Spain and the Balkan states were also targets for German economic penetration. Volkmann takes pains to demonstrate Wehrmacht involvement in these aggressive economic policies. Concern for maintaining steady supplies of food and raw materials had permeated German military planning since 1918, and the generals heartily welcomed the initiatives of Hitler and Hjalmar Schacht.

The Third Reich was hardly ready for war in 1939. National Socialism's chronic inability to organize and administrate had wrought havoc in an economy whose reserve capacity was severely limited. Party and state agencies competed for nonexistent raw materials and workers. Army, navy, and Luftwaffe spent as much time in blocking each other's contracts as in expediting rearmament. The gulf between demands and capacities grew almost by the week. Signs of stagnation and exhaustion were becoming plain at every level. After six years of effort, the Wehrmacht in 1939 still pessimistically described Germany's economic capacity for war as significantly below 1914 levels. Foreign observers described the Third Reich as able to wage modern war for a limited time at best. In this context, blitzkrieg was Germany's only hope for a military solution to an economic problem. Conquest would rejuvenate the economy by giving it a broader base of control and exploitation.

The instrument of that conquest was the Wehrmacht, and the preparation of Germany's armed forces for World War II is the theme of Wilhelm Deist's contribution. He describes German rearmament as one of the decisive factors in the drastic alteration of Europe's power relationships between 1933 and 1939. However, the nature of that rearmament reflected significant changes in internal attitudes as well as external circumstances. Both the experience of World War I and the fact of Germany's disarmament had convinced the Reichswehr's lead-

ers of the need for matching military means and political ends. In Wilhelm Groener's words, definite prospects of success must become a prerequisite of any military action. From its creation, the Reichswehr prepared for the day when the Versailles Treaty would be modified or abolished. But simple professional solutions to the problem of German security were impossible with armed forces only 100,000 strong. Recognizing this, the Reichswehr developed both its political sophistication and its consideration of economic issues. Its revisionism was broad-gauged, recognizing the existence of a European collective security system and working within its structure.

This approach began to change with Werner von Blomberg's appointment as Defense Minister in January 1933. By no means a mere lackey of Hitler, Blomberg regarded national defense as a problem whose solution should be military. Unsympathetic to international treaties and disarmament negotiations, he gave German rearmament its own dynamic, independent of but parallel to Hitler's political visions. It was a dynamic based on fear. Blomberg's abandonment of the collective security concept generated corresponding anxieties about the behavior of Germany's neighbors: Poland, France, Czechoslovakia. Not grandiose plans for aggression but concern for Germany's existence dominated the new Wehrmacht's professional councils. The Reichswehr was neither equipped nor prepared to function as a cadre for expansion on the scale Blomberg proposed and Hitler applauded. Like the proverbial chameleon on a plaid shirt, Germany's military risked bursting itself trying to make good.

Fear contributed significantly to the second characteristic feature of Nazi Germany's rearmament—competition. Chief of Staff Ludwig Beck and Commander in Chief Werner von Fritsch were convinced that Germany would be unable to deal with her potential enemies one by one, that any conflict would promptly explode into a general war. Their solution was to make Germany Europe's premier military power; they advocated enlarging and improving the army at all costs. The navy was less concerned with strategic concepts than with eradicating the shame of the 1918 mutinies and fulfilling Alfred von Tirpitz's visions of Germany as a world-class sea power. The air force, youngest of the services, with no significant institutional foundations, stood under corresponding pressures to achieve. The results were a desperate internecine struggle for scarce resources and a pattern of rearmament, incorporating no significant elements of central planning. The structure of the Wehrmacht in 1939 owed more to limited vision and interservice rivalries than to any Hitlerian visions of armament in breadth and a strategy of blitzkrieg.

The essentially haphazard nature of German rearmament is illustrated by Deist's treatment of the Luftwaffe, which from its official emergence in 1935 inspired fear and amazement. Its jump from biplanes to jets in less than a decade and its growth from three squadrons in 1933 to almost 5000 front-line aircraft in 1939 are without parallel in the history of military aviation. Deist draws an overt parallel with the Kaiser's navy in his description of a "risk air force" initially focused on increasing the stakes of war with Germany to an unacceptable level. From 1933 to 1936, air force planners were careful and comprehensive, incorporating political, strategic, and technical-industrial factors in their considerations. But the death in a plane crash of General Walther Wever cleared the way for Hermann Göring to increase his direct authority over the Luftwaffe. In one sense the service continued to progress. By 1939 it was well able to carry out tactical campaigns on several fronts. But Göring and his new subordinates, notably Erhard Milch, concentrated on technical modernization at the expense of both strategic thinking and the development of a rational supporting infrastructure. Production crises could not be met indefinitely simply by increasing demands, and Germany's new "risk air force" had contributed substantially

By July 1940, Hitler was master of Western Europe. He had forced his generals to take desperate risks, and the resulting victories raised his prestige and his confidence to new heights. Yet, once again, military victory bore no political results. Germany had won only another battle.

To win the war, Britain must be brought to heel, or at least to preserve its existence and its empire by recognizing German hegemony on the continent. Umbreit, Maier, and Dirk Stegemann collaborate to present the Third Reich's attempt to project its power across the English Channel. Umbreit demonstrates that the army's initial doubts about the prospects of a landing were encouraged as Hitler's attention turned more and more to the east and south. Too much depended on technical details that could not be improvised, and even more depended on the air force and navy. The Kriegsmarine collected barges and hoped for favorable weather, while attacking British shipping with a mixture of submarine and surface units. But the U-boat campaign was still in its infancy; the commerce raiders lacked a network of bases. Interservice rivalry, moveover, limited cooperation with a Luftwaffe increasingly focused on the Battle of Britain.

Klaus Maier analyzes the evolution of German operations—and their degeneration from a concentration on British fighters and the factories building them to a series of terror attacks aimed at exhausting Britain's resources and breaking her morale. Maier describes a Luftwaffe neither equipped nor prepared for the kind of offensive it was ordered to undertake. Pitted against a defensive system four years in the developing, its prospects for success were limited at best. They were not fostered by Hitler's growing skepticism at the prospect of winning a quick aerial victory. Like gamblers attempting to recoup early losses by doubling their bets, Göring and his subordinates extended the scope of their air attacks and told each other that every ton of bombs dropped at random was directly contributing to winning the war. British production statistics told a different story, but, as Maier indicates, the British and American air forces were not the only ones that attempted to sustain a campaign of attrition by what Napoleon called "making pictures."

BY THE AUTUMN of 1940 Germany was checked. Britain was still unwilling to abandon the continent to Hitler; Hitler, in turn, had been unable either to conciliate or destroy his British opponent. Economically, the Third Reich was relatively no better prepared for a long war than in 1939. The burgeoning Anglo-American cooperation posed still another threat to a Nazi dictator already obsessed with time. A strategy of indirect approaches, concentrating on the Mediterranean, promised only temporary success. Instead, a frustrated Hitler chose to turn against Russia, to destroy his last potential opponent on the continent, and with it England's hopes. It was a move that would decide the outcome of the war and determine Germany's fate.

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# THE POLITICS OF NAZI OCCUPATION

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MANY anti-Communist exiles from Russia and some students of Soviet affairs have maintained that the Germans failed in their campaign in the East not for lack of military prowess but because of the policies they pursued in the occupied territories. If the Germans had adopted destruction of communism as their primary aim, so the argument goes, and offered a prospect of independence to the Ukrainians, Belorussians, and even Great Russians under a benevolent political system, they would have won enough support among anti-Soviet masses to emerge from the war victorious. Instead, having embarked on the war of conquest to secure *Lebensraum* for the Aryan race to be served by Slav *Untermenschen*, the Germans awakened Russian patriotism that ultimately assured the defeat of the Third Reich.

I lived under the German occupation in northern Caucasus and in the Ukraine for two years, but despite my strong anti-Communist beliefs, I did not see such a clear contrast. Surely, most of the people were in varying degrees anti-Soviet—after the collectivization of farming and years of purges and repression it could not have been otherwise—and many of us initially hoped for German victory to secure the destruction of the regime. But very few Russians and Ukranians were "pro-German," sensing that the *Herrenvolk* had objectives other than our liberation from communism, even if we were kept in ignorance of these objectives. Those who had lived in the Ukraine and Belorussia under German rule since early in the war and experienced its unspeakable brutalities, had no illusions; for them, struggle for sheer survival overshadowed all political considerations.

THE monumental study of German occupation politics by Alexander Dallin, first published in 1957, is based on painstaking research in German archives and on hundreds of interviews with German and Russian participants in the events of that period.† It is as definitive as any study of German occupation politics and practices in any country. Its inevitable conclusion is that under the Nazi regime, as it was constituted and with the kind of individuals who made all major policy decisions, the Germans could not have done things differently. Dallin reconstructs in remarkable detail the power structure in the Third Reich in which the autonomous institutions—the Nazi Party, the Army, the State, the SS, and certain ministries—actively and successfully fought Alfred Rosenberg's Ministry for Occupied East, the only organization that made an attempt to plan a political solution for Russia, a solution fully favoring the Reich but also aiming at enlisting a degree of cooperation from at least the non-Russian Soviet populace. Hitler himself maintained that such an "elevation" of the lowly Slavs would undermine the morale of the German soldiers, whose great feats had been inspired by the awareness of their infinite superiority. Only after the first defeats did he reluctantly permit a limited propaganda effort directed at the Red Army, suggesting that the New Order was bringing the peoples of Russia liberation from Communist rule.

Propaganda apart, there was no mechanism in the administration of the occupied regions for protection of the population against German abuses and atrocities. No German was

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†Alexander Dallin, ***German Rule in Russia, 1941-1945: A Study in Occupation Politics***, 2d edition (Boulder, Colorado: Westview Press, 1981, $35.00), 707 pages.

ever found in the wrong and punished, no matter what he did to a Russian. Out of more than five million prisoners of war (POWs) captured by the spring of 1944, two million died of starvation in the camps and a million-and-a-half were exterminated by one means or another—and that in the face of severe labor shortages in the Reich necessitating the deportation to Germany of over three million people from occupied territories. Hitler's well-known idea of having Moscow and Leningrad erased from the face of the earth made it easy for the Nazis in the field to carry out destruction of whole villages under whatever pretext, and mass executions of hostages in punishment for assassinations of individual Germans by the partisans.

Hitler's specific orders were usually obeyed, but dissent from his views was not uncommon. The Wehrmacht, hard pressed for manpower, recruited hundreds of thousands of POWs into auxiliary units. In the war zone that was under exclusive Wehrmacht jurisdiction, the growth of the partisan movement also dictated a much more benign treatment of the population than was permitted in the Ukraine and Belorussia, which were administered by Nazi civilians. The *Abwehr* (central intelligence service of the German armed force) under General Gehlen and the Goebbels propaganda establishment came close to violating Hitler's explicit orders by attempting to enlist the cooperation of the Slav subhumans. Himmler undertook the formation of SS brigades and divisions out of Ukrainian, Georgian, Armenian, and other non-Russian volunteers from POW camps. The Cossacks, declared to be of obscure Aryan origin, were additionally given a degree of political recognition. The last to come into the picture in violation of Hitler's taboos were the Great Russians, the ultimate *Untermenschen* in Nazi ideology. The story of the Russian Liberation Movement headed by the captured Soviet general Andrei Vlasov forms the concluding chapters of Professor Dallin's study.

Hitler consistently turned down requests coming from the Wehrmacht, the *Abwehr*, and propaganda organizations to convert the Vlasov movement into a political force in order to facilitate demoralization of the Red Army and the inflow of volunteers into a Russian Liberation Army (ROA). In mid-1943, Hitler ordered suspension of all political activities of Great Russians centered on Vlasov. It took more than a year, during which time the Germans suffered a series of stunning defeats in Russia, before Himmler ventured to lend his support to legitimization of the Vlasov movement, recognizing that Vlasov was the only personality in the German-ruled domain who had retained a measure of loyalty of large numbers of Russians —precisely because he had been known to reject German supremacy and insist on independence for a future Russia. Finally, Vlasov's Committee for the Liberation of the Peoples of Russia was formally launched in Prague in November 1944.

It was too little, too late to make a difference. If the political action in Russia had ever had a chance—a big "if" indeed—it had to be undertaken early in the eastern campaign, certainly before the Battle of Stalingrad. But then the Germans were confident of victory and did not need collaborators of the despised Slavic race, which they had doomed for destruction. Vlasov's appointment in January 1945 as "commander-in-chief" of the ROA, consisting of one division and affiliated units and totaling perhaps 25,000 men, had a distinct air of unreality about it, as indeed did Vlasov's headquarters in Karlsbad, Germany, when I visited it in March of that year. Except for helping the Czechs to liberate Prague from the Germans, Vlasov's troops never saw action. His attempt to surrender to the advancing U.S. Third Army failed, and together with thousands of his followers he was delivered into Soviet hands, to be hanged in a Moscow prison a year later. This last episode and the subsequent roundups of the Vlasovites in refugee camps in the western zones of Germany and Austria and in Italy are not part of Dallin's story. Unknown thousands survived in the West, and those who did were

soon enabled to continue their struggle under American auspices, as the Cold War created a demand for anti-Communists from Russia and Eastern Europe. As Dallin says, by then "the past was prologue, and a new cycle could begin."

A LUCID and instructive book, *German Rule in Russia* is concerned almost exclusively with the German politics of occupation. It does not deal with the life of the people lorded over by the Germans or with the politics of the multitude of anti-Soviet organizations of all nationalities willing to cooperate with the Germans for the sake of liberating their peoples from the Stalinist yoke. Had those who took part in this unusual movement known what went on in the Nazi establishment, they would have been much less eager to collaborate with the occupiers. But then it also has to be recognized that these people had little choice, that collaborating with the abhorrent Stalin regime offended their patriotism even more than collaborating with Russia's enemy.

Military occupation is still very much in vogue. It is clearly evident in the West Bank and Gaza, in Kampuchea, and especially in Afghanistan where the Communist government, unable to garner popular support, depends on a Soviet occupation force to keep it in power. Wherever we see occupation troops prosecuting a vicious war against guerrillas and populations suppressed by alien forces, it is not the time to be deaf to the voice of history.

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# 1985 REVISITED

MAJOR STEVEN E. CADY

THE YEAR 1978 witnessed publication of *The Third World War: August 1985*, a thought-provoking work by retired British General Sir John Hackett and an advisory team of experts. Hackett's purpose was to present his thesis that the only alternative to a nuclear holocaust in World War III is for the West to be prepared adequately to wage the most advanced conventional war against the Soviet Union and its satellites. To dramatize his argument, Hackett constructed a detailed account of a hypothetical three-week war between West and East erupting and ending in August 1985. In that war, a West much more powerful in conventional weapons and armed forces than are the United States and Europe today just barely manages to bring the Soviet onslaught to a halt. The Soviet Union's failure to achieve victory swiftly triggers its disintegration.

WITH the world five years closer to 1985 but with the West not significantly closer to being fully prepared for a conventional world war, Hackett and an expanded team of advisers have brought forth a revised version of their World War III account.† The

†**General Sir John Hackett, *The Third World War: The Untold Story* (New York: Macmillan, 1982, $15.75), 400 pages.**

purpose of the new, equally challenging book is the same, as is the fundamental story line, but with 1985 only two years away, an increased sense of urgency envelops the reader.

A Soviet incursion into Yugoslavia in July 1985 is blunted by defeat at the hands of the U.S. Marine Corps, an incident publicized worldwide. This embarrassment accelerates the Soviet decision to invade and conquer West Germany, the Benelux nations, Scandinavia, and south-central Europe, and to gain control of the Dardanelles—in ten days, according to plan—and then call for negotiations with the United States from a position of strength. The Warsaw Pact forces advancing into West Germany meet with greater than expected resistance and are brought to a virtual standstill far short of their objective, the Rhine River. Mounting allied counterattacks, the defection of some satellite and even Russian military units, and anti-Soviet partisan operations behind the lines compel Soviet retreats in West Germany. In a last-ditch effort to frighten the West into negotiations, the Russians explode a nuclear missile over Birmingham, England, devastating that city. In retaliation, four American and British nuclear missiles destroy Minsk, the capital of Byelorussia. With disorganization and revolt in the Soviet sphere increasing rapidly, Ukrainian nationalists seize control of the Russian Politburo, and the Ukraine and other Soviet constituent republics declare their national independence. The threat to the West from the Soviet Union has ended.

Although Hackett's two books narrate the same fictional war, there is very little duplication between them, and the differences in the two accounts are striking. The first book presented the war almost entirely from the West's perspective; the second book devotes major sections to examining events from the Soviet view. As an apt illustration of this shift, Book 1 included a chapter dealing with the nuclear destruction of Birmingham; Book 2 has replaced it with a chapter describing the devastation of Minsk. The change in emphasis reflects the addition of two Russian expatriates to the author's team of advisers: Viktor Suvorov (an assumed name) and Vladimir Bukovsky.

The first book concentrates on the war in West Germany, with comparatively brief sections regarding air and sea operations in the North Atlantic and concurrent events in the Middle East and southern Africa. The second book expends much space on relevant political considerations and/or military events in Ireland, Scandinavia, the Caribbean and Central America, the Middle East, and the Far East. It also provides more detailed information about the Soviet war at sea throughout the world and about the conflict in space and includes extended analyses both of the underlying causes of the Soviet Union's collapse and of the resulting altered world situation.

In addition, Book 2 takes cognizance of major real-world events occurring after publication of Book 1. These include actual and planned new American and Soviet weapons and weapon systems; the regime change in Iran; the Iraq-Iran war; Israel's annexation of the Golan Heights and return of the Sinai to Egypt; Poland's Solidarity union; China's invasion of Vietnam in 1979; the influx of 125,000 Cubans into Florida in 1980; and many others.

NOT EVERYONE goes along with Hackett's perspective and ideas. Take John Skow, one of *Time* magazine's regular contributors, for instance. He denigrated the thrust of Hackett's first book as merely a request to support "our local military-industrial complex." He dismisses the theme of the new book in similar terms: it is "to trust the West's stalwart military men and give them whatever costly whizbangs they ask for." Skow accuses the author of *galling* "Blimpish prejudice," "a tone of righteous contempt," "lip-smacking language," and making the "military mind seem demented." Such outright calumny is totally unjustified. Where the future—the very survival—of the United States and of the entire

civilized world depends on pursuing the exactly right course of action, every basic option requires the most serious, intense, and prolonged consideration. Anything less could well be suicidal. Hackett, like many intelligent and knowledgeable individuals, supports one of the primary options available to Western society.

That much said, legitimate doubts about the value of Hackett's books, particularly as distinguished from his ideas, must nevertheless be raised. First is the phenomenally rapid obsolescence built into them. Depending on what happens in the next few years, the issue that concerns Hackett may have been resolved by 1985. It appears much more likely, however, still to be around, possibly in a somewhat modified or escalated form. What then? Reading about an imagined world war known not to have occurred will hardly be a popular exercise, so that the lifetime of Hackett's works is limited severely by the date he has assigned to World War III. Within just a few years, both of his World War III books will be gathering dust on library shelves, side by side with the predictive literature of H. G. Wells. Books setting the war farther into the future, or arguing the author's position directly, in more general terms, without dressing it up in a fictional war, while perhaps not selling as well, would have an indisputably longer lifetime.

Next, both works mention the author's fundamental premise a number of times. Yet, it seems virtually to disappear amid detailed descriptions of weapons and weapon systems; equally lengthy recitals of opposing tactics and strategies; vivid, absorbing portrayals of battlefield action; and chilling accounts of the nuclear devastation wrought in Birmingham and Minsk.

The many narrative distractions are reinforced by even more numerous ones of a technical nature. British spellings *(programme, gaol, manoeuvre)* and metric measurements are used throughout, as are the military's reversed dates and 24-hour clocks. The texts of both books are saturated with largely unfamiliar names—of persons, places, ships, missiles, satellites, tanks, and guns; the writing teems with strange acronyms and abbreviations—143 different ones used repeatedly in Book 1, 160 in Book 2; and the author displays a penchant for employing characteristically British and/or military words and expressions, and highly literary and foreign terms *(exiguous, conspectus, rapprochement, Dies Irae, roulement, Taoiseach):* terms so uncommon that the average reader needs several dictionaries at his side really to understand what Hackett is saying. To what does all this amount? To the fact that about the only audience capable of reading the author's works with ease is that one which does not need to be persuaded that he is right: military officers on both sides of the Atlantic. However many copies of the two books may be sold, their central argument is lost on most readers in the confusion.

More significantly, Hackett has selected a particular one of an infinity of possible futures, many of which include no kind of world war at all between now and, say, the year 2000. What real-world probability attaches to his choice? Some of the features of his world only a few years hence seem thoroughly implausible to common sense and to intuition: the acceptance of divorce, contraception, and abortion in currently Catholic Ireland; an Israel neutralized by both American and Soviet guarantees of its territorial integrity; a militarily powerful and politically resolute Egypt; the awakening of all NATO nations to the serious nature of the Soviet threat during the period 1979-85 (Book 1) or 1982-85 (Book 2); restoration of the draft in the United States; Sweden's willingness to go to war against the Soviet Union rather than permit Russian military planes to overfly its territory; the instant decision of the French to commit their forces to NATO, despite Russian assurances that France would not be attacked; NATO's surprisingly light naval losses in the North Atlantic; the refusal of NATO's commander to order the use of tactical nuclear weapons in spite of serious battlefield reverses;

NATO's ability nevertheless to bring the Soviet advance through central Europe to a halt; the strategically nonnuclear character of World War III; and a quick overthrow of the Soviet government by its own citizens.

If an average probability of 1 in 10 is arbitrarily assigned to each of the events just enumerated as materializing by 1985 (or even 1987) in the real world, the probability of all of them coming into being within the next three (or five) years is only *one in one trillion*. Conceding the fact that human history is dotted with events that seemed most unlikely shortly before they occurred—the recent Falkland Islands war and the sudden dispersal of the Palestine Liberation Organization around the Arab world are good examples—a scenario as wildly implausible as the one constructed by Hackett and his advisers detracts very sharply from the force of their argument. It becomes extremely difficult for the reader to perceive a moral in Hackett's patently unreal world, which is applicable to today's actual world.

Finally, there is nothing to suggest that the nations of western Europe are currently motivated to raise their levels of preparedness for conventional war to those of the Warsaw Pact nations; that the United States is willing to compensate for their unpreparedness by stationing several million heavily armed and equipped American troops on European soil; that the European nations would permit such a massive influx of American military power; or that the Soviet Union would watch this military buildup without launching an attack on western Europe, and perhaps on the United States as well, to abort it.

It also stands to reason that the West can match conventional Soviet military might in one of only two ways: either by lowering its standard of living almost to the Soviet level or by plunging recklessly toward national bankruptcy. No Western government is willing to adopt either course; any government that did would soon be toppled or voted out of office.

Hackett sidesteps the resulting critical dilemma for the West by maintaining that:

- Western superiority over the Communist bloc in electronic communications and weaponry is so extraordinary;
- The decision-making and initiative-taking ability of junior officers made imperative by the flexibility of today's conventional warfare is so much greater in the West than in the East; and
- The organization and cohesiveness of American and West European military units are so superior to those of Soviet and satellite units that properly equipped and supplied Western troops, planes, and ships can hold their own against Communist forces four or five times their number.

TO ME, such unbounded faith in Western qualitative superiority looks like wishful thinking of the most dangerous sort. A crash program educating the public both here and in western Europe to the stark realities of the world situation, teaching it to understand and accept a life of personal sacrifice for as long as it takes—for decades to come, if need be—seems like a much safer and more realistic solution to the dilemma. Let each reader decide for himself!

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# DIRECT SATELLITE BROADCASTING: YOU HAVEN'T SEEN ANYTHING YET!

LIEUTENANT COLONEL WILLIAM J. WALLISCH, JR.

TECHNOLOGICAL strides made over the past two decades in telecommunications have been astonishing. This revolution has given us communication satellites, lightning transmissions over hair-thin fiber optic systems, digital transmission, and large-scale integrated circuitry that produce literal miracles at both ends of the "message." The military implications of these many developments continue to be a topic of ongoing interest, not to mention in-place or projected hardware. Volumes and volumes of high-technology reporting and curricula race to keep up with the latest laboratory findings. Better and better command and control is the name of the game.

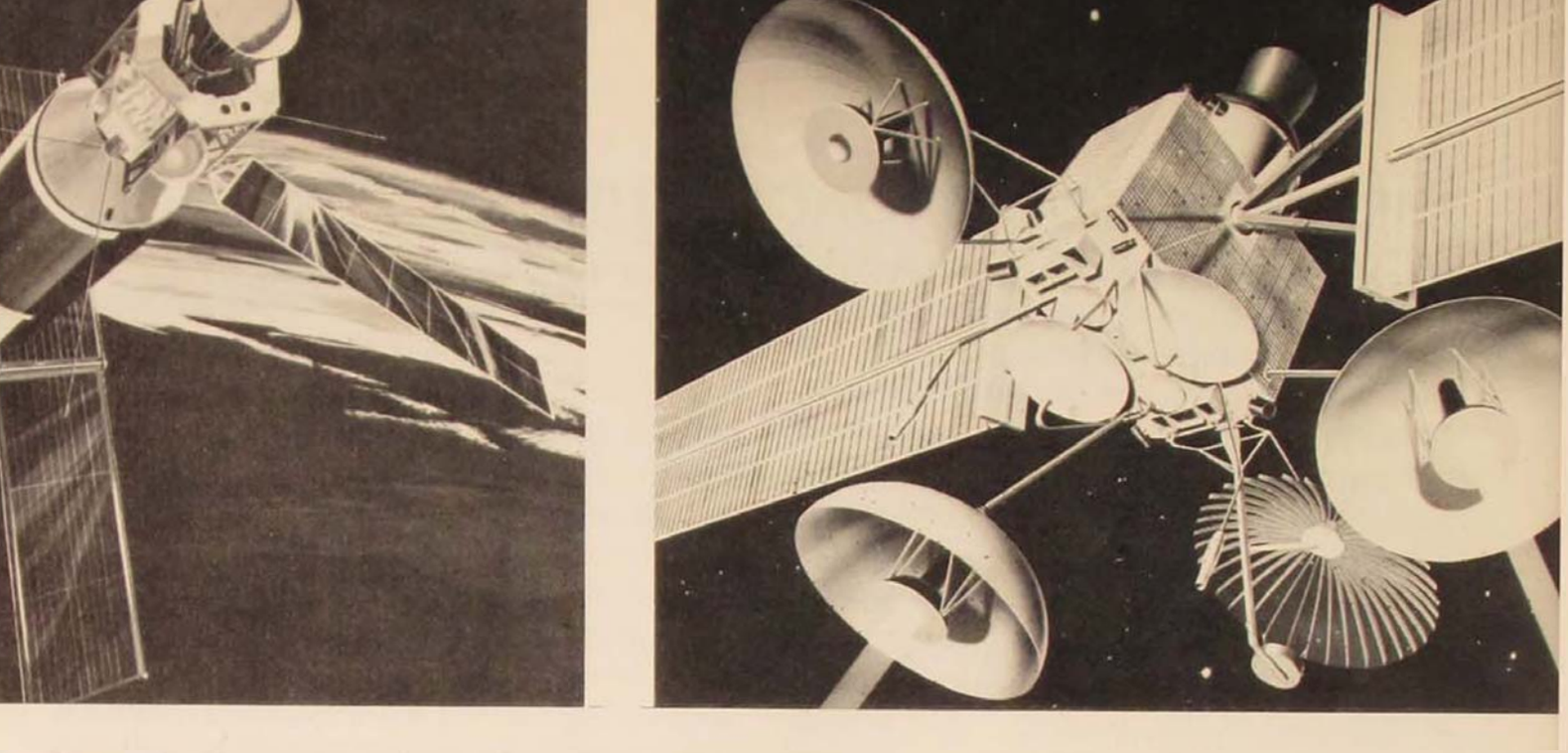
But as a human communications specialist—though, to be sure, one decked out in Air Force blue—I am concerned with the new technology in other than purely military terms. I am worried about propaganda implications. I am worried not about controlled missiles or killer beams from above but rather by messages aimed at friendly territory as carried by the new communications technology. And, in my opinion, direct satellite broadcasting (DBS) is just the weapon to deliver what might be the most potent barrage of "missiles" the free world has ever known.

DBS itself is a simple enough technique. The engineers tell me that because higher satellite power increases everyday, it is soon going to be very easy to broadcast television signals from anywhere on earth directly to home rooftop antennas. You do not need cables or traditional over-the-air transmission towers. Just pump it down from above, and, presto, it's "The Uncle Ivan Show," direct from downtown Moscow. The engineering is most feasible and discussed in such sources as a recent Rand report by Walter S. Baer.[1]

I will leave the discussion of gigahertz and antenna size and costs to the engineers because I want to devote my discussion to the content of the transmissions. However, those costs and sizes get smaller and smaller every year with Baer saying that "12 color television channels transmitted at 12 gigahertz could be installed for about $250 if mass produced in the millions."

The opportunity to receive worldwide TV transmission is probably something that would catch on like video games and CB radios. People in this country alone are especially hungry for entertainment. They cannot get enough HBO, cable, movies, and overall TV glitter. Just think what American audiences would do if they had the chance to tune in to uncensored TV fare from Italy, Spain, Brazil, Australia, or Russia. And in this society that guarantees freedom of information, who says it is capable of being stopped? And if you did legislate against it, ask the networks how they are coming with the job of shutting down all of those "illegal" home tape units these days that are snatching up their copyright-protected content. The audience potential is there, just waiting for DBS.

That being the case, I do not think it will be long before we see the Soviets make their debut over the international airwaves via high-power satellite systems. They have long recognized the effectiveness of propaganda, and this opportunity is just too good to pass up. Just think back at how many of us sat listening to the clear, loud voice of Radio Moscow telling of America's sins back in the fifties. For that matter, it is still going strong, even though many of us old shortwave listeners grew out of that old *Boy's Life* shortwave contest and went on to



*Communication experiments in space in the 1960s and '70s are yielding results such as direct satellite broadcasting (DBS), which will bring the world closer together in the 1980s and beyond. The Air Force Lockheed Agena satellite (left) bounced high-frequency signals off the polar surface back to the satellite and performed other early space communication experiments. . . . A laser system developed by Lockheed more than a decade ago (right) could transmit as many as 70 television channels at once.*

other hobbies. The audience is still there, and the funny thing is that we will probably be among the first to put up an antenna.

The Soviets continue to spew out propaganda. A DBS system wouldn't really be a new venture for them but rather an improvement on the existing one. Recently a story appeared in the *Washington Post* that cited a Heritage Foundation study on Soviet international broadcasting operations.[2] That report estimates that the U.S.S.R. spends $700 million a year on Radio Moscow alone, an operation, incidentally, that puts out some 2000 hours a week, in 82 languages, over 285 high-powered transmitters. And that is just the official broadcasts they claim as their own. With a track record like that, how can they pass up the potential of DBS?

At the Air Force Academy, we teach a course officially known as English 330 Honors, but everyone there knows it as the "Blue Tube," our twice-weekly colorcast over the Academy's closed-circuit system. Besides making the seven-minute news and features program everyone sees, the cadets who take the course learn a great deal about the persuasive power the medium of television has. When they have the course, they have a new respect for TV. As future Air Force leaders they will need that kind of an understanding of TV in order to deal with it fairly but also in terms of what something like DBS promises.

WE SHOULD be suspicious of a medium that has so captured the attention of world audiences. Americans have become so addicted to television that a new term, "vidiots," has been coined for the mass U.S. audience that will sit in front of 146 million television sets and watch those screens on an average of 45 hours a week. That is a lot of sets and a lot of time devoted to watching them.

I realize full well that color programming from Moscow is not an Air Force problem. But, nonetheless, it will be a national problem that may have serious implications for the Air Force in terms of the beliefs and attitudes of the citizenry it is pledged to defend. The television audience has been subjected to shattering visual stimuli. Wars, assassinations, and a host of

terrible images—both real and make believe—have shocked and numbed the American psyche. I cannot help thinking that a lot of this content has had a less than healthy effect. TV eats at us. It almost demands human sacrifice, even including the fall of presidents. I do not think any other media have been quite this ravenous.

The printed word has caused kings and popes alike to react with outrage; heads have rolled because the printed medium dared make its point. That print has had a dramatic impact on humankind is an understatement. Movies, too, have changed opinions and created perceptions about our very way of life. Radio has had considerable influence. Each medium has made its mark and taken its toll in terms of influence and perception. Now we face propaganda beamed at an audience that cannot always tell the good guys from the bad.

The problem with advanced communications technology is that too often the hardware has gotten the lion's share of the attention, with too little thought given to what message will be transmitted over it. In this case, our national psyche stands a good chance of falling prey to what I predict to be some pretty slick Soviet TV fare over a very accessible DBS system. While we work at the job of building a stronger defensive arm, our population and that of our allies could be bombarded with a barrage of confusing and confounding symbols from an enemy that has already demonstrated a willingness to use any means whatsoever to achieve its objectives.

For ages the poets have told us that the pen is mightier than the sword. It could well be that the new communications wonders will deliver a war of words, not of missiles or killer beams. And in the end, I think we have always recognized the fact that we are engaged in a true struggle for the minds of men, a struggle of ideologies. DBS in theory suggests a communication system that will tie the world together creating the "Global Village" Marshall McLuhan once talked about. But who can guarantee that the village will not be manipulated by the electronic wonders that have the potential to bring humankind closer together?

MY STUDENTS at the Air Force Academy have evidenced an increasing discomfort with TV lately. We are still reading the flowing editorials about media technology and the future. And we are just as excited as those authors are about the potential that fiber optic technology, satellites, cable TV, HBO, video discs, teletext, computers, teleconferences, and digital technology hold for civilization. But we are also becoming increasingly skeptical. We know that the new technology is going to arrive soon. We cannot wait until there is a QUBE-like system here in our town. But we are going to be watchful, especially when the DBS receiving antennas start going up on U.S. rooftops.

We better think about the possibility of strong propaganda coming our way via DBS and devise a counterstrategy nationally. And we had better think about what our own DBS image should be. Or we may find ourselves engaged in a ratings war where the low network loses more than sponsor time. DBS is coming. You haven't seen anything yet!

*USAF Academy, Colorado*

**Notes**

1. Walter S. Baer, *Telecommunications Technology in the 1980s* (Santa Monica, California: Rand Report, P-6275, December 1978).
2. *Washington Post*, November 22, 1981.

# POTPOURRI

**Mussolini Unleashed, 1939-1941: Politics and Strategy in Fascist Italy's Last War** by MacGregor Knox. Cambridge, London: Cambridge University Press, 1982, 385 pages, $29.50.

Achieving hegemony over the Mediterranean in 1939 necessitated a solid military organization. MacGregor Knox analyzes the attempt of Mussolini to attain an Italian empire and build a powerful military base in *Mussolini Unleashed*. It appears that no matter where or when Mussolini wanted to move, the consistent Italian high command response was that they were only two to four months away from being capable of full mobilization. Knox concurs with historian Emilio Faldella that the Italian promotion system was archaic and encouraged mediocrity while discouraging "initiative and innovative fervor." (p. 29) Thus, a powerful military machine as well as Mussolini's hope of achieving autarky were never realized but remained distant goals, part and parcel of the "bluff" of great nationhood.

Additional factors for poor Italian military performance included Il Duce's own decision not to build aircraft carriers, arguing that Italy itself was an aircraft carrier. This decision contributed to the Italian naval disaster at Taranto in November 1940, where there was little or no air coverage for the navy. Mussolini planned to rule the Mediterranean with submarines, mines, light torpedo craft, and aircraft, but he gave very little thought to their coordinated use. (p. 21) Even the land army was not trained in modern tactics. Moreover, at Bardia in North Africa (4 January 1941), the Italians could not stop a simple infantry assault that breached their minefields. At Tobruk, the Italian defenses were utterly uncoordinated. What the Italian armed forces proved during 1939-41 was that it is difficult to build an empire with an archaic and uncoordinated command structure.

Knox states that the main theme of Italian policy between early 1939 and March 1940 was the attempt of Count Galeazzo Ciano, the foreign minister, to restrain Mussolini from participating in the war as Hitler's ally and Il Duce's own reluctance to be held back. This struggle of whether to remain neutral was finally won by the temptation of spoils and the driving force of supremacy over the Mediterranean.

The British represented the most serious challenge to Mussolini's international schemes. Mussolini refused offers of a British rapprochement even when sweetened by a promise of continued coal supply in exchange for Italian exports. Fearing that the British would attain control over the Italian economy, Mussolini declined, thus forcing a British embargo which then predictably drove Italy into the German camp.

However, in 1940 Italy was not ready to join Germany in its war against France. The country lacked hard currency, strategic raw materials, and key military essentials such as fuel and ammunition. But Il Duce had done so much to convince the Italian people of Italy's nonneutrality and the eventual necessity of intervention in a conflict as Germany's ally that he could not back down on his word and dream of a Mediterranean empire. Victory promised the embodiment of a Fascist state in Italy and afforded that regime the opportunity to rid istelf of the influence of the monarchy, church, and the bourgeois. He was able to entice the Italian people with the vision of a Mediterranean victory cheaply bought.

Knox points out that in June 1940 Il Duce did not bluff the West or the Germans, or even Italian opinion but rather bluffed his military who discovered too late, "that Mussolini, and the situation into which he had flung them, demanded far more than a stroll in the *passo romano*." (p. 122) Taking this theory a step further, one might perceive Mussolini's visions of empire so cheaply gotten as having obscured reality so much that he convinced or bluffed himself into believing in an easy triumph.

So, after faring poorly in the French campaign, Il Duce looked to Egypt and Greece in the fall of 1940. He had an added inducement to fight and win there, the need to gain or maintain some degree of prestige for the Fascist elite. So maddened by Hitler's fait accompli in Rumania, he gave the order to attack Greece in October 1940 to gain back some degree of equilibrium lost in the French campaign and present the Führer with an Italian fait accompli. Mussolini was still hopeful for a triumphal entry into Alexandria or Athens.

However, Mussolini had overreached himself. His attempt to add Greece to his booty, to strike at the Suez from the north and the western desert, and establish independence from Hitler floundered miserably in the ensuing months. Worse still, he suffered the humiliation of being rescued by the Führer, further obligating Italy's destiny to Germany. Beset by these setbacks, Mussolini denounced his countrymen.

Knox refutes the belief that Mussolini sought preservation of the Italian social order through external conquest as a means of distracting the lower orders from demanding "a larger share of the National wealth." Instead, Knox argues that Il Duce consciously "risked and generated internal disaffection by the pursuit of conquests that demanded sacrifice, but would ultimately confer on him the power and prestige to remake society at home." (p. 290)

Knox complains that the brutality of this Fascist regime has been underestimated, yet he presents a rather positive impression of its leader. Unlike Hitler, Mussolini was not an absolute dictator, he listened to others, such as Ciano, the military, the king, and key party officials, because he had to. He is depicted as less ruthless than his Nazi counterpart. What drove Il Duce during those two years was lust for Italian glory and his own. This goal obscured his vision, and its pursuit led to his demise.

Knox tends to make too humble an assessment of his own effort. *Mussolini Unleashed* is an exhaustive study of the

diplomatic and military decision-making process of the Italian Fascist regime during two pivotal years. Mussolini, of course, is the focus, and his agonizing over decisions, his hopes, fears, and rages in an effort to win world respect for himself, the Fascist regime, and Italy by achieving hegemony over the Mediterranean are effectively examined.

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**How to Make War** by James F. Dunnigan. New York: William Morrow & Co., 1982, 442 pages, $14.50.

Reading *How to Make War* is rather like reading the Bible—you better have a great deal of faith in the authors because they do not cite their sources. James F. Dunnigan set a formidable task for himself—the presentation of an accurate picture of modern warfare. He attempts to construct this picture by detailing the principal weapons in use by all branches of the world's major armed forces as well as the tactics, logistics, and human factors involved in making war. The book has no central thesis other than the presentation of sufficient data on warfare to allow the reader to reach his own conclusions of the character, cost, and outcome of a future war.

*How to Make War* includes, among other things, chapters on land warfare, naval warfare, air operations, human factors, and logistical considerations, detailing much basic information. For example, in the ground-warfare section, typical Russian and American divisions are described as well as the capabilities and characteristics of various common ground weapons. These accurate data are tabulated for easy reference, so the reader can readily compare units or weapon systems.

The book also contains information about tactics and leadership that I found to be sketchy and at times somewhat misleading. For example, in the air operations section, Dunnigan asserts that "air operations revolve around the gathering of information. They always have; they still do, "but he fails to support this assertion. Then, he apparently contradicts himself in the logistics section, where he states (all assertions are without source, of course) that "most combat sorties are flown against enemy supply lines and dumps." A good example of misleading information on weaponry concerned air-to-air missiles and guns. In bold face print on the air weapons table is the statement: "The simpler weapons, like cannon, survive because of their greater reliability." Later, in "Warfare by the Numbers," the author asserts that most post-World War II air combat has been visual contact and engage, and for this reason the "cannon is still a preferred weapon for shooting down aircraft." These statements could lead one to conclude that there must be quite a few aircraft shot down by cannons. Of course, anyone with even a casual acquaintance with air operations knows that the overwhelming majority of air-to-air kills in Vietnam and the Arab-Israel conflicts have been by missiles. Recent Israeli experience with Syria and the British record in the Falklands indicate this trend will continue. The entire chapter on the human factors makes some interesting points concerning motivation, leadership, and perceptions, but there are, unfortunately, few original or new insights into our profession. The chapter concerning logistics, attrition, and costs does not break any new ground either. The final chapter makes an unbalanced presentation of high technology weaponry, emphasizing the high cost and some notable failures but with little mention of some of the excellent capabilities of high technology modern weaponry: capabilities which the Israelis, British, and Argentines have recently demonstrated.

Although the book contains much force and weapon character information, much of it is readily available from other sources. The book lacks substance on some crucial aspects of warfare, such as leadership, and often fails to present a balanced case about others, such as weapons and tactics. It is difficult to accept many of the author's assertions, and because no sources are given, determining validity is left entirely to the reader.

As stated earlier, it takes a great deal of faith when one reads this book. In terms of new insight into the nature of warfare, the professional officer would probably be better rewarded by sticking with the Bible.

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**The Armed Forces of the United Kingdom** edited by Chris Chant. North Pomfret, Vermont: David and Charles, 1980, 80 pages, $14.95.

In the excellent introduction, Chris Chant discusses British defense policy, the Ministry of Defense structure, and the strengths and weaknesses of the British Army, the Royal Navy, and the Royal Air Force. Chant maintains that Britain's defense forces must be viewed from the perspective of her commitment to NATO and not as a global defense force. In assessing Britain's defense posture, the editor notes the following weaknesses: (1) Her conventional forces are too small to accomplish their assigned missions, they lack sufficient training, and they do not have the backing of an adequate reserve of manpower and materiel; (2) integration of British weapons and manpower into the NATO structure is sadly lacking; and (3) British defense spending is inadequate. Chant is quick to point out that "the armed forces are fully aware of the above problems, but they have been stymied by a succession of governments bent more on short-term political and economic expediency than on long-term realism in both political and military spheres." (p. 13) All three services suffer from low pay, a shortage of high-caliber manpower, and insufficient numbers of aging weapon systems. Chant concludes that of the three services, the Royal Air Force is the most effective fighting force.

*The Armed Forces of the United Kingdom* is divided into three sections that cover the British Army, Royal Navy, and Royal Air Force. Each section contains the numbers, types, photos or drawings, and technical specifications of the weapon systems operated by the respective branch of service. Also included are the numbers and types of units in each service. The only exception to the organization is that the aircraft of the British Army and Royal Navy are in-

cluded in the section on the Royal Air Force. The index and list of abbreviations are useful. This work is highly recommended for anyone interested in the armed forces of the United Kingdom.

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**How Taxes Affect Economic Behavior** edited by Henry J. Aaron and Joseph A. Pechman. Washington, D.C.: Brookings Institution, 1981, 446 pages, $28.95 cloth, $11.95 paper.

*How Taxes Affect Economic Behavior* is a collection of eight papers by public finance economists, and it assesses the performance and effectiveness of the American political economy. Originally presented at a conference of experts at the Brookings Institution on 18-19 October 1979, the papers evaluate competing claims to arrive at the best quantitative estimates of alternative tax policies. The authors are all scholars trained in modern econometric techniques. Editors Henry J. Aaron and Joseph Pechman are members of the Brookings Economics Studies program. The areas covered include labor supply, business investment, corporate financial policy, the stock market, capital gains, residential construction, saving, and charitable deductions.

*How Taxes Affect Economic Behavior* is the fourteenth volume in the second series of Brookings Studies of Government Finance. The project was supported by the Ford Foundation and the National Science Foundation and is devoted to examining the issues of taxation and public policy. The book and its issues are important. Taxes divert resources from private to public use. Taxes also influence how private agents use resources, and Congress has used the tax laws to aggressively influence private behavior. The papers report important areas of progress in identifying the economic effects of taxes. While the book is of general interest, it should be particularly remembered that the taxes thus raised are used in large measure to maintain our armed forces and military capabilities and preparedness. By the application of some judicious deductive reasoning, the reader may gain significant insight into the impact of these economic behaviors on the availability of financial resources and capital for the U.S. Armed Forces.

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**Gunships: A Pictorial History of Spooky** by Larry Davis. Illustrated by Don Greer. Carrollton, Texas: Squadron Signal Publications, 1982, 64 pages, $8.95.

Larry Davis spins a lively tale of aviation lore with universal appeal in a light and readable style. He obviously devoted significant time and effort in his portrayal of an unusual and exciting facet of the air war in Vietnam. A leadoff chapter entitled "Spooks, Spectres, and Shadows" traces the historical origins of gunship operations back to World War II. Then B-26 hunter-killer anecdotes from the Korean War set the stage for the advent of "Puff the Magic Dragon," the AC-47 gunship of Vietnam fame. The author's narrative of AC-47 development from questionable concept to capable combat aircraft is as entertaining as it is enlightening.

Obviously the result of diligent research and extensive interviews, the story of the Gooney Bird with 7.62-mm miniguns is detailed and accurate. But equally important is the author's skillful use of the AC-47 employment to frame subsequent gunship developments. The AC-119G Shadow, AC-199K Stinger, and the AC-130 Hercules Spectre followed the AC-47 Spooky in quantum leaps of sophistication and effectiveness. Determined to tell the entire gunship story in a single volume, Davis concludes with a kaleidoscope treatment of gunship operational spinoffs to include the AN/NC-123K Black Spot and the AU-23A turbo Pilatus Porter.

The most impressive aspect of *Gunships* is the selection and arrangement of photographs and sketches that range from combat action to detailed camouflage prints. The visual panorama is nicely laced with well-written text and vividly portrays one of the most interesting and unusual chapters in aviation history. One might criticize the author for attempting too much in a mere 64 pages, but he tells an interesting story in a concise manner with surprising detail.

Larry Davis has presented an interesting and important contribution to aviation lore. This was a story waiting to be told, and the author provided it in a lively and entertaining style. *Gunships* stands as a valuable addition to aviation literature. The appeal is universal, and its utility ranges from warm nostalgia for gunship pilots to a ready reference for aviation scholars and buffs alike. This book rates kudos for the author and thanks from the readers.

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*Burke, Virginia*

**Unelected Representatives: A New Role for Congressional Staffs** by Michael J. Malbin. New York: Basic Books, 1980, 320 pages, $15.95.

Michael Malbin, research fellow at the American Enterprise Institute, offers a timely and balanced study of the explosive growth of congressional staffs over the last three decades and the questions raised by these unelected representatives. More than 20,000 people today are engaged in congressional staff work; they provide a vital specialization for congressmen, but do they also tend to insulate members, leaving them no better able to cope than when they all did the work themselves? Members, particularly newcomers, want aides to initiate new bills bearing their names rather than to help them understand bills already on the agenda. Staffers, however, are generally short-timers who seek to a large degree to build a reputation in important legislation that will be useful after leaving Capitol Hill. As a result, effective policymaking that should consider long-term consequences of legislation is often sacrificed to short-term interests of staffers. Malbin, therefore, presents a congressman who cannot control the workload that the staff generates nor represent his constituency properly without.

Over the past three decades, Congress spends more hours in session, holds more committee and subcommittee hearings, takes more recorded votes while passing fewer public bills of somewhat greater length. The work *product* of Congress is not going up, only the workload.

Dr. Paul R. Schratz
*Arnold, Maryland*

**Islam in the Modern World** by Elie Kedourie. New York: Holt, Rhinehart and Winston, 1980, 332 pages, $17.95.

Among scholars of the Middle East, Elie Kedourie is a singular phenomenon. He can write a cultivated style in a language which, like Conrad's, is not originally his own but which he has turned well to the purposes of his penetrating intellect. In an age of declining literacy that alone would mark him as a man to be reckoned with. Professor Kedourie is a man of acute sensitivities to and established authority in the problems of the contemporary Muslim world. None of his scholarly productions bears this out better than his most recent endeavor, *Islam in the Modern World*.

Kedourie brings together in one collection a number of his essays on Islam and Muslim society as well as others that only tangentially relate to the subject implied in the title. The reader would do well not to cavil about this; each essay is a judiciously considered argument and is methodically researched, meticulously reasoned, explicit in its judgments, and quite able to stand alone on its individual merits. Two essays are exemplary of Kedourie's many talents.

The first essay, entitled "Rule and Religion in Iran," examines Islamic revolutionism in the light of the circumstances which, since the precipitous downfall of the late Shah, now exist in Persia. Professor Kedourie subjects Ayatollah Khomeini's political doctrine to thorough scrutiny and finds it wanting as both a consistent Shiite theory of the relations between church and state and as a bona fide revivalism. In a brief excursus into the philosophic roots of this minoritarian faith, the author concludes that, more eschatological and soteriological than political, the notion of a Shiite imamate has been incapable of producing the necessary legal rationale for the governance of a state. Consequently, what Ayatollah Khomeini has fashioned in his attempt to call Muslims back to the true faith is, in point of fact, a usurpation of Islam that substitutes for the hallowed precepts of Muslim justice and political probity, a stern and unrelenting religion of right belief. This, the author warns, bodes ill for the welfare of the Islamic community.

In the second essay, "Great Britain and Palestine: The Turning Point," Professor Kedourie turns his attention to an idea that will engage his mind again and again elsewhere in the book: that is, the decline of the West before the arrogance and self-importance of minor powers. The essay recounts the story of G. W. Rendel, the head of the Eastern Department of the British Foreign Office, who almost singlehandedly paved the way for a legitimization of Arab interests in British mandated Palestine, a problem which Kedourie contends ought to have concerned only the British imperium. Through the discerning eye of the author, the reader follows the events of Rendel's tenure in office and observes how he overestimated the power of the Saudi king to calm the inflamed Palestinian Arabs, and with what tenacity he pursues a justification of Saudi interference before his weak-willed colleagues and superiors. The essay is a marvelous tour de force of diplomatic history and reads almost like a thriller as it progresses ineluctably to its dénouement in the debacle of British Palestine policy. If there is any moral to this essay and to those in which this idea appears under other guises, it is that the West can ill-afford the luxury of appeasing nations with which the West has little communality of views.

There is much, much more to this excellent volume to which so short a review can do no justice. Suffice it to say that Kedourie's work is compelling from beginning to end and well worth a serious reading.

Dr. Lewis Ware
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**The Expanding Circle: Ethics and Sociobiology** by Peter Singer. New York: Farrar, Straus & Giroux, 1981, 190 pages, $10.95.

Are ethical standards based on emotion, reason, or some mysterious moral sense? This question is central to *The Expanding Circle*, and for author Peter Singer the answer is grounded in sociobiology. He starts with the evolution of the nervous and glandular systems, showing how, by natural selection, these systems control the emotions of love, hate, guilt, fear—establishing biological networks for the ways we behave toward each other. These networks are at work when we define our standards of good and evil.

Drawing on varied sources, Singer raises even more questions concerning such old givens as "heaven's laws" and "absolute truths." He argues that our social way of life combines with our reasoning ability to press us increasingly toward an objective view of ethical matters. Ethics, therefore, expands outward from its base of biology to combine science and sociology, nature and nurture, and physics with philosophy, shaping clearer insights and deeper understanding concerning what it means to be a human in relation.

Singer contends that religion no longer provides a satisfactory answer to the puzzle about morality and that religious belief itself is no longer as universally accepted as it once was. If religion cannot answer our worries about the nature of ethics, what's left? A great deal—in fact, more than before.

Ever since the experimental sciences began transforming what was once "natural philosophy" into what is now physics, there have been attempts to apply scientific methods to morality. In this text, Singer shows that the sociobiological approach does tell us something important about ethics—something we can use to gain a better grasp on who we are and what our moral standard means. Defining and describing this model and how it can be combined with what is sound in philosophical theories of ethics are the objects of his book.

For the reader, *The Expanding Circle* is a challenge. It is well built, tidily organized, moving along slowly but with logic and expert analysis. Singer is a good writer, and he lives up to his reputation as a philosopher and teacher through an exciting delivery and a crystal style. In this latest work he helps remove some of the confusion and solipsism surrounding belief and faith that camp on the turf of ethics.

In regard to the morality of patriotism, defense of the group, home, and country, students in the military will wish to add this small volume to a shelf holding such books as *Territorial Imperative* and *The Origin of Consciousness*. It speaks to these larger issues and speaks well.

Dr. Porter J. Crow
*Barry College*
*West Palm Beach, Florida*

**Practicing History** by Barbara W. Tuchman. New York: Alfred A. Knopf, 1981, 320 pages, $16.50.

*Practicing History* is an open invitation to a Barbara Tuchman banquet, where an enticing, intellectually appetizing array of literary hors d'oeuvres is laid out for the reader. A delightful sampling, indeed, but the main course never arrives.

Ms. Tuchman's claim to the professional designation of historian is weak and causes one to look at the title of this volume with jaundiced eye. Nevertheless, she is an extraordinary journalist, a talented commentator, and a perceptive intellectual giant. Her volume on Stilwell was outstanding, her work on the fourteenth century, *A Distant Mirror*, will be a classic, and the *Guns of August* is already one.

This book is a potpourri of essays, speeches, and articles written over a 30-year period. Each shows further development of Tuchman as a writer but projects no strong theme. She dabbles when she should dig. For example, she offers this profound tidbit: "The influence of air power on foreign policy is very great"; she surmises, because it is a quick, clean, and surgical way to exert force in support of policy. She neglects any further thought that the idea demands; we cannot forgive her for that. Later on, she opines about political unity: "No people worth its salt is politically united. A nation in consensus is a nation ready for the grave." Such a delightful ambience, outside of Socratic Greece, I cannot imagine. Would not a consensus on productivity, arms control, or energy recovery be a welcome circumstance? Barbara Tuchman has missed the mark this time.

Major Theodore M. Kluz, USAF
*Air Force Journal of Logistics*
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**World in the Balance: Behind the Scenes of World War II** by Gerhard L. Weinberg. Hanover, New Hampshire and London: Brandeis University Press, 1981, 165 pages, $12.50 cloth, $5.95 paper.

Professor Gerhard Weinberg evokes some fresh images of the heavily studied World War II in *World in the Balance*. In the first two chapters, he offers a brief analysis of political, military, and diplomatic factors underpinning the direction and tone of the war. In an attempt to present a holistic or multinational picture of the interrelated motivations to go to war, the author focuses on both Axis and Allied decision-making processes, but concentrating heavily on the German actions. Airmen will find Weinberg's observations on air power interesting: "The Allied stress on air warfare efforts was necessary in 1940 because that was the only way to equalize the powerful German army." (p. 11) "While Britain and the United States were strong in naval and air power, as fit their relative geographic isolation, Germany, France, and Russia stressed ground forces as a natural corollary to their landed position." (p. 29)

The remaining four chapters, focusing on German leadership, are recycled from previously published articles. The first discusses Hitler's views on the United States. Carefully constructed from the limited available historical resources, the essay suggests that Hitler had an irrational lack of concern about this nation's military ability and its industrial production potential. The second essay presents Hitler's changing attitudes toward the future promise and value of colonies—waxing and waning with military success and failure. The third essay gives an insightful analysis of Hitler's timing and reasons for declaring war on the United States. Finally, Weinberg discusses the problems and purposes involved in the "Plot to Kill Hitler."

The author has some difficulty identifying his intended audience. The study is not particularly good as a summary for the general college student because it presupposes a general background of knowledge. Nor would the study attract the specialized scholar who would have access to the essay articles in earlier published form. Perhaps a historically sensitive Air Force serviceman would be the best kind of audience, as he would be receptive to the broad perspective and analysis. One more point of criticism: The little volume does not fulfill the title promise, which is cryptic as well as pretentious. The *World in the Balance* fails to provide content guidance, and the *Behind the Scenes of World War II* subtitle suggests more than the few examples of behind-the-scenes narratives included in the text. The editors took liberal freedom in the descriptive back matter essay, summoning a wide spectrum readership, many who would be either uninterested or unable to follow the rather sophisticated—if readable—analysis. Even in the introduction, Weinberg promised more than he delivered. While he tantalizes the reader with thoughtful analysis, he also puts his name on a highly specialized package of essays that present only a few scenes of World War II.

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**Reinhard Heydrich: A Biography** by Guenther Deschner. New York: Stein and Day, 1981, 376 pages, $16.95.

In the spring of 1942, Reinhard Heydrich was at the height of his power when two Czech resistance fighters attacked him on the way to Hradčany castle in Prague. The model German and ideal Nazi died on 4 June 1942, and the

Nazi world was shaken to the core.

Guenther Deschner, recently political editor for *Die Welt*, Bonn, and author of several books on World War II, has demythicized the enigmatic figure of Reinhard Heydrich and written the definitive biography of the "Blond Beast." Heydrich, a talented musician and athlete, courageous fighter pilot, loving husband and father, at the age of 38 exercised power without restraints. He was, as Deschner says, a modern technocrat who personified the competitive spirit whether it be in the decathlon, with the violin, as a fighter pilot, or in the extermination of whole populations.

The author explores the early physical and emotional problems experienced by Heydrich: his awkward, introverted youth, the rumor of his Jewish blood, and the destruction of his secure world in 1918. To compensate, Heydrich strove for perfection. A friend recalled that "he was never content with what he had achieved. His impulse was always for more: to go one better; to go higher." As a naval recruit in 1922, he began to overcome his physical weakness and acquire self-confidence. Heydrich had obtained the rank of first lieutenant in the German Navy when his security, status, and self-image were shattered by a dishonorable discharge resulting from a trivial personal affair. Disgraced, defeated, depressed, Heydrich returned home in 1931 to a family stricken by the depression.

At this point the unemployed young man turned to the Nazi party. Heinrich Himmler appointed him to set up the SS Intelligence Service or SD. When the Nazis came to power in 1933, Himmler became chief of the Munich police and Heydrich head of the political department. They secured control of the political police of one state after another, and in 1934, Heydrich took over the direction of the Prussian Gestapo and continued to develop the SD. These two threads are difficult to follow, but the confusion was resolved with the creation of the Reich Central Security Department in 1939, which created a Reich police force controlled by the SS and gave Himmler and Heydrich their power and freedom of action.

Deschner details the close association of Heydrich with The Final Solution. The Jews had to be removed, but Heydrich opposed the violent anti-Semitism of Julius Streicher and the crude methods of the SA. He preferred an orderly and rationally based elimination and saw the solution in emigration. *Kristallnacht* was a setback for this concept; the war was its defeat. It closed the route to emigration, unleashed the latent tendencies in National Socialism feasible only in the abnormal conditions of the war, and enormously increased the scale of the Jewish problem.

The Russian campaign formed the framework for Jewish policy from 1941 on. When the defeat of the Soviet Union foundered, Hitler decided to purge Germany and the protectorate of the hated enemy, and the first deportations began in September 1941. Heydrich, as chairman of the Wannsee Conference of 20 January 1942, is inextricably linked to the extermination of the Jews. The conference was to involve other central authorities in policy decisions and to announce a new stage of the Jewish policy: able-bodied Jews would form a labor force, and others were to be exterminated. Thus, Adolf Eichmann began the systematic combing of Europe, delivering the victims to the extermination camps; Heydrich's death a few months after the Wannsee meeting removed him from the mass murder embarked upon.

In September 1941 Heydrich had become the Deputy Reich Protector for Bohemia and Moravia, one of the most important provinces of the entire Reich. Heydrich moved to the front rank of the hierarchy and became a policy-maker. He was so conspicuously successful that, independent of each other, the intelligence services in both London and Moscow concluded that Heydrich was their most dangerous German opponent and decided to eliminate him.

*Reinhard Heydrich* is a fascinating and, for the most part, well-written biography. Here is the biography of a man who had a passion for doing everything thoroughly, a man with an insatiable ambition, a man willing to use intrigue, duplicity, cunning, and terror to achieve his objectives. Guenther Deschner in demythicizing Reinhard Heydrich has recreated the "Blond Beast."

Dr. David B. McElroy
*University of Alabama, Tuscaloosa*

**The Holocaust and the German Elite: Genocide and National Suicide in Germany, 1871 to 1945** by Rainer C. Baum. Totawa, New Jersey: Rowman and Littlefield, 1981. 374 pages, $25.00.

Murder on the scale of the Nazi-German Final Solution, which has recently become known through the media as the Holocaust, ceases to be just a crime; it becomes a social phenomenon and needs to be made comprehensible as such.

Professor Baum has undertaken to do that in terms of German elites: the military officers, politicians, industrialists, and university professors. He finds them all to have been "one-dimensional." That is, of the marks of superior status—power, wealth, and prestige—each possessed only one: the military, social prestige; the politicians, power; the industrialists, wealth; and the professoriat, cultural prestige. Feeling deprived and envious of each other, they promoted aggressive national policy and wars in the hope of somehow acquiring the dimensions they lacked. Consequently, the two world wars were for them, in Baum's words, "the big show." The Holocaust, on the other hand, was a "side show," an affair of no significance since it appeared neither to impair nor promote the big show. In brief, they were not disposed to let some millions of wanton murders divert them from their gamble with the life of the nation.

Professor Baum has assembled a good deal of persuasive evidence on the motivations and moral outlooks of the groups with which he deals, and he has devised an impressive methodological framework to support his hypothesis. However, I doubt whether he has proved, as he seems to think he has, that the Holocaust was in essence nothing more than "the institutionalization of meaningless action," a purposeless crime ignored (and thus abetted) by those who could have prevented it. Questions remain, for instance: How could a clutch of "one-dimensional" elites having little more than their frustrations in common have used the whole nation, presumably including Hitler, to promote their own corporate interests? What about other

elites, the civil service in particular, whose members wrote and administered the Nazi racial decrees and ran the trains that carried the Holocaust victims to the death camps? Finally, can the reader go along with the author so far as to accept as fact without further evidence that the four elites were the only ones who could have done anything about the Holocaust because they alone had knowledge of it? In view of these reservations, it is difficult to regard *The Holocaust and the German Elite* as more than a stimulating footnote in the literature of the Holocaust.

Dr. Earl F. Ziemke
*University of Georgia, Athens*

**Raid! The Untold Story of Patton's Secret Mission** by Richard Baron, Major Abe Baum, and Richard Goldhurst. New York: G. P. Putnam's Sons, 1981, 283 pages, $12.95.

*Raid!* is a light, breezy account of General George S. Patton's abortive attempt to liberate an Allied prisoner-of-war camp at Hammelburg, Germany, in late March 1945. Though Patton later claimed that this raid by approximately 300 troops of the U.S. 4th Armored Division was a diversion to distract the German High Command, it was also an attempt to free his son-in-law, Lieutenant Colonel John Waters. Though the American column reached Hammelburg, it was surrounded by German forces, and only a handful of troopers and POWs escaped to Allied lines.

*Raid!* has no notes or formal bibliography and appears to be based largely on oral interviews with participants and the recollections of Major Abe Baum, the task force commander, and Richard Baron, a POW at Hammelburg. It is written in the breathless style of "you are there" combat narrative, long on invented, colorful dialogue and action and short on historical documentation and analysis. *Raid!* is replete with such trenchant analyses of the military art as: "... aces were made to take kings and ... majors were made to command captains." (p. 23) In short, *Raid!* may be light reading to while away an idle hour, but it contributes little to the understanding of one of the more interesting events of World War II in Europe.

Captain George A. Reed, USAF
*Department of History*
*U.S. Air Force Academy, Colorado*

**Communist Armies in Politics** edited by Jonathan R. Adelman. Boulder, Colorado: Westview Press, 1982, 225 pages, $22.00.

*Communist Armies in Politics* is a very useful book. It supplies information on some of the lesser-known Communist militaries and focuses on aspects of civil-military relations which generally have been overlooked in the past. Like most edited works, however, the quality of the articles varies.

According to Jonathan R. Adelman his purpose is to supply needed data while at the same time testing what he calls a "historical developmental model" of civil-military relations. In essence, this model maintains that the role played by the armed forces in a Communist takeover "has significantly determined the nature of civil-military relations in the first two decades after the seizure of power." (p. 5) Adelman argues that there are three main patterns of Communist military politics: those in which the armed forces played a major role in the seizure of power and emerged as major political actors (e.g., China, Cuba, Vietnam), those in which the army exerted minimal influence in the seizure of power and played only a minimal role in the period immediately following the Communist takeover (Eastern Europe), and those in which the army's minimal postseizure role slowly gave way to a gradual enhancement of its political influence (U.S.S.R.).

The ten country studies vary considerably in value. Some, like Korbonski's on Poland, Dominquez's on Cuba, Turley's on Vietnam, Valenta and Rice's on Czechoslovakia, and Rupen's on Mongolia, are extremely informative and provide the reader with data not available elsewhere. This is particularly true of the Rupen piece, which is the first such article available in English on the development of Mongolian civil-military relations. Others, however, are of limited utility. Ting's article on the Chinese military offers little new, and the author appears unaware of some of the most important pioneering work done on the subject (e.g., by Paul Godwin). Likewise, Dean's chapter on the Yugoslav military does little more than repeat what the author has said elsewhere. One major weakness of all the articles, however, is their failure to relate adequately to Adelman's conceptual framework (Korbonski is an exception). Having gone through the exercise of editing two such efforts, I can sympathize with Adelman's problem, however. Nevertheless, the book's overall value is weakened by the seeming irrelevance of the historical developmental model to most of the contribution.

From a conceptual standpoint, Adelman's conclusion is particularly interesting. Based on the country studies, for example, he decides—wisely, in my opinion—that the model needs to be modified to account for the East European experience. He argues that when Soviet influence is minimal, the military may emerge as a dominant political force. While the book was completed prior to the military takeover in Poland, Adelman might also have noted that other factors, such as a collapse of political structures, could lead to an enhanced role for the armed forces.

Despite these criticisms, *Communist Armies in Politics* is a very useful book. The information it supplies on some of the lesser-known Communist militaries is invaluable. Furthermore, while Adelman has not come up with a theory of civil-military relations in Communist systems, he has certainly done us all a service by focusing attention on an area that many in the field—including this reviewer—have tended to overlook. The book should be carefully read by anyone seriously interested in understanding the dynamics of civil-military relations in Communist systems.

Dale R. Herspring
*Washington, D.C.*

**The Evolution of U.S. Army Nuclear Doctrine, 1945-1980** by John P. Rose. Boulder, Colorado: Westview Press, 1980, 252 pages, $23.50.

Nuclear weapons doctrine has again emerged as a vital and controversial topic. The pros and cons of such issues as the MX missile; sea-based (Polaris Poseidon Trident surface ship) missiles; cruise missiles, both air- and ground-launched (ALCMs, GLCMs); GLCM deployment in NATO countries; command and control of NATO nuclear-capable delivery systems; nuclear targeting strategy; warhead custody and security in forward areas; the use of nuclear weapons in Europe and other urban areas; blackout effects (electromagnetic pulse EMP) from nuclear explosions; development of follow-on manned bombers and or ALCM launch platforms; and CONUS defense against air-breathing and strategic-missile nuclear threats are all increasingly being debated. Factors such as worldwide nuclear proliferation, strong evidence of Soviet advances related to nuclear warfare, and the controversy as to how best to improve the U.S. national security posture have increased the intensity of the dialogue on these issues.

*Review* readers are generally familiar with the USAF's strategic and tactical nuclear capabilities and concepts and they will probably find it useful to read this book to trace the Army's organizational and conceptual developments. *The Evolution of U.S. Army Nuclear Doctrine, 1945-1980* depicts the various ways in which the U.S. Army has attempted to adapt to the realities of nuclear warfare in the 35 years since Hiroshima. The Army's need to be flexible is heightened by its broad spectrum of duties, many of which involve peacetime up-front deployments in close proximity to potentially hostile forces.

The author, Army Major John P. Rose, is concerned that the thrust of Army developments since 1945 may have overstressed the aspects of surviving and operating in a nuclear environment and underemphasized the offensive, war-winning (including possible use of nuclear weapons) aspects. He notes that although many Americans view nuclear war as "unthinkable" even in a general war context, the Soviets view it as both "thinkable" and "winnable." Soviet military doctrine, training, equipment, and exercises clearly reflect a thorough Soviet understanding of the nuclear, biological, and chemical battlefield environment.

Given the heavy weight of nuclear-capable Soviet forces and the growing sensitivity of some intra-NATO nuclear issues, Rose's book is very timely.

Lieutenant Colonel John A. Hurley, USAFR
*Alexandria, Virginia*

**Strategic Defense in Soviet Strategy** by Michael J. Deane. Coral Gables, Florida: Advanced International Studies Institute and the University of Miami, 1980, 119 pages, $6.95 paper.

As part of its program of examining and analyzing current and prospective Soviet military capabilities and their implications for the United States, the Advanced International Studies Institute (AISI) has published monographs on Soviet strategic offensive thinking, survival in Soviet strategy, and, now, strategic defense. Michael J. Deane, a research associate of AISI and assistant professor at the University of Miami, concludes in *Strategic Defense in Soviet Strategy* that the Soviets have consistently maintained a commitment to strategic defense since World War II. It is considered an integral component of both Soviet war-making and war-survival capabilities. From the Soviet perspective, mutual destruction is not an acceptable strategy or defense policy for rational leaders. Additionally, strategic defense lacks the concept of sufficiency, which was the norm from 1969 to 1981 in U.S. thinking. Instead, the only limitation is the temporary one of technical feasibility.

"Soviet military doctrine holds that in the event of a nuclear war, the Soviet objective must be 'victory' by eliminating the United States as an effective opponent, and at the same time preserving the USSR as a viable state and system, with resources and power adequate to effect restoration and to maintain dominance within the postwar environment." (p. 109)

Conversely, U.S. doctrine has changed repeatedly, with the practical result that "U.S. officials . . . have abandoned the concept of successfully surviving a nuclear war." (p. 111) The result is a Soviet view which believes that fighting and winning a nuclear war are like fighting and winning any war: keep damage to a minimum, accept the consequences of an enemy's attack, and do everything possible to ensure that the enemy is deprived of further war-making capability.

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*Brownwood, Texas*

**Mission to Iran** by William H. Sullivan. New York: W. W. Norton & Co., 1981, 296 pages, $14.95.

There can be little argument with the opening words of William H. Sullivan's preface to *Mission to Iran*. "The revolution that deposed the Shah of Iran in 1979 was one of the major political events of the second half of the twentieth century. Its full consequences for the world at large are not yet clear, but it has already altered the strategic balance between the Soviet Union and the United States."

Some argument could be made, and may well be made by those involved at the time, as to the accuracy and completeness of Ambassador Sullivan's sweeping assertion that "The weaknesses in the formulation and execution of United States foreign policy were exposed by Washington's ineptitude in the face of the revolution. . . ." Throughout the book, Ambassador Sullivan cites examples within the Executive Branch of division of opinion, vascillation, lack of clear policy, initiatives at cross purposes, and unwillingness to accept on the scene assessment of the situation. Some of these examples are matters of public record.

Although the lack of a consistent, informed U.S. policy contributed to the rapid success of the revolution in Iran, Ambassador Sullivan credits inherent weaknesses of the Pahlavi regime with major responsibility for its own

downfall. Graft, corruption, favoritism, lack of consideration for Islamic ideals and influence of the Shi'a clergy, inequitable distribution of wealth, and the lack of skilled personnel to utilize the massive economic and military buildups were shown to play important roles in the Shah's overthrow. Possibly the ultimate weakness was the Shah himself. Ambassador Sullivan recounts in detail the deterioration of the Shah's health and morale and the accompanying loss of resolve and vascillation of plans to handle the crisis.

When the fall of the Shah became probable, the lack of intelligence regarding the plans of the clergy and bazaar power centers was cited as a critical issue in development of a suitable U.S. policy toward the revolution. An equally damaging failure was the unwillingness of U.S. authorities to accept as valid the reported internal situation and state of the Shah's plans and resolve. In this regard, the cancellation of the Eliot mission to Khomeini in Paris needs clarification by those involved in that decision. This mission to urge all possible effort to retain Iranian military strength could well have favorably affected U.S. relations with the Khomeini regime.

As claimed, *Mission to Iran* is a subjective account of an important historical event and of many factors affecting that event. Based on all sources known to this reviewer and on personal knowledge and experience of many years in Iran (including the period of Ambassador Sullivan's tour through November 1978) this account is accurate and worthy of trust. The book is fascinating reading but not likely to bring much satisfaction to those who look for the United States to defend our interest in the Persian Gulf area.

Many of the details covered are matters of public record, and Ambassador Sullivan apparently has endeavored to omit any material that could be considered classified in nature. He brings personal insight and clarification that are welcome into controversial matters such as the purpose of the Huyser mission.

George C. Miller
*Montgomery, Alabama*

**Aces and Aircraft of World War I** by Christopher Campbell. Poole, England: Blandford Press Ltd., 1981. 144 pages. $24.95.

Lovers of wood, wire, and canvas aircraft, and white scarves snapping in the wind; pilots in general, fighter pilots in particular: clip this review and leave it where your spouse will find it! This is the book you want for Christmas or your birthday, but the $24.95 price will send you on a guilt trip if you buy it for yourself!

Based on well-illustrated biographical sketches of 29 World War I aces representing all the major combatants, *Aces and Aircraft of World War I* is far above the run-of-the-mill coffee-table book. The "aces" are well chosen; all were significant, interesting, or both, though some of the names will come as a surprise. The colored illustrations of the aces and their aircraft are well done and the selection and presentation of contemporary photographs is excellent. The stories of the aces in rough chronological order, interspersed with competent summaries of each year's war in the air, are among the book's strongest features.

This is not a major work for the serious student of air power; it presents no new data or conclusions, and the format has inherent limitations. Even conceding the validity of the multiple biography approach, the built-in implication that war in the air revolved around the activities of a handful of great aces is questionable at best. It would be refreshing to see something in print about exceptionally successful reconnaissance or ground attack crews, for instance. But "good book, wrong subject" criticism is unfair and irrelevant. This is a straightforward, accurate, and entertaining book with wide appeal. For what it is, you will have to look far to find better.

Dr. John F. Guilmartin
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**Spaceliner: The New York Times Report on the Columbia's Voyage into Tomorrow** by William Stockton and John Noble Wilford. New York: Times Books, 1981. 183 pages. $12.50.

It had been nearly six years since the last American had flown into space from Kennedy Space Center near Cape Canaveral, Florida. But when the Space Shuttle *Columbia* rose majestically into the Florida sky in April 1981, she carried not only the dreams of the thousands of technicians who had contributed to her development but also the hopes and dreams of millions of Americans that in reasserting a presence in space the United States could retrieve a status surrendered or lost in the 1970s.

Against the flight plan of the first of *Columbia's* excursions into space, William Stockton and John Wilford have cast the whole history of rocketry, the American space program, Space Shuttle development, and military applications of the Space Shuttle among other subjects. Biographical sketches of John Young and Robert Crippen (new members on the first Shuttle flight) trigger a broader discussion of earlier astronaut groups and that elusive quality Tom Wolfe termed "the right stuff." The discovery of tiles missing from the *Columbia's* OMS (Orbital Maneuvering System) pods leads to a discussion of the troubles that plagued the Shuttle's development. Under the heading of "High Secrets," Stockton and Wilford survey the potential military roles for the Shuttle; here interested readers will find a shotgun approach to the U.S. military space program covering such diverse topics as the planned Consolidated Space Operations Center, shuttle launch facilities at Vandenberg AFB, California, and the USAF's antisatellite program.

The Times Company has gained some fame for its "instant books" produced after such significant events as the Entebbe Raid and the hostage return from Iran. While this book is not "instant," it shows many of the weaknesses while sporting strengths the reader might associate with a Times product. On the minus side, *Spaceliner* is a superficial summary, virtually "everything you wanted to know about space now that you've seen the shuttle." An informed reader will probably come away dissatisfied with the scho-

larship, despite the fact that the authors have managed to find room for everything from the Montgolfier brothers to the U.S.S.R. space program in this small book.

On the plus side, *Spaceliner* is fairly well researched, written, and indexed. It could serve as a useful starting point for anyone interested in knowing more about "where we are and how we got there" with the U.S. space program. The book benefits from an apparent bias on the part of the authors. They are pro-space. Their enthusiasm spills onto every page, catching the reader up in *Columbia's* voyage as part of an American dream of "a future in space."

Lieutenant Colonel James P. Moore, USAF
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**Stages to Saturn: A Technological History of the Apollo/Saturn Launch Vehicles** (NASA SP-4206, NASA History Series) by Roger E. Bilstein. Washington: National Aeronautics and Space Administration, 1980, 511 pages, $9.50.

In his foreword to this monumental study of rocketry hardware, William R. Lucas, Director of NASA's Marshall Space Flight Center, states that the development of the Saturn booster "was as if the Wright Brothers had gone from building their original Wright Flyer in 1903 to developing a supersonic Concorde in 1913." (p. xi) Indeed, after reading *Stages to Saturn*, one is convinced of the truth—perhaps even the understatement—in that claim. Development of the Saturn launch vehicle required blending experimental technologies in a variety of fields, achieving unprecedented systems reliability, and then "man-rating" the system so that it could carry the Apollo spacecraft to the moon. Accomplishing this required smoothly functioning teamwork among a NASA-industry-military partnership with strong and creative management. The result was a 7.5 million-pounds-thrust liquid-fuel booster that never failed once, not even during its first test launches.

There were, in fact, two families of Saturn boosters, the IB and the V. The Saturn V was responsible for the lunar launches and such later ventures as Skylab. The smaller and less powerful IB was utilized for earth-orbit operations, including the joint U.S.-U.S.S.R. Apollo-Soyuz Test Project (ASTP). The story of this development effort makes for fascinating reading to anyone interested in the history of rocketry and the managment of advanced technology. Many were the choices faced by Saturn's developers, and the peril of technological failure lurked at every turn of the development road. Author Roger Bilstein, professor of history at the University of Houston, gracefully wends his way through a maze of technical documentation to reveal the important themes of his story; rarely has such a nuts-and-bolts tale been so gracefully told.

This volume is just one of many excellent histories produced by government and contract historians for the NASA History Office, and it complements the other Apollo-related volumes that NASA has produced in the series. The book is enhanced by many excellent appendixes and charts, and it has a thorough essay on sources and documentation, including exhaustive references and notes. Unfortunately, the many fine photographs are reproduced so small as to reduce the Saturn to the size of a sounding rocket; for future volumes of this sort, a larger, crisper photo layout would be beneficial.

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**Beyond Camp David: Emerging Alignments and Leaders in the Middle East** by Paul A. Jureidini and R. D. McLaurin. Syracuse, New York: Syracuse University Press, 1981, 197 pages, $18.00 cloth, $8.95 paper.

This book is a disappointment, even more so for having been written by two men who have an otherwise finely honed sense of what is happening in the Middle East.

*Beyond Camp David* has the air and format of a college textbook. The force of its subject matter—Actors and Forces; Bilateral, Multilateral, and Regional Pressures; Emerging Alliances; Regional Leadership Changes; U.S. Policy in the Emerging Middle East—is attenuated by arrangement according to country, and thus, what is said in one chapter often reappears, with only the slightest change in wording, in another. The introduction boasts two of those neat circle-and-line schemata of systemic change whereby political scientists attempt to explain the obvious to the verbally handicapped. Five years is a magical but arbitrary number introduced to mark the limit of the authors' predictions, the predictions themselves being supported by bald assertions without the benefit of theoretical substantiation.

This is perhaps too hard an indictment. The book makes no pretentions, after all, to be more than a primer for crystal-gazers, and as far as the crystal gazing goes, some of the authors' prognostications are really quite tantalizing. Instability in the wake of the Iran-Iraq War, we are told, may occasion a coup in the Gulf, and, in fact, Bahrain did recently survive a minor revolutionary disturbance. The annexation of the Golan Heights, foretold by Jureidini and McLaurin, does indeed make moribund the Camp David accords and may hasten the disintegration of Syria. Furthermore, it is quite possible that Syria may also splinter into a handful of ethnic states and join the de facto Christian enclave in Lebanon to form a string of littoral satellites under the thumb of Israel. This, in turn, may add some luster to the contention that, according to Jureidini and McLaurin, optimism in respect to Egypt's future rapprochement with Saudi Arabia is not unfounded.

These views are, of course, hypothetical. The danger of expressing them in this format lies not with their truth or lack of it but in the fact that they may be taken as unexamined quick fixes on a complex international situation that requires, for its proper study, greater tolerance of ambiguities. In the hands of those professionals who are intrinsically susceptible to oversimplifications, this can cause irreparable damage.

However, those who insist on chancing *Beyond Camp David* will be rewarded with a complete text of the Camp David accords, the Israel-Egypt Treaty, and its associated maps.

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**Red Phoenix: The Rise of Soviet Air Power, 1941-1945** by Von Hardesty. Washington: Smithsonian Institution Press, 1982. 300 pages, $22.50.

Certainly no air force has come closer to the legendary phoenix which rose from its own ashes than the Soviet air forces during World War II. During the initial hours and days of Operation Barbarossa, the German thrust into Russia in June 1941, the Soviets lost several thousand aircraft on the ground and in the air. As the German armored spearheads swept toward Leningrad, Moscow, and Kiev, Joseph Stalin's Soviet regime seemed to face certain doom and defeat. The Soviet air forces were incapable of anything but feeble, sporadic responses to the German attacks. Four years later, however, Soviet airplanes swarmed in the skies over Berlin as the victorious Russian army marched into the captured German capital.

Very little has been written about the Soviet air force, *Voyenno vozdushnyye sily* (VVS), in the Great Patriotic War (1941-45), and very little currently in print has used available Soviet sources such as memoirs and battle accounts. Author Von Hardesty has written a concise, readable survey of the activities and experiences of Soviet air power during the war period. In his research, the author made extensive use of numerous Russian works on the subject. While the use of Soviet sources is a strength, the nearly total lack of Soviet statistics on their own casualties and aircraft losses still leaves a glaring hole in the total picture of Soviet air war experiences.

*Red Phoenix* traces the VVS from the early hours of 22 June 1941 through its recovery from those initial losses to the struggles over Moscow, Stalingrad, the Kuban bridgehead, Kursk, to the eventual triumph over Berlin. The Soviet air force's development throughout the war can only be understood in light of what went before: the 1917 revolution, the first five-year plans, the purges of the 1930s, and the early years of Soviet air development.

Soviet air power's recovery from the initial crippling defeats was only possible through the relocation of armament and aircraft industries east of the Ural mountains during the war's opening months. Unfortunately, Hardesty devotes little attention to this key factor in the Soviet air victory. He also seems to be overly impressed with the Soviet tactic of ramming German aircraft, called a *taran*, by mentioning it four different times. Most of the photos in this book are of German aircraft in action on the Eastern Front. A better selection of Soviet photographs would have been more appropriate.

No book is perfect, but *Red Phoenix*, despite its faults, is an excellent survey of this four-year period in Soviet air power's history. It definitely enhances present aérospace military literature and our appreciation of the current Soviet air force's heritage.

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**Enemy in the Sky: My 1940 Diary** by Sandy Johnstone. San Rafael, California: Presidio Press, 1976. 192 pages, $12.95.

Many books have appeared on that most decisive and probably most important air battle of them all, the Battle of Britain. By now every aspect of that engagement has been told and retold. There are also large numbers of airmen's memoirs in the aviation literature, which seemingly attempt to recapture the youth and glory of their authors. But they tend to be notoriously poorly written, and there is considerable question as to their value. Why, then, another memoir on the Battle of Britain?

*Enemy in the Sky* is just that, recounting, as it does, the year 1940 through the eyes of Sandy Johnstone, a Spitfire pilot and in July Commander of 602d (City of Glasgow) Squadron. (Johnstone later rose to the rank of Air Vice Marshal.) The 602d was stationed in its native Scotland, on the periphery of the battle, until 13 August when it entered the main arena. Within a month it had been reduced from 16 to 5 aircraft. Johnstone gives a participant's view not only of the details of air fighting but also of life both in a wartime unit and in wartime England. Johnstone writes with a clear, perceptive, yet humorous touch; he does not magnify his or his unit's importance but fits both into the context of the battle and of the war. In so doing, he adds details missing in most other accounts. In addition, Johnstone is able to transmit the human element, the feel of what was happening.

The principal criticism that can be leveled at this book is at the language. While the aviation jargon may be understandable to aviation students, it may be difficult for laymen, and British slang is much more opaque for non-Britons. A second criticism deals with what was *not* included. Statistical material on 602d Squadron and other units engaged in the battle (losses, claims, aces, etc.) would have been most useful and helpful.

This is not heavy reading; it is easy, enjoyable, and informative. *Enemy in the Sky* can be read alone or, better yet, read along with one of the many survey histories of the battle. In any event, it is highly recommended.

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**American Servicemembers' Supreme Court: Impact of the U.S. Court of Military Appeals on Military Justice** by Harold F. Nufer. Washington: University Press of America, 1981. 197 pages, $20.25 cloth, $10.25 paper.

Since 1951, the United States Court of Military Appeals has acted as a "supreme court" for the military justice system. *American Servicemembers' Supreme Court* is a history and description of the Court, its powers, and functions, based on both published sources and interviews with the three civilian judges who made up the Court from 1975 to 1979.

Harold Nufer is a political science professor who became interested in military justice while serving on courts-martial as an active duty Air Force officer. As a political scientist, he is more concerned with describing and classifying the Court within the American system of government than with the technicalities of military law. This occasionally

leads him into error, as when he repeatedly insists that an accused officer was sentenced to dismissal by a *special* court-martial; that punishment is actually only within the jurisdiction of a general court-martial.

The most valuable sections of the book are those that draw on the author's interviews with the Court's judges. These sections provide an inside view of the Court which is usually unavailable elsewhere. The book concludes with an interesting description and assessment of the reforms of the Court proposed by the DOD General Counsel in 1979, including the reactions of the judges to the proposals.

*American Servicemembers' Supreme Court* deserved a better publisher. At $10.25 it is overpriced for a paperback, printed by offset from a typed manuscript. Even rudimentary editing would surely have eliminated the author's mildly irritating overuse of italics for emphasis. Still, even considering these weaknesses, this is a worthwhile study that contains much new information on the most important single institution in our military justice system. Anyone interested in a general introduction to that system would do well to start with this book.

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**Air Mail: An Illustrated History, 1793-1981** by Donald B. Holmes. New York: Crown Publishers, 1981, 240 pages, $27.95.

From the author's preface, one gathers that the book began as an informal study of pioneer mail flights in the United States but evolved into international scope with a dual purpose of blending aviation history with the history and significance of air mail. Although author Donald Holmes includes a disclaimer that the volume should not be viewed as a "definitive report," the preface alludes to "a survey of an enterprise leading right up to the present day." (p. xi) Thus, readers may be led to expect certain things: a melding of aviation and air mail history; international coverage, and coverage to the present—which implies a certain degree of balance. The author does better on the first point than he does on the two latter points.

To Holmes's credit, there is an interesting blend of aviation and air mail history. Illustrations include early news articles and advertisements; letters carried by balloon and plane; semiofficial stamps and unofficial postal labels; early postcards and other miscellaneous nostalgia; a large number of worthwhile photographs. *Air Mail* is especially effective in the early chapters in which numerous pioneer flights and services are detailed. Early services include several "pigeon-post" operations, such as the two-way service established at the siege of Paris during the Franco-Prussian War of 1870 and many pioneering air mail flights.

Roughly two-thirds of *Air Mail* covers events since World War I. Despite the variety and interest of the many illustrations, this part of the book suffers from overemphasis on the American scene. There is no mention of the intriguing efforts to catapult mail before the Second World War, using German seaplanes launched from ships in the Atlantic; no coverage of German and Italian routes across the South Atlantic on the eve of the war, not even an illustration of the doughty Empire-class flying boats, which operated over remarkably long mail and passenger routes that linked the British Empire. There is a problem of reasonable coverage, which allocates only 14 pages to cover events from 1938 to the present and excludes illustration of such notable postwar aircraft as the Constellation, the Comet, and many more.

One cannot deny the fascinating array of illustrations and anecdotes of early air mail efforts. Yet readers should not expect a balanced treatment of aviation trends, such as the impact of the flood tide of air mail and air express of the postwar era.

There is a brief bibliography.

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**Hitler's Secret War in South America, 1939-1945: German Military Espionage and Allied Counterespionage in Brazil, 1939-1945** by Stanley E. Hilton. Baton Rouge: Louisiana State University Press, 1981, 353 pages, $20.00.

This book wowed them in Brazil, first being published there with the title *Suástica sobre o Brasil*, and making it to the best-seller list for four months. Revised and expanded somewhat, it nonetheless is basically the same book in English: a detailed exposition of German espionage efforts in Brazil from about 1938 to 1943 and the equally detailed but far more absorbing counterespionage campaign waged by the English and Americans against the Axis spy network in Brazil. The high tension and innate drama of the subject are almost lost in the blizzard of details that produce a feeling of great familiarity but near ennui in the reader. The German spies—with a few traditional exceptions we all know about from spy novels—were recruited in a rather humdrum fashion from the hundreds of thousands of first- and second-generation Germans in Brazil. An average recruit had fought for the Kaiser in 1918, was intensely devoted to the fatherland, and, typically, had been on a trip home in 1938 or 1939 when the *Abwehr*, or German military espionage agency, approached him. Sent back to Brazil, he was linked with one of the many information-gathering cells and then began his unlikely second career: transmitting from clandestine radios perhaps, watching ship movements, paying small amounts of cash here and there to other sympathizers for information. When Brazil dropped her neutral stance after the Rio meeting in early 1942, the network collapsed, in great measure from the intensive efforts of the Allies—especially of the English whose backs were pressed to the wall in a tense survival situation that the average American never felt—to destroy the sources of vital information on critical Allied movements not only in the South Atlantic but throughout the greater Atlantic theater. This is hot war espionage revealed fully and should not be missed by partisans of the business of spying—amateur or professional.

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## AWARD

The Air University Review Awards Committee has selected "Linebacker and the Law of War" by W. Hays Parks as the outstanding article in the January-February 1983 issue of the *Review*.

## attention

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Printed by Government Printing Office. Address subscriptions to Superintendent of Documents, GPO, Washington, DC 20402; yearly $18.00 domestic, $22.50 foreign; single copy $3.75 domestic, $4.70 foreign, Air Force Recurring Publication 50-2. Distribution: reader-per-copy ratio, one to every ten USAF personnel, military or civilian. ISSN: 0002-2594.

The Professional Journal of the United States Air Force