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EDITORIAL

My Friend Mich and the Dual-Track System

MY friend Mich is a fighter pilot. He flies Mirages for the Belgian air force. He is a very good fighter pilot, well respected by his peers and his superiors for his abilities. In addition, he serves his unit as a NATO exercise evaluation officer, planning and conducting the exercises that keep the unit in top readiness. He has been very helpful in assisting the collocated American unit in developing its own exercises as well as joint exercises. He is bright and capable, just the type of officer every wing commander wants to have in the unit. He will never be promoted again.

Mich is a commandant in the Belgian air force. That is the rank given to those officers who have chosen the "other track" in a dual-track system. Recent changes in the officer evaluation system and various responses to the current shortage of pilots have generated discussion concerning the United States Air Force considering some form of dual-track system. Should the Air Force decide to seriously consider a dual-track system, we would be well advised to check into the existing dual-track systems of our allies to avoid possible pitfalls. If we want a dual-track system, then we must be willing to make the effort to ensure that it works.

As Air Force Chief of Staff Larry D. Welch points out when he speaks about the new officer professional development system, we must time the selection point late enough in a career so that individuals are sure they really want to opt out of the command/promotion track and perform their current duties for the rest of their careers. It is very easy when you are a young captain to say you don't care about promotion but just want to fly. The choice may not be so simple a few years later. By the time individuals reach the 12- to 15-year point, they have a much better feel for what they really want out of the rest of their career. In the meantime, young officers need to stay on a single track, learning their jobs and preparing for the future, whichever path they choose.

We must set a high standard for selection to either career option. The people we select to remain in their functional career fields must be chosen based on proven excellence. They must be very capable and highly motivated like Mich but must, for their own reasons, have decided not to pursue the path to higher rank and command. We would be making a selection that the Air Force and the individual will have to live with for the rest of that person's career. These people must be selected against the most stringent of standards. If we allow the standards to be lowered simply to fill all the authorized slots or if the specialty track becomes a place to hide individuals who simply aren't hacking it in the command/promotion track, then the system will fail. Poor performers are poor performers regardless of the option. The second track cannot afford to be a place for the sick, lame, and lazy to rest. Selection to the second track must be every bit as competitive as the command/promotion track. If it is, the individuals selected can be the corporate knowledge base that keeps their organizations strong and effective.

We can make the second track a useful tool in Air Force personnel management by controlling entry into it. It can be a tool that fills the needs of the individuals in the system as well as the system itself, one that allows our most capable people to stand out—people like my friend Mich. MAK

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Letters to the editor are encouraged. All correspondence should be addressed to the Editor, Airpower Journal, Walker Hall, Maxwell AFB AL 36112-5532. We reserve the right to edit the material for overall length.

MORE ON "YOUNG OFFICERS"

Bravo to Lt Col Stephen C. Hall's comments in "Shortchanging Our Young Officers: Military Traditions Denied" in the Fall 1987 issue. However, traditions are important only if they support why we are here.

For example, my role in the Air Force became clear at SOS but not in the expected way. At SOS it was those people sitting around me, my peers, who had fought in some of the most recent conflicts and who would fight in any conflict in the near future. My job was to support these people with command and control computer systems. If a system works poorly, it becomes one less resource available to support their mission and successful return.

My resolve was to ensure our computer systems would be ready and capable of supporting the mission. No excuses of old technology, lack of trained programmers, or other common reasons would prevent us from realizing every last capability of the system. It was gratifying to note that this same insight and resolve had an equally motivating effect on the folks who worked for me. We subsequently made some breakthroughs and plan to make more.

I suspect traditions come from striving in a noble endeavor and will come and go as needed.

Capt Bruce Benson, USAF
Neubruecke, West Germany

OPERATIONS AND INTELLIGENCE

I want to commend Capt Brian P. Tice for his article "Air Force Operations and Intelligence: Getting It Together," Winter 1987–88 issue, and add several observations of my own. Captain Tice correctly points out that a good interface or relationship between intelligence and operations must exist for the US Air Force to have an effective warfighting and winning capability. To bring about this relationship, he concentrates on overcoming obstacles at the squadron and wing levels. While there's nothing wrong with this approach as a starting point, I would go several steps further to expand the scope of this relationship to include the entire Air Force (actually any military) organizational framework.

As a professional intelligence officer now on "temporary loan" to the political-military affairs field, I too, like Captain Tice, have worked down at the squadron and wing levels, both in CONUS and overseas. In addition, I've had assignments up through the major command and joint levels. Regardless of where the jobs have been, there's been one constant factor: a pressing need to improve the operations/intelligence relationship. Fortunately, over the last few years, a marked improvement has taken place. Credit is due to the efforts of many from both the operations and intelligence areas of the Air Force.

Intelligence needs to do even more. Several general thoughts for improvement to supplement Captain Tice's proposed solutions come to mind. These support enhancements will happen only in a context where intelligence is *used* and *understood*. While much sensitive intelligence should remain strictly "need to know," the old "behind-the-green-door" syndrome is going away slowly. An effective relationship today demands that intelligence personnel make themselves and their resources more useful and understood. Said another way, they have to become more credible.

Gaining credibility requires considerable effort. However, it is essential that intelligence people do just that, regardless of where they fit in the Air Force organization. The resources available might not be as limited as Captain Tice states. According to recent figures published in *Air Force Magazine*, over 3,400 officers and 13,000 enlisted personnel are in Air Force intelligence. From my perspective, that's a lot of people—many with considerable experience and capability—to help make the extensive intelligence community work. These professionals have access to some significant man-made resources, including much high technology and

to 90

THE SIOP
What Kind of War Plan?

DR STEPHEN J. CIMBALA

THE credibility of American deterrence doctrines is based on the clear explanation of the ideas behind those doctrines, the forces available to national leaders to implement those ideas, and the actual plans that are made in peacetime in the event of deterrence failure and war. We call these, respectively, declaratory, force acquisition, and employment (or action) policy. If there is a wide gap between declaratory policy (what we say we

will do) and action policy or force structure (what we can do or have the forces to do it with), then deterrence may be based on bluff.

This essay considers the subject of war plans, more specifically US nuclear war plans. There is some argument that war plans are not always matched to political leaders' goals and objectives, or to the actual capabilities of strategic nuclear forces. The results of these mismatches may be war plans that, in the event that deterrence fails, adversely affect national security and the attainment of war aims.

Nuclear war plans are not like war plans of the past. There is no "Schlieffen Plan" for a war between nuclear-armed superpowers, and even if there were, history is testimony to the fact that the best drafted plans can fail. Accordingly, it might be wise to assume that US nuclear war plans, if tested, will also fail to some extent. However, our preoccupation with their catastrophic failure in a nuclear "Pearl Harbor" may be misplaced. Failures caused by something other than total surprise may also lead to national defeat.

How Flexible?

There has been a struggle between policymakers and military planners since the Kennedy administration, if not before, over the issue of how flexible US plans for nuclear war must be. According to historical documents, plans during the Eisenhower administration called for massive attacks on Soviet, East European, and Chinese military and civilian targets.[1]

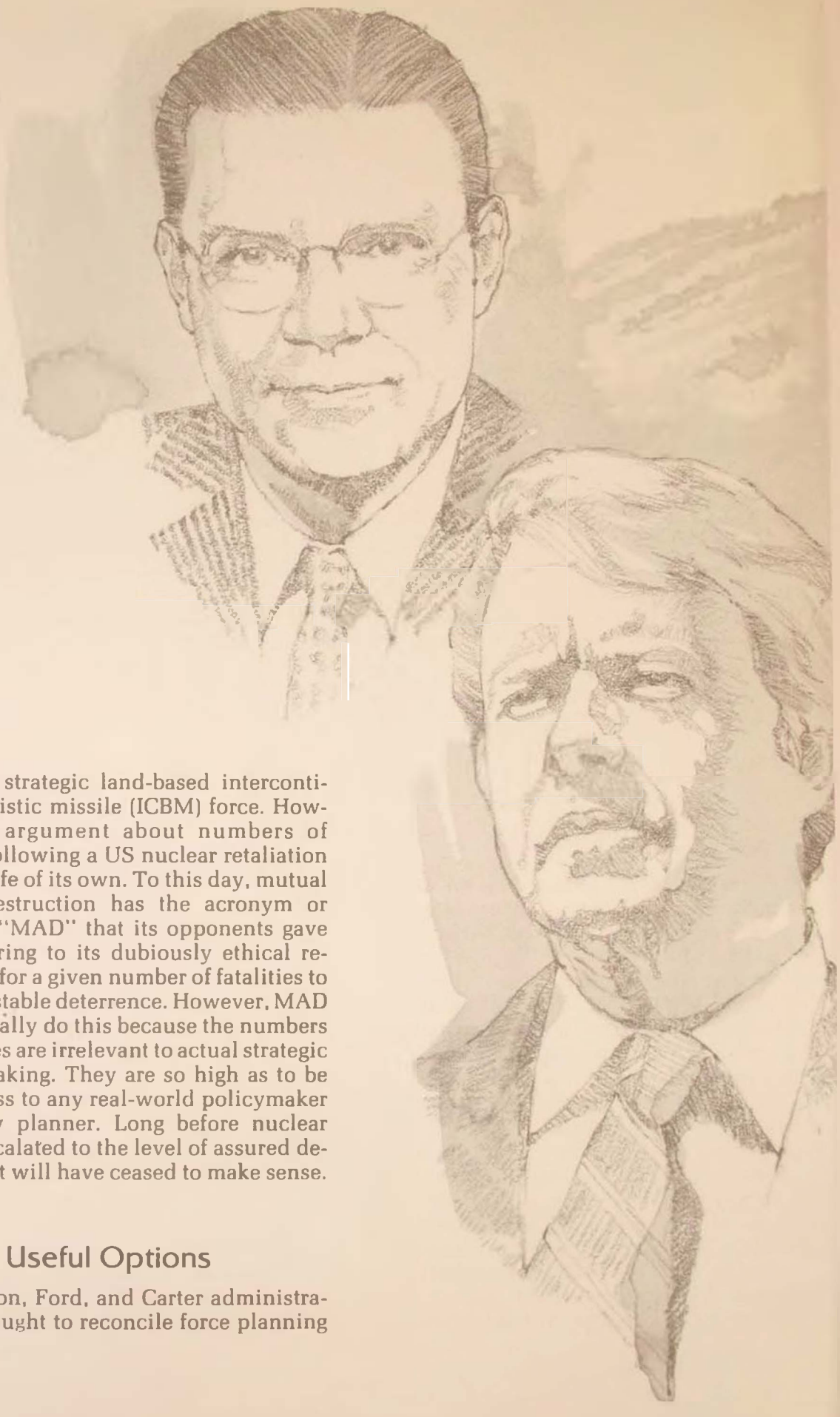
When President Kennedy assumed office, a comprehensive assessment of US nuclear war plans was undertaken. Secretary of Defense Robert S. McNamara sought to introduce flexibility into the single integrated operational plan (SIOP)—the central nuclear war plan for strategic forces—he inherited from the Eisenhower administration. In his commencement address at the University of Michigan in 1962, McNamara provided public notice of this shift in emphasis:

> The U.S. has come to the conclusion that to the extent feasible basic military strategy in a possible general nuclear war should be approached in much the same way that more conventional military operations have been regarded in the past. That is to say, principal military objectives, in the event of a nuclear war stemming from a major attack on the Alliance, should be the destruction of the enemy's military forces, not of his civilian population.[2]

This call for "counterforce" targeting would be misunderstood by some of McNamara's contemporaries and by future nuclear historians. He was not saying that the opponent's cities or economic and social values would be spared in US retaliatory strikes *under all conditions*. Nor was he saying that the two sides could engage in a gradual and reciprocal process of escalation, trading exchanges of air bases, submarine pens, and missile silos while withholding attacks against cities and bargaining with the adversary.

Later theorists and policymakers would call for variations of these two ideas rejected by McNamara: purely counterforce war or graduated and controlled strategic nuclear warfighting. McNamara was skeptical that these ideas could be implemented with any existing or future force structure. What he wanted was the *capability* to retaliate against any set of targets after the United States had absorbed the worst possible Soviet first strike. Therefore, McNamara desired forces sized according to the "greater-than-expected threat," which would allow for numbers adequate to fulfill the requirements of worst-case scenarios. His deputies in the Pentagon set 20 to 25 percent of the Soviet population and one half to two-thirds of its industrial capacity as guidelines beyond which additional destruction would be politically and militarily insignificant.[3]

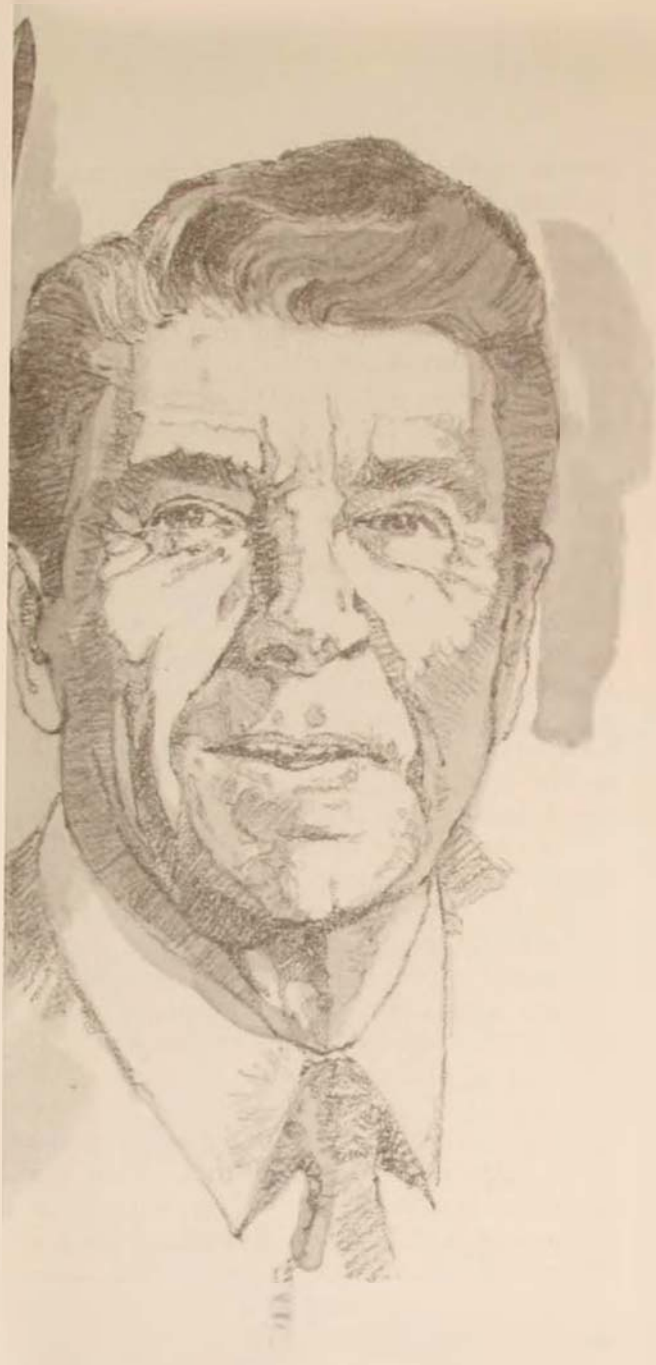
In setting these criteria, McNamara and his associates were trying to set limits on force acquisition, especially on the growth



of the US strategic land-based intercontinental ballistic missile (ICBM) force. However, the argument about numbers of fatalities following a US nuclear retaliation took on a life of its own. To this day, mutual assured destruction has the acronym or nickname "MAD" that its opponents gave to it, referring to its dubiously ethical requirement for a given number of fatalities to guarantee stable deterrence. However, MAD does not really do this because the numbers it prescribes are irrelevant to actual strategic decisionmaking. They are so high as to be meaningless to any real-world policymaker or military planner. Long before nuclear war has escalated to the level of assured destruction, it will have ceased to make sense.

Useful Options

The Nixon, Ford, and Carter administrations all sought to reconcile force planning



and war plans with declaratory policy. All to some extent succeeded, but large gaps remained. According to National Security Decision Memorandum (NSDM)-242, as explained by former Secretary of Defense James R. Schlesinger in 1974, US policymakers sought flexible nuclear targeting, escalation control, and the capability to withhold early strikes against certain classes of targets.[4] Flexible targeting meant the use of less than full SIOP options in response to a Soviet attack on Western Europe or other American allies. Escalation control implied that the United States would want to limit the destruction attendant to war in order to induce reciprocal Soviet restraint. For example, strikes could be withheld on targets such as the highest political leadership or cities, which the United States might want to hold in jeopardy for bargaining purposes later.[5]

The targeting studies of the Carter administration led to modifications in the SIOP that continued the evolutionary trends of Schlesinger toward increased numbers of smaller and more flexible options. "Countervailing" strategy purported to meet Soviet aggression, including nuclear attacks, with proportional responses while seeking war termination under the best possible conditions.[6] Although dubbed a war-winning strategy by its critics, countervailing strategy was described by former Secretary of Defense Harold Brown as a continuation of previous developments in the 1970s. And so it was, for the most part.

There was some additional declaratory emphasis in the Carter strategy in the targeting of Soviet leadership, both political and military. This had been a component of US planning previously but had not been broadcast very loudly in press and academic accounts of American nuclear war plans. The Carter doctrine allegedly also called for plans and forces that would permit American forces to fight an extended or protracted nuclear war. This placed heavy emphasis upon the command, control, and communications (C^3) system required to fight such a war over a period of weeks or months.[7] The public exposition of Presidential Directive (PD)-59 in 1980 called these components of the Carter plans to public attention and created debate among strategists that continued into the early Reagan years.

The Reagan administration did not rewrite the Carter declaratory strategy, nor did it attempt to drastically modify its war plans. The early Reagan years were spent trying to purchase the forces and the C^3 system to implement the Carter countervailing

strategy, including the controversial MX/Peacekeeper ICBM. In 1983, however, the president declared his intention to launch a research and development program to determine whether technology could make nuclear weapons obsolete. The Strategic Defense Initiative (SDI) was formally begun in response to the president's charge. It would, if developed into technology according to the president's vision, change the balance of nuclear terror by threat of retaliation into something else. The "something else" would be a balance of denying attacking warheads access to American, and presumably Soviet, society. In between where we are now and where we are going, according to the advocates of the "defense transition," is a limbo of negotiated reductions in offensive capabilities accompanied by a buildup of defenses. The administration's "strategic concept" as explained by chief arms control adviser Paul H. Nitze outlines a similar three-stage progression, from the present offense-dominant world to a new defense-dominant one.

Key Questions

We have pointed out the kinds of policies that may or may not be consistent and have identified the stages through which US nuclear war planning has progressed from 1960 to the present. An assessment of the adequacy of nuclear war plans under present conditions is now pertinent, with the caution that this assessment is based on unclassified sources only.

First, it would appear that the United States has reached the feasible limit of flexibility in strategic nuclear war planning. The SIOP 6 of the Reagan administration apparently identifies some 50,000 separate targets (designated ground zeros), although obviously not all could be attacked in the same war plan.[8] Additional flexibility might be a trap instead of a virtue. As the "wish list" of possible targets becomes larger relative to the list of targets that any real force can actually attack during the first 30 minutes to one hour of war, the wish becomes a fantasy. The number of US strategic warheads on bombers, submarines, and land-based missiles surviving a Soviet first strike would depend on whether those US forces had been previously "generated" or had remained on day-to-day alert. In the fully generated case, approximately 7,000 US weapons would arrive on target, destroying some 8,700 military, political, and economic targets. Forces on day-to-day alert would provide some 3,800 weapons destroying an estimated 5,400 targets.[9] Therefore, the abundance, if not surfeit, of potential targets in relation to surviving weapons argues against the need for plans that are excessively fine tuned.

Second, the feasibility of war plans depends not only on the number of weapons available and surviving attack but also on other factors. An additional factor of obvious importance is the US C^3 system for nuclear crisis and war.

The US command system has been subjected to more study in recent years, partly as a result of programmatic emphasis in the Reagan and Carter administrations. Analysts seem to agree that the system can provide for retaliation *of some kind* under all but the most drastic conditions. But the kind of retaliation, and under what conditions, is more debatable. Bruce G. Blair has suggested that the Soviet Union could do serious, and possibly fatal, damage to the US command system by attacking key command centers, communication networks, and warning/intelligence systems early in war. And the Soviets might do this with only a fraction of the forces they would have to expend to disarm the American retaliatory forces.[10] On the other hand, Ashton B. Carter has noted that the Soviet target planner attempting to destroy the US nuclear command system would have a formidable task. Eventually the candidate target list would grow so large that it would be virtually indistinguishable from an all-out attack against American society.[11]

Then, too, the more that plans call for very calibrated and selective exchanges ac-

companied by continued warning-and-attack assessment, the more stress there will be on the US command system to perform its assigned missions, including sub-SIOP ones. The compression of time within which decisionmakers will have to act in a nuclear war might preclude their careful scrutiny of the entire menu, assuming they could understand it if time permitted. Few US presidents have shown any serious interest in the details of nuclear war planning, and their successors in the constitutionally prescribed chain of command would doubtless be worse off, for the most part. Having available targeting options for extended war presupposes that neither side will deliberately attack the other's central command system, otherwise those extended and limited options would become superfluous. And there is little to suggest that the Soviet approach to the targeting of US C^3 would be sparing of it.

Less is known about the viability of the Soviet command system during crises or wartime operations of the type that nuclear war might cause. Stephen M. Meyer has suggested that the Soviet command system would not be fragile. It has many redundant command centers for military and political leaders, alternative pathways for reconstituting communications, and an enormous target list that would have to be covered.[12] However, the operation of the Politburo would depend on whether the Soviets anticipated a surprise attack "out of the blue," escalation from conventional war, or the collapse of a US-Soviet nuclear crisis (as in Cuba in 1962) into nuclear exchanges.

A third issue in American nuclear war planning that is not yet resolved concerns the purpose of the planning. What is the object for which the war is presumably being fought? We frequently hear the statement that nuclear war is so destructive as to be pointless. If superpower exchanges escape control altogether, this hunch may be correct. But total loss of control in a nuclear exchange is not foreordained. American planners have to prepare for the possibility that even if they do not acknowledge the possibility of limited nuclear exchanges for specific objectives, their Soviet counterparts might.[13]

Three possible objectives for the United States in a nuclear war are to deny the Soviet Union victory in attaining its war aims, to achieve a US victory according to some prewar definition of policy objectives, or to terminate the war under the most favorable conditions possible provided the survival of American and allied political independence and territorial integrity are guaranteed.[14] Once nuclear exchanges begin, even those short of attack on American and Soviet territory per se, both sides might find war termination the most expedient alternative.[15]

However, war termination could be difficult to arrange. Nuclear detonations and their attendant destruction would inflame passions of leaders and publics alike and would partially destroy or make unreliable the command systems on both sides. The ability of US leaders to communicate with their Soviet counterparts would be uncertain; neither side might with assurance know who was in charge in the Kremlin or in Washington.

Finally, the Soviet concept of war termination might be very different from the American or Western one.[16] One of the more interesting cases to be made for any partially effective missile defense system is the possibility that it could contribute to war termination by preserving essential command, control, and communications facilities and personnel beyond the initial phases of a nuclear conflict. Apparently, the Soviets, having deployed the only current BMD system around Moscow, have noticed this possibility.

Conclusion

The SIOP has evolved over the years into a plan that calls for increasingly numerous and flexible nuclear responses to attacks against American or allied interests. We may now have reached the sensible limit beyond which additional "options" are

merely paper ones instead of realistic alternatives. The US command system might provide for immediate retaliation against a very large target set, but whether it could conduct flexible and protracted attacks over an extended period is doubtful. Above all, US policy planners need to clarify their war aims in order to determine whether planning for victory, victory denial, or war termination is to receive pride of place. □

Notes

1. A review of US nuclear war plans prior to the Kennedy administration appears in David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945–1960," *International Security* 7, no. 4 (Spring 1983), reprinted in *Strategy and Nuclear Deterrence*, ed. Steven E. Miller (Princeton, N.J.: Princeton University Press, 1984), 113–81.

2. Quoted in Lawrence Freedom, *The Evolution of Nuclear Strategy* (New York: St. Martin's Press, 1981), 235.

3. According to McNamara aides Alain C. Enthoven and K. Wayne Smith, "This capability (assured destruction) to destroy him (any attacker) after absorbing his surprise attack must be a virtual certainty, and clearly evident to the enemy. This is the foundation of U.S. deterrent strategy." See Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961 69* (New York: Harper and Row, 1971), 175.

4. See Lynn Etheridge Davis, "Limited Nuclear Options: Deterrence and the New American Doctrine," in *Strategic Deterrence in a Changing Environment*, ed. Christoph Bertram (Montclair, N.J.: Allenheld, Osmun and Co., 1981), 42–62.

5. Desmond Ball, "The Development of the SIOP, 1960–1983," in *Strategic Nuclear Targeting*, ed. Desmond Ball and Jeffrey Richelson (Ithaca, N.Y.: Cornell University Press, 1986), 57–83.

6. Walter Slocombe, "The Countervailing Strategy," *International Security* 5, no. 4 (Spring 1981), reprinted in Miller, 245–54.

7. For a discussion of US extended war doctrine, see Richard Halloran, *To Arm a Nation: Rebuilding America's Endangered Defenses* (New York: Macmillan, 1986), 268–98. Historical and strategic perspective on the problem of terminating extended war is provided in Colin S. Gray, "Global Protracted War: Conduct and Termination," in *Strategic War Termination*, ed. Stephen J. Cimbala (New York: Praeger, 1986), 75–98.

8. Ball, 80.

9. Ibid., 81.

10. Bruce G. Blair, *Strategic Command and Control: Redefining the Nuclear Threat* (Washington, D.C.: Brookings Institution, 1985), esp. 182–211.

11. Ashton B. Carter, "Assessing Command System Vulnerability," in *Managing Nuclear Operations*, ed. Ashton B. Carter, John D. Steinbruner, and Charles A. Zraket (Washington, D.C.: Brookings Institution, 1987), 555–610.

12. Stephen M. Meyer, "Soviet Nuclear Operations," in Carter, Steinbruner, and Zraket, 470–534.

13. See John G. Hines, Phillip A. Petersen, and Notra Trulock III, "Soviet Military Theory from 1945–2000: Implications for NATO," *Washington Quarterly* 9, no. 4 (Fall 1986): 117–37. This study argues the case for increased Soviet interest in conventional and limited nuclear options since the late 1960s. On the other hand, one might note the caution offered by another source: "The increased Soviet attention to conventional capabilities observed over the past decade does not, by itself, represent any less readiness to employ nuclear weapons in a war with NATO, nor does it represent any shift in the nature of the Soviet threat to NATO away from nuclear and toward a primarily conventional strategy." See Joseph D. Douglass, Jr., *The Soviet Theater Nuclear Offensive*, vol. 1, *Studies in Communist Affairs* (Washington, D.C.: Government Printing Office, 1976), 6.

14. See Colin S. Gray, "Targeting Problems for Central War," in Ball and Richelson, 171–93.

15. Barry R. Schneider, "War Termination for Strategic Nuclear Conflicts," in Cimbala, 120–33.

16. See Raymond L. Garthoff, "Conflict Termination in Soviet Military Thought and Strategy," in *Conflict Termination in Military Strategy: Coercion, Persuasion and War*, ed. Stephen J. Cimbala and Keith A. Dunn (Boulder, Colo.: Westview Press, 1987), 33–58.

Spring 1988

IRA C. EAKER AWARD WINNER

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for his article

"Soviet 'Tactical' Aviation in the Postwar Period: Technological Change, Organizational Innovation, and Doctrinal Continuity"

Congratulations to Dr Jacob W. Kipp on his selection as the Ira C. Eaker Award winner for the best eligible article from the Spring 1988 issue of the *Airpower Journal*. Doctor Kipp receives a $500 cash award for his contribution to the Air Force's professional dialogue. The award honors Gen Ira C. Eaker and is made possible through the support of the Arthur G. B. Metcalf Foundation of Winchester, Massachusetts.

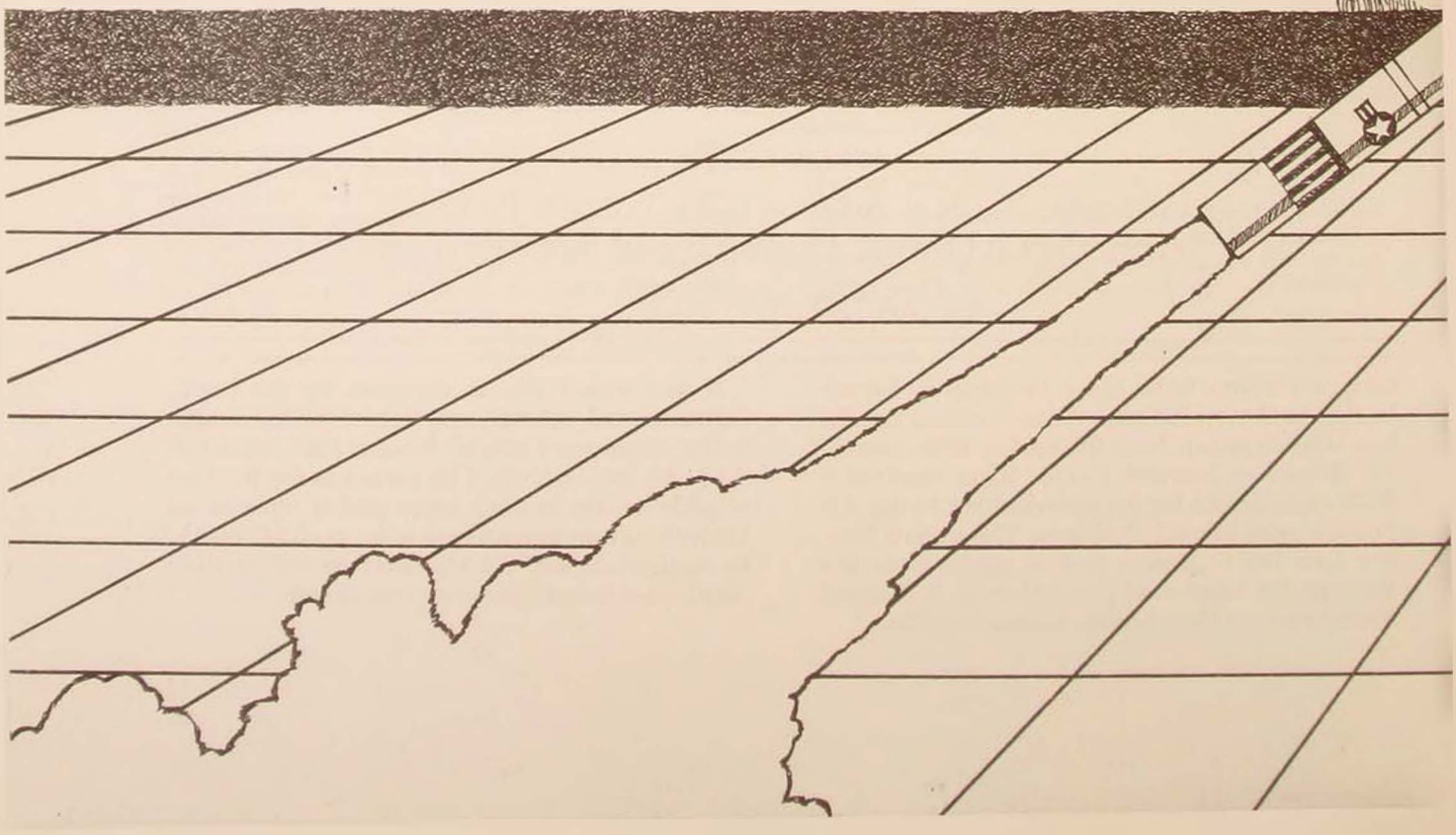
If you would like to compete for the Ira C. Eaker Award, submit an article of feature length to the *Airpower Journal*, Walker Hall, Maxwell AFB, AL 36112-5532. The award is for the best eligible article in each issue and is open to all US military personnel below the rank of colonel or equivalent and all US Government civilian employees below GS-15 or equivalent.

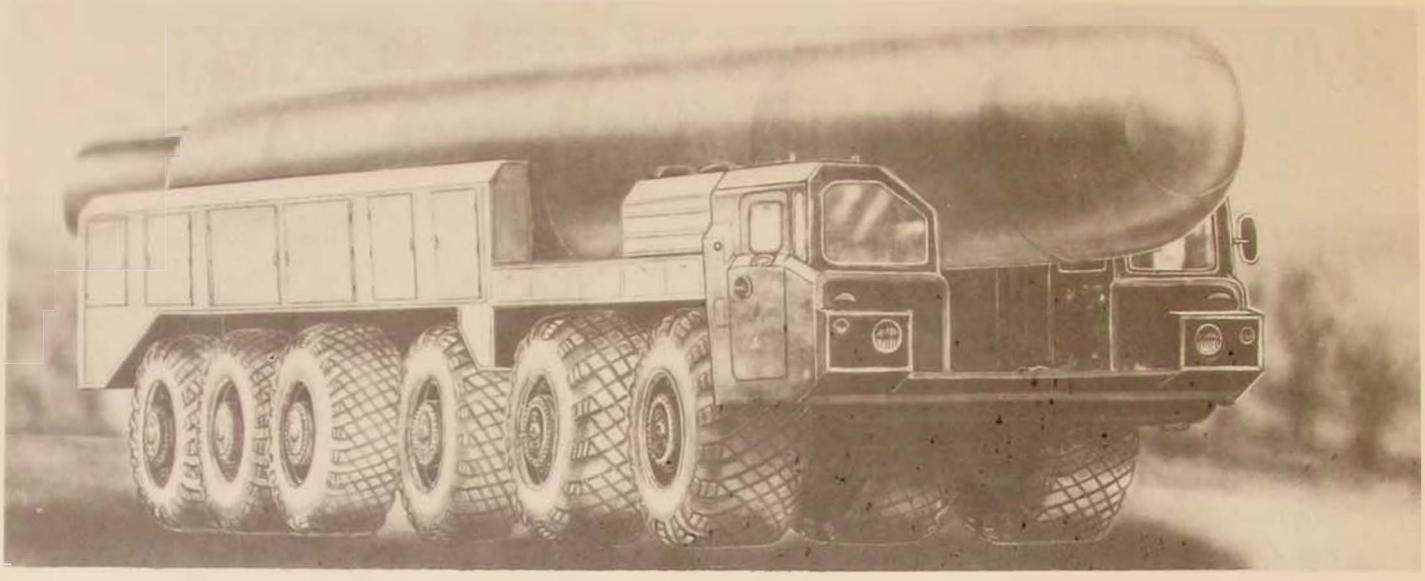
THE STRATEGIC DEFENSE INITIATIVE IN THE MILITARY CONTEXT

Lt Col G. E. Myers, USAF

THERE has been much written over the past five years on the seeming rebirth of strategic defense as embodied in the president's Strategic Defense Initiative (SDI). Much of the literature argues the feasibility of exotic technical proposals. Other publications isolate arms control and discuss how SDI will affect our efforts to obtain an agreement with the Soviet Union. Still others advance a scholarly discourse on the effect of SDI on our posture without reviewing the real military requirements for and the effects of such a system. Rarely do any of the authors attempt to place the SDI program into a military context. To many, the system may appear to be politically motivated. Regardless of the reasons for the system's development, however, SDI may be in the hands of the US defense establishment and operating within a complex set of requirements and threats ranging from antiterrorist operations to the prevention of a nuclear holocaust.

The purpose here is to address the military context. This discussion does not directly address the technologically feasible argument. It does not attempt to solve the arms control puzzle except to suggest that we are not likely to get something for nothing. The article addresses SDI's effect on our strategic posture by suggesting that while it cannot make nuclear weapons impotent or obsolete, it may play a significant role in our overall strategic force posture. It also examines the effect of the SDI program on "tactical" or "theater" requirements, which in the long run are every bit as important as a





"No enemy vehicle of attack must be permitted to have a free ride." Even a partially effective SDI would end the 30-year-old free ride for Soviet missile systems such as this SS-20.

Soviet "bolt-from-the-blue" nuclear attack on the continental United States. But first, since SDI is a concept for strategic defense, it would be useful to place it within the historic context of defense of the American homeland.

The Historical Context

The US historical experience does not stress the need for defenses in the classic sense. We have relied on two oceans to protect us from overseas threats; we have had benign neighbors to the north and south; and we have possessed the defensive advantages of a large landmass. (World Wars I and II, Korea, and Vietnam taught us the advantages of fighting wars over somebody else's territory.) In addition, the advent of nuclear weapons along with the rapid means of their delivery over intercontinental distances seemed to make the idea of strategic defense meaningless to many American strategic theorists.

Even in the 1950s and early 1960s era of large strategic defense forces (before intercontinental missiles made their presence felt in a major way), the threat of absolute destruction, or massive retaliation, was the primary engine of our military defenses. We obviously did see our defensive forces as playing a role in the calculus of deterrence, but we certainly did not believe that our interceptors and air defense missile batteries would make Soviet bombers obsolete or eliminate the threat of nuclear weapons.[1] As Secretary of State John Foster Dulles said in 1954, the United States would "depend primarily upon a great capacity to retaliate instantly by means and at places of our choosing."[2] While the United States and the Soviet Union relied on the nuclear offensive as their primary military instrument during this era, the United States did not ignore its active defenses even though they could not, as large as they were, be seen as totally effective.[3] Bernard Brodie captured the idea:

> There is a rough rule-of-thumb that no enemy vehicle of attack must be permitted to have "a free ride." The enemy should not be relieved of uncertainty with respect to any avenue of attack which is feasible for him to use.[4]

But as the nuclear era progressed, we neglected our active defenses to the point of

almost total abandonment by the 1970s. Through the late 1960s and 1970s, the Soviet threat came increasingly from a growing ballistic missile fleet and less from bombers. Of course, we toyed with the concept of ballistic missile defense during this time but eventually gave it up as "destabilizing" to the Soviet-American strategic relationship as too expensive and as a nut that was too tough to crack with then-existing technology.[5]

We then codified the "mutual hostage" relationship in 1972 with the Antiballistic Missile (ABM) Treaty and settled into what many in the United States termed *mutual assured destruction* (MAD), which assumed that stability between the superpowers could be assured only if both sides could maintain the capability to destroy the other.[6] Destruction in this case means devastation—the intentional targeting of cities rather than weapon and command systems. (Official US declaratory policy called it assured destruction, the "mutual" part being added by think-tank analysts.)

This was the situation (admittedly simplified here for brevity), or at least the publicly believed situation, throughout the 1970s and into the 1980s—except for those naysayers who argued that assured destruction or MAD really never existed and that the United States had been targeting Soviet weapons and they ours for as long as the technology to do so had existed.[7] Then there were those who were opposed to MAD in the first place and who opposed even a declared policy of assured destruction. Fred S. Hoffman (of "Hoffman Report" fame) summed up the anti-MAD view this way:

> [MAD advocates] generally leave implicit the remarkable assumption that the Soviets would devote their entire (and . . . presumably undamaged) missile force to attacks on cities, ignoring military targets in general and not even making an attempt to reduce our retaliatory blow by attacking our nuclear offensive forces.[8]

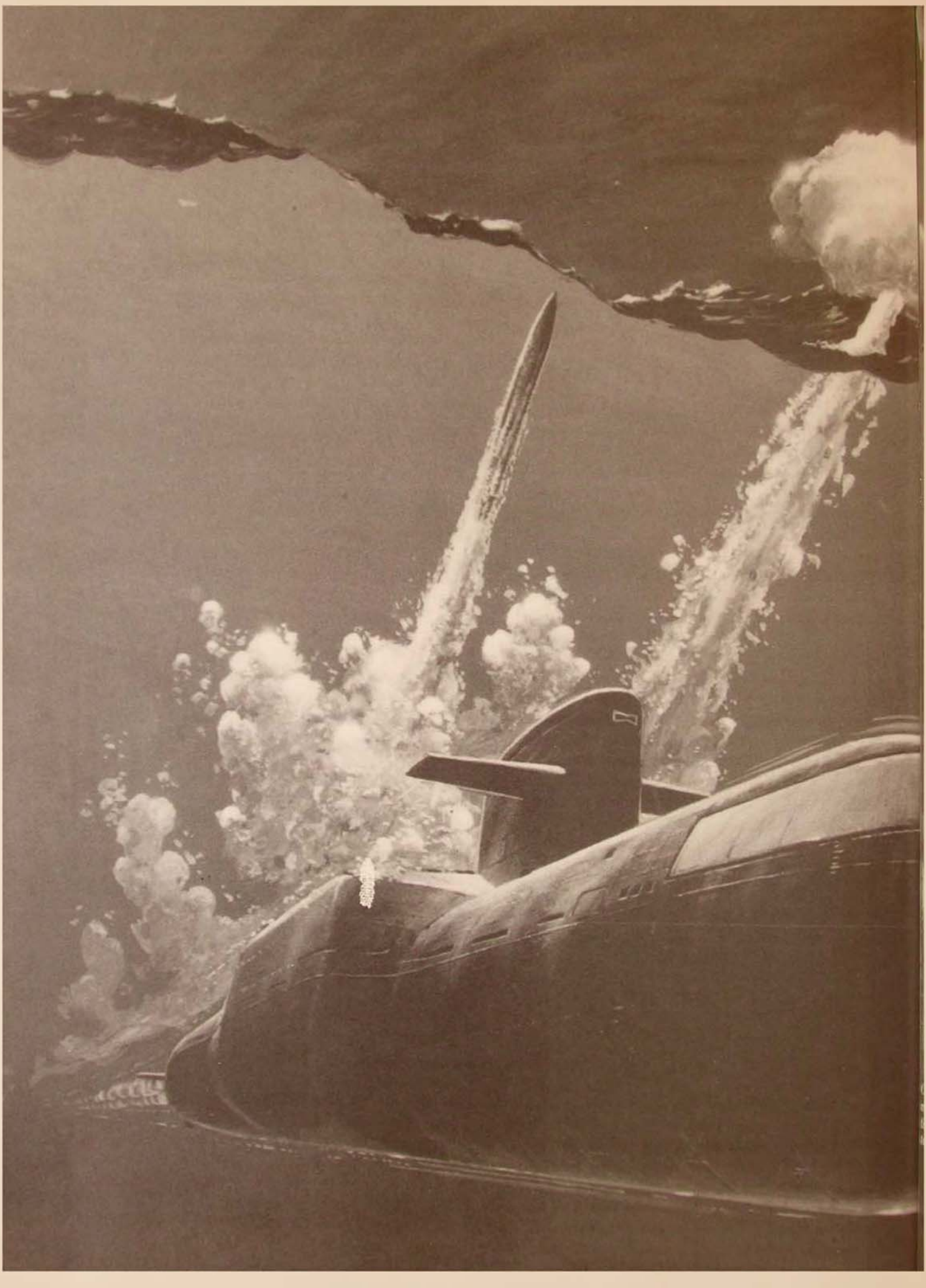
It would therefore seem, as another observer put it, "that the only consequence of the ABM Treaty was to ensure that offensive (damage-inflicting) and defensive (damage-limiting) capabilities would henceforth be embodied in the same weapons."[9] This means simply that even though the MAD advocates appear to have carried the day with respect to US nuclear targeting philosophy, what has happened is that we are forced to build a counterforce capability since, militarily speaking, it makes absolutely no sense to target Soviet cities when doing so would invite a similar response by their reserve weapons that will survive because they were not targeted.

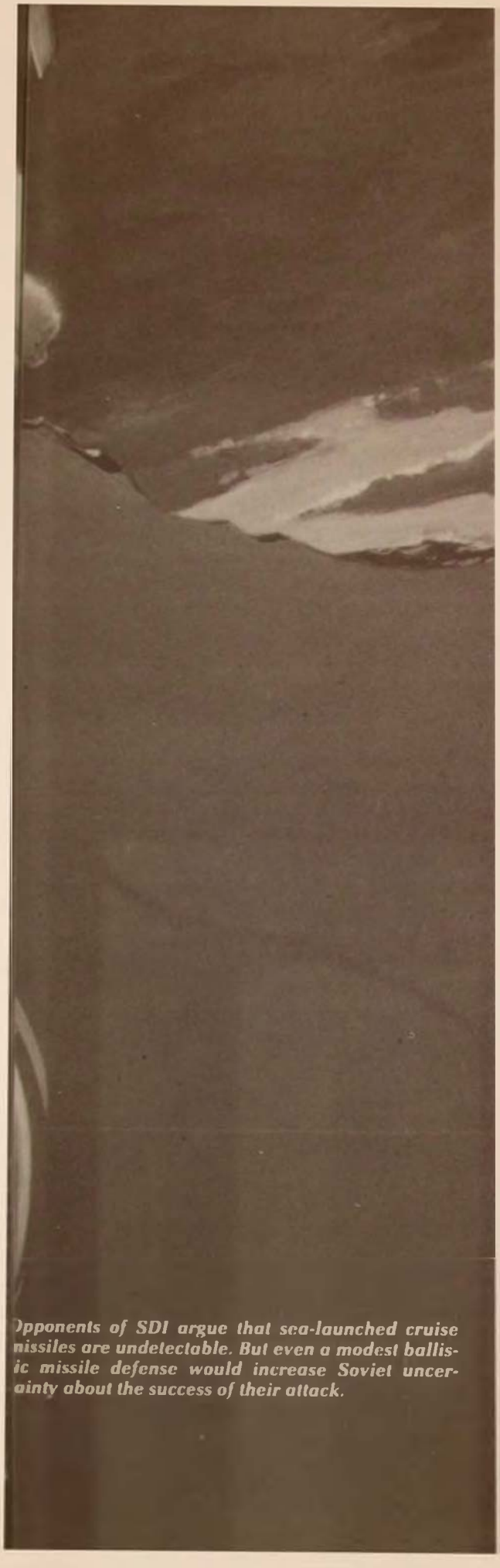
The Military Requirement

To make matters worse, it became evident to some observers by the 1970s that the Soviet Union did not subscribe to the assured destruction concept. As one writer describes it, the Soviets believe that "however awful, nuclear war must be survivable and some kind of meaningful victory attainable."[10] This means that they do not view their nuclear weapons as some sort of mystical out-of-sight, out-of-mind force reserved only for use against the very thing that would bring about their own destruction—the American cities. Rather, their philosophy centers on the ability to fight a nuclear war in the classic sense. Their weapons are designed with the accuracy and numbers to attack and do tremendous damage to both our hardened nuclear weapons and command centers.

The upshot of all this is that the Soviet leaders plan to disarm us first if they must fight a nuclear war. We must remember that the reason the United States has maintained the triad of three separate nuclear force elements all these years is to prevent the Soviets from doing just that. They are not likely to attack our cities and leave us free to do the same to them and are not about to believe any claims to the contrary from us.[11]

Leon Sloss, noted strategic analyst and deputy director of the Future Security Strategy Study, insists that for these reasons the United States is "moving away from the pu-





Opponents of SDI argue that sea-launched cruise missiles are undetectable. But even a modest ballistic missile defense would increase Soviet uncertainty about the success of their attack.

nitive concept of assured destruction toward a more flexible and variegated concept." He goes on to say that the "doctrine was threatening to become self-deterring."[12] The United States plainly could not continue threatening Soviet industrial and population centers as a response to a Soviet attack on US intercontinental-range weapons, especially when it became obvious that no matter what the United States did the Soviets would retain a sufficient strategic reserve to exact similar retribution.

Efforts to improve the situation have until recently centered on passive defense of our offensive forces to reduce their vulnerability (submarine basing and intercontinental ballistic missile [ICBM] silo hardening) and on accuracy improvements to our weapons to provide, as former Secretary of Defense Caspar Weinberger stated with respect to the new Peacekeeper (MX) ICBM, a "prompt capability to hold time-urgent hardened Soviet assets [missile silos, command centers—counterforce targets] at risk."[13] Weinberger made a similar argument for the new Trident II submarine-launched ballistic missile (SLBM).[14] It should be noted (if the reader has not already done so) that the theoretical targets for a strategic doctrine based on assured destruction are cities that are not considered "time-urgent hardened Soviet assets."

This leads in a rather roundabout way to the real topic—strategic defense, particularly SDI. All rhetoric about more "enlightened" political motivations aside, strategic defenses in the generic sense can and do perform a valid military function, even though legions of analysts have made it abundantly clear that a reliable defense of our major population centers is for all practical purposes impossible.[15] The oft-expressed notion during the recent SDI debates that anything less than perfect defense is no defense at all has little relevance to the military issue at hand—the utility of an attack on American cities, knowing we can respond in a like manner. The key is to make sure that we always *can* respond and deny the enemy any plausible avenue to

military victory—that we can respond against his weapons and command and control or against his population if required. The first and most direct effect of strategic defenses, be they the currently envisioned SDI program or something else, is to enhance the effectiveness of our strategic offensive forces. As Sir Michael Howard writes, they have the effect of "keeping our nuclear weapons in business . . . rather than rendering them 'impotent and obsolete.' "[16] This is a strictly *military* requirement.

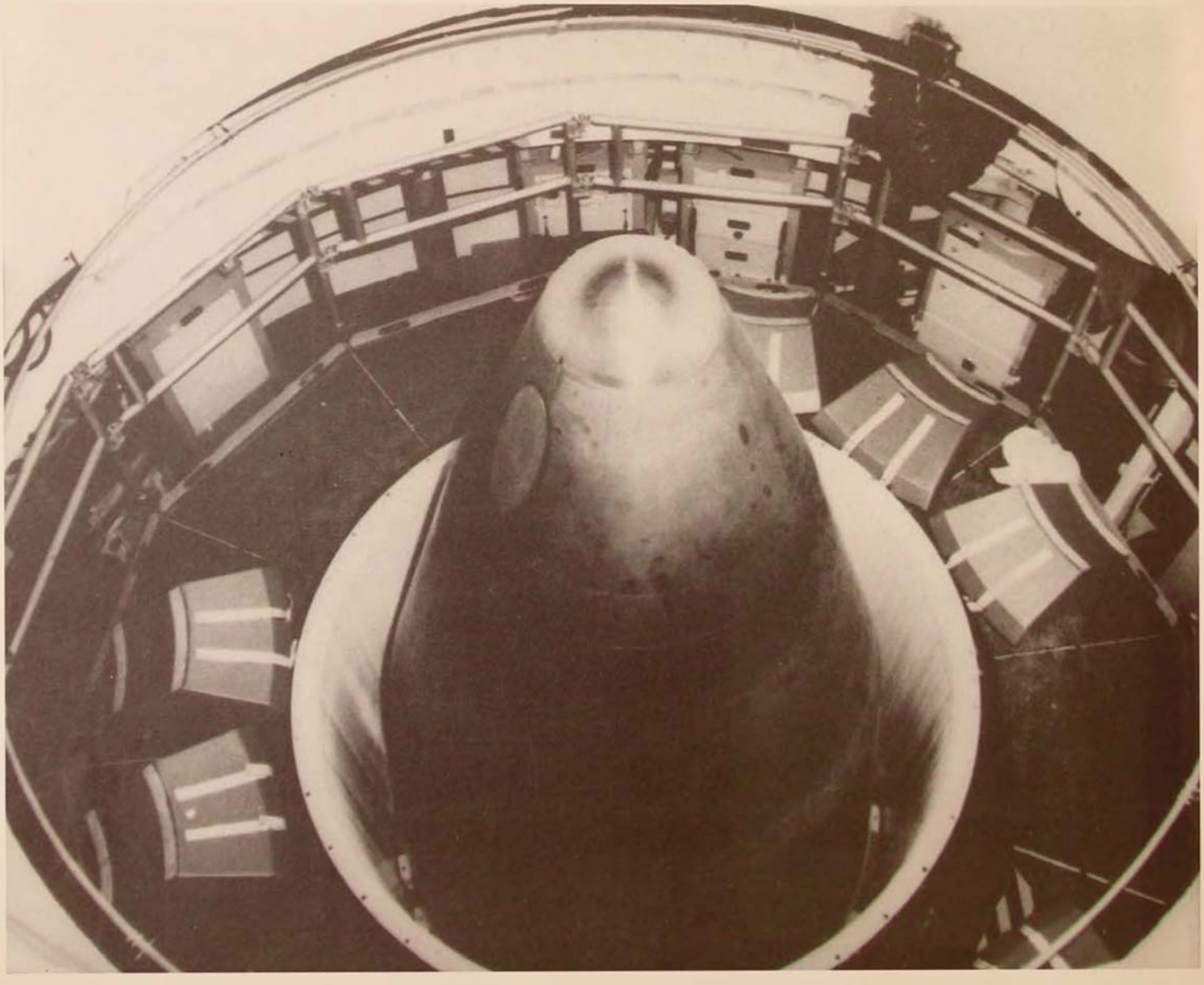
The Essence of Deterrence

Secretary Weinberger said during a 1982 hearing before the Senate Foreign Relations Committee that

> to deter successfully, we must be able—and must be seen to be able—to retaliate against any potential aggressor in such a manner that the costs we will exact will substantially exceed any gains he might hope to achieve through aggression.[17]

The advent of the SDI program has not changed this requirement. As mentioned above, we must assure that the Soviets understand that they cannot disarm us (and *then* hold our cities hostage) and that we can and will respond in an appropriate manner to any attack. Active and passive defenses can enhance the ability of offen-

The target. A Peacekeeper missile on alert in its silo. It is unlikely that a Soviet attack would be aimed at our cities and leave our retaliatory capability undamaged.

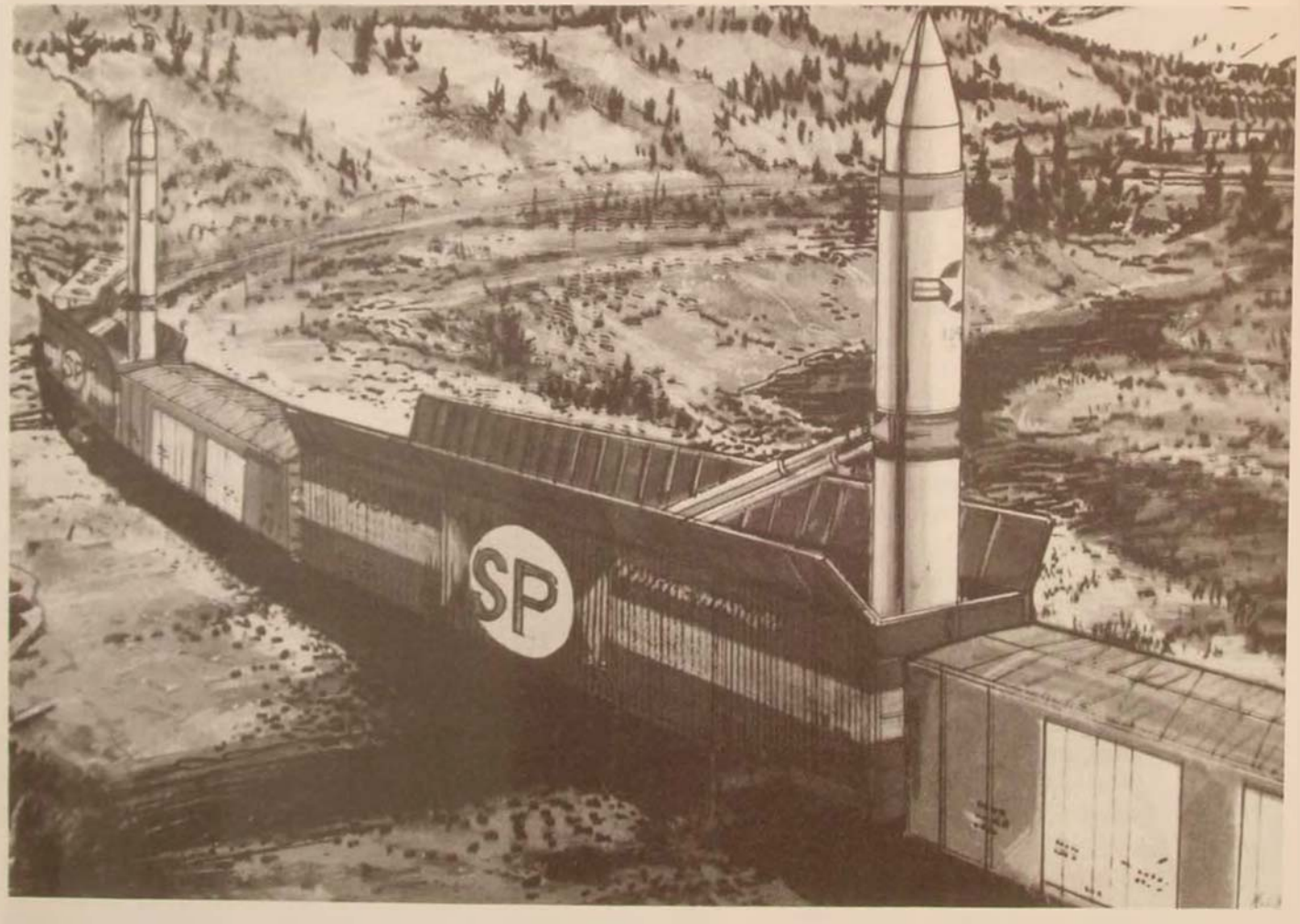


sive forces to deliver their retaliatory strikes by assuring that enough such forces survive to do so.[18] Active measures need not be perfect or massive if they are combined with passive defense measures such as mobility, deceptive basing, or increased hardening. The presidentially directed Future Security Strategy Study reinforced this notion when it reached the following conclusion as stated by Leon Sloss, its deputy director:

> Even a U.S. defense of limited capability can deny Soviet planners confidence in their ability to destroy a sufficient set of military targets to satisfy enemy objectives, thereby strengthening deterrence.[19]

We should remember that even during the period of our greatest reliance on offensive nuclear power in the 1950s, we maintained large active defense forces, though, as Bernard Brodie pointed out, they were not seen as totally effective.

No weapon technology or military strategy, whether offensive or defensive, has ever been perfect, nor should we reasonably expect them to be in the future. Yet there are those who insist that a strategic defense must be perfect, that we can somehow eliminate offensive nuclear weapons, and that such a strategic "shield" may be attainable



Former Secretary of Defense Weinberger said the Peacekeeper ICBM (shown in its rail-mobile mode) represents a "prompt capability to hold time-urgent, hardened Soviet assets at risk." Even with an effective SDI, such systems would remain a necessary part of our arsenal in order to threaten Soviet assets held in reserve.

sometime in the near future.[20] The Soviets will be able to circumvent a ballistic missile defense (BMD) system by increasing their reliance on sea-launched and air-launched cruise missiles (SLCMs and ALCMs) and even gravity weapons from bombers.[21] That alone does not constitute sufficient reason not to attempt a BMD system, especially with such large numbers of weapons delivered by Soviet ballistic missiles. In some cases, a properly timed SLCM or ALCM attack could strike US coastal cities and military installations before Soviet ICBMs. This could present a particularly potent threat to the central US leadership in Washington, especially since we have an acknowledged inability to detect incoming cruise missiles.[22] A modest air defense system would serve to increase Soviet uncertainties even here, but the historical lessons indicate that nuclear weapons, from whatever source, will always be able to penetrate the defense we do build, no matter how complex.

It would indeed be a blessing to mankind if the "civilized" nations were able to attain the SDI proponents' dream of rendering nuclear weapons "impotent and obsolete." However, it is highly unlikely that the United States and the Soviet Union will ever be able to deter nuclear warfare solely by threatening to destroy incoming ballistic missiles or, as Weinberger said to a group of European leaders, by producing a situation in which "the Soviets would simply have no reason to continue their huge investments in offensive arms" because ICBMs and shorter-range missiles were "approaching obsolescence."[23]

It is most probable, however, that defenses could enhance a deterrence that is already firmly based on a strong offensive capability. This author must agree in this instance with McGeorge Bundy and his colleagues (though not with all their conclusions) in their assessment that SDI "will have a level of political support unrelated to reality" as long as the American people believe that it offers a real hope of achieving President Reagan's stated goal of making nuclear weapons obsolete.[24] In other words, if US leaders continue to oversell the program, political pressure may eventually force them to attempt a system that is unbuildable, at least with the degree of sophistication and lethality projected by many SDI supporters. The United States simply cannot return to the time when it was safe behind two great oceans; SDI will not provide a satisfactory substitute for this bygone era.[25]

If developed, ground- and space-based defenses most likely will play an important role in dissuading an attack on the United States. However, to foster the idea that the United States will shift its strategic emphasis from the threat of nuclear retaliation to that of a "comprehensive national defense" is not only unwarranted at this early date but dangerous at any time. The preferable view in this case was offered by Fred Hoffman:

> The relevant question for the foreseeable future is not whether defenses should replace offensive weapons but whether we should rely exclusively on offensive weapons or whether a combination of militarily effective and discriminating offense and defenses will better meet our strategic requirement for deterrence and limiting damage.[26]

What defenses the United States does deploy should increase Soviet uncertainty as to their ability to successfully disarm us or to separate our leadership from our forces. What we should avoid is an SDI program that unduly threatens other vital military programs. An unbalanced approach could be dangerously destabilizing since in the absence of comprehensive offensive arms control, the Soviets could attempt to overwhelm our defenses with minimum concern over US retaliation, especially if they have built a defense of their own (which they already have done against our aircraft).

The essence of deterrence will continue to be the ability to respond to a nuclear strike—to first place the enemy's ability to do the United States harm at risk and then, if need be, to pose a threat to his people. (After all, weapons capable of destroying

opposing hardened weapons sites can certainly do grievous harm to soft population centers.) If active defenses can contribute to this goal, they should have a place in US strategic calculations. A limited defensive system could at least provide much-needed protection against a third nation's missiles or against an accidental launch and also could provide some level of protection for our vulnerable national leadership. However, billing SDI as a technological answer to the nuclear reign of terror and as a way to shift to defense-based deterrence may very well force us to drain resources from our strategic offensive forces and from much-needed measures such as deception and mobility that would provide more effective passive defenses probably a good deal cheaper than many of the exotic SDI proposals.[27]

Americans have a long-standing love affair with high technology, and nowhere is it more evident than in the Defense Department. This is not necessarily bad, but we must not allow ourselves to be blinded by the prospects of unproven technologies and promises of miraculous solutions to what is perhaps man's greatest dilemma. New technological innovations from the longbow to the H-bomb have regularly changed the face of battle, but none have provided a solution to the problem of war.

The Tactical Perspective

The SDI program has the potential to affect far more than the traditional strategic balance. Directly or indirectly the new emphasis on strategic defense can also generate tremendous change in the tactical or battlefield environment. Before exploring these potentials, we need to clear up some commonly held misperceptions about the concept of strategic and tactical operations.

Since World War II and the advent of nuclear weapons, we have tended to compartmentalize our military forces into convenient strategic or tactical categories. The general public and even many within the military have come to associate intercontinental-range and nuclear weapons with the "strategic force" category while all else is thrown into a "tactical" or "theater" force pot. How often have we heard senior Defense Department or administration officials discussing "strategic" weapons in a context that can only mean intercontinental nuclear weapons? The Strategic Arms Reduction Talks (START) are not intended to reduce strategic weapons but rather long-range nuclear weapons. This apparent division of labor between "strategic" and "tactical" forces is purely arbitrary.

It is not the weapon used but how it is used that is important. As Dr Robert Kupperman points out, the systems we have considered to be strategic, such as our bombers or even our ICBMs, "can attack theater targets while long-range theater systems can attack some strategic targets as well."[28] Thus, the difference between a strategic and tactical ICBM (or fighter-bomber) is determined by what is targeted, not by its size, range, speed, or destructiveness. It should be mentioned that the Soviets see our Pershing and cruise missiles in Europe as strategic since they can accomplish strategic tasks against Soviet targets. The Europeans are just as sensitive to our classification of Soviet SS-20s and Backfire bombers as tactical theater systems. The vaporization of 10 Downing Street is just as strategic to the British as 1600 Pennsylvania Avenue would be to Americans.[29]

The point of all this, of course, is that the same thing applies to our "strategic" defenses. More to the point, we should be careful not to confuse strategic and tactical defenses as we have done with the offense. Once again, whether a defensive system is strategic or tactical is mostly a matter of semantics. The same fighter aircraft that provides strategic defense of the United States is used to defend against enemy aircraft and cruise missiles over the plains of central Europe. The same ground-based interceptor missiles used in Europe could be used at home; and many of the more exotic SDI systems, if proven effective against ICBMs, could be

just as useful against intermediate-range ballistic missiles (IRBMs) in Europe—maybe more so given the slower reentry speed of IRBM warheads.

The president and the secretary of defense have repeatedly said that any defenses we deploy will also extend to our allies.[30] There is little doubt that some sort of defense against intermediate- and intercontinental-range missiles (if not their shorter-range battlefield or tactical cousins) can be fashioned even now from existing technology. The United States has conducted a successful test of a direct-impact (nonexplosive) ICBM interceptor. According to one report, the interceptor was able to hit a dummy ICBM warhead "100 miles above the earth at a combined closing speed of 18,000 mph."[31] Of course, it does not matter a bit whether the warhead destroyed by such a system is aimed at a strategic or a tactical target or whether the interceptor is launched from West Germany or the United States—the results are the same. The same applies to any future SDI offspring such as space- or ground-based lasers, particle-beam generators or high-energy kinetic impactors—what is strategic can in many cases also be tactical.

So the first and possibly most important effects SDI may have on the tactical arena are to create increased emphasis on defense against shorter-range weapons among our various alliances and, as a spin-off of SDI research, to provide some of the technologies required to provide such defenses. The United States and its European allies are already actively discussing the development of a theater-based antitactical missile (ATM) for use against both nuclear and conventionally armed Soviet missiles. There would be no difference in the ATM used for either purpose.[32] The primary effect of this system would (or should) be to "heighten substantially the risks and incalculable factors confronting the Soviet planners of an attack thereby strengthening the overall NATO deterrent."[33] Just as we should not artificially limit the fruits of the SDI program to just strategic defense, we should not assume that all space weapons technology will necessarily be limited to the defensive mission just because SDI is a defensive effort that may see some of its systems deployed in space.

The Air Force has made clear that it intends to "exploit the military potential of space, focus technology development, and redress deficiencies across *all* mission areas in space."[34] (Emphasis added.) While there is little doubt that the SDI program itself is intended as a defensive system, much of the related research into space weapons may produce spin-off systems that could be used for these other missions, including antisatellite (ASAT) and space-based tactical or strategic offensive weaponry. Space-based surveillance, navigation, warning, and communication systems already exert a tremendous influence over the way we plan to conduct all forms of military operations; we are now reliant on our space systems for all sorts of support and enhancement functions. Former Secretary of Defense Weinberger has further accused the Soviet Union of preparing space- and ground-based offensive ASATs as well as defensive antimissile systems for deployment as early as the late 1980s.[35] It seems obvious that any further development and deployment of more complex systems such as lasers, rail guns, and ground-launched ASATs by the United States, the Soviet Union, or other advanced nations will have strategic, tactical, offensive, and defensive applications against targets in space or on earth.[36]

Additionally, the SDI program is structured to investigate primarily nonnuclear means of accomplishing its defensive mission. Highly advanced detection, tracking, and guidance systems at the heart of any forces deployed as a result of the SDI program hopefully will allow interception of attacking forces by such systems as interceptor missiles or kinetic impactors, if not space-based laser weapons.[37] Again, these advances will have other battlefield applications.

Kinetic energy weapons may be useful against tanks, and lasers are already in use

for aiming and guiding a host of nonnuclear weapons. In the future they may very well be useful for direct weapons application. These technologies, if deployed, would hopefully foster a reduction in US reliance on nuclear weapons from both the offensive and defensive perspectives. The Defense Department is actively pursuing new technologies (ET—emerging technologies) that may provide long-range, highly accurate, nonnuclear weapons with sufficient accuracy and destructiveness to allow them to supplant nuclear weapons in many instances, especially for tactical (vice strategic) operations.[38] In fact, the US Congress has directed the Defense Department to submit a report on the applicability of SDI research to the tactical defense of theater-based conventional forces and in 1987 officially authorized about $500 million to study SDI spin-off technologies applicable to both conventional weapon systems and antitactical missile systems.[39]

Unfortunately, none of this implies that such technologies will banish nuclear weapons from the face of the earth or even make them truly obsolete. They may provide new defensive options previously unavailable and other wartime options short of nuclear weapon use. Carl Builder writes in his study of nonnuclear strategic warfare that even though new nonnuclear technologies may magnify incentives not to use nuclear weapons:

> Nuclear weapons remain unique in their credibility as a threat to destroy entire cities and societies in a single attack. Because of that unique quality, they will also remain the most potent political instruments and national symbols of power. The advent of nonnuclear strategic weapons [which is really nothing at all new] will not eliminate the interest and value that resides, and will continue to reside, in the possession of nuclear weapons.[40]

The psychological bottom line of nuclear deterrence (some would say all deterrence in the nuclear age) will always be the threat of a holocaust even if both adversaries do not plan a "city-busting" campaign. The sheer destructiveness of these weapons lends tremendous international political clout to the nations possessing them. However, as Builder maintains, the advances in modern nonnuclear weapon technology (increasing accuracy and destructiveness) and the acknowledged destructiveness of nuclear weapons will provide "both the incentives and the means to avoid resorting to nuclear weapons, even in conflicts fought over strategic objectives at intercontinental ranges."[41] Many of the advances in such weaponry will undoubtedly come as a direct or indirect result of research on the SDI program.

It could be said, then, that the SDI program through directly deployed nonnuclear defensive systems and through the technological spin-offs to other areas could significantly enhance our ability to conduct offensive and defensive, strategic or tactical warfare. It is important to emphasize that this is what deters war in the first place. This cannot be provided by one element such as SDI or long-range nuclear weapons in isolation. The nuclear arsenal did not prevent either the Korean or Southeast Asian wars, and SDI will not of itself succeed where nuclear weapons failed.

Some Conclusions

Fred Hoffman captured the most important function of defenses in the nuclear era:

> Ballistic missiles now offer an attack planner a degree of simplicity and predictability associated with no other weapon system. Planning a ballistic missile attack is much more like building a bridge than it is like fighting a war. The distinguishing characteristic of warfare, an active and unpredictable opponent, is missing.[42]

It should be the purpose of strategic defenses to provide that characteristic of warfare—an active and unpredictable opponent—to enhance in the enemy's mind Clausewitz's fog of war or, as Bernard Brodie put it, to ensure that enemy weapons do not have a "free ride." This author does not

agree that planning a missile strike is quite as simple as Hoffman implies. The precise timing of hundreds of missiles and hundreds of aircraft to within a matter of very few minutes to prevent or to blunt a response is no simple matter. However, if we interject even a marginally effective active defense or an enhanced set of passive defenses, these uncertainties grow much worse, even if an enemy does add more offensive systems. This, then, is the first and most crucial conclusion drawn from this discussion—that defenses can and do serve a valid military purpose in spite of the assured destruction rhetoric that has been so pervasive over the past two decades.

It is equally important to understand the second major conlusion: strategic defenses cannot by themselves deter an attack on the United States. Simply stated, an adversary not fearful of retribution becomes the boldest sort of enemy; he must see consequences that are more serious than merely the possibility of a failed attack. Defenses can enhance but cannot provide such consequences.

If we do manage to reduce our reliance on nuclear weapons, it will be due as much to advances in nonnuclear offensive weapons (including SDI spin-off systems) as defensive ones. There are certain crucial targets that must be covered in order to deny an enemy victory and to reduce damage to ourselves. If these are targeted by highly effective nonnuclear weapons, so much the better.

Even so, the bottom line of deterrence will likely remain nuclear weapons. They may be smaller and we may eventually agree with our allies and adversaries to reduce their overall numbers, but their destructive power and resulting political importance make it imperative that we not only possess them but that we are seen to possess at least a rough balance with our adversaries even if defenses are deployed. This balance becomes even more important as arms control efforts reduce their numbers. It is at this point of reduced weapon levels that defenses (active or passive) have their greatest impact in assuring that we have the capability to respond to Soviet attack.

In sum, the SDI program can make vital contributions to both our strategic and tactical mission capabilities as long as we do not see the program as the technological remedy for the nuclear "reign of terror." There were many who believed early on that nuclear weapons would put an end to war; they obviously have not. They have probably prevented the titanic clash between the world's two superpowers, and we should be grateful for that. It was, however, the presence of nuclear weapons that made the surrogate state challenge the problem it is today and that fostered our reliance on those same nuclear weapons, which in turn left us militarily unprepared to deal with contingencies in Korea and Southeast Asia.[43]

There is a relevant military lesson here that bears directly on the SDI debate today. In an era of increasingly available, sophisticated, nonnuclear weaponry and growing worldwide nuclear presence, we cannot allow vague promises of obsolete intercontinental missiles and useless nuclear weapons to blind us to the very real need for a balanced military force structure that is as able to deal as effectively with third-nation conventional aggression or the worldwide terrorist infrastructure as with the Soviet Union's massive nuclear arsenal. SDI and many of the technologies resulting from the program have the potential to contribute to that vital military balance as long as US military and civilian leaders approach it as a military system intended to play a military role in a very complex environment. □

Notes

1. A 1985 article compared our strategic defense systems in the early 1960s to those of the mid-1980s. In the 1960s we had 207,000 people assigned to strategic defense, today 37,000; we had over 2,600 interceptor aircraft, today 340; we had 274 air defense missile batteries, none today. See Howard Silber, "NORAD Commander Comments U.S. 'Now Vulnerable' to Soviet Cruise Missile," *Omaha World Herald*, 8 September 1985, 1.

2. John Foster Dulles, "Foreign Policies and National Secu-

rity." *Vital Speeches of the Day*, 1 February 1954, 232–35.

3. Jerome H. Kahn summed up the prevailing attitude when he wrote that even with substantial defensive deployments after 1954, "offensive force decisions remained the focal point of the administration's strategic policies throughout the decade . . . the emphasis on offensive power also stemmed from a growing awareness on the part of the President and his advisers that a fully effective defense of the United States against nuclear attack was neither technically possible nor economically feasible." See Jerome H. Kahn, *Security in the Nuclear Age: Developing U.S. Strategic Arms Policy* (Washington, D.C.: Brookings Institution, 1975), 28.

4. Bernard Brodie, *Strategy in the Missile Age* (Princeton, N.J.: Princeton University Press, 1959), 202.

5. See the discussion of ABM systems in *International Arms Control: Issues and Agreements*, ed. John H. Barton and Lawrence D. Weiler (Stanford, Calif.: Stanford University Press, 1976), 58–61, 132–36; and Henry Kissinger's discussion of the US ABM controversy in Henry Kissinger, *White House Years* (Boston: Little, Brown and Company, 1979), 206–10.

6. Those that argue in favor of MAD as a basis for nuclear deterrence often point to Soviet acceptance of the ABM Treaty as proof.

7. See, for example, Desmond Ball, "Counterforce Targeting: How New? How Viable?" in *Arms Control Today* 2, no. 2 (February 1981): 1–6.

8. Fred S. Hoffman, "The SDI in U.S. Nuclear Strategy," *International Security*, Summer 1985, 16.

9. David Goldfischer, "ABM as Arms Control: The Fate of the U.S. 'Strategic Concept'" (Paper presented at the Inter-University Seminar on Armed Forces and Society 1985 Biennial International Conference, Palmer House, Chicago, 18–20 October 1985), 1.

10. Fritz W. Ermarth, "Contrasts in American and Soviet Strategic Thought," in *American Defense Policy*, ed. John F. Reichart and Steven R. Sturm, 5th ed. (Baltimore: Johns Hopkins University Press, 1983), 65. Patrick Glynn writes that "one of the critical difficulties that proponents of MAD confronted from the beginning was the overwhelming evidence that Soviet strategists had no such view of nuclear technology; on the contrary, the Soviets seemed to assume even a Case for the Arms Buildup." Patrick Glynn, "The Moral Case for the Arms Buildup," *Nuclear Arms, Ethics, Strategy, Politics*, ed. R. James Woolsey (San Francisco: Institute for Contemporary Studies, 1984), 31.

11. For a discussion of Soviet targeting philosophy and the primacy of military objectives over assured destruction, see William T. Lee, "Soviet Nuclear Targeting Strategy," *Strategic Nuclear Targeting*, ed. Desmond Ball and Jeffrey Richelson (Ithaca, N.Y.: Cornell University Press, 1986), 84–108. Also see Lt Gen Brent Scowcroft, "Strategic System Development and New Technology: Where Should We Be Going?" *New Technology and Western Security Policy*, ed. Robert O'Neil (Hamden, Conn.: Archon Books, 1985), 1–11.

12. Leon Sloss, "The Return of Strategic Defense," *Strategic Review*, Summer 1984, 39. Additionally, Dr Donald Snow writes that "critics of assured destruction argue that the ex post [facto] decision to implement MAD simply is unbelievable, except in the event of an all-out nuclear countervalue attack by the Soviets against the U.S. . . . MAD emerges as a credible deterrent against the least likely threat." Donald M. Snow, *The Nuclear Future: Toward a Strategy of Uncertainty* (University, Ala.: University of Alabama Press, 1983), 15.

13. *Report of the Secretary of Defense Caspar W. Weinberger to the Congress on the FY 1986 Budget, FY 1987 Authorization Request, and FY 1986–90 Defense Programs* (Washington, D.C.: Government Printing Office, 4 February 1985), 53.

14. Weinberger writes, "To rectify the inability of existing SLBMs to deal with hardened Soviet targets, we are developing the Trident II missile." Ibid., 52.

15. Former Secretary of Defense James Schlesinger wrote that "there is no realistic hope that we shall ever again be able to protect American cities. There is no leak-proof defense. Any defense is going to suffer some erosion at best." See James R. Schlesinger, "Rhetoric and Realities in Star Wars Debate," *International Security* 10, no. 1 (Summer 1985): 5. Also see the discussion in Joseph D. Douglas and Samuel I. Cohen, "SDI, the Hidden Opportunity," *Defense Science 2003+*, August-September 1985.

16. Michael Howard, "The Future of Deterrence" (Lecture presented at the Royal United Services Institute [RUSI] on 16 January 1986, in *RUSI*, June 1986), 10.

17. Statement of Secretary of Defense Caspar W. Weinberger in Senate, *U.S. Strategic Doctrine: Hearing before the Committee on Foreign Relations*, 97th Cong., 2d sess., 1982, 17–22.

18. Douglas and Cohen maintain that "the minimum (but most important) US requirement is for a highly effective SDI optimized first to ensure the ability of the United States to launch a deliberate, organized, powerful counterstrike while under attack or, more precisely, at the beginning of the Soviet first strike. . . . There are two secondary roles for SDI: *help* preserve US residual forces, or strategic reserves . . . and *help* limit damage to the United States in the event of war." See Douglas and Cohen, 6.

19. Sloss, 38. Additionally, a distinguished group of defense experts including former Secretary of Defense Robert S. McNamara, former chief arms negotiator Gerald Smith, and former Special Assistant to the President for National Security Affairs McGeorge Bundy wrote that "the overwhelming consensus of the nation's technical community is that in fact there is no prospect whatever that science and technology can, at any time in the next several decades, make nuclear weapons 'impotent and obsolete.' The program developed over the last 18 months, ambitious as it is, offers no prospect for a leak-proof defense against strategic ballistic missiles alone, and it entirely excludes from its range any effort to limit the effectiveness of the other systems—bomber aircraft, cruise missiles, and smuggled warheads." McGeorge Bundy et al., "The President's Choice: Star Wars or Arms Control," *Foreign Affairs*, Winter 1984–1985, 265.

20. See the president's now famous 23 March 1983 "Star Wars" speech delivered to the nation via national television. Also, in a June 1986 speech the president said that his goal was "a shield that could protect us from nuclear missiles just as a roof protects a family from rain." See David Wood, "White House Fails to Sell its 'Star Wars' Plan," *Newark Star-Ledger*, 21 August 1986, 6. Also see Richard N. Perle, "The Strategic Defense Initiative: Addressing Some Misconceptions," *Journal of International Affairs* 39, no. 1 (Summer 1985): 23–28. Even though he tacitly admits the defense does not have to be perfect, Perle does say that "by effectively destroying attacking ballistic missiles, and thus rendering them 'impotent and obsolete' for military or political purposes, such defenses also can eliminate the potential threat of first strike attack" (p. 25).

21. For a discussion of US vulnerability to Soviet cruise missiles, see Silber, 1.

22. In a recent interview, Gen Robert T. Herres, at the time commander of the North American Air Defense Command (NORAD), said that "since we don't have a good detection capability where the cruise missile is concerned, a decapitating attack is possible. . . . That sort of attack could be staged with a relatively small number of cruise missiles. . . ." See Silber, 1.

23. Caspar Weinberger, "Deterrence Stability, and Arms Reductions, the Goals of SDI," remarks prepared for delivery at the German-American Roundtable, Bonn, West Germany, 5 December 1985, 6.

24. Bundy et al., 269.

25. Dr Gary Guertner agreed with this assessment when he wrote that "without understanding the ambiguities and controversies that will still remain, Congress and the public may succumb to a dangerous confidence that SDI research alone can illuminate a risk-free path to a safer, defense-dominated world. An idea all too capable of fatally destabilizing today's nuclear balance may pass the point of no return." See Gary L. Guertner, "What Is Proof?" *Foreign Policy*, no. 59 (Summer 1985): 74.

26. Fred Hoffman, 19.

27. An article on small mobile ICBMs in the *New York Times* stated that "some supporters argue that mobile missiles are a cheaper and more effective way of reducing the vulnerability of land-based missiles than proceeding with the Administration's Strategic Defense Initiative Program. . . ." See Michael R. Gordon, "Study Says a Small Mobile Missile Would Help U.S. Deter Soviet Strike," *New York Times*, 9 November 1985, 4. Also see Walter Slocombe's (former assistant secretary of defense under President Carter) comments on cheaper and more passive weapon defenses in Evan Thomas, "Strategic Questions," *Time*, 23 June 1986, 18.

28. Robert H. Kupperman, "Using SDI to Reshape Soviet Strategic Behavior," *The Washington Quarterly*, Summer 1985, 79. Perhaps the classic example of the reversal of traditional strategic and tactical roles was during the Vietnam War. During that conflict our B-52s were extensively used from 1965 for nonnuclear operations (dropping three million tons of bombs). Furthermore, they were not used for what would be considered strategic actions until the Linebacker II campaign of 1972. Up until then they were used almost exclusively for tactical actions in South Vietnam (direct troop support, interdiction of supply lines, etc.). At the same time our "tactical" forces were conducting what some consider to be "strategic" operations in the North.

29. For an in-depth discussion of the relationship between strategic and tactical actions and the indivisible air power concept see Grover E. Myers, *Aerospace Power: The Case for Indivisible Application* (Maxwell AFB, Ala.: Air University Press, 1986).

30. Most recently, Weinberger told the German-American Roundtable in Bonn, West Germany, that SDI "is not an attempt to shield only the United States from Soviet intercontinental missiles. The fact is, if strategic defense research bears fruit, it will protect against ballistic missiles of both strategic and intermediate range, and so enhance deterrence, and protect Europe as well as the United States. In fact, we are told by scientists that if we can do it at all, it will be somewhat easier to destroy intermediate-range rather than strategic-range nuclear missiles." (Note Weinberger's association of range with "strategic.") See Weinberger, "Deterrence, Stability, and Arms Reductions," 4.

31. See "Bull's-Eye in Space," *Time* 123 (25 June 1984): 28. Also see Clarence A. Robinson, Jr., "BMD Homing Interceptor Destroys Reentry Vehicle," *Aviation Week & Space Technology* 120 (18 June 1984): 19–20.

32. For a discussion of the ATM, see Hubertus G. Hoffman, "A Missile Defense for Europe?" *Strategic Review*, Summer 1984, 45–55; and Clarence A. Robinson, Jr., "U.S. Develops Antitactical Weapon for Europe Role," *Aviation Week & Space Technology*, 9 April 1984, 46–48.

33. Hubertus Hoffman, 51.

34. *USAF FY85 Report to the 98th Congress of the United States* (Washington, D.C.: Government Printing Office, 1984), 40.

35. *Report of the Secretary of Defense, FY 1986*, 60.

36. Myers, 42.

37. See Secretary of Defense Weinberger's discussion of the SDI program in *Report of the Secretary of Defense Caspar W. Weinberger to the Congress on the FY 1987 Budget, FY 1988 Authorization Request, and FY 1987–1991 Defense Programs* (Washington, D.C.: Government Printing Office, 5 February 1986), 287–93.

38. See the discussion of the effect of "emerging technologies" on air power doctrine in Myers, 25–29; and Gen Robert T. Marsh, "A Preview of the Technology Revolution," *Air Force Magazine*, August 1984, 42–49.

39. See Edgar Ulsamer, "SDI in Increments," *Air Force Magazine*, December 1986, 23–25.

40. Carl H. Builder, *Strategic Conflict Without Nuclear Weapons* (Santa Monica, Calif.: Rand Corporation, April 1983), 43.

41. Ibid.

42. Fred Hoffman, 23.

43. General William W. Momyer, former commander of the US Air Force in Vietnam and former commander of the Tactical Air Command, wrote in regard to the early years in Vietnam that "with the war moving toward higher levels of violence, the tactical Air Forces in the United States were rapidly being trained and equipped for conventional actions. Since the Korean War, relatively little attention had been given to refining or building non-nuclear weapons or to training aircrews for delivery of non-nuclear weapons." See Gen William Momyer, *Air Power in Three Wars*, ed. A. J. C. Lavalle and James C. Gaston (Washington, D.C.: US Air Force Association, 1978), 16–17.

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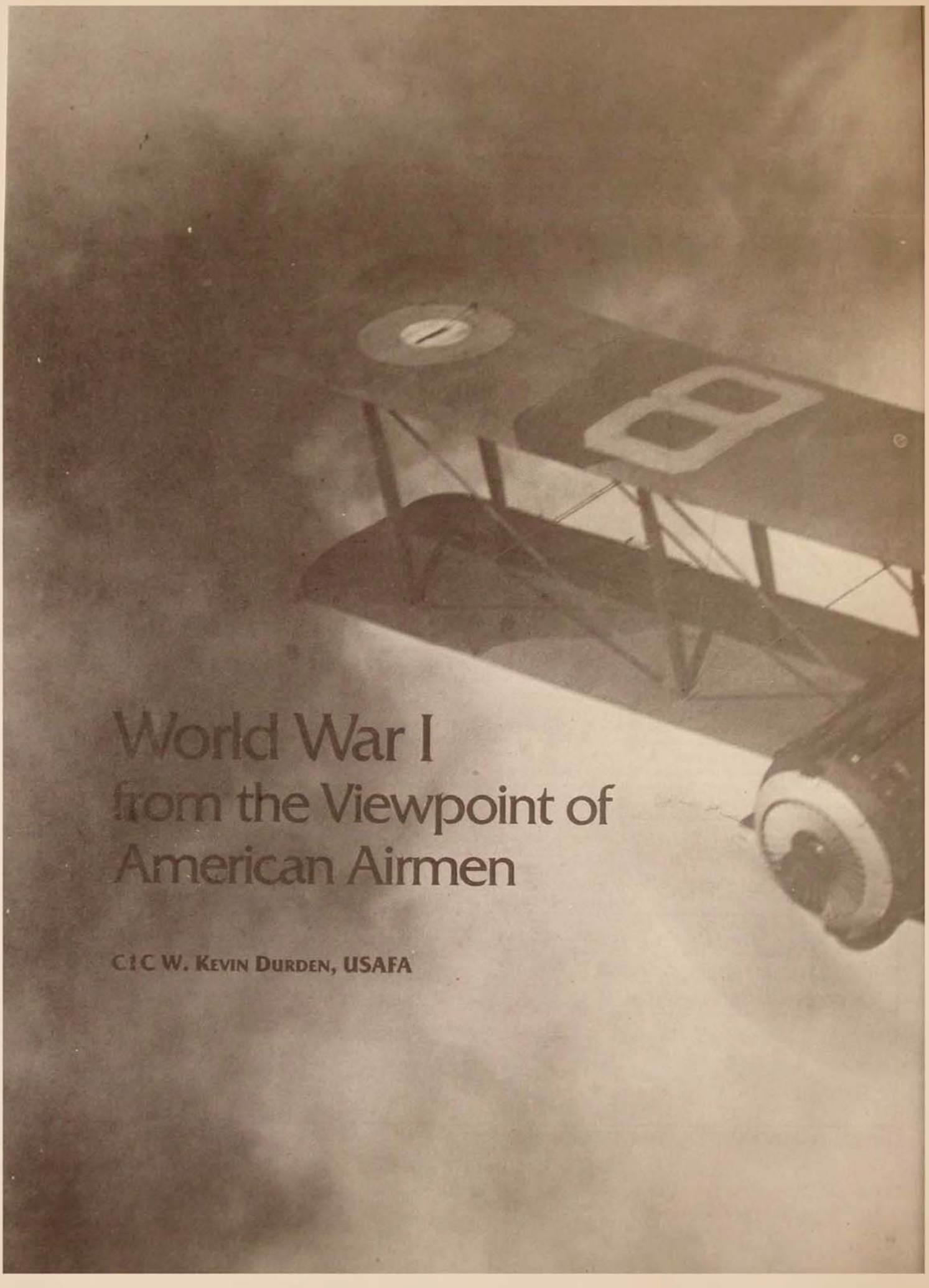
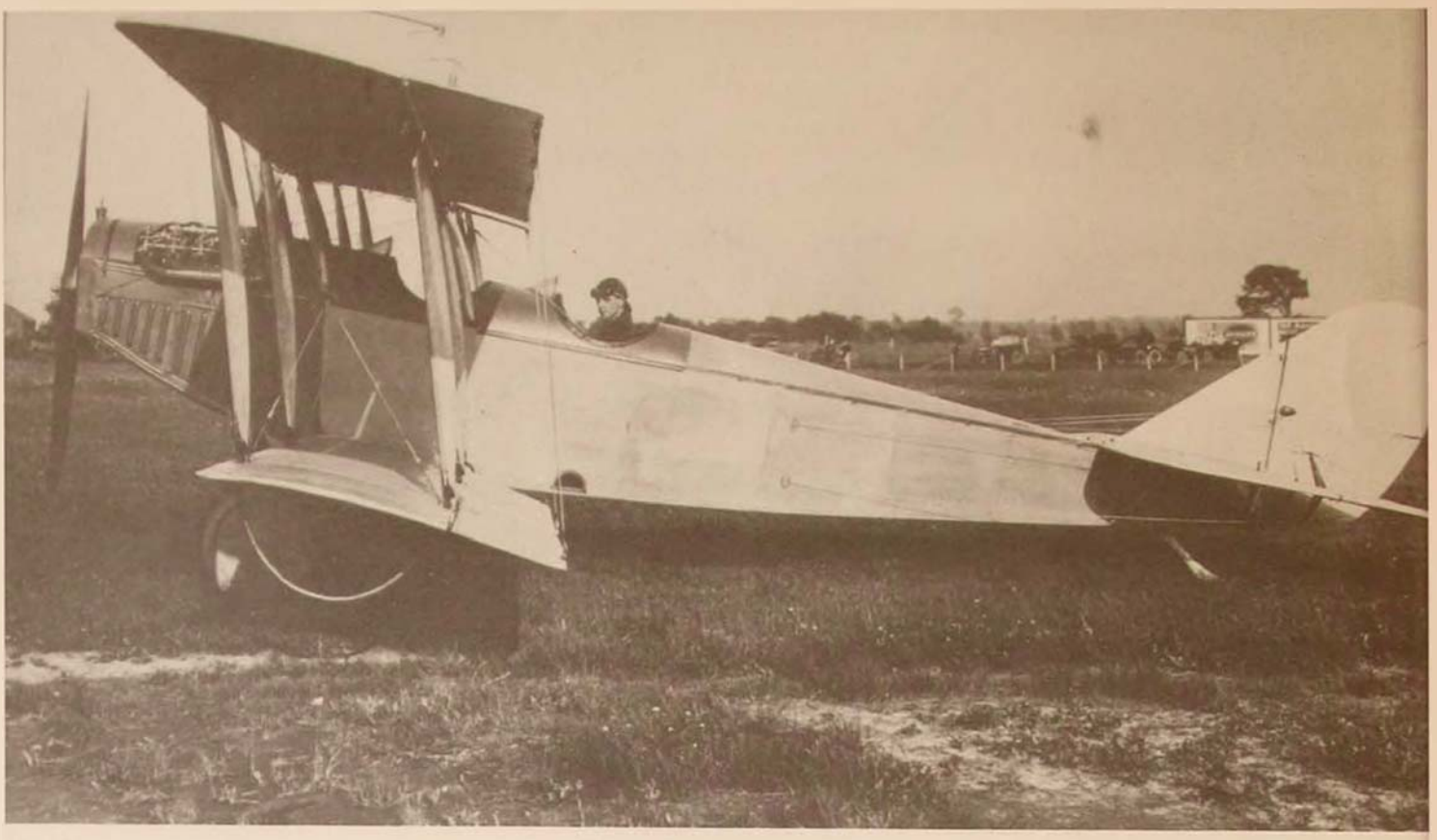


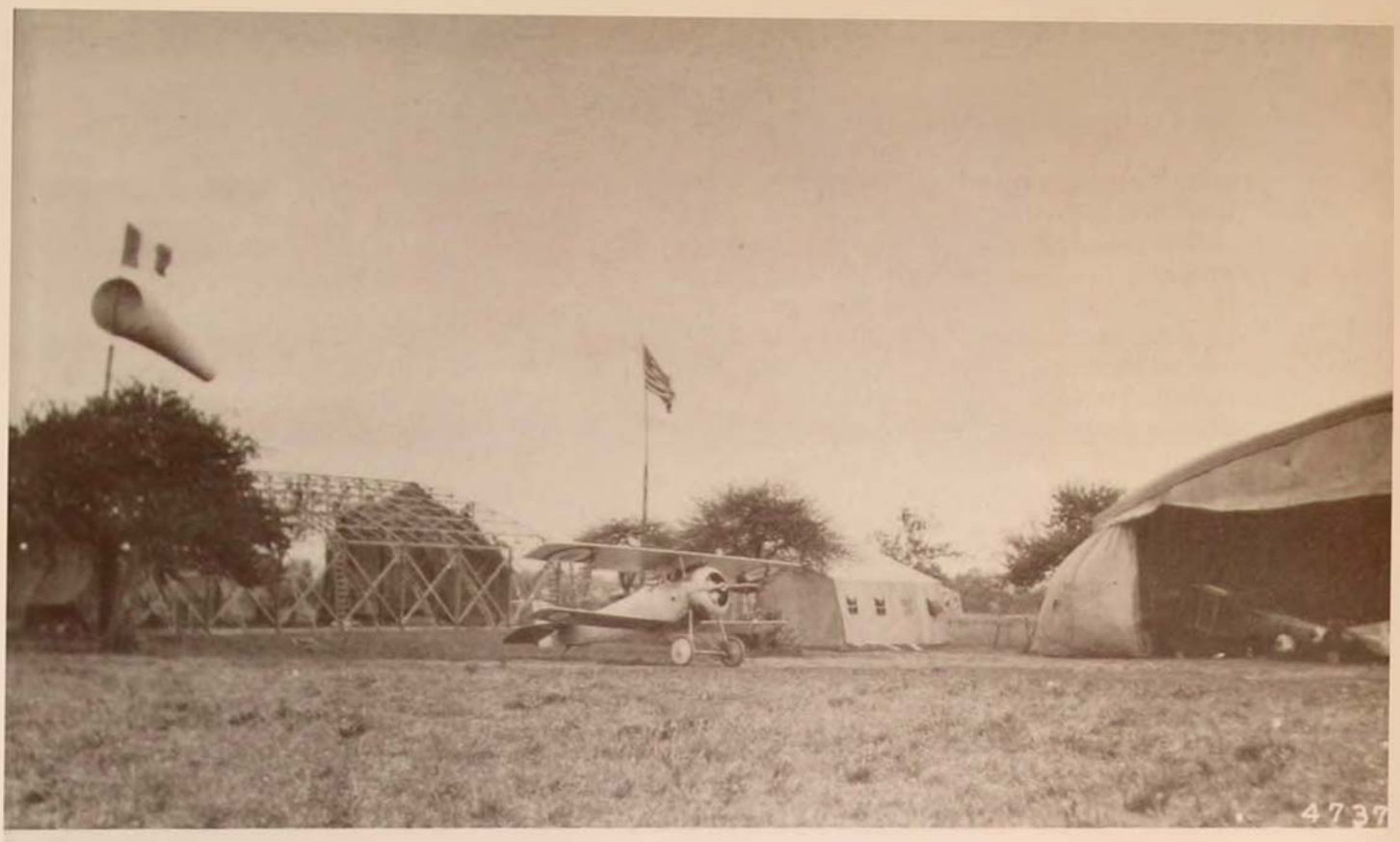
World War I from the Viewpoint of American Airmen

C1C W. Kevin Durden, USAFA

WHEN the United States declared war on Germany on 6 April 1917, the US Air Service was a branch of the Signal Corps. Its inventory consisted of one squadron equipped with obsolete airplanes; no machines fit for frontline service; no fundamental knowledge of air organization; fewer than 50 trained pilots; no pilots, save those serving with the French or British air forces, capable of performing a battle mission; a total of approximately 1,120 personnel; and only five officers in Europe, none of whom had yet acquired any advanced tech-



The Curtiss JN-4D "Jenny" (top), used as a primary flight trainer for American pilots, was a very forgiving aircraft. Advanced flight training in Europe normally meant flying battered aircraft that had been retired from combat service in favor of newer and better models. This French-built Caudron G-III (above) was used in 1915-16 as a reconnaissance aircraft and then brought back into service in 1918 to train American airmen.



French and British airfields often had permanent facilities. Most American airfields, however, housed their airmen in tents and were saturated with mud a good part of the year.

nical knowledge.[1] These were the assets with which the United States faced a war in the air.

The broad expansion program spurred by this deplorable state of affairs resulted (by November 1918) in the indoctrination of approximately 9,000 men as pilots in this newly formed branch of military service.[2] In this novel arena of conflict, these pilots possessed none of the traditions or prescribed living and working standards that their counterparts in the land or naval forces had acquired from years of practice. The American aviators' pilot training, their experiences with the aircraft they flew, their unique living and fighting conditions, and their contact with members of the Allied air forces behind the lines shaped their perspective of the conflict both during and after the war.

In April 1917 the United States possessed only three pilot training schools.[3] Many of the Army's 65 flying officers were in administrative positions and could not be released to take part in a training program. None of them had ever flown a modern European service-type aircraft, and the majority had trained on a system of controls differing sharply from those used at the front. Army officials realized from the beginning that most of the enormous training program had to be carried out in the United States. They decided early that training needed to be standardized because the highly personalized prewar methods would not serve to train the thousands of pilots needed. The Bingham Plan (after Maj Hiram Bingham, who was in charge of the air training) called for a three-phase program: ground, primary, and advanced.[4] The first and second phases were to be accomplished in the United States; the final phase would occur in flying schools in Britain, France, and Italy because there were "no planes in the United States

suitable for advanced training and no pilots qualified to give such instruction."[5]

Ground school was a six-to-eight-week program in which aviation cadets studied the mechanics of the machine gun, map reading, aircraft rigging, engines, meteorology, astronomy, and instruments. They also took part in basic military drill and physical fitness programs. The state of mind of the young men at these training schools is evident from their letters and diaries.

Standing guard was the worst hardship and was seen as a waste of time. After all, the cadets reasoned, there was little danger of "a German attack on Pennsylvania. What we need is more sleep."[6] In a letter home, one cadet noted that "a flying-boat has been up twice from the (naval) yards and makes everything look more warlike."[7] Clandestine crap games received more thought than the war, which seemed unreal from across the Atlantic.[8]

Primary flight school signaled the end of guard duty and the beginning of the real thing for the cadets. By Christmas of 1917 there were 15 training schools in the United States as a result of the frenzied construction program.[9] Most instructor pilots were Canadians or Americans who had been trained in Canada and who had not seen combat. The war was still a distant thought during primary training. "It's a great life, mother, flying alone with nothing to worry about, the whole sky to fly in, and not much work to do," wrote one student, "I will really hate to see this old war stop, if it ever does. I am having such a fine time."[10]

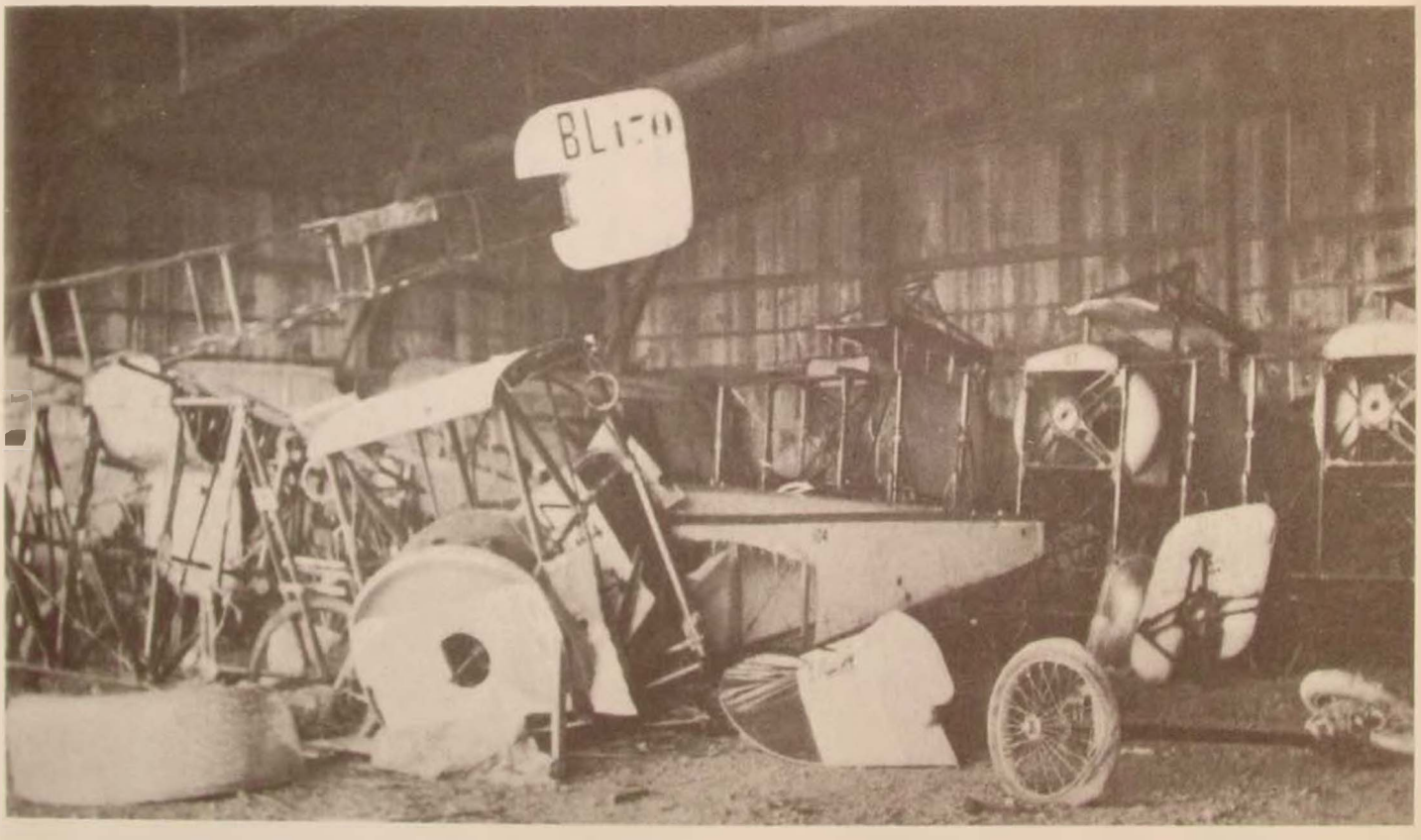
The "fine" time continued through the completion of primary training until the arrival of the fledgling aviators at one of the advanced training bases in Europe. Even the voyage across the Atlantic, with the constant threat of submarine attack, was seen as a great adventure by the newly commissioned lieutenants.[11] The mood of their writings underwent a distinct change, however, after the excitement of being on a new continent wore off.

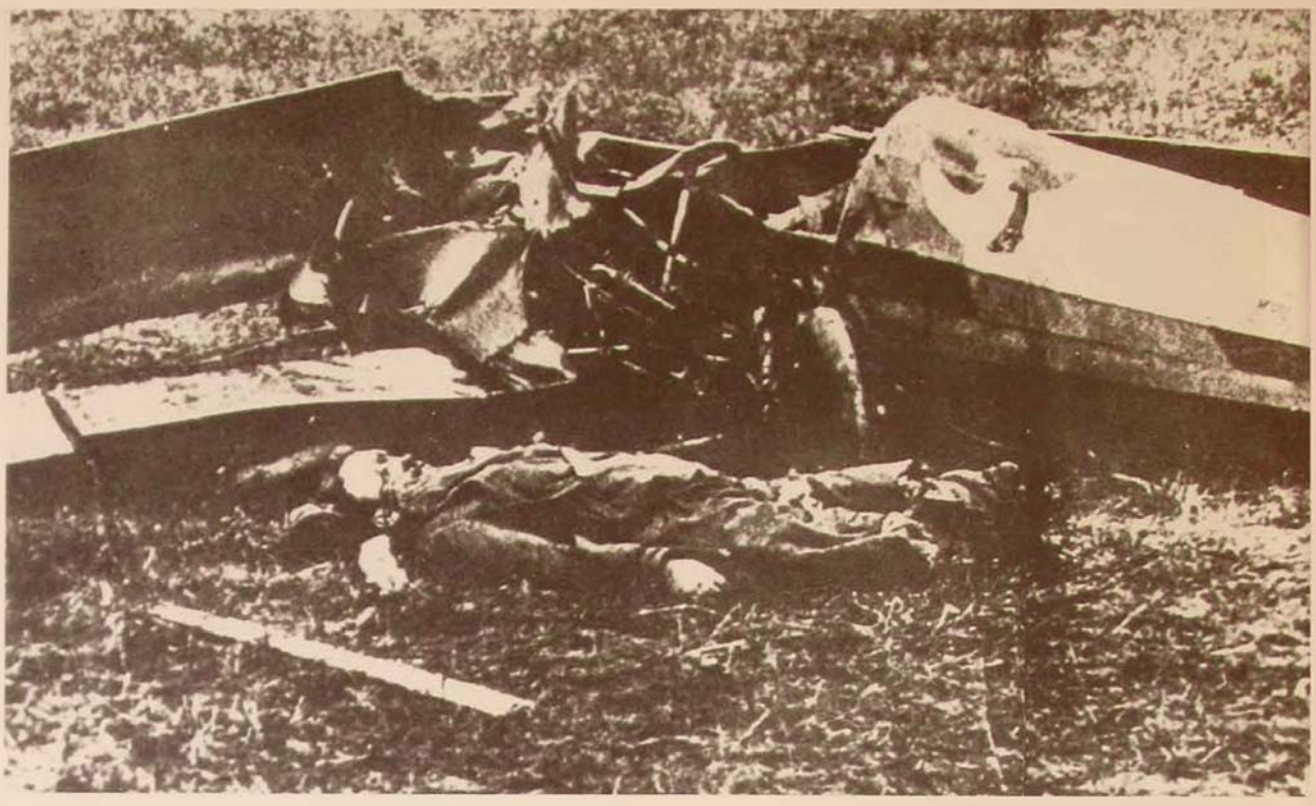
Many American student pilots took advantage of days of nonflying weather or periods of liberty to visit American infantry units on the front. The trenches were every bit as gruesome as the stories they had heard while still in the United States, and the shell-churned landscape contrasted sharply with the picturesque countryside around the training airdromes. These field trips reconfirmed the wisdom of their decision to join the Air Service. However, the sight of the skeletons of burned-out aircraft in no-man's land and immediately behind the trenches, where pilots had tried to make forced landings, gave testimony that death was just as prevalent in the skies as on the ground.

With the exception of those receiving their final instruction at English-run schools, the aviators were immediately aware of the difficulties produced by the language barrier in their training.[12] But language was not the only difference between student and teacher. Instructors at these schools, unlike those in the United States, were veteran combat pilots who had been removed from the front lines due to time in combat or injuries. In addition, these pilots were not professional instructors, and they had little patience for slow pupils or those they considered lazy. To them, flying was a serious and dangerous business, no game for overzealous youngsters. The American pilots found themselves subdued by the grim intensity of their teachers.

Those who were brave enough and had the language ability to approach these forbidding figures in the evenings after flying had ended found the veterans willing enough to share their opinions of the war, among other things. The Americans found that those individuals they considered "old men" were only slightly older than themselves. A 25-year-old Italian major at the school at Foggia had been the commander of a pursuit squadron for a year before returning to the rear to instruct new pilots.[13] In addition, many were tired of the war after four years. They no longer saw it as a great crusade or as a desperate defense of their homes, and they were more than ready for it to end. The bravery, chivalry, and ad-

It took courage to fly the aircraft in training, let alone in combat. These photos show the salvage hangar at Pau, France, filled with aircraft damaged in student mishaps.





venture of air combat anticipated by the American pilots began to pale with this knowledge.

Despite these considerations, the American pilots who finished their training and waited for assignments to the newly formed American aero squadrons still possessed a fair amount of enthusiasm. At one billeting camp constructed for these waiting pilots, one "green" aviator wrote, "I guess we're in something really big now. I wonder how I will like it."[14]

Chivalry of sorts existed between enemies. When 1st Lt Quentin Roosevelt (right) was killed in combat (above), the Germans informed the 95th Aero Squadron by dropping a note on the American airfield. In the end, death for an airman was just as gruesome as for a soldier in the trenches.

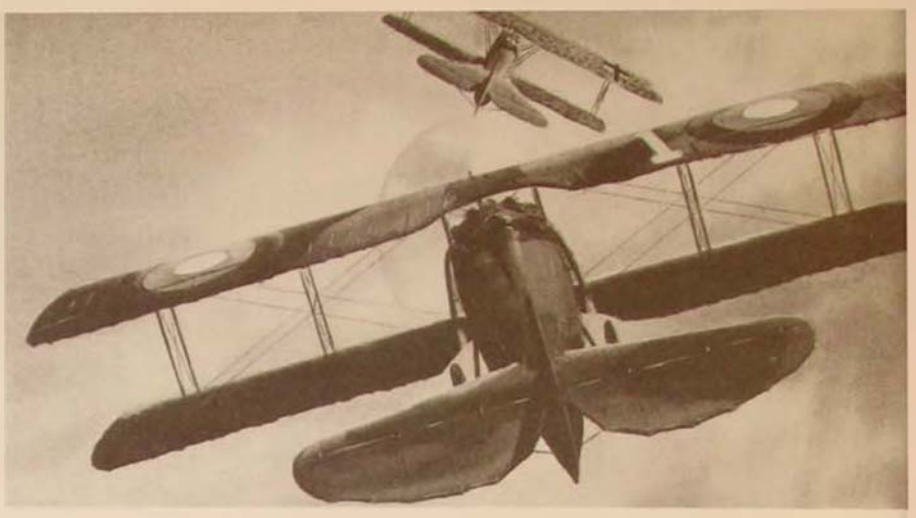
Training accidents were common, though not always fatal. In the accident (below) at Pau, France, where many members of the Lafayette Escadrille trained, two aircraft collided at midfield. At the far left, one of the pilots sits dazed, while at the far right the other pilot attempts to explain the incident.

Upon arriving at their assigned squadron, the first action many took was to walk to the flight line and examine the aircraft they were to fly. While at primary training in the United States, most had flown the Curtiss JN-4 Jenny, a very forgiving aircraft, slow and easy to fly. Advanced training consisted of two-seat versions of Allied pursuit types for the fighter pilots and dual-control models for those going into observation, bombing, or reconnaissance squadrons. If they were fortunate, the pursuit pilots had access to older models of the frontline combat aircraft with which to gain experience. Some of these aircraft were "held together with baling wire and butyrate dope" and made the aviators anxious to get to the front where at least they would be getting new equipment.[15] Unfortunately, most of them were destined to be disappointed.

When they arrived at the front, many were greeted by the sight of "more wire and more dope."[16] British, French, and Italian air services donated what they thought they could spare when the American squadrons were mobilized—machines rotated out of service in favor of newer types. Some of these aircraft came from the front; others, fresh from the storage fields in southeast France, had been refused by the Allied air services in favor of more advanced models.

The Nieuport 28, which the French air service declined in favor of the Spad, might have faded into obscurity had it not been available to the new American squadrons. The first to arrive from the factories were unarmed, but machine guns were quickly "begged, borrowed (or stolen)," from nearby French units.[17] Problems with the Constantinesco interruptor gear, which allowed guns to be sighted through the propeller arc, resulted in near tragedy when some pilots shot off their propeller blades in aerial test-firings and were forced to glide back to their airfield. Another weakness of the Nieuport was its tendency to shed its upper-wing fabric in a steep dive, an occurrence that befell the 94th Aero Squadron's commanding officer, Capt Eddie Rickenbacker, on two occasions.[18] The arrival of the Spad XIII to replace the Nieuport in July 1918 was a welcome change as pilots discovered an airplane that they were not afraid to "throw all over the sky."[19]

The British contributed to the American pursuit effort with the Sopwith Camel and the Scouting Experimental No. 5 (SE-5). The models utilized by the Americans were older versions removed from service by the British in favor of improved models with better engines and performance limits. The extremely maneuverable Camel was equipped with a 130-hp Clerget rotary engine that was cooled by the engine rotating on its mountings, generating extreme torque to the right in flight and making takeoffs and landings very dangerous. The Clerget engine was difficult to service due to lack of spare parts, resulting in the cannibalization of one flyable aircraft in order to keep three others in the air.



For those who survived training, actual combat changed their romanticized view of war. For fewer still, dreams of heroism became reality. Below, Lt Gen Hunter Liggett decorates American airmen with the Distinguished Service Cross.

The SE-5 also had engine-cooling problems with the 150-hp Hispano-Suiza in-line engine. Again, lack of spare parts prevented US squadrons equipped with these aircraft from realizing their full potential, causing frustration and resentment among the pilots.[20]

American observation and bombing squadrons fared little better at first. Confronted with the older models of the British de Havilland 4 (DH-4) for reconnaissance, artillery spotting, and bombing, one pilot remarked that "it must have been designed by a German." The pilot and observer were separated by the fuel tank, and the nickname "flaming coffin" was revived from the period of British use.[21] Newer models with a redesigned fuel tank, some built in the United States, were available in August 1918. The French Salmson 2A-2 also aided in the replacement of the "coffins."

Their initial experience with combat aircraft brought home to the Americans what the veterans from advanced training had tried to tell them; it took courage just to fly the machines, let alone fight in them. Even in the newer models, engine and structural failures were common. In this period before the development of self-sealing fuel tanks, a stray bullet or piece of shrapnel could turn a wood and fabric aircraft into a flaming torch in minutes. It was no longer the "great game" it had seemed from the cadet barracks in Texas. Flying was a deadly, serious business.

For those pilots who entered service before American frontline fields opened, living conditions were in most cases better than those in Texas or at the advanced training fields in the rear area. The Americans assigned to British or French airfields shared the facilities with the veteran Allied pilots. After the trench lines had solidified, the Allied personnel at these airfields improved the poor conditions with permanent barracks possessing such comforts as heated running water, stoves, gas or electrical interior lighting, and mess halls that prepared hot meals in an atmosphere reminiscent of hunting clubs. Though primitive by normal standards, these few comforts contributed to the morale of the pilots and made the war a little more like the sporting tournament they had envisioned.

The number of pilots joining the service and the arrival of aircraft for the American squadrons soon made the airdromes too crowded for continued sharing of Allied facilities. In addition, the organization of the Air Service called for the American flying units to support American ground forces. New airfields appeared behind the trenches assigned to American divisions. These hastily established fields usually consisted of tents and corrugated tin buildings in any area level enough to allow aircraft to take off and land. Whereas the British and French fields were close to towns to allow for supply deliveries by train to established depots, American squadrons were far from the towns and required new rail lines and railheads. Until these could be built, food, fuel, ammunition, and spare parts had to arrive by truck over roads often in poor condition.

At these new airdromes the American pilots longed for the comforts of "an easy chair, magazines, and a piano."[22] Cold soup eaten in leaking tents under "an awful combination of fog and rain which makes flying impossible and life on the ground unbearable" did little to improve their state of mind.[23] Though they joked about the "famous St. Maixent sulphur baths," the living conditions, especially for those who had seen the conditions at the Allied airdromes, made the Americans compare their situation to living in the trenches, though most realized that conditions were not that bad.[24] The aircraft, stored in their metal sheds, were better protected from the elements than the pilots. There was growing anger against the Allies for forcing the American ground troops into the trenches in the poorest positions, which in turn forced the aviators to the desolate areas behind these positions. The mud and the cold caused building resentment and frustration.

Their lot improved with the weather and the possibility of flying, however, and the pilots wrote less about living conditions

and more of their activities during periods of good weather. Not all pilots flew on a given day unless there was a major ground offensive in progress. The daily routine in most squadrons consisted of patrols, alerts, and administrative and work details.

For the pursuit squadrons, patrols of between 3 to 10 aircraft would fly at dawn, midmorning, noon, afternoon, and evening, weather and lighting conditions permitting. These patrols would escort American observation aircraft, which flew in daily patrols of two to six airplanes, or would go "hunting" on their own. Alert flights of two to four scout planes would remain on the ground, waiting for telephone messages from observation posts at the front in case they were needed on short notice. Pilots assigned to a patrol or to alert status were "saved" from the administrative and work details.

Due to the lack of supply officers in the Signal Corps, squadrons used flying officers for these and other positions. While some squadrons had one officer who did the work on a regular basis, most used a rotating list for these assignments. One hapless aviator wrote of "spending an [sic] sunny afternoon poking around in the supply shed counting ammunition boxes."[25] Other pilots were assigned paperwork, a job that most despised except when writing their own racy, colorful accounts of a combat report.

The pilots also supervised groups working on the rail lines or roads that supplied the squadron, working on leveling the grass field used for taking off and landing, or building permanent barracks.[26] They also worked on a system of drainage ditches, which were hailed as engineering wonders if they reduced the mire in which the tents were erected to a condition that could be called "pleasantly damp."[27]

The war was never very far away, however, even in the daily routine. German pilots, taking advantage of the lack of antiaircraft defenses, strafed airfields, their machine guns "kicking up great geysers of mud."[28] Gun positions with light aircraft machine guns set on swivels soon made the Germans more wary, but the attacks continued until the last weeks of the war.

Observers at the airdrome could see their friends surrounded by black puffs of antiaircraft fire as their aircraft passed over the front on their return home.[29] It was while supervising a barracks-building detail that Douglas Campbell observed Eddie Rickenbacker land his Nieuport 28 "with all the fabric from his top wing torn away."[30]

Other emergency landings did not end so well. The sight of a crippled plane landing with a dead observer and a pilot coughing up his lungs was no less terrible for being commonplace. Even without a major offensive in progress, pilots and observers continued to die, and oftentimes the deaths were just as gruesome as those in the trenches. These deaths were made more shocking due to their dramatic contrast to the routine of the flying field, where the sounds of artillery on the front were heard constantly but the effects rarely seen. In this respect death seemed an intrusion and an aberration in the daily life of the flying units.

To get away from the strain of combat flying, aviators sought means of recreation within the squadrons and on leave. Those on liberty usually went to Paris, and some with extended periods of leave could cross the Channel to England and get even farther from the war.

Paris had bars and hotels for the exclusive use of Allied airmen, so that even during times of relaxation pilots were surrounded by other aviators and invariably ended up "talking shop."[31] Pilots argued the various merits of their aircraft, and at times came to blows over what unit had downed the most enemy airplanes. Some inquired about those in other units whom they had known in the United States or in flight school, only to receive the terse reply "gone."

Those who avoided the company of other pilots in Paris were reminded of war in other ways. One pilot estimated that one of every five women in Paris wore black to mourn a son, father, or husband killed on the front.[32] Men in Paris were of three types:

too old for service, young men on leave, or young men crippled by war wounds. Nighttime raids by German Gotha bombers were infrequent, but searchlights and defensive guns lining busy thoroughfares were constant reminders of the war. It was indeed difficult to forget about the conflict.

Recreation in the squadrons consisted of pastimes such as team sports, and the open flying fields lent themselves to such activities. British, French, and Italian aviators played soccer, while Americans normally played baseball. Although Americans took pride in their "peculiarly American" sport, some squadrons adopted the European pastime in order to join in intra-Allied tournaments with other units.[33] Unfortunately, the war intruded even during these periods of recreation. Games would come to a standstill as squadron members watched one of their own aircraft slip through the flak bursts on its way back from patrol. Landing aircraft and medical emergencies made it difficult "to get nine innings in," one pilot noted wryly.[34]

At times American squadrons would be invited to dine at French, British, or Italian airfields. These were enjoyable affairs because, as Douglas Campbell noted, these Allies not only had the best planes but also the best food and the best pianos.[35] From these meetings came the traditions the American pilots borrowed for their own use. Serving tea at four every afternoon became as common in American mess tents as in British squadrons.[36] Pianos appeared in those squadrons with permanent mess halls and were jealously guarded against "thieves" from other units.

In addition to the adoption of these traditions, the Americans noted that their Allied counterparts had a certain type of style and chivalry. The Americans saw the flag-raising and flag-lowering ceremonies by the French and British as a show of pride, and they instituted the strict observance of such rituals in their own squadrons. Some squadrons copied toasts "to the King" at evening meals, but "raising one's glass to the President" did not seem "nearly so grand."[37] The practice of dropping notes on enemy airdromes, informing them of the death or detention of one of their pilots, was a tradition scrupulously observed by all the air services, German as well as Allied. The 95th Aero Squadron learned of Lt Quentin Roosevelt's death in this fashion.[38]

Despite these outer trappings of chivalry and style, the Americans also noted an underlying current of cynicism in the Allied air forces. When one American pilot complained during dinner of the difficulty of hitting aircraft in flight, Edward Mannock, the leading British ace, replied, "When you shoot, don't aim for the plane, aim for the pilot."[39] Allied airmen were tired of the war and seemed to feel little good would come from it. The Europeans were ready for the war to end after four years, and the American airmen began to echo that feeling.

The Armistice, which took effect on 11 November 1918, seemed at first to answer the desires of all combatants of all nationalities. The war that had begun in August 1914 was over, and even the American pilots, some who had been in combat for only a few weeks, were glad to see it end. For American forces in Europe, the Armistice seemed to signify a return home.

For many American units, however, this was not to be. They were part of the Allied occupation forces in Germany and Austria-Hungary and did not return home until after June 1919. Restrictions on travel prevented many Americans from seeing much of Europe on what, for most, was their only visit. Conversation and other relations with the civilian population of Germany were also forbidden, although there was little inclination to engage in such activities due to the language barrier and to the fact that German shops and restaurants had little to offer but "scraps of meat, barley coffee, or black 'war' bread."[40]

With little flying or sight-seeing to do, and thinking of their return home, some pilots began writing personal accounts of their combat experiences, more for the benefit of family and friends than for any desire to become a published writer. Although these

narratives are often racy, colorful, adventurous accounts tinged with comedy, there are times when a serious side shows through, revealing personal contemplation of the war and its aftermath.

The zeal for life of the young pilots could not obscure in their writings the fact that they found war a very disillusioning experience. "The war for democracy doesn't seem to have accomplished anything," observed one pilot after seeing the poor conditions of civilians in Germany and the desolate battle zones that "crisscross France like a twisted scar."[41] "War is the failure of human understanding and wisdom," wrote another.[42] Writing on an alien continent, occupying an alien country, Lt Curtis Kinney asked, "Was it our fight? Indeed, was it anyone's fight?"[43] This disillusionment is reflected in a poem written by Kinney while serving with the occupation forces:

1918

We flew together
In the tall blue sky.
We fought together
With bombs and guns.
We ate together
In the squadron mess.
We danced together
To the old gramophone.
We walked together
In the fields of France.
We talked together
Of home and tomorrow.
We flew together
In the tall blue sky.
Many were killed;
The world is no better.

Many other writers of the period asked the same questions, and as there were few answers, the questions gave way to expressions of bitterness and anguish. Phrases such as "universal crucifixion" and "the world's youth murdered" were examples of this sentiment.[44] Most aviators agreed with the general postwar impression that the Great War had accomplished nothing.

The aerial warfare of World War I had little effect on the outcome of the war itself, and American involvement in the air war played a very minor role in the conflict. What made the evolution of air combat during the war so important is that it marked the evolution of the airplane from a curious invention into a military weapon. The rise of the concept of air power later in the twentieth century was due to the air combat during the Great War, and the future US Air Service, US Army Air Forces, and the US Air Force saw their beginnings in the men who flew from grass airfields in borrowed aircraft. How these men viewed this first air war formed the basis for US military aviation.

The men who volunteered for the Aviation Section of the Signal Corps passed through this country's first mass flight-training program, and their views of the training caused changes in the system that brought it to its present form. The pilots were awed by the technology their aircraft represented, and they secretly wondered about its capacity to kill them. Their experiences with their aircraft would be paralleled by the experiences of those who followed. The primitive living conditions, where they lived isolated from the immediate effects of the war but always aware of its presence as missing men and machines testified, were much the same in later conflicts. The aviators' efforts to find relief from the war, from leave to baseball to the officers' clubs, are the same as those used today. Their attempts to establish traditions within the new organization are still present in today's Air Force. Even the postwar opinions about the war that were formed and developed through their experiences from pilot training to the Armistice and after provide valuable lessons.

For the average person, the air action of the First World War provides an interesting and exciting contrast to some of the other aspects of that conflict. The romanticist can envision a last revival of the age of chivalry, when men dueled each other under a common code of honor. In reality, flying was not

as full of excitement and heroics as some imagine, and the pilots of that period provide ample testimony. Thousands died in the air, just as many more died on the ground, and oftentimes the deaths above were just as gruesome as those below. The war in the air was more personal, but that did not make it more glorious. □

Notes

1. James J. Hudson, *Hostile Skies* (Syracuse, N.Y.: Syracuse University Press, 1968), 3; Lucien H. Thayer, *America's First Eagles* (San Jose, Calif.: R. James Bender Publishing, 1983), 5. Information on the condition of the Aviation Section is taken from these two sources.
2. Hudson, 300.
3. Ibid., 26. The three bases were San Diego, California; Mineola, Long Island; and Essington, Pennsylvania.
4. Hiram Bingham, *An Explorer in the Air Service* (New Haven, Conn.: Yale University Press, 1920), 20. A Yale University professor of history, Doctor Bingham was commissioned a major in the Signal Corps and placed in charge of the flight-training program in the United States. He was considered qualified for the post due to his varied background. He obtained his PhD from Harvard in 1905 and won national attention for his exploration of the route of Simon Bolivar across Venezuela and Colombia in 1907. He learned to fly in 1915 and joined the Connecticut National Guard in 1916.
5. Ibid., 30.
6. Diaries of J. Loy Maloney, vol. 1, 14 November 1917, Special Collections Branch, United States Air Force Academy Library.
7. Henry W. Dwight to his mother, 3 November 1917, Henry W. Dwight Papers Collection, 1917-1961, Special Collections Branch, United States Air Force Academy Library.
8. William P. Taylor, *Items* (Falls Church, Va.: Ajay Enterprises, 1917), 13.
9. Charles C. Tansill, *America Goes to War* (Boston: Little, Brown and Co., 1938), 29.
10. Allan Parr to his family, 6 February 1918, Dwight Papers.
11. Norman Archibald, *Heaven High, Hell Deep: 1917–1918* (New York: Albert and Charles Boni, Inc. 1935), 12.
12. Thayer, 307.
13. Giorgio Evangelisti, "American Pilots at Foggia," *American Aviation Historical Society Journal* 23 (Winter 1978): 278.
14. Allan Parr to his family, 11 June 1918, box 1, Dwight Papers.
15. Archibald, 65. Butyrate dope is a putty used to smooth the canvas or fabric skin of the aircraft and make it water-resistant.
16. Ibid., 80.
17. Henry Dwight to his family, 28 May 1918, box 1, Dwight Papers.
18. Edward V. Rickenbacker, *Fighting the Flying Circus* (Garden City, N.Y.: Doubleday, 1965), 61–62, 90–91.
19. Douglas Campbell to his father, 22 July 1918, box 1, Dwight Papers.
20. William P. Taylor and F. L. Irvin, comps., *History of the 148th Aero Squadron* (Lancaster, Pa.: Tri-County Publishing Co., 1957), 31.
21. Thayer, 105.
22. Archibald, 86.
23. Douglas Campbell to his father, 8 November 1918, box 1, Dwight Papers.
24. 639th Aero Squadron, US Army, *639th Aero Squadron Book* (Berkeley, Calif.: Lederer, Street, and Zeus Co., 1920), 23.
25. Richard Ashley Blodgett to his mother, 3 May 1918. Cited in Mabel Fuller Blodgett's *Life and Letters of Richard Ashley Blodgett* (Boston: MacDonald and Evans Printers, 1965).
26. Ibid., 5 May 1918.
27. Ibid.
28. Arch Whitehouse, *The Ace from Arizona* (New York: Award Books, 1966), 66.
29. K. W. Clendenin, comp., *147th Aero Squadron 1918* (Parkersburg, W.Va.: K. W. Clendenin, 1964), 6. Black puffs marked German antiaircraft shell-bursts, due to their being explosive shells. Allied AAA was usually white, as they were shrapnel shells. Both were fired at American pilots on occasion.
30. Douglas Campbell to his father, 17 May 1918, Dwight Papers.
31. Whitehouse, 47.
32. Curtis Kinney and Dale M. Titler, *I Flew a Camel* (Philadelphia: Dorrance and Co., 1972), 65.
33. Whitehouse, 77.
34. *639th Aero Squadron Book*, 27.
35. Douglas Campbell to his father, 23 August 1918, Dwight Papers.
36. Henry Dwight to his family, 22 October 1918, Dwight Papers.
37. Allan Parr to his sister, 29 September 1918, Dwight Papers.
38. Rickenbacker, 155.
39. Kinney, 42.
40. Diaries of Maloney, 9 January 1919, vol. 5:37.
41. Henry Dwight to his parents, 19 January 1919, Dwight Papers.
42. Allan Parr to his sister, 3 February 1919, Dwight Papers.
43. Kinney, 112.
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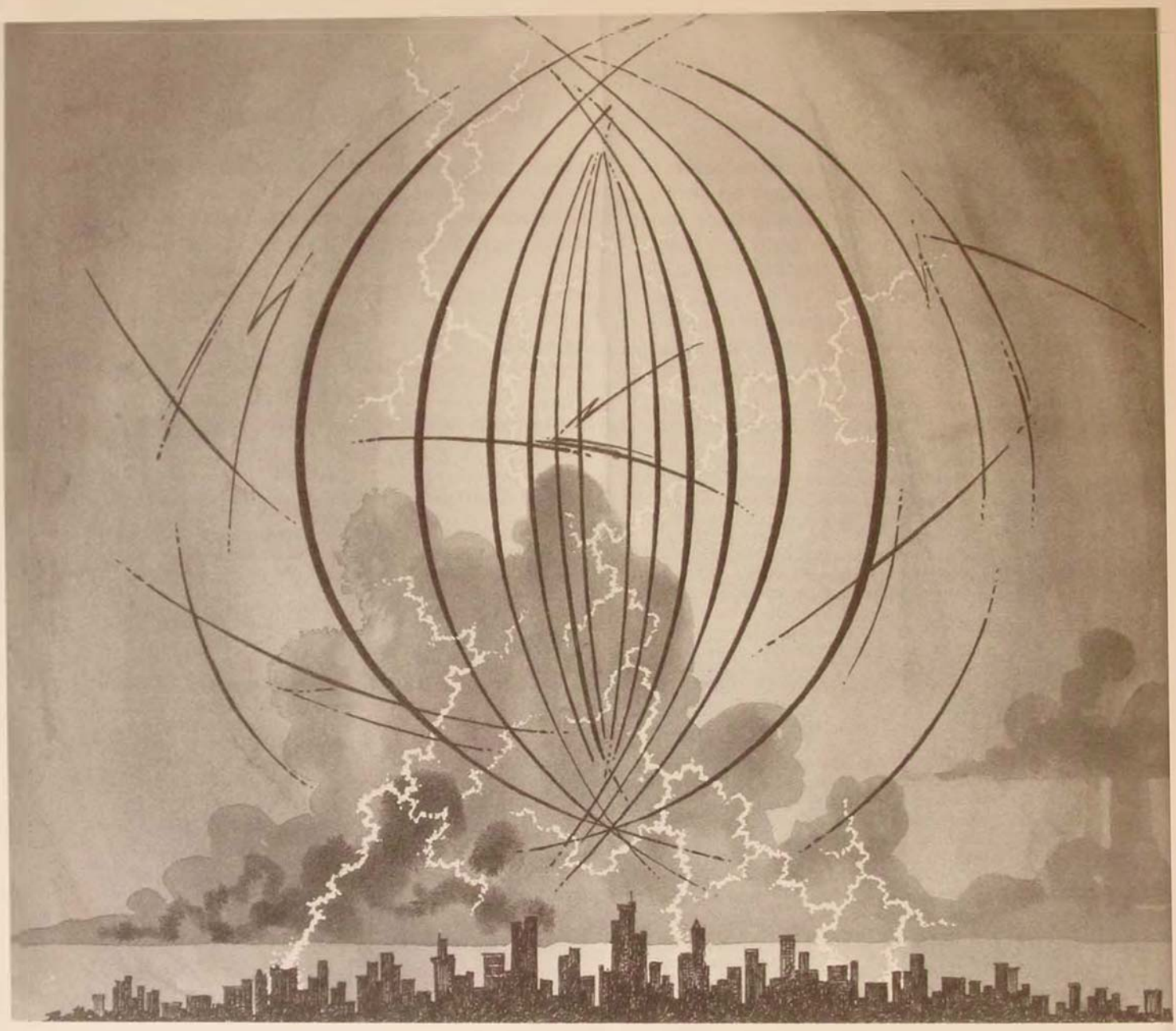

TECHNOLOGY, AIR POWER, AND THE MODERN THEATER BATTLEFIELD

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Since all information and assumptions are open to doubt, and with chance at work everywhere, the commander finds that things are not as he expected.

Carl von Clausewitz

Victory smiles upon those who anticipate changes in the nature of war.

Giulio Douhet

NO one knows what tomorrow's battles will look like or which contemporary military trends can be projected into the future. While some past conflicts may share common traits, war has few immutable characteristics. As Clausewitz reminds us, every war is unique and within each war the decisive factors are amorphous. Like fog and friction, technological change clouds our vision of tomorrow's battlefield. Because of this uncertainty, we are quick to absolve ourselves of predicting the nature of future warfare. But we have a double standard. In studying military history, we often hold commanders to account for their failure to see their future. The generals of World War I are often criticized for not anticipating the slaughter that artillery and the machine gun would produce when infantry was employed under the accepted doctrine of the era. To us, the handwriting was on the wall from the American Civil War onward. Why couldn't the German, French, and English generals see that the spirit of the offense was a cruel illusion?[1]

There is handwriting on our walls too, messages providing a hint of tomorrow. But there are so many words that it is hard to read—one message obscures another. And not all of the messages are relevant. Mixed with prophetic glimpses of the future are the bureaucratic graffiti of today. It is easy to poke fun at the myopic vision of some officers who, even after the stagnating trenches of World War I, thought there was still use for horse cavalry in modern war. But it is very likely that someday someone will wonder why we pursued an outdated tactic or persisted in further development of an outmoded weapon. Unfortunately, the future may judge some of us as contemporary equivalents of those cavalry proponents.

While accurate prediction may be impossible, we must at least attempt to relate the attributes of military power to future theater battlefields. Technology is one attribute of modern military power. There are others, but technology is a common denominator—an attribute most nations try to incorporate into their armed forces. During the first half of this century, manufacturing technology, such as for steel and aluminum production, was a critical determinant of a nation's military potential. Today silicon chips as well as iron ore determine military power. But as anyone who has employed or maintained a modern weapon knows, the effects of technology are not entirely positive.

Technology rarely provides solutions without creating other tensions. For example, modern US Air Force air-to-air fighters can operate more independently from ground-based command and control than earlier aircraft. But the technology that permits this can also link the pilot's radio to the White House. Technology in this case creates a tension between tactical freedom of action and military power that responds like a marionette to the will of the commander. Similarly, technology has been broadly applied to many military systems to help commanders dominate specific portions of the battlefield. Incorporating these systems, however, has not only changed specific segments of the battlefield but also has altered the overall nature of theater-level war.[2] The lethality of modern weapons creates a violent, fluid battlefield and challenges our ability to formulate appropriate air power doctrine.

Lethality of Modern Weapons

The battlefield was never a safe place, but technology has increased the danger. A modern army division or air force wing has 10 times the combat power of its World War II equivalent.[3] This increase is the result of changes in the physical characteristics of weapons. But in addition to increasing available fire power, technology produces qualitative changes in the relationships among air, land, and sea power.

Physical Aspects

In "bang per pound," nothing supersedes nuclear weapons. The mushroom cloud

casts a shadow over every battlefield. Commanders must conduct war differently, whether it is to threaten nuclear escalation or to protect against nuclear preemption. Chemical weapons are similar. They cover large areas and can cause panic and mass casualties among unprotected troops. Even if not used, the possibility of chemical attack forces the use of protective equipment, which is nearly as debilitating to a unit's combat effectiveness as exposure. While nuclear and chemical weapons are the most visible expression of modern weapon technology, changes in conventional weapons are just as important to establishing the modern battlefield environment.[4]

Some contemporary conventional weapons can cover large areas very effectively. Area coverage is essential to engage dispersed targets, such as dismounted infantry, or mobile targets, such as mechanized forces. In the past, the statistical dispersion of many bombs or artillery rounds was needed to perform this task. Saturating an area with effective fire, therefore, was either time-consuming or required many guns and aircraft. A few modern cluster munitions, though, can quickly blanket a wide area. Added advantages to covering an area quickly are less exposure of aircraft to enemy air defenses and less vulnerability of artillery sites to counterbattery fire. Rapid coverage of an area target is one advantage of rocket artillery. The Soviets believe modern, mobile warfare increases the utility of area weapons, especially multiple-launch rockets. In addition, the psychological shock of firepower is much greater when delivery is concentrated rather than spread over time. German survivors of the Eastern Front had a great fear and respect for Soviet rocket artillery.[5] Enemy forces engaged by the US Army's new multiple-launch rocket system are likely to be even more impressed.

Technology also increases the efficiency of delivery. Modern tactical fighters carry a payload similar to that of heavy bombers in World War II, but they are much more accurate. One winner in the Tactical Air Command's bombing competition (Gunsmoke-85) had an average bombing error of less than one foot.[6] In contrast, planners of the World War II strategic bombing offensive believed only half of the bombs would fall within one-quarter mile of the target.[7] Improvements in artillery performance have been almost as dramatic. Rocket-assisted projectiles, cluster munitions, and shaped charges are examples of improvements in artillery rounds. Also, better alloys and design of artillery tubes and breeches permit more powerful propellants, resulting in increased range.[8] In addition, modern artillery fire direction systems allow missions to be fired faster and more accurately, increasing the rate and number of targets that can be engaged. This capability, plus improved munitions, has made the battlefield more dangerous than ever.

More violent area firepower is not the only product of technology. Small, hard-to-hit targets—such as bridges, command bunkers, and tunnels—are vulnerable to guided weapons. Laser, infrared, terrain matching, and television guidance systems are used for precise aiming and delivery of these "smart" weapons. One advantage of precision guidance is that fewer weapons are needed to destroy a target. In addition, some guided weapons have a standoff capability—they can be released or fired outside the protective defenses of the target. Under certain conditions, guided weapons can even destroy moving targets. Whether in a ship, aircraft, tank, or foxhole, there are no safe places on the modern theater battlefield because technology has magnified the physical nature of firepower.

The impression that modern weapons, utilizing precise targeting and delivery, have civilized the battlefield is wrong. In World War I the Germans attacked Verdun in one of mankind's most violent battles. They fired 26 tons of shells per artillery salvo into a seven-mile-wide section of the French front. The earth was literally plowed by explosions. Modern war is likely to see even more intense applications of firepower, even when restricted to conven-

tional weapons. A modern Soviet division on the offense, for example, can deliver 56 tons per salvo but would attack on a much narrower front (2.4 miles).[9] This salvo is only from the division's organic artillery and does not include the additional firepower the parent army or front commander might provide. Technology has enhanced, not diminished, violence and destruction.

Qualitative Aspects

No theater battlefield is one-dimensional. Technology has produced many weapons, such as the attack helicopter, that transcend traditional categories of combat power. Today, surface-based missiles can command the sky, infantry weapons can decimate a tank assault, and land-based aviation can control the sea. Air, land, and sea power cannot be measured in isolation nor employed independently from one another.

Complex weapons also often breed specialization in machines and people. Often we highlight the positive aspect of specialization by calling it a "force multiplier." The "smart" bomb, with its ability to destroy a target in one sortie instead of dozens of sorties, is an example of a force multiplier. Another is the tactic of blending different weapon systems together on the battlefield. The combat power of Apache helicopters, self-propelled artillery, and A-10 aircraft working together is more than the sum of their individual measures of firepower. This apparent increase in total combat power is due to the efficiency of modern weapons.

One reason modern, complex weapons are efficient tools of war is that they are often designed for specific tasks. But the same tools may be unsuitable for all-around use. The Maverick antitank missile, for example, is nearly useless against anything but small, armored targets. In addition, any weapon, however efficient, is usually very vulnerable to at least one other modern, complex weapon. For instance, the aircraft, despite its offensive flexibility, is very vulnerable to surface-to-air missiles without some type of defensive electronic support. Most other modern weapons exhibit similar traits. Therefore, teams with many types of complex weapons are needed on today's battlefield so that one system complements another. There are different names for these teams. The Army calls infantry, armor, artillery, and aviation working together "combined arms." Naval "task forces" are different classes of ships and boats teamed together. The Air Force uses the term *packaging* or *composite* to describe the combination of attack, fighter-escort, and electronic-warfare aircraft needed to conduct a mission. And the Marines have the "Marine air-ground task force," which includes combined arms plus fixed-wing aviation and often naval gunfire support. Whether it is land, sea, air, or amphibious operations, complex mixtures of different types of weapons are needed.

Mixing complex weapons, however, can create limitations. One requirement for teamwork is the ability to communicate. Here again technology provides the ability to transmit voices and data through electromagnetic transmission and reception. But it is not an unmixed blessing because it adds a new dimension to the battlefield—electronic combat. Electronic combat offers a new way to paralyze battlefield operations by severing the communication links that bind a team together. In addition to neutralizing command and control systems, electronic combat can be directed against modern weapons themselves. Nearly all major weapon systems use some part of the electromagnetic spectrum: radars, radar-guided missiles, heat-seeking rounds, TV-guided bombs, laser range finders, and the like. Elimination of a fighter's ability to use its radar or radio, for example, will reduce its effectiveness and increase its vulnerability to physical destruction. Electronic combat also includes deceiving an enemy by presenting false signatures of weapons, units, or movements. Electronic combat is another dimension of modern war that transcends the previous notions of air, land, and sea power.

While the team's ability to communicate is essential, the team must also speak a common language. This is the task of doctrine.

Institutional Limitations

Good service or joint doctrine is especially important because modern weapons are controlled by people who may be as specialized as their equipment. Pilots, infantrymen, and submariners, for example, each have a unique perspective of war. Even within a single service, the perspectives vary. A fighter pilot views the battlefield very differently than does a tactical airlifter. Furthermore, the culture of each service is dominated by the exploits of past accomplishments when battle was perhaps less complex. Although World War II saw combined arms warfare, most interactions among air, land, and sea power took place at the operational level of war and very little at the tactical level. In the histories and traditions of most regiments and squadrons, there is little mention of victories aided by other arms because of infrequent tactical interaction between them. Close cooperation sometimes existed at the higher echelons, but the glories of operational-level staff work make poor reading compared to the exploits of tactical-level units on or above the battlefield. That portion of current joint and service doctrine and attitudes influenced by history, then, will lack the insight joint tactical-level combat experience could provide.

Another problem is the American budgeting process. To some extent, the services have adversary relationships because each program competes for a place in the limited federal budget. It is hard for institutions to compete one day and the next day cooperate on writing joint doctrine. In addition, justification to buy better guns, bombs, and ships is usually based on economic analysis. A new weapon must prove that it can do a specific, quantifiable task more efficiently—usually expressed in some form of "bangs per buck." Unfortunately, econometric analysis, while important, cannot capture the operational-level dimensions of battlefield effectiveness. For example, calculating the cost per tank kill of a Maverick air-to-ground missile is much easier than determining the benefit of aerial-delivered mines. While the missile is designed to kill one tank, the task of the mines is to delay and channel large groups of tanks. But delay and channelization are significant only in terms of the commander's intent in shaping his battlefield. This, in turn, is based on joint doctrine that considers the ability to create and exploit opportunities by shaping the battlefield—an operational-level concept—as important as the tactical-level ability to engage a specific type of target. Proper use of specialized, complex weapons is more complicated than just finding an economic mix of combat systems or surmounting the electronic dimension of communication. Good joint or integrated doctrine is the basis for effective teamwork on the fluid theater battlefield.

Fluid Battlefield

By clouding previous distinctions among air, land, and sea power, the lethality of modern weapons has challenged our institutional ability to develop effective doctrine. A recent attempt to deal with the doctrinal aspect of the challenge is the US Army's Field Manual (FM) 100–5, *Operations*, which espouses a doctrinal concept called AirLand Battle. The Army believes modern weapons and nonlinear operations will extend the depth of the battlefield.[10] This may have important implications in using theater air power effectively. It may even suggest fundamental changes to the way theater forces should be organized.

Extended Depth of the Battlefield

From the standpoint of protection, a commander must disperse his forces. Any permanent concentration of forces presents a lucrative target, especially those close to the enemy. Therefore, tactical-size units will be

dispersed in depth behind the "front." But dispersal is not enough. Technology, as we have seen, makes even deep, rear-area airfields, logistic sites, and transportation systems vulnerable to rocket, missile, and aircraft attack. The assault helicopter can even place brigade-size surface forces deep into the rear area. Mobility, in addition to dispersal, is also essential for survival of tactical-size units. For example, after an artillery battery completes a fire mission—a matter of a few minutes—it must immediately move before the enemy locates it with detection equipment and returns counterbattery fire. The same principles apply to other combat systems. Whether aircraft, ship, or tank, the act of firing, moving, or communicating will unmask location and often intentions. But the same conditions apply to the enemy. Therefore, the commander who can act faster than his opponent reacts has the advantage. AirLand Battle calls this the fluid battlefield, but it probably applies to all forms of modern theater-level combat. At sea, the battle may be won by the side that is able to fire the first salvo. Similarly, in aerial combat a fighter pilot has a tremendous advantage if he can identify enemy aircraft and fire his missiles before the visual maneuvering engagement begins. This is one rationale for the development of "smart" weapons—such as the advanced medium range air-to-air missile (AMRAAM), a beyond-visual-range, launch-and-leave weapon. For a successful battle, therefore, a commander would rapidly mass his combat power, quickly attain his objectives, and then swiftly disengage and disperse.

Because combat power is dispersed in depth, attack and defense must also be in depth. AirLand Battle categorizes operations into rear, close, and deep.[11] But this classification depicts a sense of order that may not be present. Combining several simultaneous and rapidly forming engagements throughout the depth of the battlefield results in nonlinear operations. According to AirLand Battle, the intermingling of opposing forces will result in little distinction between front and rear areas.[12] As a result, forces will have to conduct simultaneous offense and defense. Some believe future land warfare will resemble sea warfare. Mobile land units will operate physically isolated from each other and launch attacks while providing self-defense, much like a carrier battle group conducts combat operations.[13] In the air, combat has always been nonlinear, but at the theater or operational level the fluid battlefield and nonlinear operations raise concerns about the Achilles' heel of air power, the airfield. Long-range firepower, airfield attack munitions, special operations forces, and even air assault or armored breakout forces can threaten all but the most distant theater airfields. But the modern battlefield holds other important considerations for air power.

Implications for Theater Air Power

A fluid battlefield with nonlinear operations may completely change the way air power is applied on the battlefield. In one respect this rapidly changing combat environment demands the flexibility and quick massing of firepower inherent in air power. But the way we currently think about and apply air power may be obsolete. For the past decade, there has been debate over the proper emphasis between close air support (CAS) and air interdiction (AI). The debate has not been productive because current concepts of CAS and AI were derived from the static battlefields of Korea and Vietnam.[14]

A modern, fluid battlefield may not have the physical rigidity of past battlefields. It will probably resemble an amoeba more than a finely constructed animal that acts in a predictable fashion. If so, the next war may not conform to our organizational charts and doctrinal prejudices. For example, traditional air interdiction that attempts to isolate the battlefield or logistically strangle the enemy, as past interdiction campaigns attempted in Italy and Korea, is probably invalid.[15] Both of these

AI concepts rely on firm, quantifiable combat infrastructures, and firmness is not a trait of an amoeba. In addition, in war characterized by rapid movement and many short, vicious engagements, attrition of combat and support units before they reach the "front" may take too much time. As a result the long-term effects of air interdiction, such as diversion of enemy resources to defend and repair AI attacks, may never be felt.

Yet the need to control the evolution and shape of the battlefield is even more important. Theater air power is currently the only form of violence that has enough range and muscle to do it. To borrow a concept from AirLand Battle, the focus of air attack must be the mind of the enemy commander.[16] But the "mind of the enemy" is not a single person, command, control, communications, and intelligence (C^3I) system, or any other target array. It is his total ability to act on the battlefield. Modern battles will be won by forces that think quicker than their enemy and create situations of destruction in which combat power is massed and applied faster than the enemy can react. Air power can help create these situations, and air power can also help destroy the enemy. This is the way we should think about air interdiction and close air support in the future—creation and destruction.[17] It is the way Patton and Quesada combined land and air power in France after the breakout from Normandy.[18] It also resembles the Soviets' concept of fire superiority and the ability of firepower to "guarantee success" of combined armed forces.[19] It bears little resemblance to the conceptual rigidity Korea and Vietnam placed on our tactical air control system.

If there is no distinct "front" and enemy and friendly ground forces conduct nonlinear operations throughout the depth of the battlefield, then the difference between CAS and AI should not be defined in terms of the present procedural distinction. In the past we have classified AI and CAS by drawing a line on a map, the fire support coordination line (FSCL).[20] The FSCL generally corresponds to the range of the ground forces' organic artillery. Air-to-surface attacks between the forward line of own troops (FLOT) and the FSCL are close air support, and air attacks beyond the FSCL (excluding airfields) are considered air interdiction. AI and CAS, therefore, could be procedurally defined by the depth to which they penetrate the battlefield. In the future, however, we may very well find air power providing close support to surface forces operating deep into enemy territory. Similarly, air power could be vital in helping shape a rear-area battle where large enemy units have penetrated into the rear area of a US corps. Therefore, the concepts of close support for direct effect (destruction) and detached support for indirect effects (creating situations) is still valid. However, the procedural rigidity produced by linking these missions to lines on a map or depth of attack is meaningless. Unfortunately, our command and control system is based upon our experiences on positional battlefields.

The traditional distinction between AI and CAS produced a command and control system that treats these two missions very differently. CAS targets are generated by the Army. Within the joint force commander's apportionment decision, the Army has the authority to decide how, when, and where CAS sorties will be used. Successful CAS requests and tasking, however, depend upon an extensive C^3 system, from the battalion through brigade, division, corps, and then to the air component headquarters and back down to wings and squadrons. To execute the mission, the CAS aircraft and pilot—like a ball in a pinball machine—go from one C^3 bumper to another until they finally appear over a battalion tactical engagement. AI attacks, in contrast, are planned and conducted by the air component in accordance with the joint force commander's interdiction objectives. AI sorties theoretically do not need detailed integration with surface units because their targets are beyond the physical location of surface forces. But on a fluid battlefield—the amoeba that blends close, deep, and rear—

Air Force air interdiction sorties cannot operate autonomously, nor can the Army's long-range rocket, tube artillery, or even special operations forces. The problems with AI, CAS, and current C^3 systems, however, are not limited to the disparity between tradition and reality.

A fluid battlefield with nonlinear operations threatens the survivability of today's C^3 systems and procedures. For physical security, important C^3 assets are usually found in the rear area. But the lethality of modern weapons and the depth of the battlefield negate this protection. Survivability and redundancy of C^3 systems are adequately addressed by technicians and systems analysts, but they fail to deal with the most important C^3 implication of the fluid battlefield. Modern war will challenge the current approach to higher-echelon command (a structure that is a curious combination of Napoleonic, Prussian, and modern corporate staff procedures).[21] The staff/management approach is based upon the efficiency of centralization—higher echelons make decisions and lower echelons implement them. This process assumes that the higher echelon can make better decisions because it consolidates data and information from lower echelons and other sources. But the fluid battlefield will not accommodate this approach. Severed C^3 links will rob commanders of important information, and rapid movement of both friendly and enemy forces will quickly invalidate information that does come through. The problem will be compounded by the technological capability of unsevered C^3 links to transmit large quantities of data. A management-oriented commander and staff will be overwhelmed quickly by volumes of obsolete, incomplete information. A correct decision will be a matter of luck. Redundant and survivable C^3 systems in this case could produce more harm than good—organizational gridlock. One solution to this dilemma is a less centralized C^3 doctrine.

In AirLand Battle doctrine, the Army believes initiative offers a solution. If a subordinate commander cannot communicate with a higher commander, then he will rely on his understanding of the higher commander's intent to make decisions. The Army implements this C^3 doctrine through mission-oriented orders.[22] This philosophy not only minimizes the negative effects of severed communications but also uses the fluid nature of the modern battlefield to advantage. A subordinate who understands his commander's intent and is trained to operate under uncertainty can exploit sudden, fleeting opportunities without waiting for approval even when adequate C^3 links exist. For historical support, the US Army often explains the tactical excellence of the World War II German army as a product of *auftragstaktik*, the Prussian version of initiative and mission-oriented orders.[23] Decentralized concepts of C^3 doctrine may also have a place in the employment of theater air power.

A decentralized C^3 doctrine for air power, however, cannot mirror the Army's. A ground commander can give mission-oriented orders because, compared to air power, geography limits ground combat power and serves to deconflict one ground unit from another. Air power's area of influence is not as bounded. Fighter squadrons whose bases are hundreds of miles apart have the same area of influence—the entire theater. In fact, this trait of air power—range—is one of its strengths. But we can look to the same technology that provides air power with range and firepower to decentralize air power C^3 systems.

Too often advocates of technology portray the battlefield as an information management problem. "Target arrays," "the automated battlefield," "battle management," "probability of kill," and "target servicing" are some of the buzzwords of this outlook. Adherents of this viewpoint describe contemporary warfare as an "information war."[24] This can lead to the belief that one can build weapons, sensors, and computers that can see through the fog and operate without the friction of war. In reality, systems designed with this prejudice

will likely contribute more fog and friction, especially if they centralize decisions. However, the current explosion in electronic gadgetry can be harnessed. Just as some mainframe computers are being replaced by numerous personal computers linked into a local net, the functions of the tactical air control system can be devolved to many small C^3 nodes, each node capable of operating independently if needed. The process has already begun in air-to-air warfare with airborne warning and control systems and fighters with sophisticated long-range radars that augment a complicated ground radar system. Other systems are being considered for air-to-surface warfare. The Soviets call them "reconnaissance strike complexes" and believe they represent a revolution in military affairs.[25] But as the United States fields these systems, unless fog, friction, and the limitations of centralized command and control are accounted for, we are likely to saddle ourselves with military power that can be easily decapitated.

We must also look forward to the next century. The merging of air, land, and sea combat power will likely continue down to the lowest tactical levels.[26] We should take this into account as we develop C^3 systems and reorganize units. Even today tactical ground units will be directly affected by air engagements—thanks to the air-to-air combat helicopter.[27] Just as there is no air, land and sea war, we have passed the point where it makes sense to develop separate air, land, and sea campaigns. Perhaps we should begin planning for the day when divisions, wings, and fleets no longer exist but are replaced by all-service (joint would be an inadequate description) formations.

Conclusion

Modern weapons and the contemporary doctrine of technologically advanced military forces have created a new environment of war at both the tactical and operational levels. The future battlefield may be unlike anything we have experienced. The violence produced by modern weapons may very well exceed the human capacity to adapt. Death and annihilation will await individuals and units that cannot respond to quickly changing circumstances. Similarly, defeat and subjugation await organizations and nations that will not invest intellectual energy in anticipating future changes in weapons and forge doctrine and strategy both appropriate to current situations and adaptable to future conditions.

The theater battlefield will be composed, as with all previous battlefields, of humans engaged in violent acts. As trite as that may sound, the tools and systems we use to wage war often require us to focus on proper management of data, equipment, and personnel. While obviously essential aspects of our profession, they can distract us from understanding the essential characteristic of war—dynamic violence. It will take a combination of weapons to win tomorrow's battles. At the operational level, the joint force commander does not wage separate air, land, and sea wars. At his level there is one battlefield and one war. But even at the tactical level of engagements and battles, the three forms of combat power are interdependent and often intertwined.

Each individual and service component has cherished beliefs and traditions about the best way to conduct military operations. To outsiders these beliefs and their associated doctrines often appear to be sacred cows, and some of them probably are. But there is no sure way to know without testing them in combat. Tradition and heritage are vital in developing unit cohesion and morale. Without cohesion men and women will not make the personal sacrifices necessary for combat success. But tradition and heritage can become irrelevant or even destructive influences if they result in a stultifying institutional mind-set.

One can forgive the World War I officers for not foreseeing the carnage of trench warfare. But one has to condemn them for pursuing the same tactical- and operational-level doctrine for years, well after artillery

had churned infantry and earth into an organic slush described by one soldier as a place "where one cannot possibly distinguish if the mud were flesh or the flesh were mud."[28] We must continually measure our doctrine against the fog and friction of war. We think nonlinear operations on fluid battlefields will characterize future wars—but perhaps they will not. We may form inaccurate visions, but the danger is not that we may guess wrong. The real danger is that we become too comfortable with our doctrine and beliefs. Intellectual inquiry, even if faulty, at least conditions the mind to consider alternatives and changes. □

Notes

1. Correlli Barnett, *The Swordbearers* (New York: New American Library, Inc., 1965), 46. The European armies' doctrines, especially France's, were oriented toward the offense. During engagements the army with the most "elan," or spirit, would be victorious.

2. Seymour J. Deitchman, "Weapons Platforms, and the New Armed Services," *Issues in Science and Technology*, 1, no. 3 (Spring 1985): 83–112. Deitchman's general thesis is that modern weapons have so changed the nature of war that the weapons themselves, as opposed to their delivering platform, will determine combat power. Mary C. Fitzgerald, "Marshal Ogarkov on the Modern Theater Operation," *Naval War College Review*, Autumn 1986, 6. The concept that cumulative incremental changes eventually produce a qualitative, revolutionary change is found in Marxist-Leninist analysis of the nature of modern theater warfare.

3. Deitchman, 86.

4. FM 100-5, *Operations*, 5 May 1986, 43–46. The earlier version of AirLand Battle emphasized the integrated battlefield (conventional, nuclear, and chemical weapons) more than the current version.

5. Chris Bellamy, *The Red God of War* (London: Brassey's Defence Publishers, 1986), 58, 154, and 186. Bellamy provides several examples of the physical and psychological effects massive Russian artillery fires had upon their opponents—in some cases the survivors went mad.

6. Blake Morrison, "Gunsmoke '85," *USAF Fighter Weapons Review*, Winter 1985, 16. The winner of the level bombing category had a .25-meter circular error average (CEA), the average error for four bombs. The winner of the dive-bombing category had a 3.5-meter CEA.

7. Barry D. Watts, *The Foundations of US Air Doctrine* (Maxwell AFB, Ala.: Air University Press, 1984), 22. The first US air plan, AWPD–1, used 1,250 feet as the expected circular error probability (CEP). This represented normal peacetime bombing errors multiplied by a factor of 2.25.

8. Bellamy, 149–63. Improvements in artillery are deceptive. Compared to aircraft, the outward appearance of tube artillery has changed very little, but the real improvements have been significant.

9. Ibid., 196–97.

10. FM 100–5, 2, 16, 19. Depth is one of the four tenets of AirLand Battle and refers to physical dimensions as well as depth of resources. Here the term is used only in the physical sense.

11. Ibid., 19–20. The previous edition of AirLand Battle emphasized the deep battle. The current version is more balanced and treats the deep, close, and rear as equal.

12. Ibid., 2.

13. Noyes B. Livingston, "Blitzkrieg in Europe: Is it Still Possible," *Military Review*, June 1986, 26. The author contends the daring tank "thrusts and cut" of World War II blitzkrieg will be replaced by vicious dogfights between tanks, helicopters, and infantry.

14. Although the enemy was elusive in Vietnam, the battlefield was static in the sense that very little changed from day to day. Allied aircraft could provide CAS and AI throughout the theater.

15. Edmund Dews and Felix Kozaczka, *Air Interdiction: Lessons from Past Campaigns* (Santa Monica, Calif.: Rand Corporation, September 1981).

16. FM 100–5, 16. This concept is found in the AirLand Battle tenet of agility.

17. John Boyd, "Creation and Destruction," an unpublished paper and lecture delivered at Air University, November 1978; Richard E. Simpkin, *Race to the Swift* (London: Brassey's Defence Publishers, 1985). Boyd and Simpkin present similar ideas about the nature of war that are having an impact, especially within the US Army, on current views about the theater battlefield.

18. Glen M. Harned, "The Spirit of Au Gay: Putting the Air Back Into AirLand Battle," monograph (School of Advanced Military Studies, Fort Leavenworth, Kans., 1986).

19. Bellamy, 191.

20. Lt Gen Merrill A. McPeak, "TACAIR Missions and the Fire Support Coordination," *Air University Review*, September–October 1985, 65. McPeak also advocates using the FSCL to distinguish CAS from AI.

21. Martin L. Van Crevald, *Command in War* (Cambridge: Harvard University Press, 1985). This is one of the themes in his book.

22. FM 100–5, 4, 15, and 97. Commander's intent and mission-oriented orders are some of the most important aspects of AirLand Battle.

23. Stephen W. Richey, "The Philosophical Basis of AirLand Battle," *Military Review*, May 1984.

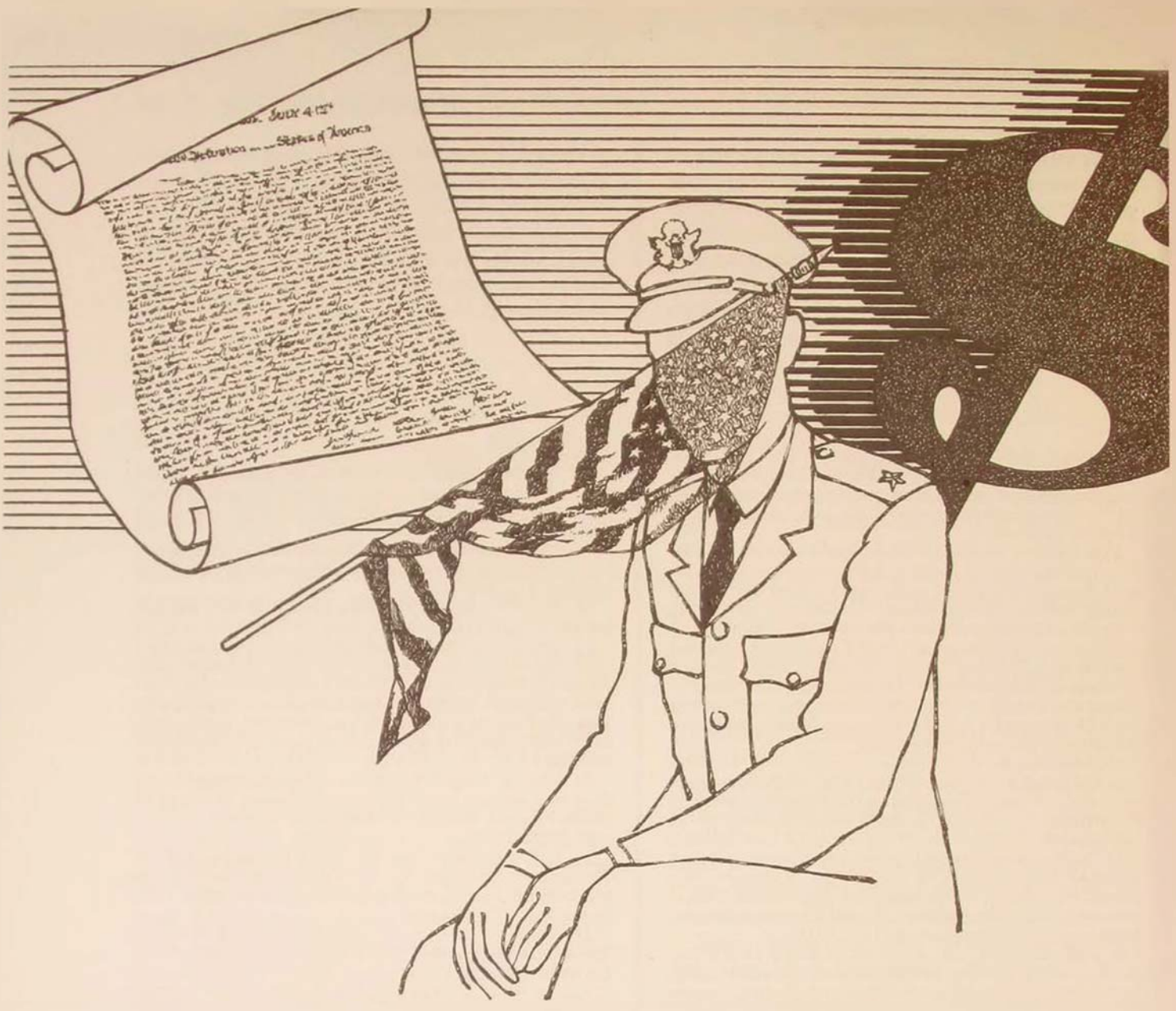
24. Deitchman, 86.

25. United States Army Intelligence and Threat Analysis Center, *Soviet General Doctrine for War* (U), vol. 1 (June 1987), 3–53.

26. Rudolph Ostovich, "AirLand Battle—Part I: Dramatic Changes in Emerging Aviation Doctrine," *U.S. Army Aviation Digest*, November 1986, 2. Ostovich maintains that helicopter operations will be essential in conducting airland battles and are an integral part of combined operations down to the lower tactical level of war.

27. "Industry Observer," *Aviation Week and Space Technology*, 16 November 1987, 11. The magazine reported that the Army is testing air-to-air missiles on helicopters. The Army has also published an air-to-air doctrine manual, FM 1–107, *Air-to-Air Combat*, 12 October 1984. (This manual will soon be replaced by Field Circular 1–107, *Air Combat Operations*, which reflects some maturing of the Army's air-to-air doctrine in terms of the AirLand Battle.)

28. Friederich Mielke, "1916: The Crisis of World War I," *Military Review*, May 1987, 70.



Getting a Grip on Careerism

MAJ MICHAEL L. MOSIER, USAF

Caution is the eldest child of wisdom.
Victor Hugo

THE consensus is clear: the officer corps must come to grips with the self-serving, promotion-oriented behavior known as careerism. Military professionals view the careerist with disdain. Military historian Lt Col John F. Shiner expresses a typical view: "These parasites could spell national ruin should many of them advance to command positions."[1] Military reformists from Richard A. Gabriel to Edward N. Luttwak condemn the spread of careerism, warning, "If careerism becomes the general attitude, the very basis of leadership is destroyed."[2] The senior Air Force leadership also acknowledges career-

ism's dangers. According to a recent statement by Maj Gen Ralph E. Havens, commander of the Air Force Military Personnel Center (AFMPC), "Many of our Air Force leaders have recently expressed concern that 'careerism' is having a disruptive effect on the development and retention of our officer force." For this reason, General Havens explained, the Air Force is mounting a major effort to make a "basic philosophical change on an individual and on an institutional level."[3]

Efforts to purge the officer corps of careerism are long overdue. Unfortunately, careerism is much more elusive than most care to admit—a complex problem that is hard to pinpoint and even more difficult to treat. Overly zealous, simplistic reforms could not only be ineffective but also inadvertently distill valuable attributes from the officer corps. Therefore, corrective action must be carefully considered and judiciously applied lest a short-term fix result in even greater long-term problems.

This article examines the complexities of treating careerism. To lend historical perspective, it outlines the background of careerism and explains how careerism is currently defined. Next, it discusses difficulties in pinpointing and treating careerism and presents ways to help the officer corps deal with careerism.

From Occupationalism to Careerism

According to military sociologists, the genesis of today's careerism lies in a shift in basic values within the officer corps. As Samuel P. Huntington observed in his classic work *The Soldier and the State: The Theory and Politics of Civil-Military Relations*, one of the salient characteristics that has traditionally distinguished the officer corps is its view of the military as a " 'higher calling' in the service of society."[4] However, Morris Janowitz noted a change in orientation as early as 1960 in his book *The Professional Soldier: A Social and Political Portrait*. After interviewing 113 potential military leaders, Janowitz concluded:

> Those who see the military profession as a calling or a unique profession are outnumbered by a greater concentration of individuals for whom the military is just another job. . . . For a sizable minority—about 20 percent, or one out of every five—no motive [for joining the military] could be discerned, except that the military was a job.[5]

Janowitz is not the only military sociologist to document these findings. Charles C. Moskos, Jr., also wrote of a change in the orientation of the officer corps from institutionalism (in which the profession is viewed as a calling) toward occupationalism (just a job). The consequence, Moskos argues, is a shift from an attitude of self-sacrifice and moral commitment to one of materialism.[6] Military sociologists theorize that the concept of a calling higher than self diminishes as institutional values deteriorate.

In recent years, the officer corps has also recognized this shift in basic values. In 1970 Army Chief of Staff Gen William C. Westmoreland commissioned the Army War College to assess the ethics and values of the officer corps. In light of the trend identified by Janowitz 10 years earlier, the results of the study were both predictable and unsettling. The study cited a loss of ethical orientation to include "selfish [,] promotion-oriented behavior . . . disloyalty to subordinates [and] poor standards of ethical and professional behavior."[7] This loss of orientation is not limited to the Army. According to a 1980 Air Command and Staff College report, 100 percent of officers surveyed felt "most fellow officers compromised their integrity to varying degrees."[8] Most recently, an Industrial College of the Armed Forces report titled *Cohesion in the US Military* observed that "the shift in orientation of the officers has weakened [their] corporate cohesion. Many officers view the military as a job that offers material rewards and individual success."[9] As the evidence

mounted, military as well as civilian critics increasingly referred to occupationalist behavior as careerism.

Careerism Defined

There are a variety of definitions of careerism. In their book *Crisis in Command: Mismanagement in the Army*, Richard A. Gabriel and Paul L. Savage define careerism as "self-seeking, the use of one's charge and command largely as a means to higher career rewards."[10] In another well-known reformist work titled *National Defense*, James Fallows describes careerism as "the desire to be, rather than the desire to do. It is the desire to have rank, rather than use it; the pursuit of promotion without a clear sense of what to do with a higher rank once one has attained it."[11] Members of the officer corps define careerism in similar terms. In his article "The Military Professional in America," Lt Col John F. Shiner defines careerism as "seek[ing] advancement for its own sake and [using] it exclusively as a goal rather than as an opportunity or reward."[12] An AFMPC study reached a similar conclusion in June 1987, defining careerism as "career-building as a deliberate aim; preoccupation with career advancement/ promotion that supplants concern for basic duty performance."[13] Although other definitions exist, these are representative thoughts of both outside observers and members of the officer corps. For purposes of discussion, careerism is defined here as the practice of placing self-interests above the interests of the organization to accelerate personal advancement.

Two aspects of careerism should be highlighted. First, self-interest is central to the definition. For this reason, careerism is generally considered the antithesis of professionalism, which stresses subordination of self-interests to the interests of the organization.[14] By extension, the relationship between professionalism and careerism is a zero-sum game—when careerism prospers, professionalism suffers. Second, careerism is based on motivation. An individual motivated by the lure of personal advancement places his own interests above the interests of the organization and is by definition a careerist. However, another individual who performs the same act can be called a professional if the actions are motivated by altruism. On the surface, the simplicity of the definition implies that careerism would be relatively easy to pinpoint and deal with. However, several factors complicate the process.

Difficulties in Pinpointing Careerism

The most basic problem in the struggle to pinpoint careerism is that few officers view it in exactly the same way. What constitutes careerist behavior is largely a matter of perception, and perceptions are rarely if ever uniform. The following scene from the popular film *Top Gun* provides a good illustration:

> The commander, ramrod straight, faced his newly assigned aircrews.
>
> "Gentlemen, you are the top 1 percent of all naval aviators—the elite—the best of the best." He paused, surveying the eager faces in the crowded briefing room. "We'll make you better."
>
> The commander began to pace the room, preaching the gospel of technical expertise and combat capability to his crews in measured tones. After a moment, Maverick casually leaned forward in his chair and turned to study the attentive faces behind him.
>
> "What are you doing?" Goose whispered urgently.
>
> Maverick turned back to his RIO [radar-intercept officer] with a grin. "Just wondering," he murmured in a low voice, "who's the best."
>
> As if in reply, the commander's voice boomed out, "In case any of you wonder who the best is, they're up here on this plaque on the wall. The best driver and his RIO from each class has his name on it." He strode to the front of the room, then turned abruptly to face Maverick. He fixed the lieutenant with a cold stare,

"You think your name is going to be on that plaque?"

There was an expectant hush in the room. All eyes turned to the young F-14 pilot in the front row. Maverick met the commander's steady gaze.

"Yes, sir."

Several crew members exchanged disgusted looks, rolling their eyes in disbelief.

"That's pretty arrogant, considering the company you're in." Maverick thought for a moment. "Yes, sir," he replied in a firm voice.

The commander studied him for a moment, saying nothing. Finally, he gave a curt nod of approval. "I like that in a pilot."[15]

The interaction between Maverick and the commander can be interpreted in two different ways. On the one hand, the crew members react to Maverick's self-assurance with disapproval. To them, his seemingly flippant remark reflects an attitude of selfishness rather than team spirit. As his call sign suggests, Maverick has a reputation as a loner, one who views the world in terms of competition and is prepared to do whatever it takes to come out on top and make himself look good, even at the expense of his fellow officers. In this respect, he epitomizes the careerist. The commander, however, has a different perspective. In his eyes, Maverick's response is simply a reflection of a good fighter pilot's relentless pursuit of individual excellence and mastery over an opponent—the essence of a warrior. Careerism has nothing to do with it. This scene illustrates how a single event can be perceived in vastly different terms, depending upon the individual's frame of reference.

In the same way, the varied perceptions of the officer corps make careerism extremely difficult to deal with because the corps lacks a common baseline by which to evaluate its own behavior. What may be blatant careerism to one may be acceptable—or even desirable—behavior to another. "That so many officers believe careerism to be a problem in military service suggests an agreement on the facts," write noted ethicists Peter L. Stromberg, Malham M. Wakin, and Daniel Callahan. However, due to varying interpretations, "one person's careerism could be another's self-realization; one person's professionalism, another's insensitive consequentialism."[16] In this respect, careerism exists in the eye of the beholder.

The difficulty in assessing individual motivation also contributes to the difficulty in pinpointing careerism. According to Samuel P. Huntington, the professional is motivated by a sense of responsibility to the profession.[17] The careerist, on the other hand, is motivated by the lure of personal advancement. Consequently, determining whether an action constitutes careerism depends on whether the individual is motivated by a desire to serve the organization or by personal advancement. For example, an officer who consistently takes on high-visibility additional duties in the squadron is considered a professional if he is motivated by a sincere desire to contribute to the unit's mission. However, if motivated solely by prospects of a good officer effectiveness report (OER), he is a careerist. In theory, the difference between the two individuals is clear-cut. In reality, this black-or-white approach can easily lead to incorrect assumptions about what motivates peers or subordinates.

Rather than stemming from a single motive, human behavior often results from several different, perhaps even conflicting, motives. Furthermore, behavior is much less consistent than people would like to believe, leading them frequently to make incorrect inferences about what prompts an individual's behavior.[18] To add to the confusion, sometimes the individual is not aware of his or her true motives. For these reasons, motivation is extremely difficult to assess, making careerism difficult to pinpoint reliably. The result can be a series of erroneous judgments by a commander or an individual's peers, leading to an atmosphere of suspicion and distrust, and a rapid breakdown of unit cohesion.

Careerism, then, is difficult to pinpoint due to the lack of a common perception within the officer corps and the difficulty of

assessing individual motivation. However, not only is careerism difficult to pinpoint, but also several aspects of the military profession hinder an effective treatment of careerism.

Difficulties in Treating Careerism

By sending mixed signals to the field, the current personnel system makes careerism difficult to treat. Within the Air Force, careerism is decried as fostering an environment of selfishness that undermines the traditional military ethic of self-sacrifice. Yet, by the Air Force's own admission, many personnel policies actually reinforce a careerist orientation.[19] Pilot retention provides a timely example. AFMPC recently sponsored a conference in an effort to halt the progressive decline in cumulative continuation rate (CCR). Air Staff and major air command representatives met to consider a variety of measures designed to improve pilot retention. The primary recommendation to emerge from the conference was an increase in flight pay.[20] This recommendation was followed by a proposal to offer pilots an annual bonus of $12,000 to stay past their initial service obligation.[21] Unfortunately, this approach to improving the CCR tends to reinforce the most pessimistic view of the officer corps as self-serving occupationalists motivated by material gain. If this view is accurate, careerist incentives are bound to spawn more careerism. If this view is not accurate, the Air Force has not set a very high level of expectation for its officer corps. Either way, materialism does not appear to be a constructive solution. Moreover, if inadequate flight pay is in fact a principal cause for declining pilot retention,[22] the Air Force has a larger problem than the CCR.

The effects of the Goldwater-Nichols Defense Reorganization Act of 1986 on the personnel system have also encouraged a careerist orientation within the officer corps.[23] Title IV of the act, which deals with joint officer personnel policies, requires officers promoted to general or flag rank to have served in a joint duty assignment.[24] The effect, according to Gen Thomas R. Morgan, assistant commandant of the Marine Corps, is to force a choice "between operational experience that will sharpen combat skills and administrative assignments that will enhance promotion potential."[25] As this legislation encourages young officers to scramble for joint duty assignments, careerism becomes institutionalized to a much greater degree, resulting in a corresponding decrease in combat capability.[26] Against the current backdrop of anticareerism, policies such as incentive pay and joint officer duty tend to send conflicting signals to the officer corps, further muddying the water.

Another aspect that makes careerism difficult to treat is the close relationship between careerism and self-interest.[27] As previously noted, self-interest is central to the definition of careerism. Consequently, the officer corps tends to equate self-interest with careerism. In reality, they can be quite different. In an article titled "Ethics of Leadership," Col Malham M. Wakin says that self-development and selfishness are two components of self-interest:

> We attribute selfishness to those who seek their own advantage without regard to the consequences of their actions for others or in spite of causing harm to others. To develop one's talents can be viewed as self-interested action, but it need not be selfish. Certainly, some self-interested actions can be morally right and justifiably encouraged. . . .[28]

Although selfishness is clearly careerism, self-interested action that supports organizational goals is not and can therefore be desirable. A good example is the Air Force nonresident professional military education (PME) program. In recognition of the role of PME in professional development, the Air Force considers PME an important factor in career progression.[29] If an individual enrolls in a PME program to enhance his chances for promotion, he is acting out of self-interest. However, this self-interested

action is not careerism because it meets PME's objective of developing expertise in the use of air power.[30] In spite of the recent decision to disregard "early" PME accomplishment at promotion boards (i.e., intermediate service school at major boards and senior service school at lieutenant colonel boards) appropriately timed PME remains an important factor for promotion.[31] If all promotion boards were to disregard PME records, an important incentive for the officer to complete PME programs would be removed. Presumably, such a decision would result in an eventual reduction in the effectiveness of the officer corps.

Finally, formulating an effective approach toward careerism is complicated by the legitimate need for competitive spirit and ambition within the officer corps. Competitiveness is a basic ingredient of leadership, and the military cannot afford to be in short supply, particularly in combat. As Gen Douglas MacArthur pointed out, the mission of the profession of arms is to "win our wars. Everything else in [the officer's] professional career is but corollary to this vital dedication."[32] Vice Adm William P. Lawrence adds that leadership requires "very competitive individuals [who possess] a high degree of pride, and [who] satisfy that pride in achieving productive ends. More simply stated in the context that all in the military understand, they are fighters with a strong will to win."[33]

Another crucial ingredient of leadership is ambition. As Lt Gen Ira C. Eaker once observed, great leaders are not shy about seizing an opportunity. "If you find need for a leader and have to coax or urge your selection to take the job," Eaker said, "you'll be well advised to pass him over. He's not the man you need."[34] When taken to the extreme, however, the two virtues of competitiveness and ambition become vices of the careerist. As Richard A. Gabriel charges in his book *Military Incompetence: Why the American Military Doesn't Win*, "competition and careerism make every officer look out for himself. Such a system engenders values corrosive of any concept of the military as a special calling requiring special service and sacrifice."[35]

Competition becomes destructive when it detracts from team spirit. Excessive ambition can have a similar effect, driving the careerist to pursue personal achievement at the expense of mission effectiveness or unit welfare. Worse yet, to the extent an ambitious individual indulges in careerism, he tends to encourage careerism in others. The result can be a self-perpetuating situation wherein careerists who advance into leadership positions teach others either to follow their example or get out of the service.[36]

Competitiveness and ambition, then, can be valuable attributes when properly channeled or destructive influences if allowed to run rampant. To avoid the latter situation, one must make a clear distinction between legitimate competitiveness and ambition and their destructive counterparts. Otherwise, these two important leadership qualities might be removed from the officer corps by heavy-handed reforms, an action that would hamper combat effectiveness.

The varied perceptions of careerism, the difficulty in assessing individual motivation, the mixed signals sent to the officer corps by the personnel system, the close relationship between self-interest and careerism, and the need for competition and ambition within the military make careerism difficult to pinpoint and treat. Immoderate reforms, hastily conceived and indiscriminately applied, can have opposite effects than those intended. However, the Air Force can treat careerism effectively if it is patient and takes a long-term perspective.

Getting a Grip on Careerism

Three important steps can be taken to help the officer corps control the problem of careerism without generating unintended side effects. First, the officer corps must develop a common perception of careerism. Second, strong, ethical leadership is needed

at all levels to control careerism. Finally, systemic changes are required to eliminate the personnel policies that foster a careerist orientation.

The officer corps cannot realize a basic philosophical change toward careerism without a common understanding of what careerism is, as well as what it is not. While it is unlikely that everyone will ever perceive careerism in exactly the same way, the officer corps needs a common understanding of careerism and its effects in order to formulate a basis for action. At present, careerism is like pornography: few can define it, but everyone claims to recognize it.

Understandably, the search for careerism generally begins with others, rather than with oneself. As Stromberg, Wakin, and Callahan point out, "Most talk about careerism centers . . . on the alleged careerism of other people. It is often easier to censure others for self-seeking motives than to identify similar motives in oneself."[37] To facilitate self-examination, personnel at all levels—from the smallest units to the Air Staff—should discuss the causes and effects of careerism. Conferences, commander's calls, and individual counseling can be useful avenues for developing an awareness of the dangers of careerism.[38]

Equally important, however, is a discussion of what careerism is not. When properly channeled, self-interested action, competitiveness, and ambition are not careerism but hallmarks of winning organizations. Likewise, eagerness is not careerism, nor is striving to be the very best at one's profession. The officer corps must understand this distinction lest misdirected peer pressure discourage the individual's desire to excel.

Even with this common understanding, the officer corps will be able to control careerism only to the extent that commanders are stewards of professional ethics. In an organization that searches for role models, strong, ethical leadership must be the standard. Commanders should be selected largely on the basis of ethical character because it is their example that will teach the individual to distinguish between self-interested action and selfishness, competitiveness and antagonism, ambition and greed. An awareness of where to draw the line will give the officer corps the confidence it needs to aggressively pursue individual excellence, as well as the wisdom to stop occasionally and get its ethical bearings.[39] Led by commanders who set high ethical standards for the organization, the individual will be inspired to place duty above self. Led by commanders who set expedient standards, the individual will be lured into looking out for himself. Without an example of ethical leadership, even basic philosophical changes in individuals can eventually give way to the pressures of careerism.

Finally, the personnel system must stop sending mixed signals to the field. As the earlier example of pilot retention pointed out, raising flight pay as a primary incentive to keep pilots in the Air Force is inconsistent with urging the officer corps to return to the institutional values of duty, honor, country. Furthermore, such incentives could exacerbate the problems of specialization within the officer corps, create animosity between rated and nonrated officers, and further weaken the profession's corporate identity.

Instead of occupationalist incentives, the Air Force should explore institutional incentives to encourage its pilots to remain in service. Pilots should be able to enhance their chances for promotion by remaining in the cockpit—at the tip of the spear—rather than accept career-broadening assignments forced upon them by the realities of the promotion system. Such a change would not only eliminate a major source of pilot dissatisfaction[40] but also shift the measure of performance from ticket-punching to fulfilling the professional officers' principal obligation—improving combat capability. As Marine Maj Robert B. Neller so astutely put it, "If any group within the Corps, or any of the Services, should be given an edge at promotion time, it should be those individuals who possess the leadership and tactical

expertise in warfighting skills and can lead us to victory in war."[41]

The Air Force should also examine assignment policies for careerist orientation, particularly in light of the Goldwater-Nichols Defense Reorganization Act. AFMPC should minimize the individual officer's direct involvement in the assignment process and instead rely on the commander's judgment.[42] Assignments should be based more on the commander's assessment of where the individual can best serve, rather than the individual's perception of what would be the best career move. In this regard, the newly announced assignment policy of weighing officers' qualifications more heavily than their volunteer status[43] is an encouraging step toward eliminating the square-filling, self-serving behavior so devastating to unit cohesion.

Finally, to nurture the attitude of "send me where I can best serve," the promotion system should encourage highly qualified officers to accept difficult assignments for the good of the service, as well as their own benefit. As Harry G. Summers notes, "You want people to be ambitious. You want people to seek out difficult jobs. *What you need to bring out is that the jobs that enhance their careers are the most difficult to do. . . .* What we need is a structure, a system where what's important pays."[44] If the military is to build such a structure, the personnel system must stop rewarding careerism on the one hand while seeking to eliminate it on the other.

Conclusion

Clearly, the Air Force must act to arrest the development of careerism within the officer corps. To the extent careerism continues to spread, the fundamental ethics that stress duty over self will further deteriorate. Although military reformists, senior military leaders, and the officer corps itself agree that reform is needed, identifying careerism is not as easy as defining it. Lack of a common perception within the officer corps and the inability to accurately assess individual motivation make careerism difficult to pinpoint. Some personnel policies further cloud the issue by fostering a careerist orientation. Finally, the close relationship between careerism and self-interested action, competitiveness, and ambition also make quick, easy solutions unlikely. The officer corps, it seems, is stuck between a rock and a hard place—faced with a grave problem that demands immediate attention, yet unable to implement a rapid solution for fear of unforeseen consequences.

Solving the enigma of careerism must start at the source: the officer corps. Air Force officers must examine careerism in the light of day and see it as a betrayal of the ethic of duty, honor, country. At the same time they must separate legitimate forms of self-interest, as well as competitiveness and ambition, from careerism and preserve them as valuable assets. The officer corps needs strong, ethical leadership to channel these assets properly and inspire selfless dedication. Finally, systemic changes are necessary to ensure that personnel policies reinforce rather than diminish the traditional values of the profession of arms.

Regardless of the solution adopted, one fact should be borne in mind: lasting philosophical changes on the individual and institutional level will come neither quickly nor easily. There are no miracle cures for the scourge of careerism, and a heavy-handed approach can produce undesirable side effects. Lt Gen Walter F. Ulmer, a former superintendent of the US Military Academy, wryly observed that the military tends to overreact zealously to fundamental ethical dilemmas. "Most mischief and lack of motivation in our systems," General Ulmer concluded, "is caused by well-intentioned policies promulgated by a dedicated chain of command."[45] As the controlled OER system of the seventies so graphically illustrates, even the best intentions can have disastrous results. This painful lesson should be kept uppermost in mind as individual and institution attempt to get a grip on the slippery issue of careerism. □

Notes

1. Lt Col John F. Shiner, "The Military Professional in America," in *Concepts for Air Force Leadership* (Maxwell AFB, Ala.: Air University, 1983), 1–35.
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6. Charles C. Moskos, Jr., "The All-Volunteer Military: Calling, Profession, or Occupation?" *Parameters* 7, no. 1 (1977): 2–9.
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12. Shiner, 1–35.
13. Lt Col Merrill L. Eidson, "Careerism," talking paper, Headquarters AFMPC/DPMRP, 22 June 1987, 1.
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THE SOVIET SPETSNAZ THREAT TO NATO

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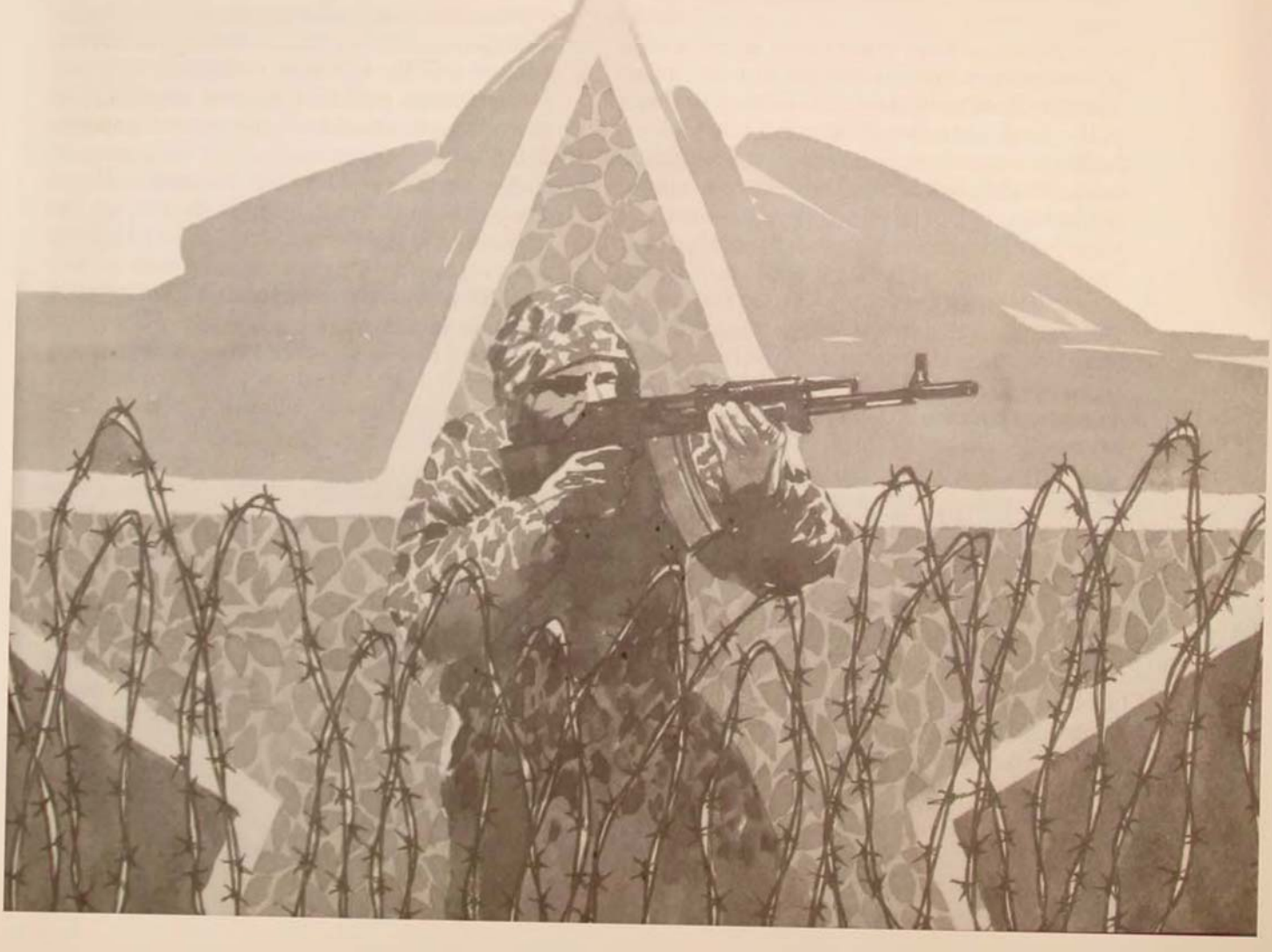
The Spetsnaz are the only Soviet troops who can think for themselves and take quick decisions.

—Abdul Haq, Afghan rebel leader

IN recent years, Soviet military doctrine has increasingly emphasized the use of conventional forces in conducting military operations. As a result, Soviet tacticians have stressed the need to wage a blitzkrieg-style attack to defuse NATO's military might before a war could escalate to a nuclear level. Traditionally, however, westerners examine future wars primarily by focusing their attention on thermonuclear weapons and conventional forces while granting scant attention to a third dimension of Soviet military operations—saboteurs, secret agents, and special forces.[1] This third dimension of warfare essentially entails the use of *military* active measures that are special operations involving surprise, shock, and preemption in the enemy's rear echelons with the ultimate goal of winning a quick victory by producing conditions conducive to the rapid advance of the main Soviet force.[2] The Soviet troops



entrusted with fulfilling these preemptive actions are "special purpose" or "special designation" *(spetsnaznacheniya)* troops, more commonly known as Spetsnaz forces. Because of Soviet military doctrine's focus on the need for surprise and preemption of the use of nuclear weapons, Spetsnaz forces could play a prominent role in the successful implementation of overall Soviet war strategy. Moreover, current evidence indicates the Soviets are fortifying and preparing their Spetsnaz apparatus to decimate the capabilities of NATO's military and political organizations in the opening phases of a potential surprise attack against Western Europe.

Strategy for a War Against NATO

The Soviet Union is none too eager to engage in an overt armed conflict against Western Europe. Nonetheless, one cannot discount that in the future extraordinary events may occur simultaneously which, collectively, could precipitate a crisis situation between NATO and the Soviet Union/Warsaw Pact nations. C. N. Donnelly (head of the Soviet Studies Research Centre, Royal Military Academy, Sandhurst, England) suggests that two phases would precede the outbreak of hostilities: the preparatory phase and the crisis phase, both designed to employ all measures to exploit NATO's weaknesses and to reduce its combat potential.[3] During the preparatory stage, the Soviets' primary aim is to weaken the West's capacity to wage nuclear war either by preventing the development or the deployment of new weapon systems or by depleting the political will to use them. This is accomplished via Soviet *political* active measures—for instance, propaganda campaigns, disinformation, and the sponsoring of Western peace movements. From the Soviet point of view, it is most desirable to operate exclusively at this level, whereby Soviet influence and power gradually grow in Europe and US power declines until the states of Europe are effectively "Finlandized" and the United States becomes isolated.

Should these political active measures fail, however, the prewar crisis phase would ensue. This phase is likely to commence only if some aspect of Soviet policy fails and it then becomes apparent to the Soviet Union that a war is either inevitable or that war is the only means by which the leadership can achieve a vital policy objective. At this juncture, the Soviets would initiate unconventional warfare methods (i.e., military active measures) to degrade NATO's fighting capability, creating favorable political and military circumstances for a successful follow-on campaign. The Soviets define unconventional warfare as a variety of military and paramilitary operations which include partisan warfare, subversion and sabotage (conducted during both peace and war), assassination, and other covert or clandestine special operations.[4] These missions are assigned to special units of the Committee of State Security (KGB—*Komitet Gosudarstvennoy Bezopasnosti*), to the Soviet General Staff's Main Intelligence Directorate (GRU—*Glavnoe Razvedyvatelnoe Upravienie*), and to airborne, ground, and naval forces, all of which possess Spetsnaz forces.

At this crisis stage, the Soviets will put these forces into play. From the outset, the ultimate Soviet objective will be the total political collapse or neutralization of key NATO governments.[5] Because frontal military assaults would be less effective in accomplishing this, Soviet strategy emphasizes the need for initial operations in the enemy's rear echelon, the domain of Spetsnaz forces whose operations are intended to sow the seeds of a political-military collapse. Indeed, the Soviets' aim is to prevent the formation of a static, frontline war with NATO on one side and Warsaw Pact forces on the other.[6] Therefore, the Soviets intend to infiltrate NATO's rear area before the outbreak of hostilities to begin eroding NATO's political and military structure from within.

In the late 1970s, the Soviet army rede-

veloped its doctrine for the "deep operation" in conventional conditions, and it determined that the sine qua non of success is surprise.[7] While the Soviets do not expect total surprise, they do believe that, if a sufficient degree of tactical surprise is achieved, then NATO deployment should be patchy and incomplete, and some corps would still be moving toward their defensive positions when open hostilities begin. Thus, the primary concern of Soviet strategists and tacticians is to launch low-visibility operations that ensure surprise, induce operational paralysis, and obstruct enemy mobilization and deployment.

Spetsnaz activity thus would be initiated prior to the advancement of main army forces at the front to ensure surprise. The Soviets believe that creating such disruption would assure the advancing main forces of a rapid, uninterrupted, and hence successful advance. The actual damage that a small team could accomplish would be moderate at best; however, the shock to national morale resulting from such acts as the assassinations of senior politicians, industrialists, financiers, and the like on the eve of the war would be disproportionately great in comparison to the small cost of attempting such an operation. It is essential to bear in mind that these Spetsnaz operations are not designed in themselves to result in a Soviet victory since their task is merely to reduce the enemy's resistance; rather, their function in the overall Soviet war plan is to enable the main army to conclude war operations in a more abbreviated and less risky fashion.

Wartime Missions

Prior to the employment of combat airborne and naval Spetsnaz units, the Soviets would preposition other Spetsnaz forces within enemy territory. In preparation for a war, the Soviets would post to their embassies and consulates a certain number of Spetsnaz officers and warrant officers in the guise of technical personnel, guards, gardeners, drivers, and so forth.[8] Similarly, groups of professional Spetsnaz agents posing as tourists, delegations, sports teams, or as passengers on merchant ships, civil aircraft, or commercial trucks would attempt to infiltrate into enemy territory.[9] Finally, on the eve of war, Spetsnaz units, employing various pretexts and covers, may concentrate in neutral states and enter enemy territory once fighting has commenced. Also at this time, various Spetsnaz elements would covertly deploy and link up with their indigenous agent assets to set in motion operations in the target area. It is expected that KGB agent assets would likewise emerge to conduct their special operations and that local Communist, Leftist, and possibly terrorist elements also might be activated to implement these operations.[10] In short, Soviet Spetsnaz forces would then be poised and ready to strike when necessary.

As the Spetsnaz missions are but one element of an integral war plan, the Soviets believe Spetsnaz objectives can be successful only if they take place on a massive scale concurrent with operations conducted in the enemy's rear areas by airborne troops, naval infantry, air assault brigades, divisional deep reconnaissance units, KGB teams, and similar groups from the Warsaw Pact. Therefore, the main Spetsnaz forces will be dropped simultaneously on all fighting fronts while the professional "athletics" regiments will operate within range of capital cities, regardless of their distance from the front line.[11]

Soviet Spetsnaz forces entering their operating area in Western Europe would first pursue the following primary objectives listed in descending order of importance:

- The physical incapacitation and destruction of NATO nuclear and chemical warheads, means of delivery, and related command, control, and guidance elements—both strategic (e.g., Polaris submarines in bases) and tactical (e.g., air-delivery systems).

- The disruption of NATO political, stra-

tegic, and tactical command, control, and communications elements. This also includes the elimination of personnel in key positions.

- The physical incapacitation of certain electronic warning and reconnaissance equipment, radars and early warning equipment, air defense equipment of all types, and possibly ballistic missile early warning systems.
- The capture of key airfields and ports to prevent reinforcement or redeployment, particularly by the United States; the destruction or neutralization of airfield and port facilities not required intact by the USSR, plus railways and key road junctions important in mobilization plans.
- The disruption of key industrial targets and facilities (e.g., power stations, oil refineries, military-electronics industries, etc.).[12]

Finally, in the wake of the Intermediate-range Nuclear Forces Treaty (INF) signed in December 1987, allied air assets and air bases would likely become a much higher priority target for Spetsnaz forces after ground-based assets have been dismantled.

Indications of Current Spetsnaz Preparations Against NATO

In recent years reports emanating from Great Britain and Sweden indicate that the Soviets may be positioning and preparing Spetsnaz elements for possible wartime use against Western Europe. In Great Britain, Soviet defectors have disclosed that the Soviet Union has established a covert detachment of female Spetsnaz personnel in the area surrounding Britain's Royal Airfield at Greenham Common since the deployment of the US Air Force land-based Tomahawk cruise missiles there in December 1983.[13] According to these defectors, three to six trained agents from Warsaw Pact and West European countries—including Great Britain—infiltrated women's protest groups at Greenham Common and were present "at all times." These agents claim to have trained in camps situated in the Carpathian military district and the Ural and Volga military districts in the western Soviet Union. Realistic, full-scale replicas of cruise missile launchers and mock-ups of the Greenham Common defenses have been built at these secret camps to help train Spetsnaz teams.[14] Using these mock-ups, the women were trained to attack the missile sites under war or surprise conditions in a preemptive strike. Additionally, the defectors claim that the terrain features of these camps mirror those at "various British and French nuclear installations" to enable hit-and-run Spetsnaz raids to be rehearsed in an environment simulating actual conditions as closely as possible.[15] Furthermore, the infiltrated agents are said to be tasked to act as "beacons" for other Spetsnaz and airborne troops who would be used to attack the missiles in war.[16]

Since the early 1980s Sweden has suffered from a steady bout of violations of its territorial waters by foreign submarines that have been determined to belong to the Soviet Union. The reports issued by the Swedish navy were granted but passing attention by both the Swedish public and the international media until 27 October 1981, when a Soviet Whiskey-class submarine ran aground in a restricted area of the Karlskrona archipelago in an incident generally referred to as "*Whiskey* on the rocks."[17] While the Swedish government issued a strong formal protest, the Soviets sloughed off the intrusion as an unintentional navigational error. In yet another incident, in October 1982, alien submarines entered the Stockholm archipelago—another military restricted area—and part of this force even penetrated Harsfjarden, which is the main base of the Swedish navy. Despite an extensive month-long hunt, Swedish armed units were unable to catch any submarines. Photographic evidence released later revealed prints and sea tracks made by these vessels.[18] Three submarines had penetrated inshore to the sea walls of the residence of King Carl Gustaf XVI.

After this public disclosure of Soviet violations of Sweden's territorial waters, Soviet submarine incursions continued despite the public embarrassment and, in fact, increased and became more brazen. Before 1981, Soviet submarines had departed from Swedish waters as soon as they realized their presence had been detected; in the ensuing years, they have behaved more arrogantly, remaining within the restricted area despite increasingly strenuous Swedish naval activities to curtail their operations.[19] During the 1970s the submarine violations had numbered between two and nine per year. In 1981 they rose to 10 and in 1982 to 40. In 1983 the Swedish defense chief could report 25 certain violations and at least an equal number possible. The figures listed do not refer to mere observations but to fully analyzed incidents, given the final characterization of certain, probable, or possible violations.[20]

Numerous tentative explanations have emerged to account for these Soviet submarine incursions. A variety of military missions have been suggested—for example, gathering intelligence on defense installations and navigational conditions in the vicinity of the Swedish naval bases; shadowing the trials of new weapons; and observing military exercises. It has been proposed that the intrusions might reflect a significant change in the USSR's operational strategy in the Baltic, based on its naval predominance in the area.[21] Some speculate that the Soviets are attempting to seek out safe havens for their nuclear missile submarines in times of crisis where they will be difficult to find and where Western forces would be highly reticent to attempt destroying them so close to allied or neutral shores.[22] However, the idea also has been seriously entertained that these missions entail dropping off or retrieving Spetsnaz teams or agents, training and familiarization exercises in Swedish waters, and testing Swedish military capabilities and crisis management techniques.[23]

A Swedish commission tasked with investigating these submarine incidents agreed that preparation for the landing of Spetsnaz forces is a possible explanation. One of the several signs pointing in this direction is the increase in submarine incursions in the vicinity of permanent defense installations on the Swedish coast; in earlier years, the activity appeared directed at Swedish navy exercises and testing of materiel. Furthermore, Carl Bildt, a prominent member of the Swedish Submarine Commission, has emphasized the importance in today's Soviet strategy of diversionary Spetsnaz forces that would likely land via submarines to undertake sabotage raids against crucial command targets as well as vital political and military installations.[24] Thus, it is not unlikely—particularly in light of Sweden's apparent lack of success in controlling Soviet underwater intruders—that the Soviets would be practicing contingency Spetsnaz operations when the consequences of getting caught appear to be so negligible.

Finally, there is a disconcerting political and military consequence resulting from these continued submarine incursions: the Europeans seem to have become desensitized to the territorial violations, which have been relegated to the sphere of everyday occurrences. The publicity surrounding the sensational report of the Swedish Submarine Commission has subsided and is now nearly forgotten, and new incursions are treated quite routinely.[25] As one observer of these incidents laments, "If Sweden permits the intruders to operate freely in sensitive restricted waters, the first step will have been taken psychologically toward subservience to the Soviet Union."[26]

Red Dawn for NATO?

With the increasing emphasis in Soviet military doctrine on winning a war under either nuclear or nonnuclear conditions, the Soviet Union seems more inclined to wage a blitzkrieg war, employing surprise and shock that would be facilitated through the use of their Spetsnaz forces. It is signif-

icant, however, that a congressional report titled *NATO and the New Soviet Threat*, presented to the Committee on Armed Services in 1977, made no mention of the potential use of such military active measures. While open acknowledgment of Spetsnaz operations has finally emerged in Western military planning in the early 1980s, greater consideration must be given to these forces in estimating the Soviet threat to NATO.

For the Soviets, NATO vulnerabilities further enhance the desirability of using Spetsnaz forces against Western Europe. As a collection of independent nations, NATO would likely require greater time to reach unified action in the event of a Soviet attack on Europe. Thus, preemptive operations—taking out military and political targets—might prove tempting because the Soviets may perceive they will encounter little initial resistance as West European leaders determine what course of action to pursue. Additionally, since the Soviets and their Warsaw Pact allies have a considerable edge over NATO in numbers of conventional forces, they may deem it imperative to take out NATO's nuclear forces prior to any overt military assault, leaving NATO highly weakened and vulnerable to Soviet demands.

In sum, it appears the Soviets are most likely to continue their current ploys to undermine Western Europe from within—for example, by infiltrating and manipulating organizations opposed to Western government policies and by bullying susceptible nations into passive acquiescence of Soviet actions. However, there are indications that the Soviets currently are continuing to reinforce their Spetsnaz capability against Europe. Thus, while open warfare in Europe does not seem imminent, Western military planners must be prepared to contend with the presence of Spetsnaz forces if war should occur. □

ORGANIZATION OF SPETSNAZ FORCES*

An independent Spetsnaz company has 115 men, including nine officers and 11 warrant officers. Every Soviet army has a Spetsnaz company which consists of a headquarters element, three parachute platoons, one communications platoon, and supporting subunits. When prosecuting sabotage in the enemy's rear areas, the force may operate as a single entity or in a small group of up to 15.

The next level of Spetsnaz organization is the brigade, which has 1,000 to 1,300 troops. The brigade usually consists of a headquarters unit, an anti-VIP company, three to four parachute battalions, a signal company, and other supporting units. The brigade can operate as a single unit or can be subdivided into as many as 135 separate and independent groups. The anti-VIP company is the only company which is comprised solely of full-time professional soldiers and is always maintained at the highest state of readiness.

The Soviet naval Spetsnaz brigade has a corresponding anti-VIP company, a group of midget submarines, two or three groups of combat swimmers, a battalion of parachutists, and the necessary supporting units. The naval Spetsnaz regiments are composed of six to seven sabotage companies and have a strength of between 700 and 800 men. These units are different from those of the independent companies and brigades in that they are manned exclusively by professional athletes of Olympic caliber.

It is estimated that there would be 41 independent companies, one to every tank and all-arms army; 16 Spetsnaz brigades, one to each front; four Spetsnaz naval brigades, one to each fleet; and 20 Spetsnaz intelligence units, one to each front or naval fleet. In addition, the Soviets would have available three Spetsnaz regiments which could be allotted to the commanders-in-chief of the Strategic Directions, which consist of three or more fronts and a naval fleet.

*This information is drawn directly from a report by Burton A. Casteel, Jr., *Spetsnaz: A Soviet Sabotage Threat*, Report No. 86-0500 (Maxwell AFB, Ala.: Air Command and Staff College, 1986).

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NORDIC NATO IN TRANSITION

Toward Turbulence in the 1990s?

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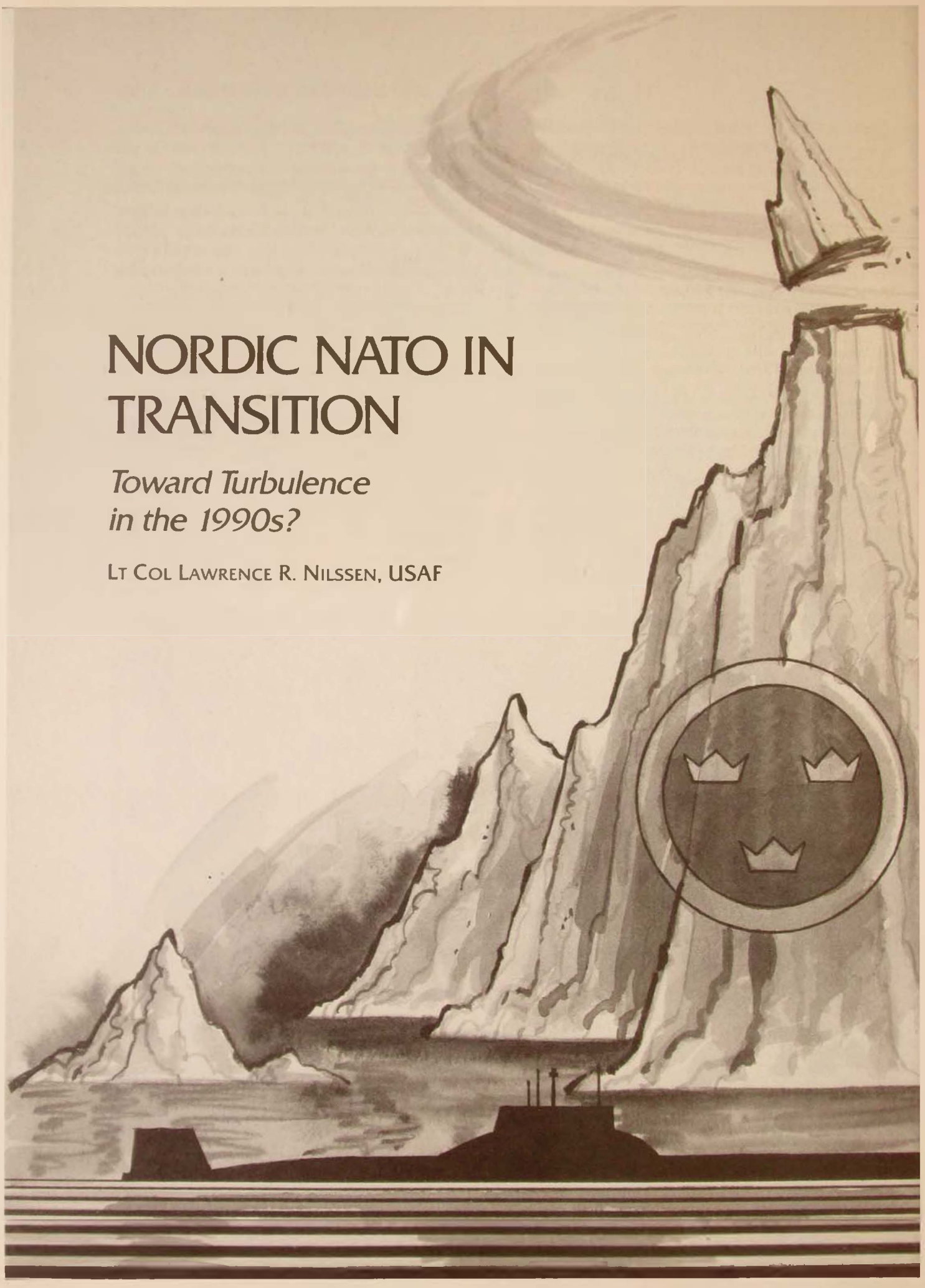
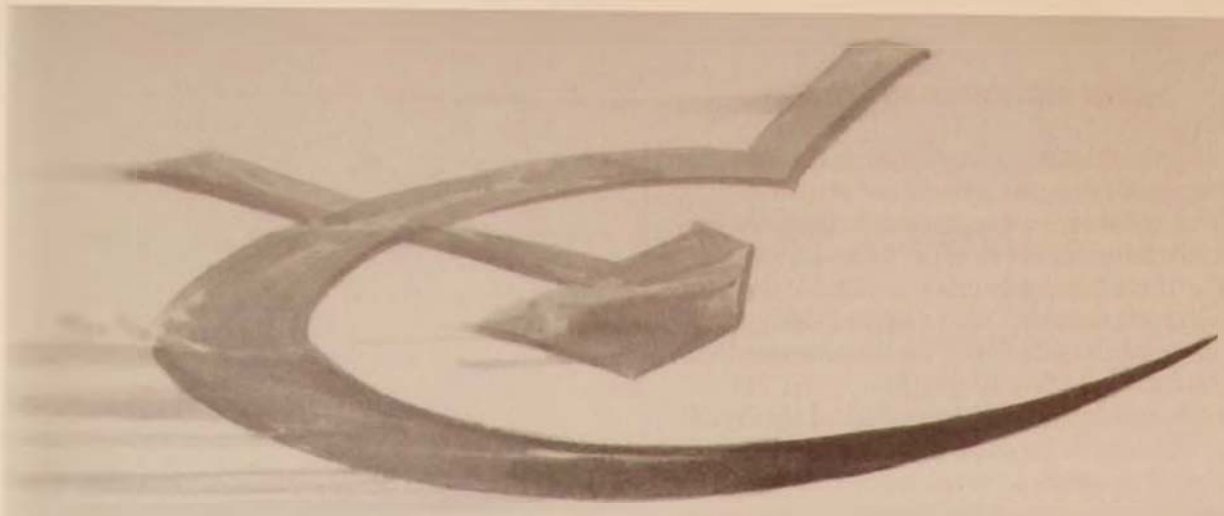




AS recently as 4 August 1987, the *Washington Post* published an article titled "All's Quiet on the Norwegian-Soviet Frontier."[1] The thesis of the article was that despite a huge concentration of Soviet forces in close proximity to NATO, tensions were low, as usual. This view has been the conventional wisdom since World War II. Past journalists have habitually called the northern provinces of Norway, Sweden, and Finland NATO's "quiet corner" or the "forgotten flank" when they addressed the area at all. This is changing. Since the early 1980s several trends have emerged that guarantee increased attention to the Scandinavian arctic area. The trends have recently been accelerated by unrelated events and developments and as a result the area is now emerging in the forefront of international defense policy debate, as suggested by Soviet General Secretary Gorbachev's recent arctic propaganda "peace offensive."[2] This article identifies these trends, shows why higher levels of confrontation and conflict are likely in the future, and suggests some modest measures that will maintain the "quiet corner" status quo, even as the airspace over the arctic north and particularly over northern Norway becomes ever more critical to Soviet military interests.

The central military reality driving all other considerations in the arctic north is the concentration there of roughly two-thirds of the modern Soviet nuclear submarine (SSBN) fleet, including the Typhoon SSBNs.[3] Five of these huge submarines have been launched, and they operate out of the Murmansk area.[4] We cannot predict the Soviet tactical doctrine of combat employment with 100 percent certainty, but the US Navy believes the SSBNs will be dispersed into a heavily defended "bastion" in the Barents Sea and under the arctic ice pack where they will represent the most survivable component of a Soviet second strike capability.[5]

Discernible Soviet doctrine places high value on the "correlation of nuclear forces" during the unfolding of any possible conflict. As the fixed silos of the Soviet land-based ICBMs become increasingly threatened by future deployments of accurate Peacekeeper, cruise, and D5 missiles, the Soviets will no doubt place an even higher premium on their SLBM assets. Even the proposed Strategic Defensive Initiative, if effective, will enhance the strategic value of submarine missile forces by placing a premium on submarine-launched cruise missiles and depressed trajectory SLBMs. As

the relative value of these second-strike assets appreciates, the pressure on the Soviets to take whatever measures are necessary to assure their survival will increase. By directly threatening Soviet second-strike assets, the recently developed Maritime Strategy of the US Navy could also contribute to instability.

A comprehensive discussion of the Maritime Strategy is beyond the scope of this paper, and volumes have been written; but some fundamentals are immediately relevant to the Scandinavian arctic. The Maritime Strategy would send several powerful carrier battle groups and perhaps one battleship group north, cautiously and prudently but aggressively, to engage the Soviet naval forces in their home waters and threaten the SSBNs in their "bastion."[6] This strategy, promulgated during Secretary of the Navy John Lehman's articulate stewardship, represents a revolutionary change from the Navy's previous role of sea control—defending the sea lines of communication. Should the Navy be called to execute the strategy, the Soviets must attempt to establish control of the arctic airspaces for both offensive and defensive missions. If, in the ensuing fight, our naval forces are significantly degraded, then their more traditional mission of sea control may fail and the resupply of Europe may be impossible. If the resupply of Europe fails, the alternatives for Western Europe may well be surrender or nuclear escalation. Thus, the Maritime Strategy puts a premium on control of the arctic airspaces for both sides at the instant hostilities seem probable.

A major consideration for both Americans and Norwegians is how to exercise the Maritime Strategy during peacetime. The Norwegians recognize that the strategy is a mixed blessing. They cautiously welcome it as a logical display of NATO resolve to defend Norway but fully recognize both the Soviet sensitivities and the difficulty of operating large formations of major surface combatants in the northern seas, which are among the worlds most environmentally difficult waters.[7] Senior Norwegian defense

A JA 37 Viggen is shown here in field deployment. The surge capability of the Royal Swedish Air Force once rivaled that of USAFE, but no longer.

officials want more exercises of larger scope in the north for six reasons: to gain proficiency in the arctic environment, to demonstrate NATO resolve and solidarity, to balance increased Soviet activity, to observe Soviet activity, to exercise the right to free transit, and to routinize American carrier groups operating in arctic waters.[8] Historically, the Soviets have been very sensitive to foreign forces in proximity to their vital interests. The Soviets invaded Finland in 1939 to take Leningrad out of artillery range of the Finnish border, for example. One must wonder how the Soviets would react if an unrelated crisis developed while an offensive battle group was exercising near the Kola peninsula.

Our battle groups are improving their offensive strike capabilities. A recent article in the *New York Times* disclosed that the United States had developed a terminally guided cruise missile that could hit "within inches" of the desired aim point, therewith "blurring the distinction between nuclear and conventional weapons."[9] This cruise missile could be launched from a submarine, could have "stealth" characteristics, and would be available sometime in the mid-1990s. A follow-up article reported that the newest *Los Angeles*-class attack submarines will carry 10 vertical cruise missile launchers, and that the newest *Seawolf*-class attack submarines will carry 50 such weapons.[10] These systems have profound military implications, as they theoretically allow a disabling (or at least degrading) surprise attack against the Kola military defenses without using nuclear munitions. With defenses disabled, Soviet military facilities would be vulnerable to systematic destruction by less vulnerable carrier battle group conventional forces. US submarines could carry out the attack mission while hunting for Soviet SSBNs and could switch munition payloads from conventional to nuclear without warning. After these weapons are operational, defense in depth will be critical. The Soviets must ensure, as far as they can, that these "triple-threat" submarine launching platforms are

kept as far away as possible and that they are destroyed as quickly as possible at the outbreak of hostilities. Large volumes of airspace must be available to allow time to detect and intercept incoming cruise missiles and aircraft. Northern Norway offers a large volume of (relatively) lightly defended airspace adjacent to Norwegian coastal areas where US submarine launching platforms could be concealed. Also, the mere existence of submarine launching platforms in near proximity to Soviet waters could precipitate a crisis where none had previously existed, especially if the Soviets conclude that submarine strength had been purposely massed to the level that permits a high probability of a successful disarming strike.

The relative decline of the air forces of Sweden and Finland is another trend in the arctic that is working against NATO. The Finnish air force, limited by treaty to only 60 aircraft,[11] has always been weak compared to the air forces of the surrounding power blocs. Not so the Swedish air force. The defense spokesman for the Swedish Conservative Party, Carl Bildt, has indicated that the two most important ingredients of the Nordic military strategic equation are the Keflavik Air Base in Iceland and the Royal Swedish Air Force (RSAF).[12] Once nearly the equal of USAFE in "surge" strength, the RSAF guaranteed unacceptably high attrition rates to any aggressive penetrator and contributed to the stability of the area. This is rapidly changing.

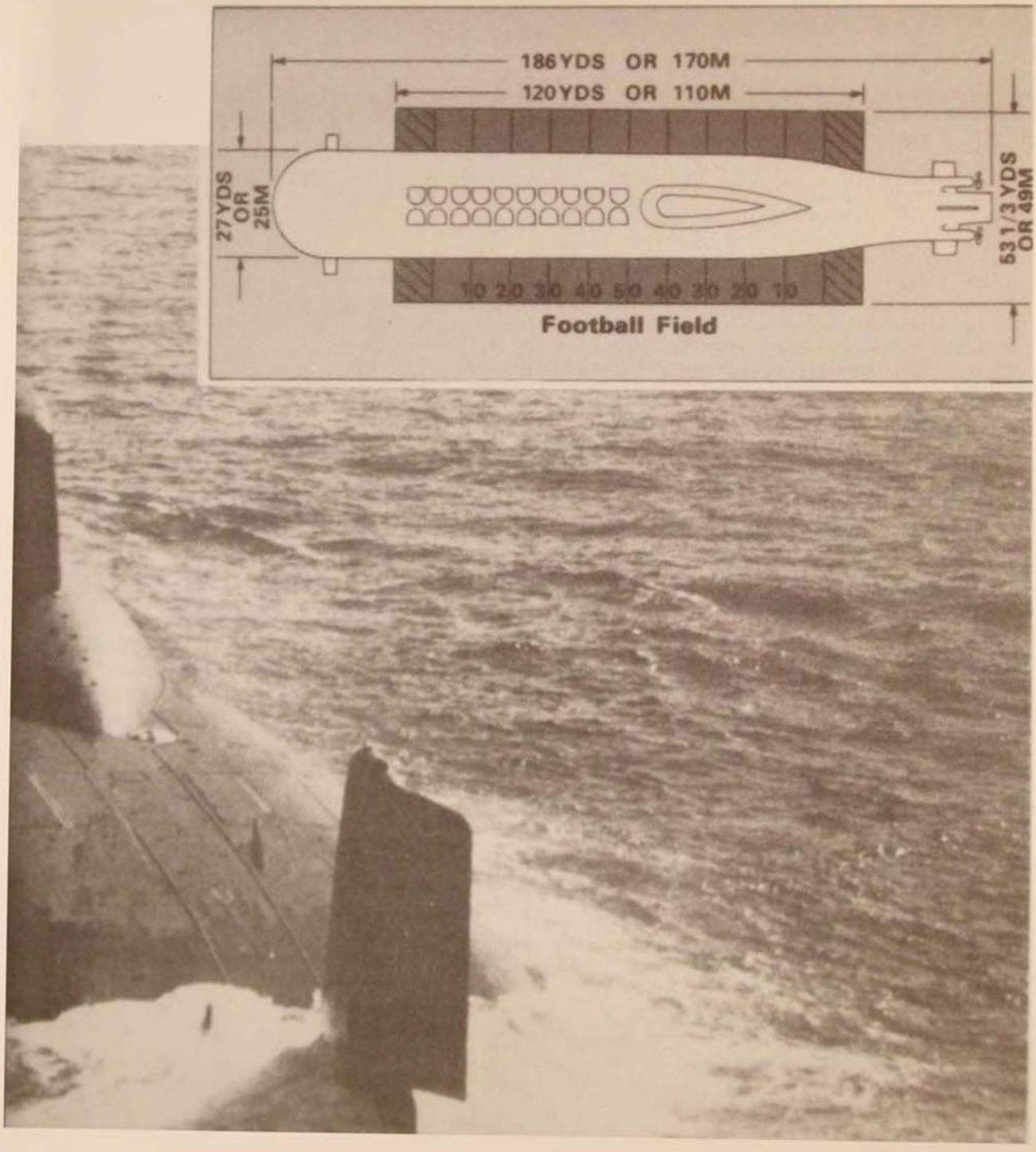
Post-Vietnam antimilitarism in Sweden, coupled with the American-Soviet détente in the early 1970s, was used by the ruling Swedish Social Democratic party as a justification to allow military budgets to languish. While NATO and Warsaw Pact forces were deploying both more and more capable aircraft, the RSAF, while deploying more capable aircraft, was deploying far fewer of them, down from 56 squadrons in 1962 to 27.5 squadron equivalents of all types in 1987.[13] This decline of strength might have been appropriate had détente flourished, but with the advent of the Soviet buildup and the Reagan administration's reply, the relative strengths of the Swedish and constrained Finnish air forces have deteriorated markedly since the early 1980s. According to Royal Swedish Air Force figures, the air forces that can be employed against Sweden have increased 25 percent relative to RSAF strength between 1974 and 1987, and threaten to increase to over 40 percent by 1992.[14] The relative decline of the RSAF has led to a Swedish defense de-

The Soviets' huge Typhoon-class submarines, based at Murmansk, represent an important and lucrative target in the Navy's maritime strategy, thereby increasing the tensions in NATO's Nordic flank.

bate that is more controversial and public than usual.

In February 1987 the Swedish air force chief of staff published an article that examined the relationship of force quality to quantity, and how greatly the lack of aircraft numbers would influence combat effectiveness.[15] The article was remarkably detailed, open, and candid. Of interest to northern stability, the study examined three scenarios: (1) sustained military operations through Swedish airspace, (2) a surprise massed attack through Swedish airspace, and (3) RSAF capabilities against cruise missiles.

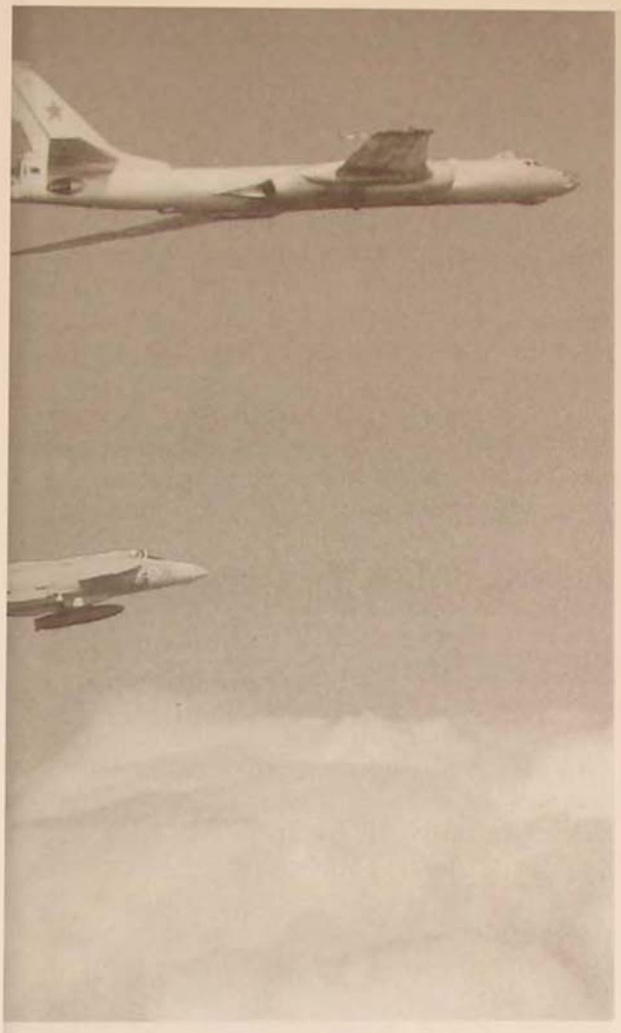
For sustained operations, the author assumed that an aggressor would attempt to operate between 200 and 600 aircraft through Swedish airspace around the clock to attack targets outside Sweden. The author assumed that the ability to destroy 50 percent of any overflying force within 10



The J 35 Draken aircraft (above) has been in the inventory for some time, including a squadron that was recently reactivated after having been in storage. Some estimates predict that only two more squadrons of fighter aircraft would increase the effectiveness of the Royal Swedish Air Force by as much as 40 percent, helping the Swedes to intercept aircraft attempting to penetrate Swedish airspace, such as this Tu-16 Badger (right).

days, using a combination of Swedish and target area defenses, would deter sustained overflight in a conventional scenario. To accomplish this, the chief of staff wrote that RSAF would have to destroy 2.5 to 5 percent of the entire overflying force (five to 30 aircraft) daily. The article concluded that if the Swedes had a great deal going for them (good weather, early warning, intact ground-controlled intercept, and no major enemy efforts against Swedish air and ground assets), the existing Swedish air force was sufficient. Finally, it also concluded that the existing quality was good but that the existing quantity was "borderline in many cases" to deter sustained operations through Swedish airspace.[16] The results were less sanguine for scenarios involving surprise massed attack transiting Swedish airspace or cruise missiles.

To deter a surprise massed attack through Swedish airspace, the article assumed that the RSAF would have to destroy about 10 percent of the transiting aircraft. It assumed a massed attack would involve 200 to 400 aircraft, but "could be more." Since RSAF would have to defend the airspace of a country about the size and shape of California with 11 squadrons, its assets would be spread thin, giving the aggressors the advantage of localized mass. The study concluded that in such an environment, the aggressors could possibly inflict heavy losses on the locally outnumbered RSAF.[17] Against cruise missile overflight, the Swedes acknowledged that merely detecting the missile, let alone destroying it, was extremely difficult at present. A recurring conclusion in all scenarios was that the quantity of aircraft is not sufficient to deal



with anything except optimum scenarios. The author even applied Lanchester's theorem* to show that just one additional squadron would raise the marginal effectiveness of the RSAF by 20 percent, and two additional squadrons by 40 percent.[18]

Publication of that article was followed by further public disagreement among the senior military staff.[19] Finally, the RSAF commander in chief (no doubt familiar with Lanchester's theorem) let it be known that he would augment his forces by a minimal squadron (12 aircraft) of refurbished J-35J Draken interceptors taken out of storage, even if he had to pay the costs "out of his hide," from the other parts of his already inadequate budget.[20] This unprecedented decision shows how concerned the Swedish air force commander in chief is about the lack of aircraft. Due to fiscal constraints, augmenting the aircraft numbers must occur at the expense of other force enhancers, such as an upgraded C³I system, improved dispersed ground facilities, and so forth; and unfortunately, the fiscal constraints occur at a time of increased Soviet military activity in the area.

The Soviets have a tradition of military heavy-handedness and intimidation in their relations with Sweden, and to a lesser extent, with Norway (interestingly, very little of late against Finland, with whom the Soviets have encouraged a "special relationship"). Recently, the Soviets have been conducting extensive operations against Sweden, both underwater and on land. The reasons for this campaign are open to speculation, since the Soviets do not explain their motives, but several very plausible conclusions may be drawn, conclusions that all support the thesis that the Soviets are systematically and methodically "doing their homework" should they judge it necessary to launch a surprise offensive in the north. The military objective in Sweden could be to degrade and delay Swedish mobilization during the first critical hours of an offensive against northern Norway, thereby lowering Soviet costs to an acceptable level.

Other Warsaw Pact members assist the Soviets with their "homework." Warsaw Pact commercial vehicles have been seen in the most extraordinarily noncommercial areas, photographing facilities, intercepting transmissions, and so forth.[21] During the summer of 1987 when virtually all Swedes, by custom, vacationed in the countryside, a number of vacationing high-ranking military officers felt that their locations and movements were being followed by foreign agents.[22] On 27 December 1983 a single electrical transformer in central Sweden went out. A chain reaction followed, blacking out central Sweden and parts of Denmark and Norway. Significant portions of the emergency broadcast system, which controls mobilization, failed.[23] One isolated exam-

*Frederick W. Lanchester's mutual attrition equations are mathematical models commonly used by war planners to predict the impact on combat effectiveness caused by incremental changes in quantity and quality of opposing forces.

ple, true, but the event suggests that a very small but highly planned attack could significantly degrade the Swedish mobilization timetable.

Operating submarines in Swedish territorial waters is a major Soviet assignment with several immediate military rewards:

- The Soviets update their knowledge of the Swedish defenses as well as of changing bottom characteristics (this knowledge could prove invaluable should the Soviets want to conceal submarines in the vast 20,000-plus-island Swedish archipelago).
- The Soviet crews get the best possible combat-like experience (the charges dropped by the Swedes are very real but not lethal, and the Swedish ASW capability is excellent but very thin).
- Finally, the Soviets can simulate inserting Spetsnaz saboteurs and assassins who, in the event of conflict, would attack key communications nodes and power grid pressure points (such as the previously mentioned transformer) and assassinate key mobilization decisionmakers, both military and civilian. To facilitate submarine activities, the Soviets would like to see all littoral states accept routinization of Soviet submarine operations within their territorial waters. To degrade defenses in northern Sweden and facilitate access to northern Norway, the Soviets would like this routinization of submarine activities to extend to the Gulf of Bothnia, between Sweden and Finland.

The Gulf of Bothnia, long an area of low military activity, has seen extensive operations of what must be Soviet submarines in recent years.[24] This must be at least partly construed as preparation for military operations against the northernmost areas of Sweden, and also of Norway and Finland. There are also signs that routinization of operations has occurred. The Swedish navy has enlisted the assistance of the Swedish civilians who vacation heavily in the coastal areas to try to detect submarine activity visually. According to one recent report, hunting U-boats has become a popular seaside pastime.[25] The Soviets are also active in the northern airspace, but here they use intimidation as a tactic instead of stealth; that intimidation has led to armed confrontation and could precipitate its own crisis in the future.

The Soviets have a long history of "playing hardball" in the sensitive airspace over the Baltic and Barents seas. In the past, they have shot down aircraft in international airspace without warning.[26] In the recent past an Su-15—of KAL 007 notoriety—took up a firing position on a chartered civilian jet full of vacationers and actually followed it, in a firing position, into Swedish airspace.[27] In September 1987 the Soviets harassed a Swedish electronic intelligence collection aircraft, resulting in a near collision.[28] A Norwegian P-3 Orion was not so fortunate; it was actually hit by an overly aggressive MiG pilot in the same month.[29] For people who live in the small countries near the northern USSR, this is all judged as normal (routinized), consistent Soviet behavior. Recent Scandinavian history offers several examples of the decisive military advantage accruing to surprise attack.

In Scandinavia, the most memorable precedent of Soviet willingness to use military force to gain space for defense in depth was the surprise attack against Finland in 1939. Ignoring world opinion, the Soviets began military operations to gain territory around Leningrad, perceived as vital for defense against Nazi Germany. The Norwegians also suffered a surprise attack by German airborne and air force units on 9 April 1940. By seizing mobilization depots and airfields, the Germans prevented a Norwegian mobilization and gained the strategic Norwegian coast from which to conduct U-boat operations against the Allies. Today, the Norwegians have a term for behavior caused by lingering strong memories of the invasion/occupation: *The April 9 syndrome*. The Norwegians will not lightly suffer surprise again. Neither will the Soviets, who were hurt badly by the "surprise" achieved by German forces during the open-

ing phase of the Great Patriotic War (World War II). That the cost of being surprised is disproportionately high was a lesson learned at a heavy cost of Soviet lives. That the Soviet leadership has learned the lesson well has been demonstrated by their skillful use of surprise in the invasions of Hungary, Czechoslovakia, and Afghanistan.

Future stability in the extreme north depends upon several factors. First, the West must be sensitive to the ramifications of the purely geographical accident that has forced the Soviets to station the bulk of their survivable second-strike forces in the Murmansk area. The force is concentrated and represents both a lucrative target for NATO and a sensitive vulnerability to the Soviets. Any threat perceived by the Soviets as direct and imminent may be met with an irrational (from a NATO viewpoint) response. The Norwegians have demonstrated a mastery of the art of distilling legitimate Soviet security concerns from volumes of propaganda and rhetoric. They have refused to allow F-111s to exercise with NATO forces on Norwegian soil partly out of deference to Soviet sensitivities.[30] They did not allow the US Marine Corps to preposition reinforcement equipment in the northernmost Norwegian provinces, again partly out of deference to Soviet sensitivities. The Norwegians understand that a military posture balanced between activity and restraint in the arctic area is important to stability.[31] Lack of an immediate offensive threat removes the destabilizing Soviet incentive for an immediate preemption.

In the realm of immediate threat, US naval carrier groups are a powerful force, and they may be well advised to restrict exercises in the Norwegian and Barents seas to the extent necessary to realize the six goals previously cited.[32] The problem is that if a crisis should occur, for whatever unrelated reason, the presence of a carrier task force in a sensitive area could precipitate its own more immediate military crisis.

To make overflight of Swedish and Finnish airspace as costly as possible, the air forces of Finland and Sweden must be as strong as possible. The United States and NATO can help. Both air forces need tech-

THE NORDIC BALANCE

The Nordic Balance is a model useful for explaining relationships between Scandinavian countries and between the Scandinavian bloc and the superpowers since World War II. The relationships are formalized by treaty, alliance, policy, culture, and tradition and allow all players a certain latitude of action.

The NATO presence in Norway has been made less threatening to the vital Soviet Kola military installations by a deliberate Norwegian policy of restraint. (Some examples: no nuclear weapons in Norway, no foreign troops based in Norway, and severe restrictions on military exercises near the sensitive border.) The Soviets gain defensive security from the inoffensive buffer provided by nonaligned Swedish and neutral Finnish territories, the latter loosely bound by treaty to "consultations" should tensions become extreme.

In the judgment of Johan Jorgen Holst, the Norwegian minister of defense, the Soviets have historically shown restraint in the strength of standing ground forces and offensive air power on the Kola peninsula, given the vital nature of the assets in place. The operative result is an equilibrium with disincentives for escalation of forces targeted at the immediate area; the bottom line is predictability and stability.

This historically happy state of affairs has been overtaken by trends and events both within the Nordic Balance context and external to its mechanisms. Incremental, measured responses are in danger of being overwhelmed by the decisive advantages accrued by the preemptive surprise attack; or more precisely, by the intolerable penalties of being the first to absorb a surprise attack. Minister Holst also points out that while Soviet standing forces in the area are relatively small, they are rapidly being improved and could also be rapidly reinforced.

nologically modern airplanes. Both forces need technologically modern missile systems, such as the latest Hawk, AIM-9, and AMRAAM systems as they become available (and are requested). Both need effective force multipliers, such as airborne early warning and control (AWAC) systems. (The Swedish air force is in fact developing the prototype of a "hi-tech" cheap but effective AWACS.)[33] Both countries recognize that while they must maintain neutral, nonthreatening postures toward the Soviets, their cultures and living standards are inextricably Western. So there are powerful motivators in place to ensure, within reasonable risk, that both countries will respect the advantages that access to Western technology gives them. Finally, both countries must be given the latitude to maneuver within the Nordic Balance (see box, previous page).

This article has examined the trends and development that are changing NATO's Scandinavian flank. The Soviet SSBN deployments, the US Navy's Maritime Strategy, the deployment of submarine-launched precision cruise missiles, the relative weakening of the Swedish and Finnish air forces, the confrontational Soviet behavior, and a heritage of surprise military operations guarantee that the area will not remain the "forgotten flank" in the future. The collective NATO challenge will be to keep the area from being involved in a costly arms race of the type that has occurred in the European central front and to avoid actions that will accelerate further destabilization while continuing to underwrite credible collective forces capable of deterring any miscalculated Soviet adventure. □

Notes

1. Karen DeYoung, "All's Quiet on Norwegian-Soviet Frontier," *Washington Post*, 4 August 1987, Supplement, 10.

2. Philip Taubman, "Soviet Proposes Arctic Peace Zone," *New York Times*, 2 September 1987, 2.

3. Department of Defense, *Soviet Military Power 1987*, Washington, D.C.: Government Printing Office, 1987, 33. The exact figure depends upon the author and his method of calculating totals.

4. Ibid.

5. Adm James D. Watkins, USN, "The Maritime Strategy," *U.S. Naval Institute Proceedings*, January 1986, Supplement, 7-14. Admiral Watkins uses the term *strategic reserve* where the author uses the term *second-strike capability*. This short passage summarizes eight pages of text and necessarily leaves out major concepts and details that are not directly relevant.

6. Ibid., 9–14. Again, this paragraph necessarily summarizes a great deal of material and leaves out major concepts. A reading of the entire volume is useful.

7. Johan Jorgen Holst, Norwegian minister of defense, "Our Political Defense and Security Situation," a lecture presented at the opening of the Chief's Course Number 20 at the Norwegian National Defense College, 7 January 1987. Transcript by US Embassy, Oslo.

8. Adm S. A. Farstad, Royal Norwegian Navy, "Norway and the Norwegian Sea—A Maritime Perspective," lecture presented to the Oslo Military Society on 13 October 1986, later published in *The Journal of the Oslo Military Society*. Transcript by US Embassy, Oslo.

9. Richard Halloran, "Accuracy Increases in Non-Nuclear Cruise Missile," *New York Times*, 14 September 1987, 6.

10. Richard Halloran, "Navy Giving Submarines a New Missile Role," *New York Times*, 25 October 1987, 9.

11. Gerard O'Dwyer, "Finland's Defence Capability," *Jane's Defence Weekly* 7, no. 5 (7 February 1987): 192.

12. Carl Bildt, "The Future of Northern Europe," in *Northern Europe: Security Issues for the 1990s*, ed. Paul M. Cole and Douglas M. Hart (Boulder, Colo.: Westview Press, 1986), 136.

13. Bo Reinholdsson, "I Programplanen 1988–92" ("The Content of the 1988–1992 Budget"), trans. L. Nilssen, *Flygvapennytt* 4 & 5 (30 September 1987): 6.

14. Ibid., 7.

15. Maj Gen Bengt Lonnbom, "Kvalitet-Kvantitet Inom Flygstridskrafterna" ("Quality vs Quantity Within the Air Forces"), trans. L. Nilssen, *Journal of the Royal Swedish Defense Academy* 2 (1987): 121–50.

16. Ibid., 133.

17. Ibid., 134.

18. Ibid., 138.

19. Lt Gen Bengt Gustafsson, supreme commander, Swedish Armed Forces, *OB Programplan For Det Militara Forsvaret 88–92* (The Supreme Commanders Proposed Military Defense Budget for 1988–1992), trans. L. Nilssen (Stockholm: Defense Department Press, 26 June 1987). The chief, RSAF, went on the record in this document as being unable to support the transfer of funds from the air force to the naval ASW program, suggesting that a better solution would be to fully fund both necessary programs.

20. Lars Christiansson, "Flygvapnet Valde Egen Vag, 'Nygamla' Plan Tas i Bruk" ("The Air Forces Chooses Its Own Way: Will Modernize and Use an Old Airplane"), trans. L. Nilssen, *Svenska Dagbladet*, 1 September 1987, 2.

21. US Department of Commerce, Foreign Broadcast Information Service (FBIS), Western Europe (WEU), vol. 7, no. 148, August 1986, from Roger Magnergard, "Picture Sellers Reportedly Monitoring Military," *Svenska Dagbladet*, 6 August 1986, 7.

22. Ibid.

23. Paul M. Cole, "Sweden and the Soviet Union," in *Northern Europe*, ed. Cole and Hart, 31.

24. US Department of Commerce, FBIS, "Naval Officer

Views Submarine Violations." WEU, vol. 7, no. 016, 24 January 1986, P1, from Stockholm International News Service in Swedish, 1000 GMT, 23 January 1986. Article quotes Commander Gjoran Frisk, spokesman for the Royal Swedish Navy: "Our security policy has failed. Foreign submarine units appear in our waters almost irrespective of Swedish efforts . . . from Haparanda to Stromstad [from the Finnish border to the Norwegian border]."

25. Sigrid Boe, "Ubotsjakten ett Folknoje" ["Submarine Hunting: A New Popular Pastime"], trans. L. Nilssen, *Dagens Nyheter*, 18 July 1987, 3.

26. "Russians Declare Swedes Shot First in Plane Incident," *New York Times*, 18 June 1952, 1. The Swedish airplane shot down was an unarmed transport, hardly capable of attacking the two MiG fighters that shot it down.

27. Cole, 31.

28. Sten Berglind, "Vi Hamnade Mitt I Ryssens Jetstrole" ["We Found Ourselves in the Middle of the Russians' Jetwash"], trans. L. Nilssen, *Expressen*, 15 September 1987, 1.

29. Hakan Hagwall, "Busflygning Over Barents Hav" ["Air Intimidation Over the Barents Sea"], trans. L. Nilssen, *Svenska Dagbladet*, 15 September 1987, 2.

30. US Department of Commerce, FBIS, WEU, vol VII, no. 183, from "Minister on Refusal on Use of F-111 in NATO Exercise," *Stockholm Domestic Service in English*, 1600 GMT, 19 September 1986.

31. Holst, "Norwegian Security in Light of the Maritime Development in the North Atlantic and the Norwegian Sea," address given at a conference on "NATO and the U.S. Maritime Strategy-Diverging Interests or Cooperative Effort," under the auspices of the Norwegian Atlantic Committee, at Ingeniorenes Hus, Oslo, on 1–2 April 1987. Transcript by US Embassy, Oslo.

32. Farstad.

33. Donald E. Fink, "Swedish Air Force's Challenge," *Aviation Week & Space Technology* 126, no. 19 (11 May 1987): 15. By taking advantage of their excellent ground-based command and control facilities, the Swedes are able to minimize the amount of airborne equipment and hence keep expenses low.

net assessment

Strength for the Fight: A History of Black Americans in the Military by Bernard C. Nalty. New York 10022: Free Press, 1987, 409 pages, $22.50 hardback.

For the first time, a professional military historian has examined the history of race relations in the US armed forces and detailed the progress made in the solution of problems. Nalty is a longstanding member of the Office of Air Force History and has written official historical accounts of the battle of Khe Sanh in Vietnam and of the US Marine Corps in World War II, among others. More important to the subject at hand, he coedited (along with Morris J. MacGregor) a 13-volume collection of basic documentation on blacks in the American military. In *Strength for the Fight*, Nalty gives the reader far more than a passive survey of the subject. Instead of simply observing and recording, he brings the analytic skills of a professional sociologist to the formidable task of explaining and understanding the changing historical roles of the black soldier, sailor, and airman.

The result is a narrative that not only describes the ebb and flow of institutional racism over the decades but also shows how it varied from service to service. One of the book's greatest contributions is its study of the US Navy, until now a neglected area. The reader will be surprised to learn that the senior service's legendary color line was of comparatively recent origin, and that Civil War sailors mixed freely and comfortably to a degree unknown among the land forces of the time. Nalty then goes on to specify when, how, and why the tolerant policies of the 1860s had regressed by the First World War. The racial histories of the US Army and Air Force are studied with equal rigor.

The author deserves praise for avoiding the traditional anecdotal approach that is frequently used by writers today to acknowledge black military prowess. Uplifting stories about the Tuskegee airmen and individual black military

heroes are interesting, but most of these tales have a patronizing and awkward tone, as if seeking to compensate minority members for past neglect. Nalty uses these anecdotes and examples sparingly to illustrate his major points and lighten an otherwise formal narrative. They are never used as substitutes for rigorous example and analysis.

The book has few faults. Although adequately done, the first chapters dealing with the Revolution and the Civil War are sketchy compared to the remaining chapters. Nalty is a modernist, and his book is clearly stronger in the later periods. There is also an occasional problem with scholarly neutrality. The narrative contains numerous accusations of societal and institutional racism and frequently judges situations in the past by the standards of today. Such a viewpoint is nearly inevitable when dealing with this particular subject, but it can lead to a distortion of the realities of the past. The very concept of racism is an emotionally loaded one today, but it was frequently less so in other eras. Nalty has done a real service in documenting past abuses, but it should also be pointed out that during many of these periods there was a genuine—if unequal—partnership between the races, and an unaffected racial harmony. Frequently, racism was more benign in nature: discrimination without active malice. This is not to condone it or to deny that it existed, but it must also be stressed that the majority of professional military members down through the years have been people of goodwill whose chief sins were those of omission and lack of racial sensitivity rather than overt antagonism. They merely reflected the values of their society, as do we.

Strength for the Fight is an exceptional piece of work, one of the few that is genuinely thought provoking. It belongs in base libraries and should be read by all professional military personnel.

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The Mask of Command by John Keegan. New York 10010: Elisabeth Sifton Books, 1987, 387 pages, $18.95 hardback.

"This book is about generals." That is about as succinct a preamble as one could hope for. In this particular book, John Keegan attempts to explain how those who command do their job. What are the elements, the imperatives of command? How does it succeed? How does it fail?

Within these queries, Keegan insists there exists a deeper element, a dilemma if you will, affecting the success of those who would command: How much of the risk do you share with your troops? Are you in front with them always, sometimes, or never? The question is not banal: generals are asking people to die for them. The dilemma involves the distinction between leading men to risk death and ordering them to risk death. To succeed, the troops must see their leader with them in spirit if not in person.

For Keegan, the leader will inevitably manage the dilemma by showing, in a theatrical sense, a "mask of command," displaying only what he wants his audience to see and hiding what they should not see. Inevitably, social scientists will posit common traits and behavior for history's generals and commanders. Yet Keegan, as a historian, believes that deeper examination shows each as unique, made so by fundamentally different circumstances and purposes. "Context," he argues, "is all." He cites as proof the careers of four "great captains" and shows each as products of his time.

Alexander the Great, at the dawn of organized warfare, is the archetype of the hero leader, fighting in the front lines. He does not distinguish between the role of ruler and warrior, yet he conquers, almost literally, the world. The popular imagination is fired; Alexander was a master with the mask. He was in front "always," and he defined the model for the successful soldier.

This hero image is with us still, but the mode of command has changed. With the industrial era, the growing size of national armies and the technology of communication prompted commanders to be increasingly remote from their troops. The First Duke of Wellington and Ulysses S. Grant were transitional, prosecuting their art by being in front "sometimes." Wellington still shared the immediate risk of battle in the best hero tradition, but he clearly subordinated himself to his king and isolated himself intellectually from the emerging democracy of mass armies. Grant showed that one need not want to be a hero to be a hero. His ambition was to be a regimental commander, and he kept the modest trappings of lower grade even when commanding the entire Union Army. Keegan here adds a friendly caution: "Generalship is bad for people. . . . The most reasonable of men suffuse with pomposity when stars touch their shoulders."

Finally, Keegan profiles Adolf Hitler, a sort of antihero model of the commander. Politically, Hitler was in front always; militarily, never. Hitler also was a master with the mask. But Keegan calls him a false hero; his heroics a charade; his command inflexible, erratic, and remote; and describes his death as alone, dishonored, and unmourned.

These four leaders exemplify the imperatives of command: (1) A commander must set an example and must be a presence to his troops. (2) He must communicate with them to "explain himself . . . allay their fears, arouse their hopes, and bind their ambitions to his own." (3) And, like Harold Hill, he must "know the territory." If a commander cannot at least smell the blood of the battle in his nostrils, his commands will be errant, inappropriate, or fatal. Failure to understand command's imperatives can induce combats that are unwise, futile, or both. Witness the trenches of World War I. Witness Vietnam.

Keegan concludes by showing that in the late twentieth century the mask of command encompasses more than just things military. Contemporary *political* leaders must also heed the imperatives of command. The truly great captains, in Keegan's words, "understood the limits to which the exercise of force may be usefully pushed." Today we speak freely of limits—limited war, limited resources, and limited objectives. Yet the question remains: Do we really know what those limits are? Or do we know how to command our forces, our resources, ourselves in light of those limits?

A more important lesson, and a point Keegan does not stress is that the mask is also imposed and embellished by the audience. People see what they want to see, and they embrace, even deify, their leaders as long as these heroes don't disappoint them. We make our own heroes, even when they are not particularly heroic. They are conjured in our minds and defined by the needs—the context—of the time. We crave to be led.

People feel the same about antiheroes. For example, Keegan portrays Hitler as a false hero. Yet how false? Heroes are perceived by the beholder, and the commander manages the mask solely to enhance these perceptions. Hitler remained a hero to a large number of German people at least until 1939. To the end his soldiers followed him and died for him. He appears a false hero in retrospect, but is that verdict wholly correct? History preserves both heroes and antiheroes, and the definition is not so different. Alexander, after all, was not much of a hero to Darius.

Keegan's tale is carefully woven, a simple study with a lucid, at times, graceful style. He complains at one point of the modern era's loss of the storytelling art. He then proceeds to tell his story artfully, inserting charming editorials and interesting historical digressions throughout the book. These digressions add depth and fullness to the work. There are some noticeable errors of detail, such as confusing the terms *counterforce* and *countervalue*, or making assertions about Hitler's support in the early twenties that are inconsistent with other recorded facts. Nevertheless, like any really good book, it makes one think and should be read.

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To Raise an Army: The Draft Comes to Modern America by John Whiteclay Chambers II. New York 10017: Free Press, 1987, 386 pages, $24.95 hardback.

Many readers are familiar with the upheavals caused by the Vietnam-era draft controversy. However, the origins and development of our modern military manpower policy have until recently escaped systematic historical examination and analysis. The appearance in 1979 of George Q. Flynn's *The Mess in Washington: Manpower Mobilization in World War II* has been followed in rapid succession by Robert K. Griffith's *Men Wanted for the U.S. Army: America's Experience with an All-Volunteer Army Between the World Wars* (1982); John O'Sullivan's *From Voluntarism to Conscription: Congress and Selective Service, 1940–1945* (1982); Flynn's *Lewis B. Hershey, Mr. Selective Service* (1985); J. Garry Clifford and Samuel R. Spencer's *The First Peacetime Draft*[of 1940] (1986); and Stephen M. Kohn's *Jailed for Peace: The History of American Draft Law Violators, 1658–1985* (1986). Colonel Griffith is presently preparing his "The Transition of the U.S. Army from the Draft to the All-Volunteer Force, 1968–1974."

Professor Chambers' *To Raise an Army: The Draft Comes to Modern America* now arrives to complete the picture. Befitting its initial chronological position, the work contains a thorough yet concise introduction to the history of military obligations and service in America from 1609 to 1917. Such an account is particularly

valuable since it provides a welcome degree of comprehensive scope and analytic sophistication on a nebulous yet complex subject. Historical details are skillfully set within the broader context of underlying theories about the growth of the nation-state and its internal and external relations, the development of military technology and doctrine, economic structures and issues, and political systems and activity. This incisive treatment could have been enhanced by more emphasis upon the relatively rural and isolated rhythm of national life and settlement and the absence of powerful neighbors as countervailing forces to building the early American state and to international power projection.

Nevertheless, Professor Chambers offers an excellent account of the introduction of Selective Service in 1917 and its volcanic effect. In a mere 18 months, 2.8 million men—72 percent of the whole army and more than half of the American Expeditionary Forces in France—had been classified, inducted, and trained. Over 10 million men were registered in a single day in June 1917. By war's end, about 20 percent of the adult male population aged 18-45 years had been mobilized. This action had even broader social and economic implications. Not only were a variety of conflicting interests and ideals carefully balanced, but also it was discovered that 25 percent of the draftees were illiterate and 7 percent could not speak English. The overall program that haltingly emerged was a subtle blend of administrative decentralization, national self-interest, and political consensus. The Selective Service expedient of 1917 thus became the basis for subsequent manpower policies for the next half century. At present, Professor Chambers regards the All-Volunteer Armed Force as a transitory creature, hopefully being replaced by a broader program of "selective civil [and military] service." Such a change would be a predictable adaptation of our crucial and fluctuating public attitude toward citizenship and its obligations.

Perhaps the greatest strength of Professor Chambers' work lies in its accurate, coherent, and lucid view of our complex history of military service. The use and deft combination of a variety of academic disciplines has produced an excellent example of the "new" military history. One could have wished that the literary style had been more polished: for example, note the use of phrases such as "occupational duty" (p. 239) and "occupation force." (p. 241) More irritating is the repetitious use of the term *format* for such varied concepts as organization, institution, and policy. These quibbles aside, *To Raise an Army* shall probably remain the standard work on the introduction of selective service, as well as a significant contribution to the perpetual debate on how our armed forces should be recruited.

Dr Richard E. Morse
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To Serve with Honor: A Treatise on Military Ethics and the Way of the Soldier by Richard A. Gabriel. New York 10010: Praeger Publishers, 1987. 243 pages, $29.95 hardback.

This thought-provoking work warrants reading and discussion by all members of the military community who care about the future of their profession. It offers a stinging indictment of a "brotherhood" that has allowed its ethical foundations to erode dramatically. But the author does not end on a pessimistic note; he commends the military as an exceptional professional cadre with innate resources more than sufficient to foster an "ethical renaissance."

Gabriel is a professor of politics and a major in the United States Army Reserve presently assigned to the Soviet Division of the Directorate of Foreign Intelligence in the Pentagon. His book reveals that he is also well acquainted with the field of ethics and passionately interested in the moral health and future course of the military.

The first portion of the book offers an astute assessment of the current state of the military establishment. In his foreword to the work, Vice Adm James B. Stockdale, USN, Retired, notes that the treatise echoes a common theme of condemning the "entrepreneurial bewitchment of the military mind." Stockdale praises the author for his willingness to go beyond simply analyzing the situation to "tackle the tough job of formulating an honor code."

Indeed, Gabriel offers the reader much to consider in this compact, yet intense, volume. In the wake of Vietnam and the realities of an all-volunteer force, he argues that the military is still struggling with "crises of confidence, adaptation and conscience." Gabriel rallies significant evidence in support of his contentions.

In an environment where "the forces of the marketplace have replaced patriotism and citizenship as the basis of military service," he pleads for a conscious return to traditional military values and ethics. Although recognizing that values and ethics are distinct from one another,

he notes that "one cannot be expected to act ethically in the absence of at least some" of the traditional military virtues because "virtues represent predispositions to action."

His in-depth discussion of these traditional virtues is superb, especially his insights on "loyalty, obedience and dissent." It may strike some readers close to home when he states that rampant careerism stifles valid dissent and "provokes the worst type of disloyalty under the guise of loyalty, namely, a marked failure to question policies and orders that often do not work or that extract too high an ethical and moral price for their success."

Gabriel provides a succinct introduction to basic ethical approaches. Still, the treatise requires thoughtful, measured reading; it is not a book to be rushed through in a single sitting. Charts or graphs may have assisted the average reader in systematically comprehending the various ethical approaches. Another drawback, in an otherwise fine work, is his persistent reference to the "brotherhood" of arms. Women who also proudly wear uniforms of various hues may feel unfairly excluded from this important discussion due to the exclusively masculine terminology employed.

The author constructs a sound case for the development of a formal "code of ethics." After dealing with objections to such an approach, he proposes a tentative code. Acknowledging that "the suggestions made here might be found wanting," he contends that it is possible—and clearly beneficial—to develop a foundational statement of the ethics of the military profession. His "Soldier's Code of Ethics" is comprised of statements such as the following: "Every soldier holds a special position of trust and responsibility. No soldier will ever violate that trust or avoid his responsibility by any of his actions, no matter the personal cost."

Gabriel addresses the difficult task of "instilling virtues" by discussing the teaching, supporting, and enforcing of ethical standards. His proposal for the development of "honor courts" in the American military is particularly intriguing.

This book is deserving of wide reading, discussion, and inclusion in the library of every military member concerned with the future of our profession. One underlying theme is that solid ethical moorings are more crucial today than ever before. Gabriel points out that "the lethality of modern weaponry" magnifies the implications of warfare and that "as long as men remain human, there will be a need for military ethics to sustain that humanity, to give meaning to actions that otherwise would be regarded as horrible, and to place limits upon the destructive abilities of the soldier."

Chaplain (Capt) Robert C. Stroud, USAF
Reese AFB, Texas

East Asian Conflict Zones edited by Lawrence E. Grinter and Young Whan Kihl. New York 10010: St. Martin's Press, 1987, 239 pages, $37.50 hardback.

The dynamic economic growth of the East Asian region is the subject of many studies that herald the beginning of the Pacific Century. Though economic development dominates the regional definition of security, the conflict potential in East Asia should not go unnoticed. East Asia, with its long-standing rivalries, is one of the most heavily armed regions in the world. The purpose of this volume is to focus our attention on the conflicts and the potential for instability in the region. The editors have brought together a number of regional experts to examine seven conflict zones: the Sino-Soviet conflict, Japan's northern territories, the Sea of Japan, the Korean peninsula, the South China Sea, the Thai-Vietnamese rivalry, and Philippine communism.

In their introduction, Grinter and Kihl define the principal aims of their study. First, the authors of the various chapters are expected to clarify the dynamics and complexities of these prominent conflicts. Each of the chapters does a thorough job in describing the historical roots of conflict and the domestic and international dynamics that keep these conflicts on national and regional agendas. Clarification is important as we move beyond the more widely known conflict zones like the Sino-Soviet conflict, the Sea of Japan, and the Korean peninsula to the more complex territorial issues and very long-standing rivalries in Southeast Asia. As the book moves from zone to zone, the reader also begins to appreciate how important geopolitical factors are to the resolution of these conflicts. In some of these conflict zones, resolution may lie with a combination of land-based and maritime policies, a marriage of Alfred Thayer Mahan and Sir Halford John Mackinder.

The second aim of this study is to suggest what practical options exist to de-escalate and possi-

bly resolve these conflicts. This volume is particularly valuable when meeting this goal. The authors of the different chapters and the editors in their conclusion are not at a loss for options. Several of the authors dealing with the more complex multilateral conflicts also assess possible scenarios for conflict resolution. Drawing on these assessments, Grinter and Kihl note how bilateral relationships are giving way to multilateral diplomacy. Bilateral conflicts become enmeshed in regional economic and diplomatic factors. These linkages, though, increase the possibilities for conflict resolution because regional actors can resort to economic and diplomatic tools for confidence-building mechanisms. In Southeast Asia the multilateral arena could be the Association of Southeast Asian Nations, while in Northeast Asia it can become a matter of linking the economic potential of states like Japan and South Korea with the needs of states like the Soviet Union and China. An important conclusion to be drawn from this study is that conflict resolution may be closely tied to regional economic dynamics.

Several of the chapter authors and the editors note the superimposition of Soviet-American security interests in the East Asian conflict zones. In particular, much is made of the July 1986 Vladivostok speech by General Secretary Mikhail Gorbachev and the Soviet discovery of its role as an Asian power. The Soviet Union has subsequently followed the speech with a series of diplomatic initiatives much in keeping with Gorbachev's desire for a peaceful international environment in order to accomplish domestic economic reforms. The Soviet Union clearly desires to tap into the economic potential of East Asia. In contrast, the United States appears to be a regional power without a regional policy. The tendency during the present administration to view Soviet-American competition as a zero-sum game does not necessarily converge with the interests of other regional actors whose dominant economic concerns color their perception of security as a more positive-sum game. In addition, economic conflicts with regional actors may make it difficult for US policymakers to appreciate the importance of economic interdependence for conflict resolution.

In sum, the efforts of the editors to provide aims and organization for the individual chapter authors and a thorough introduction and conclusion result in a coherent study that avoids many of the pitfalls associated with edited volumes. The presentation of policy options and scenarios for conflict resolution can provide the basis for thought-provoking analysis of US policy. This study will remain as a very useful reference work for those concerned with national security affairs in one of the world's most dynamic regions.

J. Richard Walsh
Maxwell AFB, Alabama

A Time for Giants: The Politics of the American High Command in World War II by D. Clayton James. New York 10016: Franklin Watts, Inc., 1987, 275 pages, $19.95 hardback.

The story of Gen George C. Marshall's "little black book," in which he recorded the strengths and weaknesses of future Army leaders, has been used in so many footnotes that it no longer requires attribution. Marshall's pervasive influence is, as might be expected, one of the more striking elements in this intriguing view of American military politics during World War II.

A Time for Giants is an insightful, very readable study of command decisionmaking at the highest levels. Using the rising and falling fortunes of 18 prominent commanders, with passing mention of a host of lesser military leaders, the author provides a strikingly clear picture of the interplay of powerful personalities in wartime. It is a fascinating look at just how our wartime commanders were chosen and who did the choosing.

The reader should be warned. The description on the flyleaf notwithstanding, this book is not a collection of biographical sketches of great wartime leaders. Nor are there sweeping descriptions of campaigns and desperate actions. This is history in the margins. Without being at all negative, one might think of this work as an assemblage of asides—the kind of tantalizing information historians too often place in footnotes at the bottom of the page while hurrying off to the next battle.

This is, in fact, the nature of this book's value. The author makes it clear that his sources consist primarily of the many biographies and autobiographies available on the chosen commanders. What he has provided is a useful compendium of World War II command assignments and their rationales. Collecting such information allows him, and the reader, to view the connecting threads, to pick out common traits, and perhaps to attain understanding beyond that possible when studying famous leaders one by one.

One of these common traits was age. At the beginning of the war, the average age of the 18 principals was 55. Adm Ernest King served in the Spanish-American War, became an aviator in 1927 at age 48, and became commander in chief of the US fleet at age 63. Adm William Leahy was recalled from retirement at age 64. General Marshall was 59 when he became chief of staff in 1939. The author points to their advanced years to explain the extent of the personal power and experience of these leaders within their services. Another common factor was the extreme length, by today's standards, of assignments. General Marshall's five-year tenure at the Infantry School was by no means unusual and provided a unique knowledge of subordinates that was to be invaluable later. The 18 individuals spent an average of 35 months in their wartime commands, providing greatly needed continuity and unity of purpose. One has to wonder, given today's military personnel policies on age and assignments, if the country might not come up short a Marshall or Patton just when it needs one most.

More central to the book's theme is the interlocking, ever-evolving personal relationships that shaped the wartime command structure. Here the author excels, whether discussing Eaker's falling out with Arnold or Stilwell's uncomplaining acceptance of an unwanted assignment.

That is not to say the book is without fault. It suffers from an unnecessarily complicated format, jumping from one theater of operation to the next and back again. Although separated chronologically, the chapters overlap so that a discussion of Eisenhower, Clark, Patton, and Bradley is interrupted by a chapter on concerns in the Pacific and then is resumed.

Even worse is the last chapter, which falls short of being a satisfactory collection of conclusions and insight. At one point, the author opines that these 18 leaders obtained their positions by being the best qualified for the jobs, a conclusion which, while perhaps not inevitable, is still somewhat obvious. The chapter ends with two lengthy quotes from Eisenhower and S. L. A. Marshall that are far more enlightening than the rest of the chapter.

Still, the author performs a fine service to both the casual and serious student of the military profession. He humanizes the high command and, in doing so, allows us to more fully appreciate their efforts and successes.

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Norton AFB, California

Dictionary of Wars by George C. Kohn. Garden City, N.Y. 10167: Anchor Press/Doubleday, 1987, 591 pages, $14.95 hardback.

Although a conventional work of reference, this book easily lends itself to browsing. Over 1,000 entries, listed alphabetically by the name of the action, chronicle 4,000 years of armed conflict. The text is crisp and lucid, providing straightforward accounts of the causes, operations, and significance of wars. One may choose to read it, either in order (e.g., "Morgan's Raids on Panama," "Moriscos, Revolt of the," "Moroccan War of 1907–12") or randomly (e.g., "Perak War," "Tyrone's Rebellion," "Cham Civil War of 1150–60").

The author claims at the outset that "the presentation gives the reader a clear idea of the amazingly diverse conflicts which have plagued mankind." This statement is certainly true. Wide in scope, the book includes rebellions, minor skirmishes, wars, and all forms of overt violence customarily considered to be armed conflict. As the author states, the criteria for inclusion had to be subjective; therefore, certain events are not covered. Such omissions may disturb some readers. Nevertheless, the book is extremely valuable. The cross-referencing is masterful, isolating, and emphasizing both umbrella and satellite conflicts. The geographic and personal indexes work well. A comparative reading of entries such as "Grenada, Invasion of" and "Numantian War" serves as an eloquent reminder that organized violence, the basis for our profession, is a characteristic of human history, and inevitably, of our future.

Capt Eric C. Anderson, USAF
Duluth, Minnesota

Air Battle Central Europe by Alfred Price. New York 10022: Free Press, 1987, 192 pages, $17.95 hardback.

Recently much interest and comment has surrounded NATO's conventional force capabilities. The proposed Intermediate-range Nuclear Forces (INF) Treaty will remove one layer of the organization's nuclear shield, and much ado is being made in both civilian and military circles over NATO's ability to defeat (and thereby deter) a massive Soviet assault. Air power will certainly play a significant role in discouraging and, if necessary, stopping this kind of attack. *Air Battle Central Europe* is a well-written and interest-

ing introduction to the type of air operations NATO would likely mount in a future conventional war in Europe.

Using information from a variety of unclassified sources and interviews with officers from NATO air forces, the author explains in nontechnical language the directions NATO's air war over a north German battlefield would take. Fifteen of these interviews, ranging from that with the commander of the 2d Allied Tactical Air Force (2ATAF) to those with squadron commanders and operations officers, form chapters in the book. Using the interview as the core, Price utilizes each chapter to introduce a different element in NATO's air capability (counterair, interdiction, close air support, and others), weaving his own comments and observations around those of the interviewee. The result is a series of vignettes that take a realistic if somewhat cursory look at NATO's strategy, tactics, equipment, and people, together with its importance in deterring a Soviet/Warsaw Pact attack.

With over 20 years experience in the Royal Air Force (RAF), Price possesses the knowledge and experience to use the interviews effectively. The 2ATAF commander, Air Marshal Sir Patrick Hine, describes an air strategy that closely resembles our recently adopted AirLand Battle concept. Surprisingly, the air marshal expresses less concern over the Soviet attack helicopter threat than might be expected, seeing it as particularly vulnerable to NATO's prepared defenses in the deep-strike role. Price also uses the interviews to keep his analysis realistic. The chapters on counterair with the F-15 and interdiction with the F-111 convey clearly the difficult problems pilots will face in fighting a numerically superior opponent and operating in the all-weather arena. Price is also careful to tie these disparate chapters together with one constant thread: the current NATO forces balance out Soviet/Warsaw Pact numerical superiority, and maintaining this balance will deter an attack.

The book's broad coverage allows the reader a glimpse into many areas. Electronic jamming, Wild Weasel (defense suppression) operations, and tactical reconnaissance are given treatment equal to counterair and interdiction. *Journal* readers will find interesting the chapters dealing with antiship operations in the Baltic and British antiarmor helicopter tactics, areas not often examined by American commentators. Befitting a British author, there is an overlong and somewhat melodramatic chapter on Harrier operations (speculating on urban battle scenarios where they would operate out of supermarket parking lots). Surprisingly, there is no chapter dealing solely with the F-16, despite this aircraft's significant presence in NATO and 2 ATAF.

Although the interview chapters are interesting, the scenario is at best thin. Fortunately, Price has not gone to the melodramatic lengths of such novels as *Red Storm Rising* or *Good Friday*, but the scenario provided is very brief and speculates only on Warsaw Pact losses. Also the author never refers to the scenario after the first chapter, further lessening its impact. Though designed to consolidate and summarize the different chapters, the book's concluding chapter is repetitious and adds little to the information and points already discussed.

As a composite overview of possible conventional air operations over northern Germany, *Air Battle Central Europe* generally succeeds. For readers unfamiliar with NATO's air capabilities, this book is a great primer, and the interviews really help give one an operator's view of the situation. More experienced readers will find the interviews candid and interesting but will be left wanting a little more detail. In either case, the book does succeed in explaining the NATO air force's importance in deterring an attack on Western Europe.

Maj Budd A. Jones, Jr., USAF
USAF Academy, Colorado

Flight in America by Roger E. Bilstein.Baltimore, Maryland 21211: Johns Hopkins Press, 1987, 356 pages, $12.95 hardback.

In *Flight in America*, Roger Bilstein, professor of history at the University of Houston-Clear Lake and author of *Flight Patterns: Trends of Aeronautical Development in the United States, 1918–1929* and *Stages to Saturn: A Technological History of the Apollo/Saturn Launch Vehicles*, presents a clear and concise survey of the social, economic, and political aspects of aviation and space exploration from the beginning of flight. While indicating the nature of these factors, he outlines the principal technological trends within the aerospace industry, emphasizing the influence general aviation has had on civil aeronautics. His broad insights graphically illustrate the inherent interdependence of the civil and military aviation industries.

Bilstein describes how successive improvements in US aviation technology from the inter-

war years to current efforts to develop new rocket boosters for the space shuttle have increasingly attracted the business and military communities for economic and combat superiority reasons, respectfully. This commitment, plus the continual evolution of a firm industrial technology base and a variety of operational skills, contributed to aviation's emergence as an integral component in a wide range of business enterprises and in the establishment of this country's current pattern of airline development. Similarly, the successful marriage of commercial ventures with military requirements during the 1930s established an important precedent for civil/military cooperation. For example, the military's acquisition of modern aircraft with improved aerodynamic construction, retractable gear, and other features was characterized by trendsetting commercial transports like the Douglas DC-3.

In later years, economics—yet another important element in the relationship of commercial and military operations—exerted its traditional influence on many of the principal aircraft manufacturers. The staggering costs and the tremendous liabilities associated with producing complex aircraft and spacecraft—both military and civilian—forced companies to diversify, reorganize, or find new corporate partners. At Douglas Aircraft, the company's inability to process their backlog of commercial orders for its DC-8 and DC-9 aircraft, production delays, and difficulties in financing forced the company to seek a partner. McDonnell Aircraft had won extensive military contracts but had been unable to enter the civil airline market. After several years of negotiations, McDonnell Douglas emerged as a balanced aerospace company, producing airliners, military aircraft, and space hardware.

What does this suggest for today? In his epilogue, Bilstein describes some of the perils associated with placing too much emphasis on any one technological system or manufacturing institution. In the wake of the *Challenger* explosion and the subsequent failure of several other launch vehicles, civil and military operations ground to a halt. With no backup launch systems available, many payloads had to be cancelled or postponed for years, creating serious scheduling problems for many commercial, military, and scientific projects. Should civil and military space operations continue on divergent paths with little, if any, capability for integrated payloads? Or should US aerospace leaders learn from the past and ensure the interchangeability of their boosters with both civil and military payloads, ensuring continual operations should one booster be grounded for any extended period of time? Whatever the answer, Bilstein believes astronautical ventures are a part of American society and, as such, place the United States on the threshold of a new frontier whose promise may far exceed the frontier opened by the Wrights' first flight.

Extremely well written and researched, *Flight in America* offers an impressive and comprehensive survey of American aeronautics and astronautics. It is well worth reading by anyone interested in the Air Force's past or future.

Capt Roy F. Houchin II, USAF
USAF Academy, Colorado

Rebels from West Point by Gerard A. Patterson. New York 10017: Doubleday, 1987, 194 pages, $16.95 hardback.

In 158 pages of text, Gerard Patterson's *Rebels from West Point* promises to tell the story of the 306 West Point graduates who served in the Confederate Army. It seems a very difficult task, and it is one that Patterson fails to accomplish. He begins by examining the difficult and unglamorous life-style of army service on the western frontier in the years preceding the war. He then focuses on how and why many officers left the United States Army to serve the Confederacy. Some officers left when South Carolina withdrew from the Union, and still others when the Confederacy was officially formed, but the bulk waited until after the attack on Fort Sumter and Lincoln's call to arms. He notes that often their departures were difficult and emotional, and at times their former comrades-in-arms threw farewell parties in their honor. When officers returned home, they were by no means off to equal starts in the new Confederate Army. Whereas a captain with eight years of federal service might start as a colonel in Alabama, the same officer might begin as a major in Georgia. Rank often depended on family connections.

Patterson points out that when Lee took command, he made a conscious decision to have West Pointers assume the key command billets in the Confederate Army. He agrees with Lee's decision and suggests that these West Pointers "provided the glue that held the Confederate Army together and gave it cohesion, order, and a degree of professionalism. Without them, there would have been utter chaos." (p. 70) This state-

ment is certainly true to a point, but one must wonder about the contributions of the graduates from the Virginia Military Institute or The Citadel. According to Patterson, this policy led to some intense bitterness within Lee's officer corps. Next, Patterson focuses on the relationships between West Point graduates serving in the Union Army and those in the Confederacy. He suggests that "even when the war reached its grimmest stages, there would be no hatred among the professionals. Ties were strong among these men. . . ." (p. 27) He supports this assertion with several examples of kindness and decency between opposing sides during the war.

In the third chapter, Patterson begins his analysis of individuals. In this chapter and subsequent ones, he offers some interesting insights into James Longstreet, "Stonewall" Jackson, Jubal Early, and John Hood. But the bulk of his historical observations appears to be very trivial indeed. For example, he refers to Lafayette McLaws as a "dandy dresser." (p. 39) In some revealing insights into George Pickett, he writes of his hair: "Long, perfumed ringlets flowed loosely over his shoulders. His beard also was curly and gave out the scents of Araby. In fact, George was known everywhere by his corkscrew ringlets which, alas, as milady's, were not particularly becoming when he was caught in the rain and they went lank." (p. 40) We learn that Jubal Early liked to swear and drink. (pp. 102-104) Patterson spends an entire paragraph describing the size of Edward Johnson's head. (p. 45) These are incredible revelations the historical community has long suffered without.

In fairness, Patterson writes of some important insights foreign observers gained from the Civil War. (p. 69) For example, they learned the importance of railroads in the movement of massive armies and their supplies. They saw firsthand how defensive fortifications had changed modern warfare. Finally, these foreign observers learned the concept of arming cavalrymen with rifles instead of sabers and using horses merely as transportation for getting these soldiers quickly to key points where they could fight on foot.

Patterson provides an interesting final chapter when he writes of what happened to several of the southern generals after the war. For example, Lt Gen Richard Anderson found himself "swinging a pick as a day laborer in the Charleston yards of the Southern Central Railroad." (p. 145) Some officers became mercenaries in foreign armies while others ran for elective offices and became governors and senators. He points out that "only two generals from the Army of Northern Virginia who had come out of West Point were ever permitted to serve in the United States Army again." (p. 158) While all these observations are interesting, they are nonetheless trivial. This is the basic flaw in Patterson's book; the bulk of the information is very trivial and not worth the reader's time. Though well documented, the book is drawn primarily from secondary sources; consequently, he offers no new information to the historical community.

This book is not worth the expense to make it a permanent part of one's personal library. Anyone wishing to read it should simply borrow a copy from the library. For a serious study of Lee and his subordinates, read Douglas S. Freeman's *Lee's Lieutenants*.

Capt Alan C. Ekrem, USAF
Maxwell AFB, Alabama

How to Stop a War by James F. Dunnigan and William Martel. New York 10017: Doubleday, 1987. 277 pages, $18.95 hardback.

The authors of this work are two military simulation experts who researched the wars of the past 200 years and supposedly discovered patterns that could be used in future conflict avoidance and management. They first describe the different types of wars, the stages of war from start to finish, and the primary causes of war. Next they explore the lessons of history on how wars are prevented by examining both actual and potential wars. Finally, the authors provide techniques for using past data to predict and possibly to prevent future wars.

While seemingly a scientific work, the book is in reality anything but that. The authors often throw out irrelevant personal observations and try to pass them off as fact. For example, the authors state that America's military officers are somehow less than capable because the "best and brightest" are not attracted to the profession. Those who do join often leave in disgust at the ineptitude they find. (p. 140) It is a fact, however, that well over half of American military officers possess advanced academic degrees and are well-trained, capable, and effective in their profession. At another point the authors claim that rioting, demonstrations, and near anarchy will break out if people think nuclear war is a remote possibility. (p. 78) If that prediction were valid, our society should be on the verge of a

nervous collapse since the specter of nuclear war is always a possibility. Perhaps the worst example occurs when the authors launch into a fantastic conjecture as to what would have happened if the Russians had been victorious in the Russo-Japanese War. (p. 121) This fiction is carried to an illogical extreme by forecasting the annexation of Korea and Manchuria to the Russian Empire and their seizure by Japan after the Russian surrender in World War I. This scenario, in turn, results in a hypothetical Japanese civil war complete with exact dates of 1918-20! The authors seem to have given new meaning to the term *historical fiction*.

The authors are also guilty of outright misstatements of fact. Some choice nuggets in this group include their contention that Hitler started World War II by accident. (p. 1) In fact, the Nuremburg trials demonstrated quite clearly that Hitler and his generals had planned the war years in advance. The authors also fail to include India as part of the nuclear club while, in fact, India has possessed nuclear weapons for a number of years. (p. 69)

Perhaps the most absurd contention the authors make is their so-called data base of past wars. Here the authors have taken the liberty of rating on a 1-to-9 scale the participants of these wars in such categories as perception of inferiority, grievances, negotiation, activity to inflame, historical patterns, perceived unrest, government stability, power status, and combat quality. This data base is probably as fishy as it sounds. Many of the early wars the authors describe do not have complete historical accounts—certainly not enough to make the numerical comparisons called for by the data base. The result is, predictably, GIGO—a term computer twinkies affectionately recognize as "garbage-in-garbage-out." For example, the authors state that until 1945, the Middle East was a peaceful region. Its warlike behavior since then is attributed to the presence of "oil money." (p. 267) Of course, the reestablishment of Israel as a nation and the ensuing resentment of its Arab neighbors probably had no part in creating feelings of hostility. India is held up as a paradigm of tranquility because it has the lowest number of wartime casualties. (p. 267) Yet one need only pick up a current newspaper to see that India is torn with internecine strife and has less than peaceful relations with Pakistan.

While this methodology might seem an innocuous exercise in numbers, it assumes serious proportions when the authors attempt to apply their logic to potential future wars. Here, in a sales pitch reminiscent of the Ronco Dice-a-matic, the authors merrily claim that by using the data they provide "you, too, can become adept at predicting how wars and warlike situations will develop." (p. 263) It sounds like fun, but this author will pass on that offer. The world has enough problems without having to endure amateurs who use questionable data to predict future conflicts.

If the point has not already been made, the book *How to Stop a War* is a silly and amateurish work. It should be revealed for what it is—a work of fiction and a very bad one at that.

Capt Paul S. Raines, USAF
Colorado Springs, Colorado

Richochets

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state-of-the-art equipment that can make the relationship much stronger and more effective.

Finally, for real credibility and improved operations/intelligence interface, I would suggest that intelligence personnel consider following four guidelines. Like the term *intelligence*, each begins with the letter *i*. First is *involvement*. Intelligence personnel have to get deeply involved in their own and in the operations world to be successful. Next is *importance*. Not only must intelligence information be important and meaningful for the intelligence specialists, it also must have applicable intelligence significance for the operators to accept and understand it. Third is *initiative*. Ambitious intelligence personnel have to be willing to interpret the information on hand, improve its utility, and satisfy the requirements. Fourth is *integration*. Intelligence personnel must unify the relevant findings into the relationship with their operational counterparts. All of the above requires hard work, creative thinking, and complete dedication. No one ever said it would be easy. The positive results—expanded credibility for the intelligence people and useful and understood applied intelligence—will be well worth the effort.

Lt Col Frank P. Donnini, USAF
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I was pleased to see a number of highly relevant ideas mentioned in the Winter 1987–88 issue of your magazine in the article entitled "US Air Force Operations and Intelligence: Getting It Together." However, I believe that the solutions suggested for improving operations/intelligence interface were precipitate and somewhat shortsighted.

Captain Tice is absolutely correct in saying operations and intelligence personnel have unrealistic expectations of each other; however, this problem will not be overcome by trying to make intelligence officers into pseudo flyers.

First, suggesting that the squadron intelligence officer be assigned to the squadron he/she supports is unrealistic; it causes far more problems than it solves. Should this come to pass, the intelligence officer will be rated by a supervisor who is a member of that group that supposedly already has unrealistic expectations of him/her. An aircrew member's interface with an intelligence officer occurs most often during current intelligence briefings, aircrew training, and debriefings. This is by no means the entire extent of an intelligence officer's responsibilities. How will a flying squadron commander judge an intelligence officer's ability to supervise and train subordinates; to counsel and evaluate subordinate performance; to coordinate exercise intelligence analysis, processing, and presentation; and to serve in those myriad security functions that inevitably belong to wing intelligence officers? Perhaps even more important, will a flying squadron commander be able to objectively evaluate his intelligence officer's contribution when he is jointly tasked to do the same for his flyers? It is this very conflict of interest that has occurred many times in the past when an intelligence officer at wing level has competed with a flyer for higher level endorsements. Because intelligence officers frequently lost this battle, our most qualified officers either left the Air Force or deliberately avoided wing assignments. Captain Tice's solution has already been tried, and it failed miserably.

Second, suggesting that operations/intelligence interface would improve if the intelligence officer "lived in the squadron" (donning a flight suit and attending squadron staff meetings) has true problem-creating potential. Presumably, the rationale behind this suggestion is that to be professionally accepted by aircrew members, the intelligence officer must not only prove his/her professional competence but be accepted as one of the guys. I contend that as long as I present a professional appearance in a uniform I am authorized to wear, any other details concerning my appearance are completely irrelevant. The issue that is absolutely critical is my professional competence, and that is not a product of appearance but of my intelligence, training, dedication, and personal initiative.

Asking an intelligence officer to attend meetings in which issues concerning his/her responsibilities are rarely discussed is a waste of time. This would not be so critical if intelligence manning at wing level was sufficient. IT IS NOT. In fact, one of the single most contentious issues in the intelligence career field today is the ability to adequately man units whose primary duty is aircrew support. A wing intelligence officer must literally use every single hour of the day (and usually more) to complete required duties alone. Mission-enhancing initiatives require overtime. Captain Tice's suggestion would simply exacerbate an already difficult situation.

Last, though orientation rides are no doubt useful, I find myself in agreement with the quoted

senior operations officer who "believed that any Air Force officer who needed an incentive ride should be selling insurance for Prudential." This issue has taken on increased importance with budget limitations that force us to seriously review every expenditure. Flights serve primarily (and most importantly!) to train those individuals who operate the aircraft. In most cases, an intelligence officer's opportunity to fly may well be denying an aircrew member's opportunity to train. Captain Tice's priorities are somewhat suspect based on this reasoning.

In my experience at wing level, I worked with professional aircrew members who supported an essential peacetime and wartime mission. Though the relationship between operations and intelligence was not always optimal, I think both sides worked hard to make it as effective and productive as possible. For three years, our Combat Intelligence Branch worked many overtime hours to present the highest quality intelligence products in support of the mission. We frequently requested aircrew feedback on our products, and we made a conscious effort to implement all their recommendations. In return, we often received positive feedback. The operations/intelligence interface developed as a direct result of our mutual professional respect and our willingness to work to produce the best possible product. I would suggest that this type of approach will far more realistically solve the operations/intelligence interface problem than those suggested by Captain Tice.

Capt Theresa A. McClure, USAF
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A HERETIC'S VIEW

Just read your article "Better Writing: A Heretic's View," Winter 1987–88. Amen and thank you!

Col Harvey L. Johnson, USAF
Vandenberg AFB, California

I'm writing in rejoinder to an article in the Winter 1987–88 issue of the *Airpower Journal*. Col Samuel Riddlebarger's "Better Writing: A Heretic's View" has some excellent advice for writers, but it also includes a number of red herrings, faulty dilemmas, and inaccurate examples that may mislead your readers regarding the "plain English" movement.

First, Colonel Riddlebarger muddles the purpose of government communication, even after he correctly states the reasons people read. On page 75 he says that no one reads anything unless he wants to or needs to, and he correctly places the writing of professions or businesses into the latter category. But he obscures this distinction when he suggests that we have a duty to educate our readers in the middle of a document intended to get business done. The illiteracy issue with which Colonel Riddlebarger opens his argument is a red herring; it drags its faulty scales across much of what follows. He believes that we are somehow contributing to the "new nation of illiterates" if we don't forcibly propel our readers to a dictionary with a "precise" word. Unfortunately, he confuses the function of most business and Air Force communication with that of schools, of fiction, of letter writing to family or friends, or of other writing for pleasure or education.

If we have a literacy problem in our squadrons, we need to teach people how to read and write. But the proper forum is *not* daily business correspondence and reports, which we must read in huge quantities to get a job done. Instead, we must improve instruction in our schools, send people to special courses, establish reading groups among employees, and stress the importance of precision and clarity in everything we say *and* write.

By the way, most government writing isn't illiterate—it's unnecessarily complex, highly specialized or abstract, and therefore often unreadable. When we must read to act or decide—as we do in the Air Force—we shouldn't have to wallow in obscure material, often written by someone with a "degree of loyalty to the subject" (page 77) but with no understanding of the purpose or audience he's writing for. The writer's purpose most often is to explain the terms and concepts of a particular problem or to put them into context for the readers, who must then act upon them to make informed, intelligent decisions. Clarity means giving those readers exactly what they need to do the job—nothing less, but nothing more.

A second problem in Colonel Riddlebarger's argument is his constant stacking of the deck against plain English recommendations. For example, the excerpt he chooses to explicate (regarding paper clips on page 77) is trivial, and the rewrite is unfortunate.

Another instance is on page 76, where Colonel Riddlebarger says that sentences "may need to

have more than three or four words" to get the job done. No one—including Robert Gunning (the "fog index") or Rudolph Flesch (the "guru" of plain English for business)—disagrees on this point. When we ask government writers to pare down their average word count in sentences, we suggest 17–20 words per sentence, not three or four. And we also recommend variety in length and structure to attend to the reader's need for style in written communication. The problem with most government writing is not brevity, however, and the colonel should know this after so many years in the Air Force. Rather, we find documents laden with compound-complex sentences, averaging as many as 50–60 words in length and filled with complex, specialized terms.

A third inaccurate treatment appears on page 78, where the colonel discusses writing the way we speak. He suggests that this advice would lead to saying "you know," "like man," or "I mean" in government correspondence. Instead, we expressly caution *against* slang, substandard speech, or "huhs" and "er ahs." Speaking on the page means using an informal (but not substandard) approach to the reader, with speaking "tidied up" to conform to rules of syntax or grammar.

Colonel Riddlebarger compounds his inaccuracies with illogic, especially in offering the reader faulty dilemmas such as the following: "If the author is preparing a nursery rhyme, common words are consistent and appropriate. If the subject is the metaphysical connotations of Nietzsche's *Zarathustra*, grab your reference books" (p. 77). Of course, the colonel doesn't point out that we read Nietzsche for pleasure or edification, not to order paper clips, choose one data communication system over another, or launch aircraft against a threat. Contrary to his assertion that common words are suitable only to nursery rhymes, research and practical experience show that common language has great power over a wide range of human communication. One need only read the eloquent "commonness" of Mark Twain, Ernest Hemingway, or Robert Frost to discover its power. The world of science acknowledges this power as well, for our finest scientists—Heisenberg, Teller, Einstein—point out that people don't truly understand complex theories until they are explained in common language.

Another fallacious dichotomy Colonel Riddlebarger wants us to accept as fact is that advice on clear writing comes from "ivory-tower types" (p. 76) or "hucksters" (p. 77) who are isolated from real-world writers. On the contrary, most of us who are researching and writing on clear communication are long-term professionals, managers, scientists, and engineers. We have seen contracts written for the public in the same jargonistic, circumlocutive language found in legal opinions.

Finally, I might offer an observation. Although Colonel Riddlebarger argues against "current guidance on better writing," he consistently writes exactly as the best of this guidance recommends: short sentences, clear syntax, pronouns and contractions (from spoken writing), expressive language, and a strong sense of voice—which shows the writer is engaged in his subject. He slips up only when he uses *aggravate* (p. 77) to mean *irritate*.

I've experienced nearly 19 years in the Air Force, 13 years of teaching and consulting in clear communication for technical specialties, and nine years of teaching plain English to some 35,000 people in the Department of Defense. In all these years, I've seen perhaps 50 instances of oversimplified or "illiterate" writing but literally thousands of overly complex, pretentious letters and reports. Therefore, while acknowledging Colonel Riddlebarger's good advice, I must reject his faulty observations about the plain English movement. Meantime, I'll swap success stories from this "movement" against the colonel's claims until the stars fall from the sky—at which point we will all stop writing for want of subject and audience.

Lt Col Perry D. Luckett, USAF
US Air Force Academy, Colorado

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Notices of upcoming conferences, seminars, and other professional notices of a noncommercial nature should be sent to Editor, Airpower Journal, Walker Hall, Maxwell AFB AL 36112-5532. We reserve the right to edit material for length and content.

USAF Academy Military History Symposium

The Department of History at the United States Air Force Academy has announced that its Thirteenth Military History Symposium will be held 12–14 October 1988. The topic is the role of intelligence in military operations. The department has sponsored a symposium series since 1967, and all symposium proceedings but the first have been published through the Office of Air Force History by the Government Printing Office. For further information, please write to Capt Mark Clodfelter, HQ USAFA/DFH, USAF Academy CO 80840-5701. Telephone inquiries may be made at (303) 472-3230 or AUTOVON 259-3230.

Air Force Intelligence Conference

Air Force Intelligence is sponsoring a conference on "The Soviet Union—Towards the Twenty-First Century: Political-Military Affairs in the Gorbachev Era." The conference will be held 19–22 October in Arlington, Virginia. Individuals interested in presenting papers or participating in one of the panels should contact the Conference on Soviet Affairs, AFIS/INIS, The Pentagon, Washington DC 20330-5110, or call (202) 695-7266.

Command and Control Workshop

The Joint Services Working Group on Command and Control Decision Aiding has announced a call for papers for its Sixth Annual Workshop on Command and Control Decision Aiding to be held 21–23 February 1989 at the Naval Ocean Systems Center, San Diego, California. Submit abstracts to AFIT/ENS, Attn: Lt Col Skip Valusek, Wright-Patterson AFB OH 45433-6583. Deadline for receipt of abstracts is 1 August 1988. For conference information, write NOSC, Code 444, Attn: Mr Eddington, 271 Catalina Blvd, San Diego CA 92152, or call (619) 553-4146.

VMI/American Military Institute Military Education Conference

The Virginia Military Institute's Department of History and Politics will host the annual meeting of the American Military Institute on 14–15 April 1989 in Lexington, Virginia. The conference theme is "Military Education and Thought." Papers that treat the establishment of formal military education, the creation of academies and service schools, or the formulation and institutionalization of military doctrine through military education are invited. Papers may focus on any nation or period of history. Please send proposals to AMI Conference Coordinator, Department of History and Politics, VMI, Lexington VA 24450. The deadline for submissions is 31 October 1988.

Old Dominion Soviet Military Doctrine Conference

Old Dominion University is sponsoring a conference on "Soviet Military Doctrine in an Era of Change" to be held at Old Dominion University on 25–27 May 1989. For more information, contact Philip S. Gillette, Graduate Program in International Studies, Old Dominion University, Norfolk VA 23529-0088, or call (804) 440-4643.

USAF Historical Research Center Grants

The USAF Historical Research Center has announced that it will make available several grants for FY 1989 for the study of the history of air power, to be conducted at the Historical Research Center, Maxwell AFB, Alabama. Applicants must have a graduate degree in history or related fields and a background in aeronautics, astronautics, or military-related subjects. A broad range of military subjects may be researched with an emphasis on performing research using primary resource material of the USAF Historical Research Center. For applications and further information, write to Director, USAF Historical Research Center, Maxwell AFB AL 36112-6678. Application deadline is 31 December 1988.

B-2 Unveiled

The initial flight of the B-2 advanced technology bomber is scheduled for this fall. The Air Force recently revealed an artist's conception of this stealth bomber, which is patterned after the flying wing design. One hundred thirty-two of the bombers will eventually be built and should be operational in the early 1990s. Construction of facilities for the B-2 will also begin later this year at Whiteman AFB, Missouri. Deployment of the B-2 to Whiteman will mark the base's return to flying missions after many years as a Minuteman ICBM base.

V-22 Osprey Flight-Testing Begins

The first flight-test of the V-22 Osprey tilt-rotor aircraft is slated for this summer. It is being developed for multiservice use by the Boeing Helicopter Company and Bell Helicopter Textron. It will use vertical takeoff and landing techniques and will convert in flight to a conventional aircraft.

MC-130H Combat Talon II

The rollout of the MC-130H Combat Talon II special operations aircraft took place recently in Greenville, Texas. The aircraft has a global, day-and-night, bad-weather capability to airdrop and land troops and equipment to support low-level and deep-penetration special operations.

Missile Site Becomes National Historic Landmark

Space Launch Complex 10 at Vandenberg AFB, California, a former Thor launch complex, has been designated a national historic landmark by the National Parks Service. It now serves as the Missile Heritage Center at Vandenberg and is run by the Missile Heritage Foundation, a nonprofit, nongovernmental organization recently formed to further the understanding of the role and history of missiles in the Air Force. Information on the Heritage Center and the Missile Heritage Foundation may be obtained by writing to Missile Heritage Foundation, PO Box 5642, Vandenberg AFB CA 93437.

Berlin Airlift

June marked the 40th anniversary of the Berlin airlift. In 1948 the Soviet Union blockaded all military land transportation between the western sectors of occupied Germany and Berlin. Allied air forces delivered 2.325 million tons of food, fuel, and other supplies by airlift through three 20-mile-wide air corridors to the 2.2 million people in West Berlin. Over 57,000 airmen took part in the air and on the ground in support of the operation. The blockade, which lasted for a year, gave a major impetus to the development of modern airlift and large transport aircraft. Today's C-5 aircraft can carry the combined load of 25 C-54 transports, the workhorses of the Berlin airlift. □

CORRECTION

Sharp-eyed readers of Colonel Siuru's article on "Supermaneuverability" in the Spring 1988 issue may have wondered at what speeds the aircraft depicted in figure 1 (page 56) were maneuvering to require turning radii measured in hundreds of miles. The answer is not the advent of the Mach 10 fighter but our error in measuring the distance of the radius rings in "miles" rather than "meters." Clearly a case of a low-speed editor having circles flown around him by a fast-moving staff, for which he accepts his just desserts and resolves to do better.

contributors

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Capt Erin E. Campbell (BA, Wake Forest University; MA, Naval Postgraduate School) recently completed work as an AFIT student at the Naval Postgraduate School, Monterey, California, where she studied national security affairs, specializing in Soviet studies. Her next assignment will be with the Soviet awareness team at Bolling AFB, Washington, D.C. Captain Campbell has published articles on the Soviet Union in *SAC Intelligence Quarterly* and has written for *Aviation* magazine. She is a graduate of Squadron Officer School.

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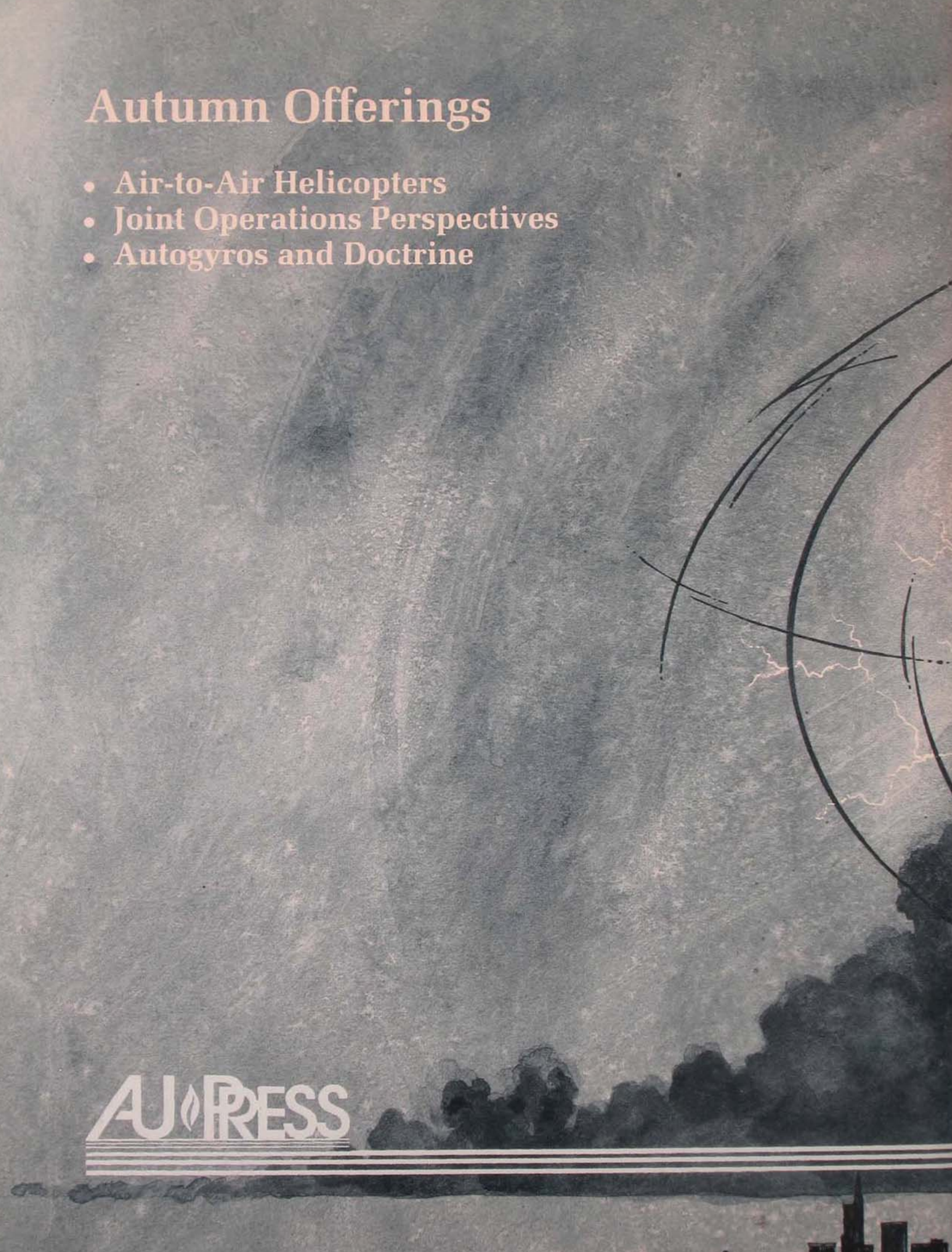

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HOT TOPICS FOR THE SUMMER

- Strategic Defense Initiative
- SPETSNAZ
- "Over There" in the Air

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