




The Professional Journal of the United States Air Force



AIR UNIVERSITY **review**

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AIR UNIVERSITY **review**

from the editor's aerie

One of the grand old men of military letters, Lieutenant General Sir John Winthrop Hackett, once suggested that "...as a society of men grows more orderly the application of force tends to become better ordered." That there has been no direct confrontation among the major powers since World War II would seem to support his thesis. The division of power has been perceived to be too uncertain and the consequences of using nuclear weapons too catastrophic to permit the use of unlimited force. It is a primary mission of the military to ensure the latter perception.

Three of our authors, Colonel Robert Rasmussen, Lieutenant Colonel Richard Stachurski, and Wing Commander Hans Roser, focus on different facets of the ordered application of force in the traditional terrestrial arena. Lieutenant Colonel Charles MacGregor and Major Lee Livingston, on the other hand, direct our attention to "Air Force Objectives in Space," pointing out that we cannot become so earthbound in our thinking that we overlook the limitless advantages of "taking the high ground."

A topic that has drawn increasing attention from our NCO academies concerns the application of the term "professional." Last year the USAF Chief of Staff convened a study group, Impact '77, to consider recent sociological theories that the service is becoming less a calling and more an occupation—that the old idealistic motivators are fading and are being replaced by "eight-to-five" considerations. One element of this subject that has been arousing the ire of the NCOs for many years is the tendency of sociologists to exclude the enlisted force from the ranks of professionals. Two articles by Senior Master Sergeants Roger Schneider and George Day address this issue from differing viewpoints. Our review article "Prescriptions for Professionalism" considers yet another aspect of the larger subject and may give us some new perspectives, coming as they do from the U.S. Army's Major William Dollar.

Our cover, by illustrator William DePaola, symbolizes the consequences of failing to adjust doctrine to the capabilities of the machine gun in World War I. In the lead article, Colonel Rasmussen warns that we must continually examine the potential of the "new machine guns" to keep doctrine abreast with technology. The pictured RPK light machine gun is currently in service with Soviet forces.

As always, we welcome your response to all subjects within.



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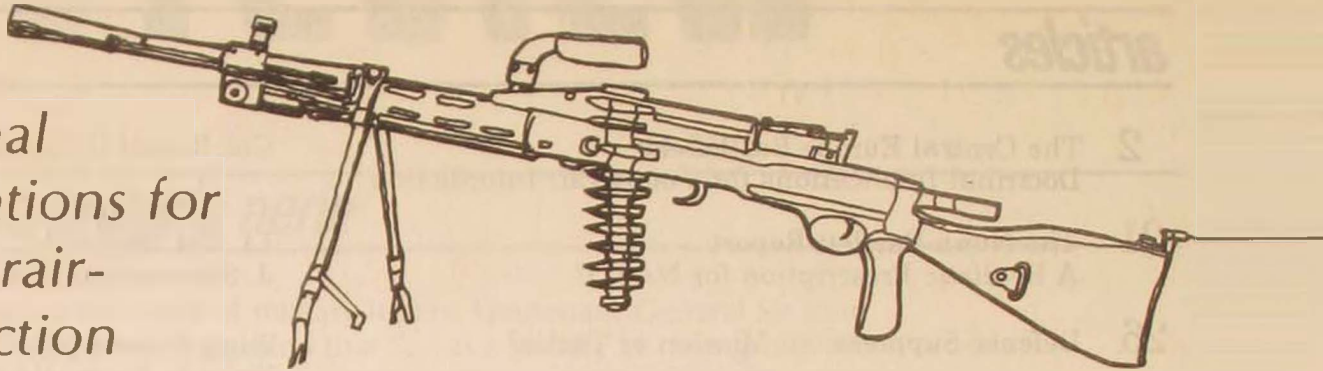
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THE CENTRAL EUROPE BATTLEFIELD

*doctrinal
implications for
counterair-
interdiction*



COLONEL ROBERT D. RASMUSSEN

IN THE annals of war there are numerous instances of technological progress upsetting the previous balance of forces: gunpowder, the machine gun, the tank, aircraft. But these innovations were not necessarily technological surprises. When the French underestimated the effect of the machine gun on their offensive doctrine of *élan*, it was not due to technological surprise—the weapon had been around a long time, and the French had it also. Their failure in the case of the machine gun was a failure to fully digest its impact and, as a result, the failure to take advantage of it, develop a counter to it, or adjust their doctrine in light of it. This article will address the battlefield in Central Europe, in an effort to ensure that we do not fail to digest the impact of or adjust to the adversary's "machine gun."

the new "machine gun"

Surface-to-air missile (SAM) air defense systems have been with us a long time. The

United States once led in their technology and production. We tasted the flavor of their potential, on the pointed end, over North Vietnam, but it was only a taste. A better sample for full digestion was made available in the course of the 1973 Middle East War.

The lowly machine gun has been with us since before World War I. Its larger caliber offspring, the automatic cannon, has been around for more than 20 years. The threat of modern radar-controlled, rapid-fire anti-aircraft (AA) cannons has been recognized by our side for over 10 years. Yet the superior Israeli Air Force, employing primarily U.S. equipment, was faced in 1973 with the loss of air superiority over the battlefield—not due to enemy air power but to ground force mobile air defenses. And the effectiveness of the SAM was exceeded only by that of the AA cannon.

The effectiveness of the mobile SAM and self-propelled (SP) anti-aircraft artillery (AAA) combination in the 1973 war was immediately recognized, but its digestion

has taken a long time—and may not yet be complete.

There were actually two separate events of potentially revolutionary significance to military arms to come out of the 1973 war: (1) the temporary achievement of local air superiority by ground forces and (2) the defeat of an Israeli tank offensive by Arab infantry armed with antitank missiles (ATM). The latter event and its implications for strategy, tactics, and doctrine have been widely discussed in a continuing dialogue in the professional journals of the U.S. Army. A major entry in this dialogue, entitled "Is the Soviet Army Obsolete?" was published in May 1974.¹

A review of past issues of *Air University Review*, the Air Force's professional journal, searching for a dialogue similar to that within the Army, is revealing. The *Review* "serves as an open forum for exploratory discussion," and exists "to present innovative thinking and stimulate dialogue concerning Air Force doctrine, strategy [and] tactics..."² The first article on the 1973 war in *AU Review* appeared in the July-August 1974 issue. Although authored by an Air Force officer, Captain Bard E. O'Neill, "The October War" was devoted to the political-psychological aspects of the conflict; *one sentence* briefly referred to the "effective use" of AAA, SAM, and ATM. Not until the November-December 1976 issue of the *Review*, over three years after the war, does one find the first article on the 1973 war that addresses directly the implications of that conflict for the "hardware and doctrine" of the U.S. Air Force. The title of the article, appropriately, is "A Call from the Wilderness."³

The present author knows, from first-hand knowledge, that much has been done in the field in terms of adjusting tactics and training to the newly perceived threat. But there is a lower level of confidence in

the completion of actions that are possibly necessary to adjust our doctrine and hardware. In any event, it is apparent that those potential adjustments have not been served well by any open dialogue of "innovative thinking" in the pages of the Air Force's professional journal. The fault here, of course—if there is one—is not with our journal; its function is to publish, not write. The dearth of dialogue on the vital issue is cited as one reason for doubting the completion of the digestive process.

implications for doctrine

Air superiority is generally considered to be that degree of control of the air that enables effective air operations by friendly forces and prevents prohibitive interference by the enemy with those operations. NATO doctrine on the subject holds that

The degree of control of the air required will depend on the tactical situation; however, NATO air forces must be capable of achieving such control whenever and wherever it is required.... Counter air operations do not necessarily relate to specific friendly surface operations. However,... the outcome of counterair operations exercises a direct influence on all other operations. Therefore, counterair operations may demand the highest priority of all air operations whenever enemy air power presents a significant threat.⁴

General Chaim Herzog, in his book on the 1973 war, reported:

In the first phase of the fighting—the holding phase—the Israeli Air Force was *unable to attack as planned* and was obliged to throw caution to the winds and give close support (a good proportion of the sorties were made in close support of ground forces), without dealing adequately with the missile threat and achieving complete air superiority. Consequently, losses were comparatively heavy.⁵

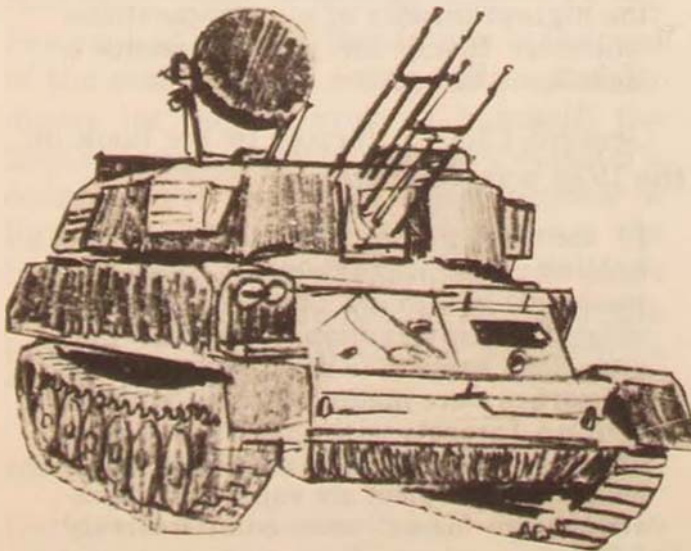
The reported Israeli losses were 102 planes shot down, but only five of those were lost in air-to-air combat, the balance lost to ground-based air defenses.⁶ The Arabs employed SA-2, SA-3, SA-6, SA-7, and the ZSU-23-4 quad 23mm gun system. It was the SA-6 and ZSU-23-4 that took the heaviest toll.⁷ Both of these systems are mounted on a PT-76 tank chassis, which enabled them to be deployed in the front lines and change positions as desired. This was the first time the Israelis had encountered the SA-6, SA-7, and ZSU-23-4. The Israelis twice abandoned air support-interdiction strikes on the Golan because of prohibitive losses: on the first afternoon⁸ and then again on the second day.⁹ Not until 21 October, two weeks into the war, did the Israeli Air Force gain the degree of control of the air that enabled them to conduct effective air support operations over the battlefield on the Sinai front; and that control of the air had to be wrested from the Arab SAMs.¹⁰

The implications are that the Israeli Air Force was unable to achieve air superiority

in a timely manner, not because of enemy air forces but enemy ground force air defenses. Even though the Israeli Armed Forces' doctrine allocated the highest priority in both timing and effort to offensive counterair operations, the Israeli Air Force was unable to follow that doctrine. The highest priority was necessarily assigned to defensive direct support operations—specifically, stopping the armored thrusts. Paradoxically, at the same time, the primary threat to Israeli control of the air was physically located in the same target complex they were forced to attack in contravening their doctrine and war plan: the SA-6 and ZSU-23-4 systems with the enemy ground forces.

While the concentration of Arab air defenses on both fronts was certainly formidable—and the most lethal seen in action to date—one suspects that the total array and variety of similar defenses on the front in Central Europe may be even more deadly. We shall therefore shift our attention to the potential battlefield in Central Europe and, in light of the above Israeli experience, look at possible implications for U.S. Air Force and NATO doctrine.

ZSU-23-4



The Threat: Central Europe

The forward-deployed Soviet ground forces in Central Europe (outside the Soviet borders) are organized into four "Groups of Forces" totaling 31 ground divisions.* (See Table I.) With the addition of the supporting airborne elements, there are the equivalent of about 32 divisions in those "Groups." The four Groups are the Group of Soviet Forces, Germany, Northern Group (Poland), Central Group

*This Warsaw Pact ground forces order of battle and the postulated invasion scenario are adapted from a paper presented by the author to the 1978 Air University Airpower Symposium in February 1978, "The A-10 in Central Europe: A Concept of Deployment Employment."

(Czechoslovakia), and the Southern Group (Hungary).

Added to these Soviet forces in the four satellite countries are the indigenous forces of the Warsaw Pact host countries: 37 divisions, including the 6 in Hungary, making a total of 68 Pact divisions in those four countries. However, not all of the non-Soviet divisions are maintained in a Category 1 state of readiness. (See Table I.) If we exclude the forces in Hungary, there

is a total of 58 Pact divisions in the "central" region. After further subtracting those non-Soviet divisions that are not earmarked for immediate employment, there remains a total of 48 divisions available for immediate employment *without additional reinforcement*. The number of main battle tanks in operational service with the divisional formations presently in Poland, Czechoslovakia, and East Germany is 16,200.¹¹ By

Table I. Warsaw Pact ground forces (Soviet and non-Soviet), Central Europe

	Divisions	"Earmarked" (Category 1) Divisions
non-Soviet		
Czechoslovakia	5 tank 5 motorized rifle	3 tank 3 motorized rifle
East Germany (GDR)	2 tank 4 motorized rifle	2 tank 4 motorized rifle
Poland	5 tank 8 motorized rifle 1 airborne 1 amphibious	3 tank 4 motorized rifle 1 airborne 1 amphibious
<i>Total non-Soviet</i>	12 tank 19 motorized rifle	8 tank 11 motorized rifle 2 other
Soviet		
In Czechoslovakia	2 tank 3 motorized rifle	All forward-deployed Soviet divisions are maintained at a Category 1 state of readiness, i.e., full complement of weapons, fuel, and supplies, with
In GDR	10 tank 10 motorized rifle	
In Poland	2 tank	
<i>Total Soviet</i>	14 tank 13 motorized rifle	a minimum of 85 percent manning if not 100 percent
Total Pact Forces Central Europe*	26 tank 32 motorized rifle <hr/> 58 divisions	22 tank 24 motorized rifle 2 other <hr/> 48 divisions

*Also available for employment are the Pact forces in Hungary—either through Czechoslovakia or possibly across Austria. The "Southern Group of Soviet Forces" in Hungary has 2 tank and 2 motorized rifle divisions. The Hungarian forces are 1 tank and 5 motorized rifle divisions. (The Soviets have excluded Hungary from "Central Europe" for purposes of the mutual reduction of forces negotiations.) The above forward-deployed Soviet forces can be reinforced on short notice from the 8 armies with 30 divisions maintained in the Baltic, Belorussian and Carpathian Military Districts, all bordering on Poland. Source: John Erickson, *Soviet-Warsaw Pact Force Levels, USSSI Report 76-2* (Washington: United States Strategic Institute, 1976), pp. 31 and 67-86.

contrast, the corresponding number of tanks on the NATO side in the same region is 6405.¹²

Group of Soviet Forces, Germany

The Group of Soviet Forces, Germany (GSFG), is the most powerful group of ground forces in the world. Since the end of World War II, the Soviet forces in East Germany have formed the "cutting edge" of Soviet military power in Central Europe. As such, GSFG is an elite force. Fourteen of the ten tank and ten motorized rifle divisions in East Germany carry the World War II honorific of "guards" divisions.¹³

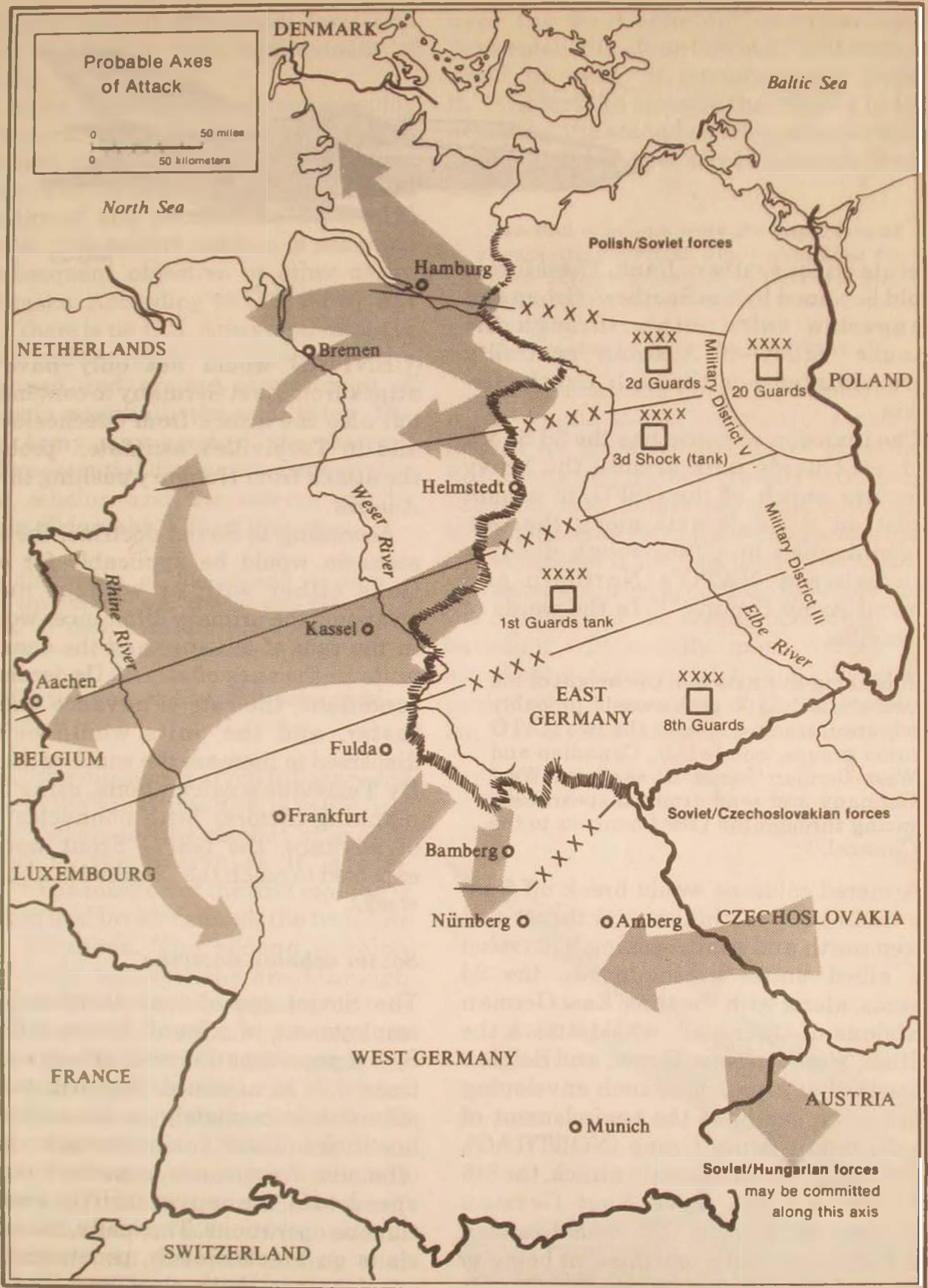
The 20 Soviet divisions in the GSFG are organized under five army headquarters, two tank armies and three combined-arms armies (the Soviets have abandoned use of the Corps). The GSFG is supported by the 16th Tactical Air Army, totaling some 1000 aircraft, of which about 850 are combat aircraft, including the MiG-23 Flogger, Su-19 Fencer, Su-17 Fitter, latest models of the MiG-21, and the Mi-24 Hind assault/gunship helicopter. The GSFG has all the ingredients of a Soviet wartime "front" (army group), and this is obviously the role that the GSFG would play in a Warsaw Pact-NATO military conflict.

The northernmost of the five Soviet armies in the GSFG is the 2d Guards Army, which is a combined-arms army composed of two motorized rifle divisions and a tank division, possessing more than 835 tanks. Directly to the south is the 3d Shock Army, a tank army with four tank divisions and a motorized rifle division. With some 1550 tanks, the 3d Shock is matched in strength by the 1st Guards Tank Army, which also has four tank divisions and a motorized rifle division, bringing the total tanks opposite the center sector of NATO's Central Region to

about 3100. The southernmost army is the 8th Guards Army, comprised of three motorized rifle divisions and a tank division, with a tank strength of about 1100 tanks. The 8th Guards is the Soviet army that faces U.S. Army forces in southern West Germany. In the east-central portion of East Germany is the 20th Guards Army, with three motorized rifle divisions and about 750 tanks. Also in GSFG are numerous nondivisional artillery units, including, reportedly, an artillery division directly under GSFG headquarters.¹⁴

In addition to the GSFG, the East German Army has six divisions assigned to two military districts that divide the country into northern and southern sections. In the north is Military District V with two motorized rifle divisions and a tank division. In the south is Military District III, also with two motorized rifle divisions and one tank division. Overall East German tank strength is about 2000 medium tanks.¹⁵ The East German divisions are permanently assigned to Soviet command in the GSFG.

Based on the known strength, disposition, and organization of the GSFG, it is possible to postulate an invasion scenario in accordance with Soviet doctrine and training; this postulation has been formulated by Graham Turbiville. (See Figure 1.) "...It must be assumed that the main mission of the GSFG Front will be to defeat the most powerful groupings of enemy forces in West Germany, secure Rhine crossings and drive to the English Channel."¹⁶ In this scenario, the GSFG Front, with East German divisions integrated, would cover the West German border from the vicinity of the Elbe to the Czechoslovakian border. Polish and Soviet Northern Group forces would cover the northern flank, while the Soviet Central Group with Czechoslovak units would



Source: Graham H. Turbiville, "Invasion in Europe—A Scenario," *Army*, November 1976, p. 19.

Figure 1. An invasion scenario



MiG-21

operate on the southern flank. These forces could be joined by the Southern Group and Hungarian units, either through the Danube Valley—if Austrian neutrality were violated—or through Czechoslovakia.

The invasion scenario has the 3d Shock and 1st Guards tank armies, the heavy offensive punch of the GSFG, in a joint thrust on a single axis along the Göttingen-Aachen line, “the rough dividing line between NATO’s Northern and Central Army Groups.”¹⁷ In the words of Turbiville:

It is along this axis that the weight of the two armies’ 3,100 tanks would probably advance, seeking to split the two NATO army groups, isolate U.S., Canadian and West German forces in southern West Germany and send armored spearheads racing through the Low Countries to the Channel.¹⁸

Armored columns would break off from the main body of this central thrust and sweep north and south seeking to envelop the allied units. In the north, the 2d Guards, along with the three East German Divisions of District V, would attack the British, West German, Dutch, and Belgian units in that area and launch enveloping columns to complete the encirclement of the Northern Army Group (NORTHAG). On the left flank of the main attack, the 8th Guards and the three East German Divisions of District III would attack southwestward with one mission being to link up with the enveloping 1st Guards units. The NATO Central Army Group

(CENTAG) would not only have this attack from East Germany to contend with but also the attack from Czechoslovakia, and in Turbiville’s estimate, “probably” the attack from Hungary pushing through Austria.

According to Soviet doctrine, the above scenario would be applicable for operations either with or without nuclear weapons; the primary differences would be in the rate of advance and the density of units in the axes of attack. Under nuclear conditions, the rate of advance would be faster, and the units would be more dispersed to increase the width of the axes. By Turbiville’s calculations, using Soviet planning factors, “with nonnuclear rates of advance, the GSFG Front would be expected to reach the Channel in about two weeks.”¹⁹

Soviet echelon doctrine

The Soviet operational doctrine for the employment of ground forces reflects a Soviet preoccupation with offensive operations.²⁰ It is assumed they will take the offensive immediately on the outbreak of hostilities. Their basic principles for the offensive are surprise, superior firepower, speed and maneuverability, and continuous operations. Tactically, the emphasis is on breakthrough, penetration, and envelopment—both close and deep. Integral to Soviet operational (front or army

level) and tactical (divisional level and below) doctrine is their employment of echelons.

All major Soviet ground elements deploy in echelons. One-half to two-thirds of a unit's total strength is assigned to the first echelon; it is the main attacking force and is assigned the immediate or initial objective. The second echelon is assigned the subsequent objective or other designated tasks. According to U.S. Army FM 30-40, "there is no U.S. Army equivalent to the second echelon."²¹ However, the preplanned and prompt commitment of reserves is essentially the same thing. The Soviet Army may employ "the reserve" also. The essential distinction between the second echelon and the reserve can be found in Sidorenko's *The Offensive*:

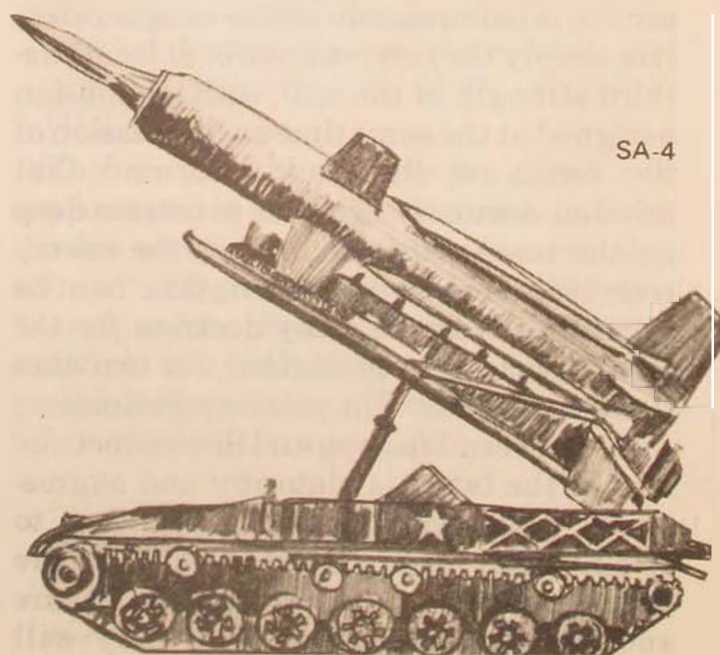
The distinction of the second echelon from the reserve was that it was created ahead of time *with a precisely defined mission*—to intensify the force of attack of troops of the first echelon from a specific position and exploit success in depth.²²

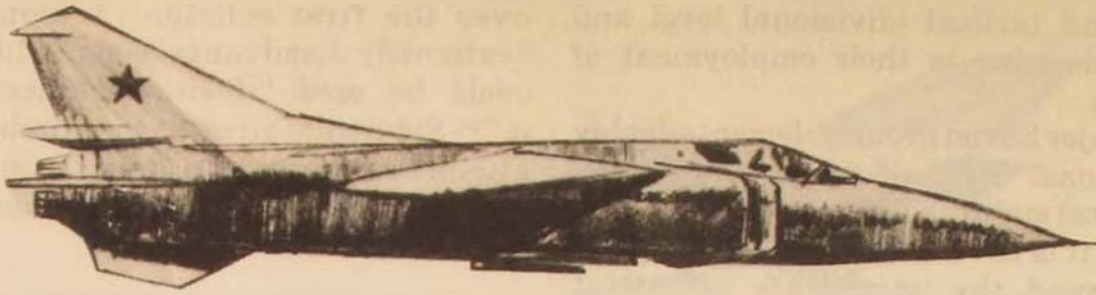
Thus, "the mission is given to the second echelon at the same time as it is to the first echelon," whereas "the combat mission is assigned to the reserve as it is committed."²³ The mission of the first echelon is to weaken and break through the frontline enemy defenses. The second echelon mission is to complete the breakthrough and exploit this breach by passing on into the depths of the enemy position to complete his destruction and engage the enemy reserves before they can reinforce the defenders or organize a second line of defense. According to Sidorenko, it is preferred to commit the second echelons and reserves "into the intervals between" the first echelon units "or from behind their flanks," to prevent mixing and overcrowding. "The commitment of fresh forces" from the rear by "leapfrogging

over the first echelon" is considered "extremely disadvantageous," although it could be used "if circumstances forced it."²⁴ Sidorenko stresses that timing in the attack by the second echelon is important; they learned in the "Great Patriotic War" that

...second echelons were the basic means of exploiting success and conducting an attack at high rates and to a great depth. Where they were weak or were not committed in time, the attack developed not only slowly, but even died down.²⁵

Two echelons are normally employed at regiment and above, but divisions may be formed by the army into three echelons. Battalions and below normally form their subunits into single echelons, although battalions may form their companies into two echelons. If the battalion is formed in two echelons, then according to Sidorenko, the company of the second echelon of the battalion will usually move during an attack at a distance of 1 to 3 kilometers behind the companies of the first echelon.²⁶ A division might advance on one or





MIg-23

two axes on a front of five or six miles, but extended to a depth of 30 miles or more, and then concentrate the width of the front to perhaps two miles at the point of breakthrough. The four or five divisions of the army assigned the mission of breakthrough would advance on a width of front of perhaps only 20 miles.²⁷

In sum, and by way of analogy, the Soviet employment of echelons can be compared to a running play through the line in football, and if three echelons were employed, the second echelon role is analogous to that of a blocking back engaging the linebackers, while the ball carrier drives for the “objective of the day.” But the uniqueness of the Soviet second echelon should not be exaggerated: it is simply the reserve force of at least one-third strength of the unit, with its mission assigned at the same time as the mission of the forces on the front line, and that mission normally being to penetrate deep on the main axis and engage the enemy reserves. This same description can be applied to Western army doctrine *for the offensive* and, in particular, for *exploitation* operations.²⁸ The primary distinction, then, between Western and Soviet doctrine is that the latter is blatantly and aggressively offensive; instead of waiting to commit the reserves when and where success develops, they intend to ensure success by planning where they will

develop it with the reserve (“second echelon”) commitment.

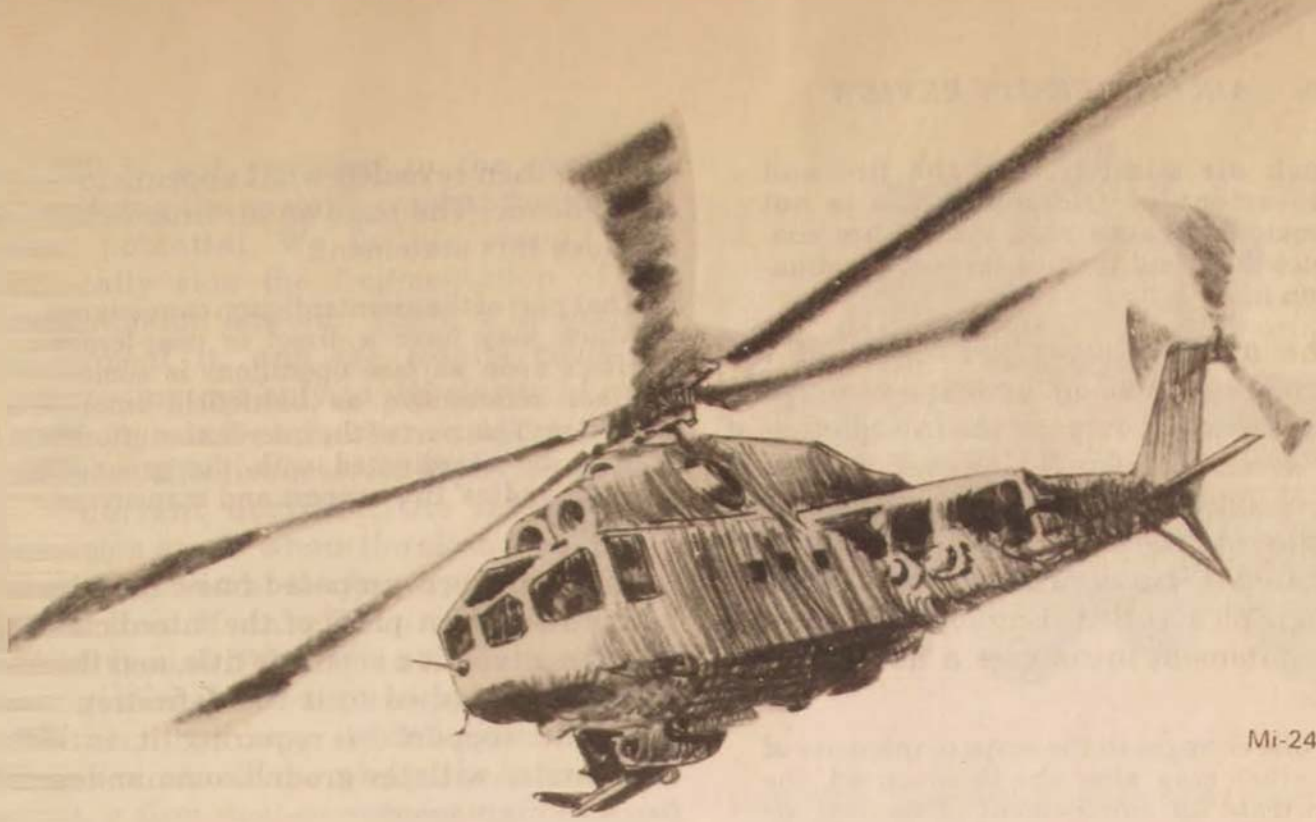
implications for air doctrine

In an article in *Air Force Magazine* in 1976, the Warsaw Pact threat drew the attention of Edgar Ulsamer. After noting the “vast numerical superiority” of the Warsaw Pact over NATO forces, Ulsamer continued:

Compounding the problem of numbers is the likelihood that Pact forces would be used in blitzkrieg fashion along a narrow front, with a strong assault echelon opening the way for one or more follow-on echelons. To counter that strategy, US and other NATO forces would have to concentrate their forces at the point of major attack....

If intelligence is right [with timely warning], NATO ground forces could achieve local superiority against the first assault echelon. The second, equally decisive, “if” is whether US and other NATO tactical airpower would be able to deal with the Pact’s second echelon before it could engage NATO ground forces at the forward edge of the battle area. This, then, leads to the third requirement for a successful defense by NATO forces—the rapid achievement of local air superiority over the main battle area to permit air interdictions of Pact follow-on attacks.²⁹

The above lengthy but pithy quote concisely illuminates three aspects of the problem with significance for air doctrine:



Mi-24 Hind

(1) the need to concentrate our forces quickly at the point of major attack, an ability ensured through the centralized control of air power, including close air support; (2) the need for priority on the timely interdiction of the Pact reserves or follow-on echelons, and (3) the prerequisite need for gaining the degree of local air superiority over the battle area required to enable *both* interdiction and close air support operations. This third point relates to the main thrust of this article, but it is necessary momentarily to divert and address the second.

Unfortunately, the long, unconventional war in Southeast Asia has produced a habit of thinking of the interdiction mission as *only* a logistics curtailment operation. The absence of visible enemy combat formations employing the weapons and tactics of conventional warfare has apparently dimmed our doctrinal memories. Thus, we presently see a spate of writers who find the term "interdiction" inadequate to express themselves. For example, in a 1977 article in *Air University*

Review, an author responding to the cited Ulsamer article found the "interdiction mission" inadequate to encompass attacks against the "second echelon." He substituted the term "battlefield interdiction mission," and defined it thus:

The term "battlefield" interdiction used in this article refers to that portion of the air interdiction function described above (i.e., ground attack in support of friendly ground forces *beyond the range of weapons organic to those ground forces*).³⁰

The dividing line between close air support and interdiction has always been the fire support coordination line (FSCL). (The FSCL was originally called the "bomb safety line.") A recheck of the doctrinal manual, AFM 2-1, 2 May 1969, revealed the following first two sentences in the chapter on interdiction:

Air interdiction operations are conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces. Detailed integration of

each air mission with the fire and movement of friendly forces is not required because such strikes are conducted beyond the fire support coordination line.³¹

The above classic definition of the interdiction mission appears completely adequate to encompass the interdiction of the "second echelon." However, a check of the chapter of AFM 2-1 entitled "The Employment of Tactical Air Forces" revealed serious trouble. In the first paragraph, entitled "Employment Tasks," this statement introduces a listing of the tasks:

While changes in the scope or intensity of conflict may alter the tactics used, the doctrine for employment of tactical air forces and *the basic tasks to be achieved remains constant*. Tactical air forces are employed in the following tasks.³²

The four tasks are then listed (condensed here for brevity): (1) air superiority, (2) close air support, (3) "the isolation of enemy air and surface forces from their sources of supply," and (4) strategic offensive operations. Amazingly, the interdiction of enemy combat forces has been deleted from the "basic task" of interdiction in an official doctrinal manual.

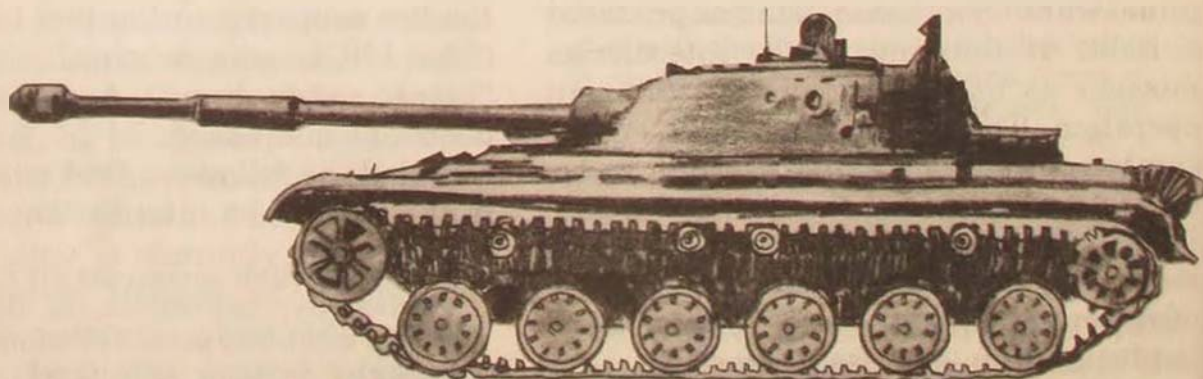
A review of the latest draft of the *new* AFM 1-1, *Basic Doctrine*, to be published

in 1978, then revealed what appears to be an epidemic. The page on air interdiction includes this statement:

That part of the air interdiction campaign which may have a direct or near-term effect upon surface operations is sometimes referred to as battlefield interdiction. This part of the interdiction effort must be coordinated with the ground commanders' fire support and maneuver plan.³³

Thus, our own proposed basic doctrine has broken off a piece of the interdiction mission, given it a separate title, and then essentially applied to it the definition of close air support in requiring it to be coordinated with the ground commander's fire and maneuver!

We clearly and urgently need to re-establish the classic definition of the interdiction mission to include offensive air action against *both* the enemy's forces and logistics. A good starting point would be the brief definition of the air interdiction mission in the War Department Field Manual FM 100-20, 21 July 1943: "To prevent the movement of *hostile troops and supplies* into the theater of operations or within the theater."³⁴ We can then progress to the classic words in the current AFM 2-1 quoted earlier (note 31), which are completely satisfactory as long as the meaning of "the enemy's military poten-



tial" is not confused to the extent of dropping the enemy's combat forces from his potential. We further should specifically stop the fragmentation of the interdiction mission. There is *no need* to fragment it, and the results could be degrading not only to the clarity of roles and missions but, more important, to combat effectiveness. As always, and still in current doctrine, the interdiction mission starts where the close air support mission ends: at the fire support coordination line. If an official need is felt to distinguish "force" interdiction from "logistics or communications" interdiction, then any subdefinitions of the mission should be along those lines. In fact, a firm dual-component definition of the mission ("forces and logistics" vice "potential") might be constructive, in view of the apparent tendency to drop "force interdiction" from the current popular conception. And the characteristic of proximity should be handled with the descriptive terms of "deep" or "shallow"—both *in relation to the FSCL*.

For those who may be concerned about the ability to strike the follow-on Pact echelons without the need for cumbersome—and perhaps degrading—coordination and clearance by the ground commander, be reminded that the FSCL is set by the ground commander *in coordination with the air commander*. Its location can be optimized to maximize the combined effect of both artillery and air, and it can be changed on short notice, as the situation dictates. The Pact forces or "echelons" beyond the FSCL can be freely interdicted without the need for constant air-ground coordination. The Pact forces or "echelons" between the FSCL and the forward edge of the battle area (FEBA) can only be attacked within the framework of the close air support system and whatever coordination procedures and rules of engagement are operative within the system at



that time. Separating close air support and interdiction operations on the battlefield is relatively simple; performing either one effectively without a degree of local air superiority would be difficult, or worse.

The Offensive Air Defense: Total Offense

The equipping of the air defense troops with modern armament permits organizing an antiaircraft defense which is capable of assuring the attacking troops freedom of maneuver and combat and repelling enemy air strikes and thereby creating the necessary conditions for the successful conduct of the offensive.³⁵

A. A. Sidorenko
Moscow 1970

By Soviet doctrine, "every *chast'* [regiment] and *podrazdeleniye* [battalion, company, platoon and squad] must be capable of fighting the air enemy under any conditions regardless of whether they are in the zone of air defense cover of the senior commander or not."³⁶ Further, their doctrine of the aggressive, high-speed offensive requires that "all troop elements" participate equally in "a uniform and simultaneous process of struggle

against the ground and air enemy." In other words, the so-called air defense weapons are actually considered to be offensive weapons, and they form "an inalienable part of the troop combat formation of any scale."³⁷ We therefore find modern, specialized anti-aircraft weapons at every level in the Soviet field army—from squad to army; and their doctrine for employment is offensive, resulting in a concept of offensive air defense,³⁸ or total offense.

offensive air defense order of battle

The total number, variety, and the dispersed array of offensive air defense

(OAD) weapons in the Soviet field army is indeed impressive. An example of the OAD order of battle (OB) of a typical Soviet army of three to four divisions is shown in Table II. The numbers of units depicted dates from 1975, so any error would probably be on the low side (except, possibly, for the towed weapons, SA-2, SA-60, and ZSU-23-2, which probably are being supplanted by modern self-propelled replacements). Since most of the weapons are organic to a division (excepting SA-2 and SA-4), an army comprised of five, six, or seven divisions (as in the GSFG) would have proportionately more weapons in its area. Also, keep in mind that the OB is for only one army. The FEBA in West Germany, as depicted in the postulated

*Table II. Typical Soviet army area
battlefield air defense weapons*

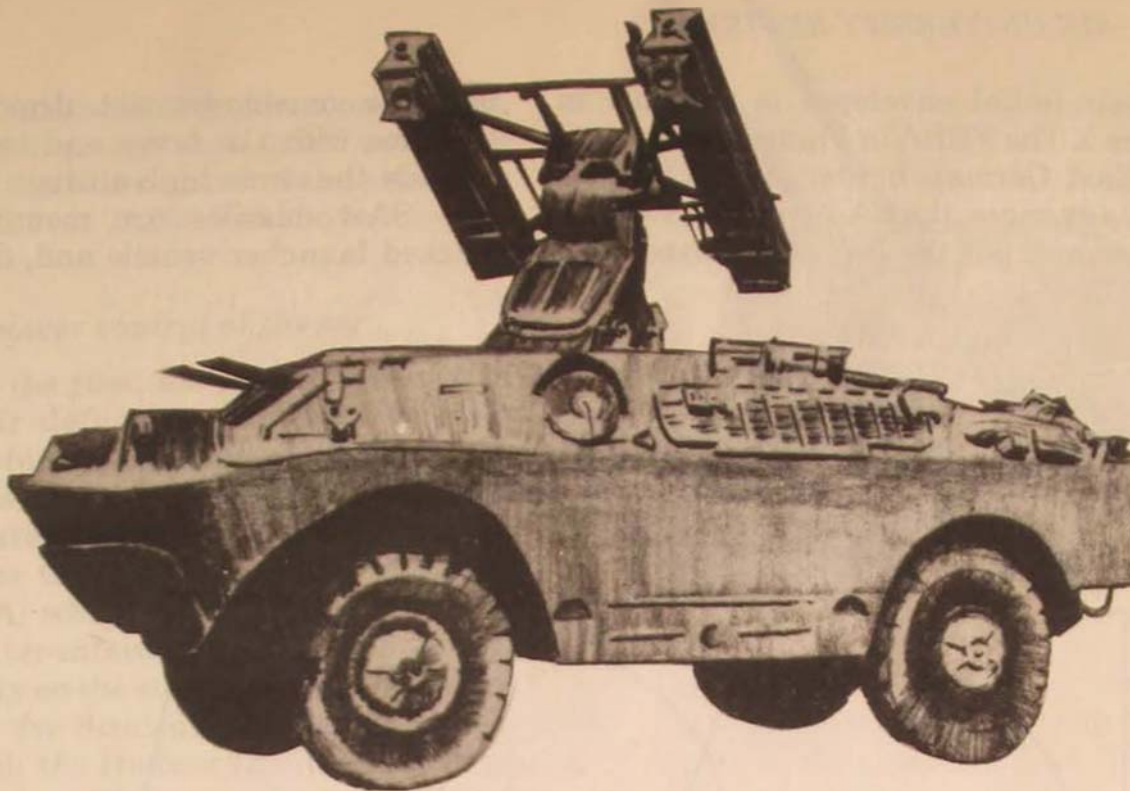
weapon	type	units (batteries)	launcher vehicles	effective range	slant altitude
SA-2	SAM	3	18	45km	25km
SA-4	SAM	9	27	70km	24km
SA-6	SAM	5	15	30km	90m- 10,000m
SA-7	SAM	in rifle companies		3.5km	45m- 3000m
SA-8	SAM	5*	20*	15km	50m- 10,000m
SA-9	SAM	64**	256**	7km	45m- 6000m
S-60	57mm AAA	23	138	4000m	-
ZSU-57-2	twin 57mm AAA	6	36***	4000m	-
ZSU-23-2	twin 23mm AAA	19	114***	2500m	-
ZSU-23-4	quad 23mm AAA	32	128	2600m	-

Sources:

Unless otherwise noted below, all data are from FM100-5, *Operations*, Department of the Army, 1 July 1976, p. 8-3, and *Understanding Soviet Military Developments* (AST-1100s-100-77), AC of S for Intelligence, Department of the Army, Washington, GPO, 1977, pp. 65-68; in all cases the ranges and altitudes are from the latter.

*John Erickson, *USSR Report 76-2*, p. 38.

***International Defense Review* (IDR), April 1975, p. 183, reported the 64 "troops" (batteries) of SA-9 launcher vehicles; *IDR*, December 1975, p. 804, reported four SA-9 vehicles per battery. *Electronic Warfare*, May/June 1977, p. 54, reported the Gun Dish fire control radar recently added to the SA-9 BRDM vehicle.



SA-9

invasion scenario in Figure 1, would be faced with at least six armies, probably seven, and possibly eight to ten armies in the first echelon.

The organic assignment of the OAD weapons starts at the squad level in the motorized rifle units; each squad of nine infantrymen has an "AA gunner"³⁹ member with an SA-7 launcher. This means that each squad vehicle, or every "infantry fighting vehicle" (IFV)⁴⁰ contains an SA-7, and the "AA gunners" are trained to fire from the vehicle on the move (but they must open their hatch and stand up to do so). Since there are 28 IFVs in a standard three-company motorized rifle battalion, that yields 28 SA-7s in each battalion.

Soviet regiments, both motorized rifle and tank, have their own batteries of self-propelled ZSU-23-4 and mobile SA-9. The OAD weapons of the regiment are deployed to cover the battalions of that regiment. ZSU-23-4 mounts are organized and operate as either "platoons" of four or

"sections" of two,⁴¹ and can be expected to operate in conjunction with an equivalent unit of SA-9 vehicles.⁴² A forward detachment or advance guard battalion will usually be reinforced with an attached ZSU-23-4 platoon. The ZSU-23-4 mounts can be expected to be positioned 500-2000 meters behind the leading tanks in the front echelon.⁴³

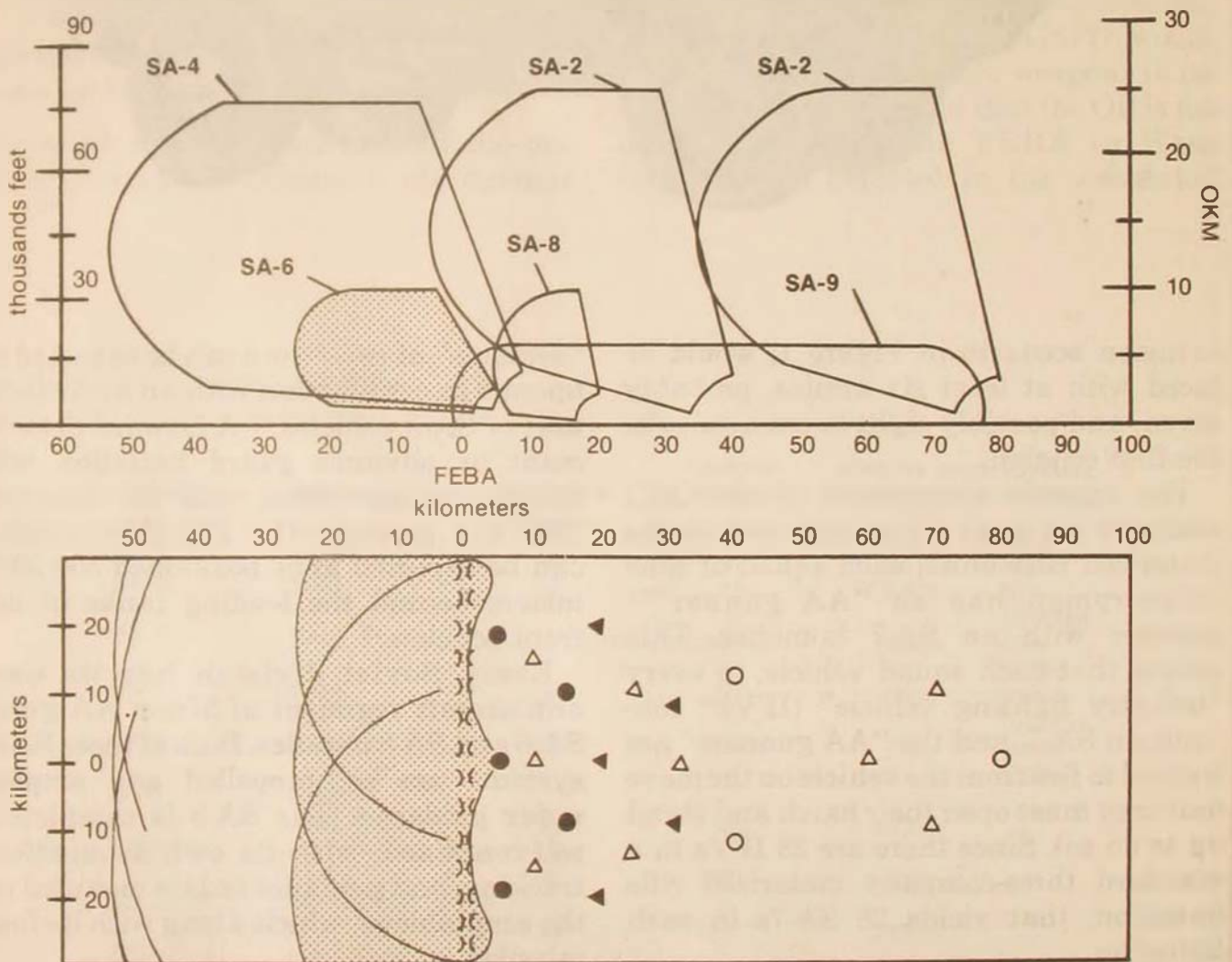
Every Soviet division has its own anti-aircraft regiment of 57mm AA guns, SA-6 and SA-8 missiles. Both of these SAM systems are self-propelled and employ radar guidance. The SA-8 is completely self-contained, with its own acquisition, tracking, and guidance radars mounted on the amphibious vehicle along with its four missiles.

The Soviet army has its own SA-2 and SA-4 regiments with which it provides high altitude and long-range protection to its own headquarters and subordinate divisions and units. An example of the deployment of all these missile systems in the army area and a vertical cross section

of their lethal envelopes is depicted in Figure 2. The FEBA in Figure 2 represents the East German border, and when the army advances, the SA-2 envelopes will be left behind, but the deeper deployed SA-4

batteries (envelopes not depicted) will advance with the army and continue to provide the same high-altitude coverage. The SA-4 missiles are mounted on a tracked launcher vehicle and, depending

Figure 2. Typical Soviet army area battlefield missile air defenses. Shoulder-fired and vehicle-mounted launchers common to all of these units provide dense coverage from the front lines throughout the army area.



- legend
- SA-2
3 batteries
 - SA-6
5 batteries
 - △ SA-4
9 batteries
 - ▲ SA-8
5 batteries

Sources: U.S. Army FM 100-5, p. 8-3;
 John Erickson, *USSR Report 76-2*, pp. 38 and 46;
Understanding Soviet Military Developments, Department of the Army,
 1977, pp. 65-67;
 the maximum ranges and effective altitudes are from the latter.

on their placement in the combat formation, will project their lethal envelopes over 50 kilometers ahead of the attacking army and over 70,000 feet above it.

ground power control of the air

While in the past, the primary "means of troop air defense" was the "fighter-interceptor," augmented by AAA, Sidorenko states that the means of troop air defense are now "qualitatively different"; he reports their "*basis*" is now the SAM and AAA, which only "*coordinate*" with the fighter-interceptors.⁴⁴ Colin Gray, previously on the staff of the International Institute for Strategic Studies and presently with the Hudson Institute, noted in an article in 1977 that the Soviet SAM and AAA forces posed immense problems for themselves in air battle management and threatened a high kill rate on their own frontal aviation (FA). Mr. Gray then continued:

...it is probably correct to claim that in many instances FA will be posed as many, if not more, problems by the impressive organic air defenses of the Soviet Ground Forces as by NATO air defenses. Soviet air doctrine attempts to minimize these problems by prescribing that *interceptors operate only above 10,000 feet.*⁴⁵

This type of employment doctrine was sampled over North Vietnam where the integrated air defense system worked a "division of labor" between the MiGs, SAMs, and AAA. It appears to be a practical doctrine for the Soviet armies and their frontal aviation in Central Europe, in view of the impressive capabilities outlined previously. Thus, it is probable that the Soviet ground forces have assumed responsibility for the air superiority mission up to a "fire coordination altitude" such as 10,000 feet. Above that altitude they would only engage after

ZSU-57-2



coordinating with fighter aviation.

To realize the magnitude of this Soviet ground force "air threat," it may be useful to relate *the number of weapon launchers bearing on the army's air space* to an equivalent number of air superiority fighters. First, taking only the mobile, *radar guided* (all weather) SAM vehicles (SA-4: 2 launchers; SA-6: 3 launchers; SA-8: 4 launchers), and then using only the numbers of vehicles depicted in Table II, we find that those SAM systems equate to 45 F-15 fighters with four *radar* missiles each. And that means 45 F-15s overhead 100 percent of the time to equal the effect. Since there would be *at least* six armies along the FEBA, that translates to 270 F-15s overhead 100 percent of the time.⁴⁶ Next, taking the mobile *infrared* (IR) (visual limits) SAM vehicles (SA-9: 4 launchers) and the number of vehicles depicted in Table II, that equates to 512 F-16s in the "air superiority configuration" with two *IR* missiles each! Again, six armies worth equates to 3072 F-16s overhead 100 percent of the time; and we have not even included the SA-7 or AAA!⁴⁷

Certainly, many of the SAMs will miss

their target, but not every F-15 that takes off will come back with four kills—or every F-16 with two. And, of course, both fighters have a cannon—but do we need to add up and compare the AAA? This is *obviously not* an attempted cost-effectiveness comparison—it is a case of “apples and oranges.” The SAMs can perform no other mission, and they are cursed with that limitation of ground forces—they are of no value to anybody except those under their static limited-range envelope. If we destroy all the air defenses of a sister army 100 kilometers away, then this army’s weapons are of no use whatsoever to the other army. But that is of no matter to this army’s commander—he wants that offensive air defense system for only one mission, and he wants it right where it is. Yes, because of their limited range and static position, we—NATO air power—can easily avoid them by staying out of range. The Soviet commander will be happy if we avoid them that way all the way to the English Channel.

A Matter for Air Doctrine

That, then, is the crux of the matter—we must penetrate those envelopes to be effective. A standoff strike capability

would be nice to have: something that can hit moving point targets with a high kill probability through a low overcast with reduced visibility. That is the weather in Germany most of the time. But as of today—and tomorrow—we still need to penetrate for a visual attack. Yes, we can penetrate at very low altitude and avoid many of the SAMs; if we train above 100 feet we are not yet realistic. But what about the quad-23mm with the Gun Dish radar? It is the most effective of all. Since we cannot avoid enough, we must either suppress or destroy, or both.

If the primary objective of our participation in the postulated war in Central Europe is to stop the Warsaw Pact tanks short of the English Channel—and as far east as possible—then our situation will be similar to the Israelis in 1973. We will not have time for deep interdiction and deep counterair strikes. We must concentrate our forces against the main attack—both close air support on the spearhead and interdiction on the spear shaft. But if the interdiction effort against the reserves and subsequent echelons is to be effective—and the close air support also—then we must achieve the degree of local air superiority required. As cited earlier from the NATO air doctrine:



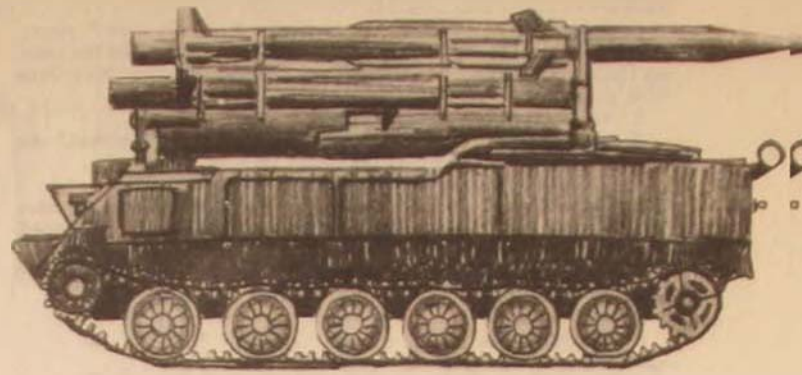
BMP infantry fighting vehicle

... counterair operations may demand the highest priority of all air operations whenever enemy airpower presents a significant threat.

This threat to our control of the air certainly constitutes a "significant threat," but it is not "enemy air power"; it is enemy "ground power" control of the air. If our air superiority force is to engage the primary threat to our control of the air—that most directly affecting our war objective—then, in theory, our F-15 force should be down attacking "tanks" (SAM and AAA chassis), or at least whatever portion of the F-15 fleet is not required, at any moment, to defend our vital installations. Absurd? Then what? Let's look at AFM 2-1 in the "Counter Air Operations" chapter. Under "types of missions," it lists six: (1) counterair strikes, (2) fighter sweeps, (3) screens, (4) combat air patrol, (5) air escort, and (6) air intercept. The closest we can come to our present problem is in the first, "counterair strikes":

*These missions involve offensive strikes against surface targets of the enemy airpower complex. The objective is to establish early air superiority by denying the enemy full use of his bases, aircraft, air defense weapons and control systems. Both offensive and defensive systems are targets for attack; however, offensive systems should normally have the highest target priority.*⁴⁸

We need to redefine, in our doctrine, the enemy's ground force air defenses in line with the concept of *offensive* air defense presented herein. Then the primary threat to our top priority air operations may fit our doctrinal habits of thinking and receive its due priority. Then resources and capability might follow. Let's assume for a moment that we have developed and deployed a counterair system with the capability to effectively suppress and destroy the Pact *offensive* air defenses.⁴⁹ The A-10s can now have a tank "turkey-



SA-6

shoot" throughout the depth of the attacking armies. Any aircraft airborne that can hit a tank with ordnance that will kill it can join in. But nearly half of those armored vehicles attacking are motorized rifle squads in BMP IFVs. The BMP is thin-skinned, and even the F-15—or any other fighter—could join in with its 20mm (if the "aircraft versus aircraft" role demands allowed). Once the Pact tanks were stripped of their protective infantry, the tanks would be easy prey for the NATO infantry and armor with antitank weapons. And NATO air power could then turn its attention to defeating the Pact's air power in detail—in accordance with our stereotyped counterair doctrine. It would almost certainly be a more comfortable feeling to be able to fit our action to our thinking.

THIS article has intentionally avoided drawing any specific conclusions or making any specific recommendations concerning hardware for the counterair problem addressed. The author doubts he has yet given the subject enough thought. But he hopes his effort will contribute to the digestive process of his profession—digesting the implications of the new "machine gun."

Air War College

Notes

1. Colonel E. B. Atkeson, "Is the Soviet Army Obsolete?" *Army*, May 1974, pp. 10-16. For an assessment of Soviet dialogue on the issue, see Phillip A. Karber, "The Soviet Tank Debate," *Survival*, May/June 1976, pp. 105-11.
2. *Air University Review*, inside back cover.
3. Major Donald J. Alberts, "A Call from the Wilderness," *Air University Review*, November-December 1976, pp. 35-45.
4. *NATO Tactical Air Doctrine*, ATP-33, 11 March 1976, p. 4-1.
5. Major General Chaim Herzog, *The War of Atonement, October 1973* (Boston: Little, Brown & Co., 1975), pp. 258-59. Emphasis added.
6. *Ibid.*, pp. 259, 260.
7. *The Yom Kippur War*, The Insight Team of the London *Sunday Times* (New York: Doubleday and Co., 1974), p. 167.
8. *Ibid.*, p. 161.
9. Herzog, p. 258.
10. *Ibid.*, p. 260.
11. *The Military Balance: 1977-1978* (London: The International Institute for Strategic Studies, 1977), p. 110.
12. *Ibid.* These figures do not include reserve stocks.
13. Graham H. Turbiville, "Invasion in Europe—A Scenario," *Army*, November 1976, pp. 16-17. Turbiville was a Soviet military affairs analyst for the Defense Intelligence Agency from 1969 to December 1975, when he resigned to pursue doctoral studies.
14. *Ibid.*, pp. 17-18.
15. *Ibid.*, p. 19.
16. *Ibid.*, p. 20.
17. *Ibid.*
18. *Ibid.*
19. *Ibid.*, p. 21. It might be noted here that in addition to the Pact divisions cited, the seven Soviet Guards airborne divisions would also be available for employment in an unreinforced invasion operation. In the 1968 invasion of Czechoslovakia, the first Soviet unit inserted was the airborne division lifted from Leningrad into Prague the first night. The paratroopers, prior to arrival at Prague, "thought they were jumping onto an airfield outside Munich." General James H. Polk, USA (Retired), "Reflections on the Czechoslovakian Invasion, 1968," *Strategic Review*, Winter 1977, p. 37.
20. See A. A. Sidorenko, *The Offensive*, translated and published under the auspices of the United States Air Force, Washington, Government Printing Office, 1973. (Originally published in Moscow, 1970.) For an excellent and current Western analysis, see Christopher Donnelly, "The Soviet Ground Forces," in *The Soviet War Machine* (London: Salamander Books, 1976), pp. 154-75, in particular, pp. 162-74.
21. FM 30-40, *Handbook on Soviet Ground Forces*, Department of the Army, 30 June 1975, p. 5-7.
22. Sidorenko, p. 97. Emphasis added.
23. *Ibid.*, p. 99.
24. *Ibid.*, p. 151.
25. *Ibid.*, p. 98.
26. *Ibid.*, p. 99.
27. Donnelly, p. 169, p. 167.
28. See, for example, FM 100-5, *Operations*, Department of the Army, 1 July 1976, p. 4-11.
29. Edgar Ulsamer, "Tac Air—History's Most Potent Fighting Machine," *Air Force Magazine*, February 1976, p. 22.
30. Robert S. Dotson, "Tactical Air Power and Environmental Imperatives," *Air University Review*, July-August 1977, p. 29.
31. AFM 2-1, *Tactical Air Operations—Counter Air, Close Air Support, and Air Interdiction*, Department of the Air Force, 2 May 1969, p. 7-1.
32. *Ibid.*, p. 4-1. Emphasis added.
33. AFM 1-1, *Functions and Basic Doctrine of the USAF*, Draft, undated, p. 2-13.
34. FM 100-20, *Command and Employment of Air Power*, War Department, 21 July 1943, p. 10. Emphasis added.
35. Sidorenko, p. 48.
36. *Ibid.*, p. 102.
37. *Ibid.*
38. The concept of offensive air defense was identified by James A. Bean in a paper delivered to the 1977 Air University Airpower Symposium at Maxwell AFB, Alabama, March 1977, entitled "Soviet Doctrine and Technology for Battlespace Control in the Tactical Environment."
39. Colonel V. Lavreichuk, "Training of AA Gunners," *Soviet Military Review*, March 1977, p. 21.
40. Infantry fighting vehicle (IFV) is the Soviet term for their mechanized infantry combat vehicle, the BMP. The BMP has replaced the old armored personnel carrier (APC) and is truly a fighting vehicle. It carries a turret-mounted 73mm gun that kills tanks; it also carries a "Sagger" antitank guided missile, in addition to a 7.62mm machine gun. The eight troops of the squad inside can fight when "buttoned up." Each troop has his own periscope and gun port through which he can fire on the move. Both the crew and the squad have NBC protection in the pressurized and filtered hull. The BMP is amphibious; it has only light armor, comparable to the PT-76 light tanks (14mm). Bill Gunston, "Army Weapons," *The Soviet War Machine*, p. 185.
41. Colonel V. Mikhailov, "Air Defense of an Advanced Detachment," *Soviet Military Review*, July 1976, pp. 28-29.
42. *International Defense Review*, December 1975, p. 804.
43. Mikhailov, p. 29. See Sidorenko, pp. 192-94, for a sample role of forward detachments and advance guards.
44. Sidorenko, p. 48.
45. Colin Gray, "Soviet Tactical Airpower," *Air Force Magazine*, March 1977, p. 69. Emphasis added.
46. If we assume one hour "overhead," a total of 30 minutes enroute time—to and from—and a 30-minute "quick-turn" ground time, we must double the number, i.e., 540 operationally ready F-15s required in place. The SAMs are not perfect, so let's give them the same probability of kill (Pk) as our Sparrow missile.
47. Same assumptions: 6144 F-16s operationally ready and in place 15 minutes from the FEBA. (If we load maximum possible missiles with wing pylons—six—we can decrease the number of F-16s overhead to 170 per army and 1020 for the front, requiring 2040 in place.)
48. AFM 2-1, p. 5-3.
49. As an interim measure, would an A-10 with an antiradiation missile be absurd? The aircraft is specialized for that specific environment. Imagine—the A-10 as an air superiority weapon.

In Dr. Krafft A. Ehrlicke's prize-winning article "The Extraterrestrial Imperative," which appeared in our January-February 1978 issue, the captions to illustrations on pages 12 and 15 were transposed. We regret the error and any confusion it may have caused our readers.

The Editor

The thrust of the report is that the Russian Bear, besides being nine feet tall and rising, can now get up to full speed from a standing start with hardly a warning twitch.



THE NUNN-BARTLETT REPORT

*a realistic
prescription
for NATO?*

LIEUTENANT COLONEL
RICHARD J. STACHURSKI

ON 24 January 1977, the Senate Armed Services Committee published a report by Senator Sam Nunn (D-Georgia) and Senator Dewey Bartlett (R-Oklahoma) entitled *NATO and the New Soviet Threat*. The senators apparently had substantial assistance in its preparation from Lieutenant General James F. Hollingsworth, U.S. Army (Retired). The report is based at least in part on a previous report prepared for the Senate Armed Services Committee by General Hollingsworth prior to his retirement.¹

The thrust of the report is that the Russian Bear, besides being nine feet tall and rising, can now get up to full speed from a standing start with hardly a warning twitch. In fact, say the authors, "Soviet forces deployed in Eastern Europe now possess the ability to launch a potentially devastating conventional attack in Central Europe with little warning."²

In support of this assertion, the report points out that the Soviets have expanded and modernized their ground forces and simultaneously transformed their frontal

aviation from a defensive force into a potent offensive arm. The quantitative expansion of the Soviet forces has been accompanied by a sweeping modernization of those forces designed to increase "the capacity to wage successfully the kind of blitzkrieg called for in Soviet doctrine."³

The total effect of these Soviet expansion and modernization efforts has been to confront NATO forces in the Central Region with five Soviet armies that can move directly to the attack without reinforcement. These armies, it has been estimated, could sustain multiple axes of advance at rates of 20-40 kilometers a day.

To NATO this means trouble since, as the Nunn-Bartlett report points out, the Soviet posture changes are specifically designed to exploit the political and military weaknesses of NATO's current strategy of flexible response.⁴ This strategy calls for the development of sufficient capability at the strategic nuclear, theater nuclear, and conventional levels to deter and, if necessary, defeat Soviet aggression.

A basic underlying tenet of flexible response is the concept of forward defense—the notion that a conventional defense must be established as far forward as possible along the NATO-Pact border. Obviously, the need for a forward defense and the dependence of the defensive battle on overseas reinforcements are the areas of vulnerability threatened by the Soviets' newly developed capability to launch a major assault with little prior warning.

The Nunn-Bartlett Prescription

What should we do to counter the menace of the high-speed Russian Bear? The Nunn-Bartlett report proposes a series of steps to be taken. First, on the political side, the senators recommend that a

conference of key NATO military and political leaders be convened to develop "ways to speed up the political decisions required to meet unexpected Warsaw Pact mobilization."⁵

On the military side, a list of eight essential tasks is presented. First, say the authors, "current U.S. force planning assumptions as to the prior warning time and likely duration of a future conflict in Europe must be revised."⁶

Second, "current postural deficiencies which threatened NATO's ability to conduct a successful forward defense should be corrected with the aim of permitting the alliance to wage the main defense battle close to the inter-German border."⁷ Specifically, the "covering" forces facing potential Pact invasion points "should be strengthened to the degree necessary to *compel the Pact forces to deploy for major battle before they enter NATO territory.*"⁸ To accomplish this strengthening, NATO forces currently deployed in the Central Region must be shifted to the east and north, with some units currently deployed along or west of the Rhine being moved forward to assigned wartime positions.

Third, according to the report, NATO forces must be provided with more artillery, antitank, and air defense systems. Fourth, ammunition stocks must be increased, with priority on increasing artillery allocations from 55 up to 350 rounds per tube per day.⁹

In addition to these first four steps, the combat readiness of deployed forces must be improved. Air defense must also be improved by better integration of existing assets. The NATO command and control system must be upgraded, particularly by the addition of the Airborne Warning and Control System. The capability for rapid transfer of U.S. and British reinforcements to the Central Region must be

enhanced, and finally, "interoperability of arms and equipment within the Alliance must be relentlessly pursued."¹⁰

Problems with the Prescription

The political and military measures proposed in the Nunn-Bartlett report, particularly the redeployment of forces to eastern and northern Germany, represent a continuing endorsement of the NATO forward defense concept. In fact, it can be argued that the prescribed measures represent proposals for a strategy for NATO similar to that proposed by General Hollingsworth for the defense of South Korea. Regarding Korea, General Hollingsworth insisted that the notion of trading space for time be discarded in favor of blunting a North Korean invasion with firepower and then carrying the battle into North Korean territory.

Can the same type of "positive thinking" applicable to the narrow confines of the Korean peninsula be transferred to Europe? Can a Soviet thrust be blunted at the border by strengthened NATO "covering" forces and then cut off by a drive eastward to the Elbe?

Maybe so! But there are some factors that perhaps should be considered before we start a redeployment of NATO forces to the eastern and northern regions of Germany. For example, even in the confines of Western Europe, the Soviets retain strategic flexibility that may make forward eastern-oriented deployments dangerous.

Suppose, for example, that the Soviets have their own editions of Liddell Hart and will forswear the "direct approach" to NATO's demise across the North German plain in the direction of Antwerp. Instead, that they opt for the "indirect approach" and search for the "joint" in NATO's

defenses. Where might they find it? The answer may well vary with the circumstances of the time, but France might be a good place to look in view of her tentative relations with the alliance.

Consider the following scenario. The Soviets, intent on an attack on the alliance, provoke or stage an incident involving the French government. In a secret ultimatum, they demand passage for their forces across southern Germany and maintain that they seek only redress from the French. The NATO allies, seeing an obvious ploy, choose to resist. The Soviets on crossing the German border attempt a psychological dislocation of the alliance by playing on traditional Franco-German enmity and loudly propagandizing their basic friendly intent toward the Germans.

Such a maneuver may seem far-fetched, but so did the Berlin-Moscow Pact prior to World War II. It does have the distinct advantage, as did Sherman's drive to the sea, of continuously threatening multiple objectives. Will the Soviets turn north or continue west against the French border? Once inside France, will they drive toward Paris or press on, à la Guderian, to the sea and the Low Countries to sever NATO's sea lines of communication? Far-fetched? Perhaps, but it is 500 miles from Switzerland to the North Sea, and the Soviets do have a degree of flexibility that would place a premium on NATO's maintenance of centrally located, highly mobile strike forces.

Even if the "direct approach" across the north German plain is considered infinitely more likely than the foregoing scenario, both the Nunn-Bartlett forward deployment prescription and the concept of forward defense require examination.

Consider the following factors.

- First, Soviet numerical superiority

in the Central Region is universally granted.

- Second, these numerically superior forces have been specifically trained to pursue a blitzkrieg doctrine of the kind postulated in Fuller's Plan 1919 and later perfected by the German Wehrmacht. The emphasis is not on gaining or holding terrain, or even on the destruction of the enemy force. The objective is instead to strike deep into the enemy's rear to demoralize, dislocate, and hopefully defeat him without even deploying for a major encounter.

- Third, if the Nunn-Bartlett thesis is correct, the Soviets will be able to come very close to complete strategic surprise, launching their assault with little warning. Certainly they will achieve a considerable degree of tactical surprise, massing overwhelming force at points of their choosing in order to force initial breakthroughs.

- Finally, keep in mind that the north German plain is no longer a vast agricultural openness. Urban areas such as Hamburg, Bremen, and Göttingen are constantly expanding. These cities will be the logical target of any Soviet breakthrough. Their occupation has political value, and it denies NATO the nuclear option. These cities, also, constitute gaps in the NATO defense. They are not considered acceptable battlegrounds by the alliance, and training for urban warfare is therefore minimal.¹¹

WHAT DOES all this add up to? In sum it is an extremely high probability of a Soviet breakthrough along the inter-German border. The effect of deploying troops too far forward in the face of such a probability is simply to increase the size of the force encircled by the Soviet armored pincers. The Soviets are quite familiar

with the phenomenon. The creation of great pockets on the Eastern Front gave them an object lesson in the error of deploying too far forward and then committing reserves in an attempt to hold as much territory as possible.¹²

The Nunn-Bartlett report would perhaps have done more service to the alliance if it had placed greater emphasis on the creation of a mobile defense in depth. At one point, the report says that "Corrective action in this regard should not be misinterpreted as a call for the creation of a Maginot Line along the inter-German border at the expense of powerful active forces withheld in the rear as a flexible reserve." But, the same paragraph continues "It is a call, however, for a shift in the weight of NATO's combat firepower deployed in the Central Region to the east and to the north."¹³

A shift in emphasis to the creation of a series of strong points supported by artillery and mechanized counterattack forces might be more appropriate. The very existence of such strong points serves as a deterrent to execution of a classical blitzkrieg thrust. The enemy knows that he must reduce them or run the risk of counterthrusts that will cut his communications and isolate his armored spearhead. The alliance should prepare such strong points and ensure the effectiveness of their counterattack forces by replacing their "leg" infantry divisions with mechanized infantry as rapidly as possible. These forces should be provided with a mechanized combat infantry vehicle and supported by self-propelled artillery as well as armored launching vehicles for antitank missiles such as the tube-launched, optically-tracked, wire-guided (TOW), two-stage missile.

On the strategic level, instead of endorsing the current NATO concept of forward defense and attempting to maintain a

tactical nuclear option that probably does not exist anyway, Senators Nunn and Bartlett should have stressed the ugly but likely prospect of a Soviet breakthrough and penetration. The truth is that the Soviets have everything going for them in this regard. They have the numbers, the equipment, and the doctrine. What's more, they will almost certainly have the initiative. The allied game has to be one of holding the shoulders of the breakthrough and then isolating the Soviet spearheads

with fast-moving, mechanized counter-attacks.

In short, the facts presented in the Nunn-Bartlett report should give rise to an examination of both the strategy and deployment of NATO forces. But these same facts also support alternatives other than those prescribed by the senators, and these, too, should be considered before a definitive course is selected for the NATO alliance.

Alexandria, Virginia

Notes

1. Senator Sam Nunn and Senator Dewey F. Bartlett, *NATO and the New Soviet Threat* (Washington: U.S. Government Printing Office, 1977).

2. *Ibid.*, p. 16.

3. *Ibid.*, p. 4.

4. *Ibid.*, p. 7.

5. *Ibid.*, p. 19.

6. *Ibid.*, p. 18.

7. *Ibid.*, p. 19.

8. *Ibid.* Emphasis added.

9. F. Clifton Berry, Jr., "NATO Readiness—Frank Talk at Last," *Armed Forces Journal International*, March 1977, p. 24.

10. Nunn and Bartlett, p. 20.

11. Major A. E. Hemesley, "NATO Defensive Concepts," *Armor*, November-December 1976, p. 26.

12. Charles Messenger, *The Blitzkrieg Story* (New York: Charles Scribner's Sons, 1976), p. 189.

13. Nunn and Bartlett, p. 19.

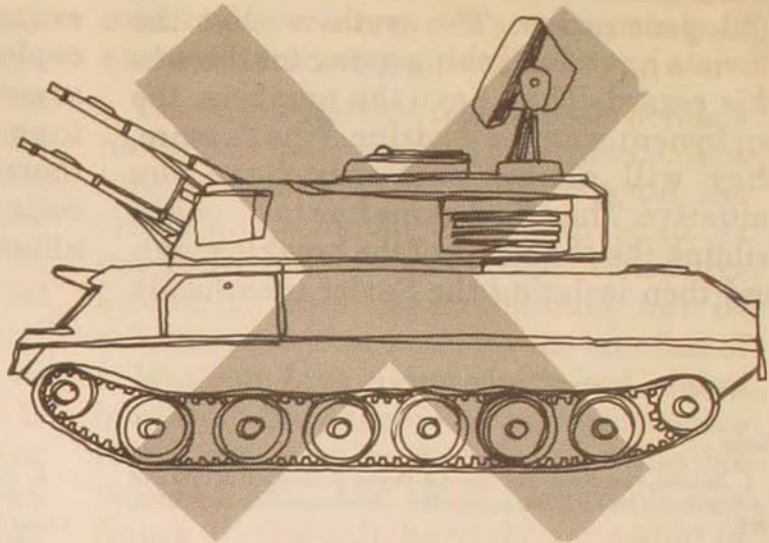
What a society gets in its armed services is exactly what it asks for, no more and no less. What it asks for tends to be a reflection of what it is. When a country looks at its fighting forces it is looking in a mirror: if the mirror is a true one the face that it sees there will be its own.

LIEUTENANT GENERAL SIR JOHN WINTHROP HACKETT
"The Profession of Arms"

DEFENSE SUPPRESSION

*mission
or tactic?*

WING COMMANDER
HANS F. ROSER, RAAF



THE Middle East War in October 1973 caused a military controversy that continues today unabated. The enormous losses suffered by Israeli armoured and air force units at the hands of Arab soldiers equipped with missiles indicated to many military experts that the advantage of war had conclusively shifted from offensive to defensive forces.¹ Particularly, the lessons drawn from those battles seemed to challenge the effectiveness of tactical air power over the battlefield.² With the superbly demonstrated effectiveness of modern defensive weapons, argued the pundits, the United States Air Force will need to reconsider its whole concept of air superiority and its ability to counter the threat of modern battlefield defenses.³ In light of the lessons learned from the Yom Kippur War, defense suppression must now be elevated to rank with air superiority, interdiction, and close air support as one of the basic missions of tactical air forces. The acceptance of the

short war philosophy influenced by the events of Yom Kippur has kept this problem at the forefront of military debate.⁴ This article discusses the validity of defense suppression as a basic mission for tactical air power.

Air Force missions

The principles for the employment of air power were developed and proved through two world wars and other conflicts. The intrinsic nature of air power allows its user to concentrate forces rapidly and exploit the element of surprise. Above all, aerospace forces possess the greatest capability to seize the initiative and strike at an enemy at any desired place and location.⁵ The basic missions of tactical air forces were developed from these capabilities. Within this framework these missions are defined as:

- Counter air operations to gain air superiority,

- Air interdiction to seal off the battlefield,
- Close air support involving the integration of air forces with the fire and maneuver of ground forces,
- Air defense,
- Air surveillance and reconnaissance,
- Airlift, and
- Special operations.⁶

Their successful execution depends on combat support operations, including aerial refueling and electronic countermeasures.⁷

The first four missions involve offensive operations by tactical aircraft. By definition, each of these tasks involves attack on an enemy's offensive capability. For example, counter air operations are accomplished by destroying, or at least neutralizing, an enemy's air offensive and defensive capability.⁸ If the freedom of action of friendly air forces is challenged by enemy air defenses, suppression of the latter becomes part of the counter air battle. This means neutralization of enemy anti-aircraft gun and missile defenses and the destruction of his radar and communications network. In similar manner, air interdiction operations aim to reduce an enemy's capability to mount an offensive, to reduce his freedom of action, and to prevent counteraction against concentrations of friendly ground forces.⁹ Similar arguments can be applied to close air support and indeed to the concept of the air defense mission. In each case the aim is the neutralization of an offensive capability that a prospective enemy may bring to bear on our own forces. Concomitantly, each of these missions has in the past involved defense suppression ranging from the suppression of area defenses in the counter air battle to neutralizing the defensive reaction of enemy troops during

close air support operations. Consequently, two factors common to all basic offensive missions of tactical air power are its direction at an enemy's offensive capability and the intrinsic nature of defense suppression. This view is presently under challenge, and to assess the validity of the challenge requires an examination of the growth of battlefield defenses.

historical perspectives

The employment of tactical air power was largely developed and refined during World War II. The use of tactical air forces in support of ground forces was the basic task of the Luftwaffe. On the Allied side, the doctrine of tactical air operations was developed initially in the fighting over the North African desert. The concept of air superiority over the battlefield allowed the side that possessed it to use its armoured forces with impunity. With time, mobile defenses mounting cannons and machine guns on half tracks or tank chassis were developed by both sides. Fixed installations were ringed with anti-aircraft guns; German tactical airfields in France, for instance, featured redoubtable flak towers.

The tactics and techniques of defense suppression developed during World War II were applied in Korea and, with little alteration, in the several conventional conflicts on the Indian subcontinent. The wars between India and Pakistan in 1965 and 1971 were fought largely with conventional air and armoured forces. The latter war provided a classic example of the importance of air defense; at Longewala, Indian forces destroyed 51 tanks, 37 of them with the use of aircraft, when Pakistan's armour was deployed without protection.¹⁰ The Vietnam War did not pose a threat to air power although surface-to-air missiles were deployed. It

showed that SAM could be countered by a combination of electronic countermeasures (ECM) and carefully developed tactics. One sign for the future was the limited deployment of the SA-7 Strela, hand-held missile at the end of the war.

Over the past decade, the major arena of aerial conflict, involving large-scale tactical employment of air power, has been the Middle East. Arab and Israeli doctrine and tactics have been studied by virtually all nations. The conflict of 1967 showed the Israeli Air Force supreme in all areas and brilliantly employed to counter the Arab threat both in the air and on the ground.¹¹ In all cases, Israeli armour operated under the protective umbrella of tactical air power. Yet, defense suppression proved essential in the Golan Heights in 1967, where some 200 Syrian anti-aircraft guns had to be neutralized before the Israeli Air Force could operate with impunity.¹² Although the Arabs possessed SAM, this weapon did not play any significant part in the war.

The same cannot be said for the Yom Kippur conflict. This war witnessed not only a change in Arab strategy but also the employment of a new family of weapons; the battlefield or tactical guided missile.¹³ These missiles, backed by radar-controlled anti-aircraft guns, challenged the air superiority that the Israeli Air Force had traditionally enjoyed.¹⁴ Not only did they inflict heavy losses in the Israeli Air Force but they denied tactical air power the freedom of battlefield interdiction, at least in the Sinai. In addition, the Air Force required the assistance of ground forces in the suppression of missile air defenses on the Suez Canal.¹⁵ On the Egyptian side, deployment of troops and armour had been carefully planned to proceed under the air defense umbrella of the SA-6 and portable SA-7 missile systems.¹⁶ These systems were backed by the conventional S-60 light

anti-aircraft gun and the quadruple barreled ZSU-23-4 cannons of Vietnam experience. The lesson of this war is significant: the Israeli Air Force was denied air superiority, not by the Arab Air Forces but by enemy anti-aircraft ground defenses. This experience provided a new perspective on the efficacy of tactical air forces.

the new technology missile

At the beginning of the 1973 war, both Egypt and Syria had highly integrated air defense systems, comprising SA-2 and SA-3 launchers supplemented by anti-aircraft guns from 20mm to 100mm calibre. These and the MiG-21 fighter defenses were coordinated through a warning and command network. On the battlefield the air defense system was extended through SA-6 and SA-7 deployment while the new Sagger missiles proved an excellent anti-armour weapon. Clearly, the development of both static and mobile air defense systems had developed apace during the previous decade, and the implications for tactical air forces on the European battlefield are not too difficult to surmise. Today the ground-based anti-aircraft defenses deployed by a Soviet army group in eastern Europe number more than 400 anti-aircraft guns of 23mm and 57mm calibre and over 100 SA-2, SA-4, SA-6 missile launchers,¹⁷ a formidable array supplemented by organic weapons and theatre air power. Penetration of these defenses is a far cry from the experiences of Vietnam. The counter air and interdiction battles assume a new dimension under the impact of modern technology.

This advent was predicted widely twenty years ago. A British defence white paper in the mid-1950s postulated the demise of the manned fighter and the strategic bomber, overtaken by the guided missile. The Lightning was to be the Royal

Air Force's last manned fighter, and confidence in missile technology was so great that both the Lightning and the Phantom were designed without an internal cannon.

Today, the prophesy of twenty years ago appears to be nearing reality. The rapid growth of missiles of all kinds over the past decade has created a tremendous technological impact.¹⁸ This impact has extended from surface-to-air missiles to antishipping weapons and precision-guided munitions. The Soviet Union has made remarkable progress in all these fields, and their present development and production are highly advanced. The technological surprise achieved by missile employment in the Yom Kippur War almost proved the undoing of the Israeli Air Force. However, their success, even in the Sinai, was temporary, indicating that they could be counteracted.

In an address to the Joint Tactical Missile Conference of the ADPA at Costa Mesa, California, Dr. Malcolm Currie (then Director of Defense Research and Engineering) described the development of tactical missiles.¹⁹ He postulated that developments in all areas were proceeding at a pace that would soon exert an impact on traditional military doctrine. Although the Soviet Union is considerably advanced in the development and production of all types of tactical missiles, American research and development of precision-guided munitions offered an excellent opportunity to counteract the newly deployed Soviet weaponry.

the new logic

The new dimension encountered in battlefield defenses, based on the demonstrable effectiveness of tactical missiles, makes a tremendous impact on air doctrine and the employment of tactical air power. In broad

terms, the new generation of tactical missiles has concentrated ever more firepower and greater accuracy in the hands of ground forces. These missiles are relatively inexpensive to produce in mass, certainly when compared to modern attack aircraft and crews, and they are achieving ever higher single shot kill probabilities.²⁰ Without doubt, the technological surprise achieved by the Arabs in 1973 greatly reduced the effectiveness of the Israeli Air Force, at least during the initial stages of the conflict, and caused heavy aircraft losses.²¹ The war was concluded before effective countermeasures were fully developed and applied.

Obviously, the challenge posed by these new weapons will require a response that includes not only the products of the new technology but involves a basic review of air power doctrine. The availability of precision-guided munitions, which possess accuracies of several orders of magnitude over the old weapons, is relatively simple and inexpensive to achieve; that these munitions can be launched from safe positions places a new perspective on battlefield interdiction.

On even a cursory examination of the problem, the suggestion to elevate defense suppression to one of the basic missions of tactical air forces is too glib an answer. It sidesteps the real problem that is the impact of the new technology. The tactical missile may, in the long run, make an impact on modern warfare comparable to the development of nuclear power; such an impact involves in the very least a total reassessment of all the basic missions of tactical air power.

Air War College

Notes

1 General A. Merglen, "Military Lessons of the October War," *Adelphi Paper No. 114* (London: International Institute for Strategic Studies, 1975), p. 27.

2 Major Donald J. Alberts, "A Call from the Wilderness," *Air*

University Review, November-December 1976, p. 36.

3. *Ibid.*, pp. 36, 37.

4. General James H. Polk, USA (Ret.), "The New Short War Strategy," *Strategic Review*, Summer 1975, pp. 52-56.

5. AFM 1-1, *USAF Basic Doctrine*, 15 January 1975, ch. 2, para 2-3(b).

6. *Ibid.*, ch. 3, para 3-5(b h).

7. *Ibid.*, ch. 3, para 3-5.

8. *Ibid.*, ch. 3, para 3-5(b).

9. *Ibid.*, ch. 3, para 3-5(c).

10. K. R. Singh, "Ground Attack vs Anti Aircraft Defense," *India Quarterly*, April-June 1975

11. Alberts, p. 38.

12. *Ibid.*, p. 39.

13. Singh, p. 343.

14. *Ibid.*

15. Alberts, p. 39.

16. General Chaim Herzog, "The Middle East War, 1973," *RUSI Journal*, March 1975, p. 15.

17. Elizabeth Monroe and A. H. Farrer-Hockley, "The Arab Israel War October 1973, Background and Events," *Adelphi Paper No. 111* (London: International Institute for Strategic Studies, Winter 1974-75), pp. 14-17.

18. R. Meller, "Europe's New Generation of Combat Aircraft," *International Defense Review*, April 1975, pp. 175-86.

19. Malcolm R. Currie, "Future Tactical Missiles," *National Defense*, July-August 1976, pp. 32-35. Dr. Currie suggested that the single dominant threat in weapon development today was the increasing accuracy and destructive capacity of tactical missiles.

20. *Ibid.*, p. 33.

21. John H. Morse, "Advanced Technology in Modern War," *RUSI Journal* (London), June 1976, p. 11.

A Footnote to Aerospace History 27 April 1822

Monticello April 27-22

Sir

Your letter of the 15th is received, but Age has long since obliged me to withhold my mind from Speculations of the difficulty of those of your letter, that their are means of artificial buoyancy by which man may be supported in the Air, the Balloon has proved, and that means of dirrecting it may be discovered is against no law of Nature and is therefore possible as in the case of Birds, but to do this by macanacal means alone in a medium so rare and unassisting as air must have the aid of some principal not yet generally known. however I can realy give no oppinion understandingly on the subject and with more good will than Confidence wish you success

(signed)

Th Jefferson

Wm D B Lee

(Reprinted from *TIG Brief*, Volume XXX, Number 10, 12 May 1978, which preserves Mr. Jefferson's eighteenth-century orthography)

THE EVER-CHANGING FLEET

William G. Holder



In these days of shrinking defense budgets, the Air Force fleet is continually being modified, diversified, and improved to stretch its lifetime and accomplish undesigned-for jobs.

THE cost of new aircraft today is astronomical. Thus, it is not surprising that a dramatic modernization of the Air Force inventory is under way to utilize fully the potential of existing aircraft. Several aircraft have been structurally modified to extend their already lengthy careers. Others have been modified to carry new weapons on new weapon mounts.

There is also an interesting proposal being considered: the possibility of stretching the fuselage of an existing transport, greatly increasing its hauling capability. Along the same lines, there has been some consideration given to modifying commercial transports so they can be converted to military cargo hauling in an emergency. Basically, the evolving inventory can be characterized by three distinct changes: in the wings, weapons, and fuselages. The changes and modifications are as different from one another as night and day, but they all have the same intent—get as much as possible for as long as possible.

wing modifications

Wings do many things. Their first purpose, of course, is to provide aerodynamic lift to get the aircraft off the ground; but they also carry heavy engines, bombs, and fuel pods.

Still others carry undesigned-for external ordnance. One other common thing these all-important wings do is get tired and fatigued, and many times they develop dangerous cracks. Sometimes it happens much sooner than predicted. The Air Force has examples of each type. The first is the venerable 15- to 20-year-old B-52 and, surprisingly, the relatively new C-5A.

The oldest of the giant eight-engined bombers still flying, the B-52D, was one of the most numerous of the giant Stratofortresses built. Extensively used in Vietnam, many of these late 1950s versions were sporting well over 10,000 flight hours although they were originally designed for only half that number. In 1971, the planned phase-out year for the D-birds, the Air Force decided that the aircraft would be needed much longer. But something had to be done—and in a hurry, since the aircraft were showing their age, large structural cracks appearing with increasing regularity. So it was decided that a portion of the B-52D fleet would get a sizable face lift.

Starting in the mid-1970s, 80 of the D-birds were extensively modified by Boeing, the last modifications completed in February of 1977. These modifications entailed the scrapping of about 15 tons of parts from each aircraft. Then new leading edges and stiffeners were provided, wings were partially reskinned, wing pylons modified, and the fuselage partly reskinned at the wing root. The program, called Pacer Plank, resulted in a price tag of \$2.6 million per copy—a large percent of the original cost of the aircraft when it was built two decades earlier.

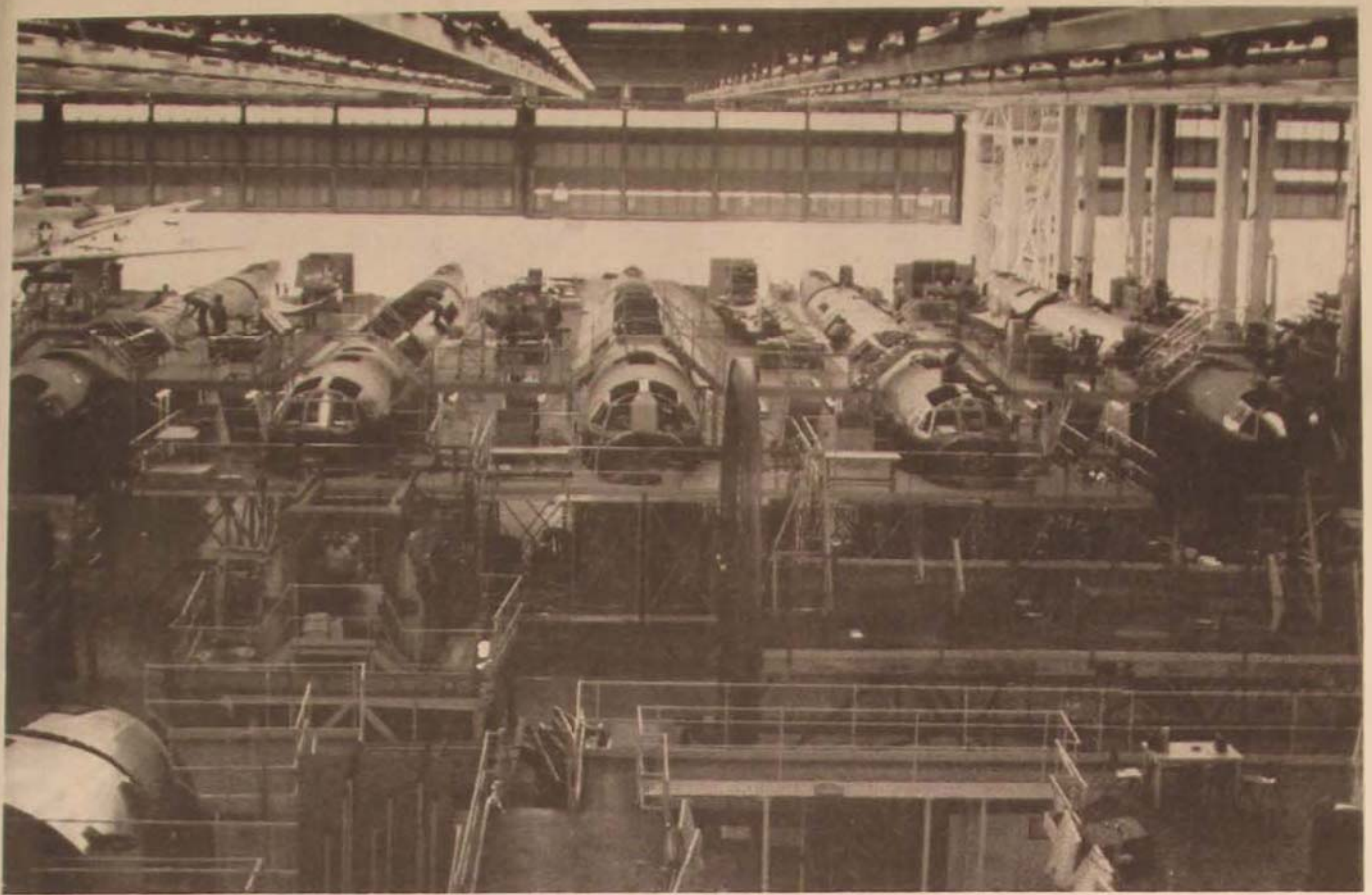
In the modification process, Boeing removed the wings from the fuselage and worked on the fuselage and wings separately. Following modification, wings and fuselage were rejoined, tested, and sent on their way.

A surprising phenomenon resulted from the Pacer Plank modifications. The new wing skin is much cleaner aerodynamically than the skin it replaced, resulting in considerably less drag. Even though the modified plane weighs about 3400 pounds more, its cruise range has been increased by three percent. After three decades, this aircraft is getting older, but she is also getting better.

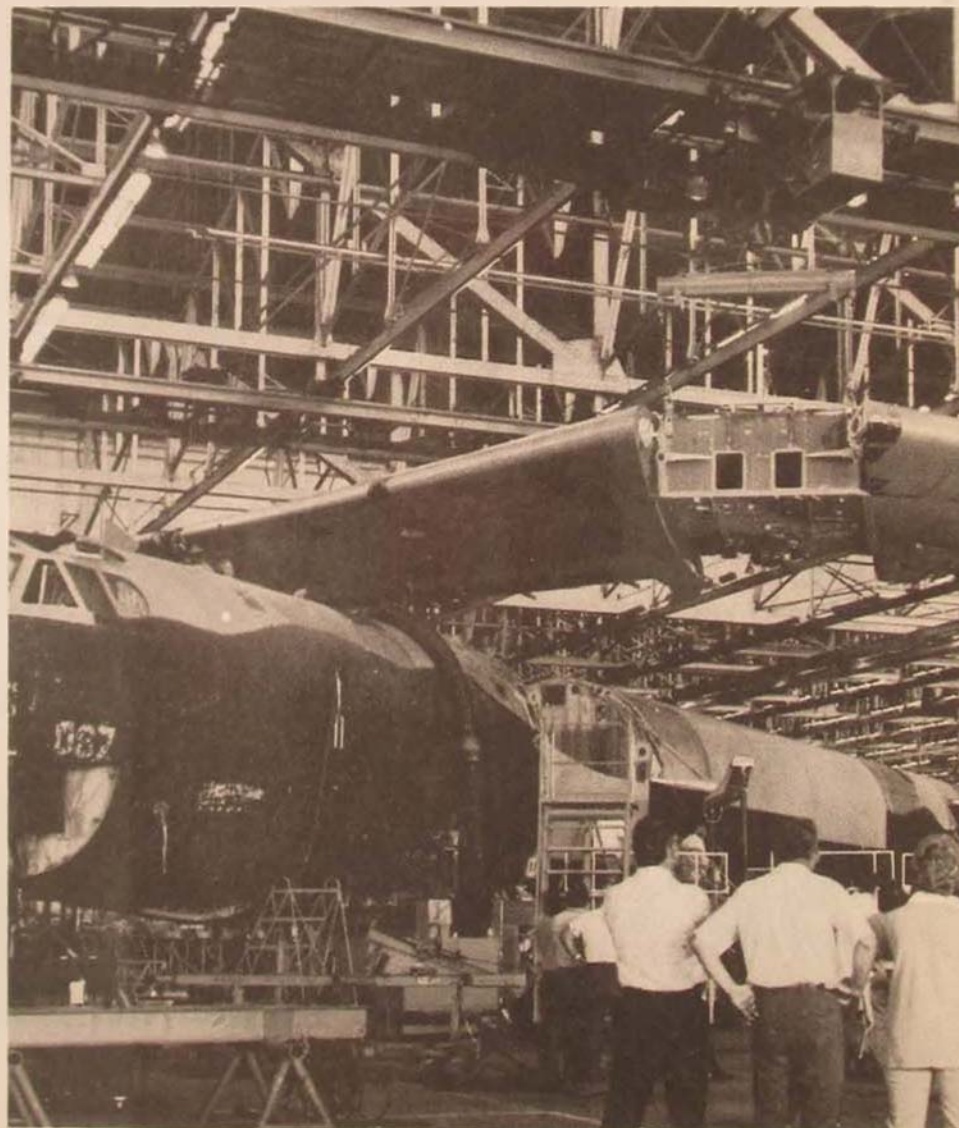
The later G and H models are also undergoing structural changes, although not as extensive as those on the B-52D.* Not to be forgotten are the 615 KC-135 tankers that are also undergoing wing modifications to stretch their operational lifetime into the 1990s.

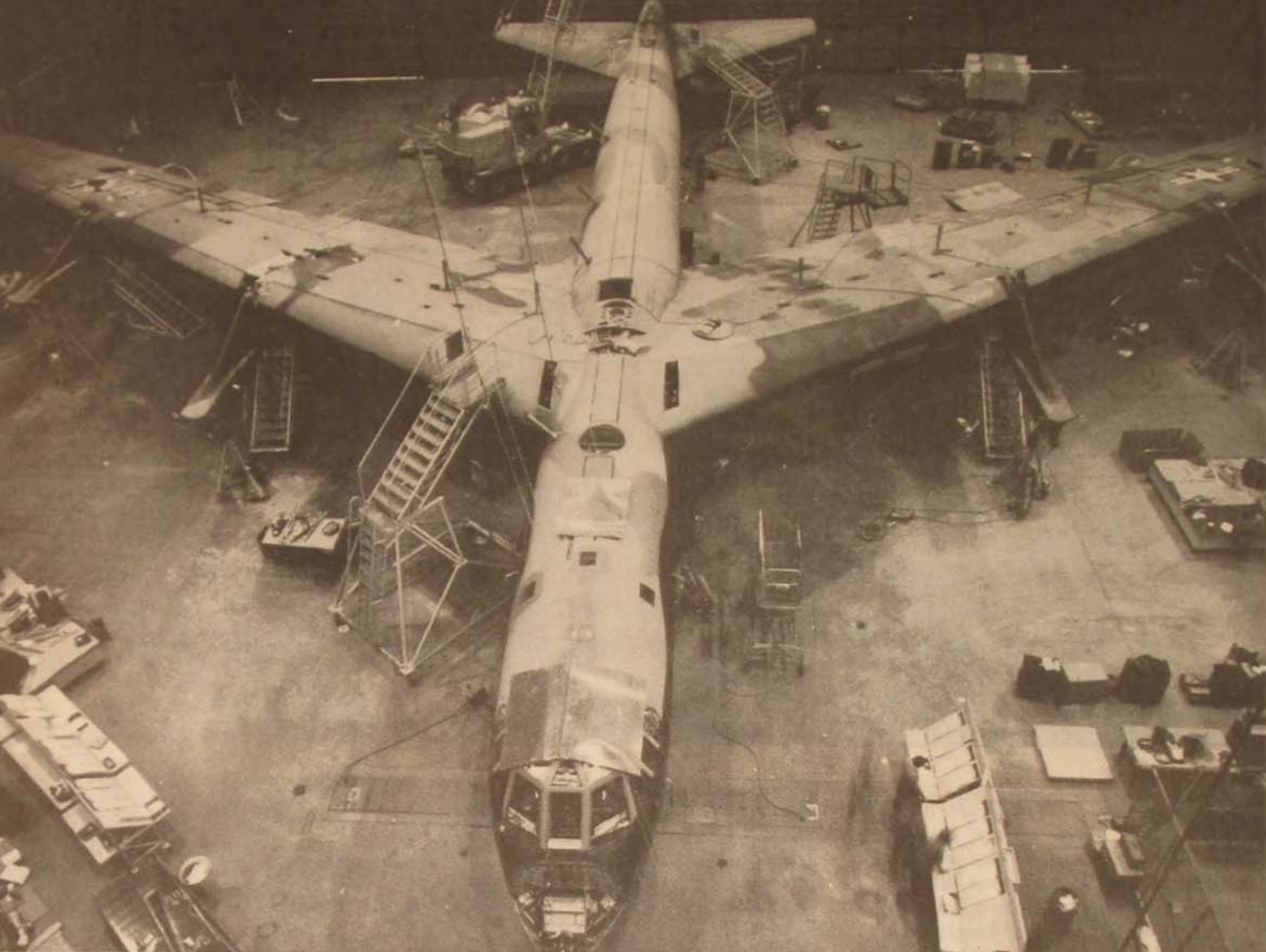
But wing problems certainly have not been restricted to

*USAF is considering the use of winglets on its Boeing B-52Gs. The modification would not only enhance aerodynamic performance of the bomber, earmarked as the air-launched cruise missile carrier, but also would provide distinctive markings — of those B-52G models used for cruise missiles and thus avoid having all B-52s counted as potential carriers of this weapon. (*Aviation Week & Space Technology*, March 6, 1978, p. 9)



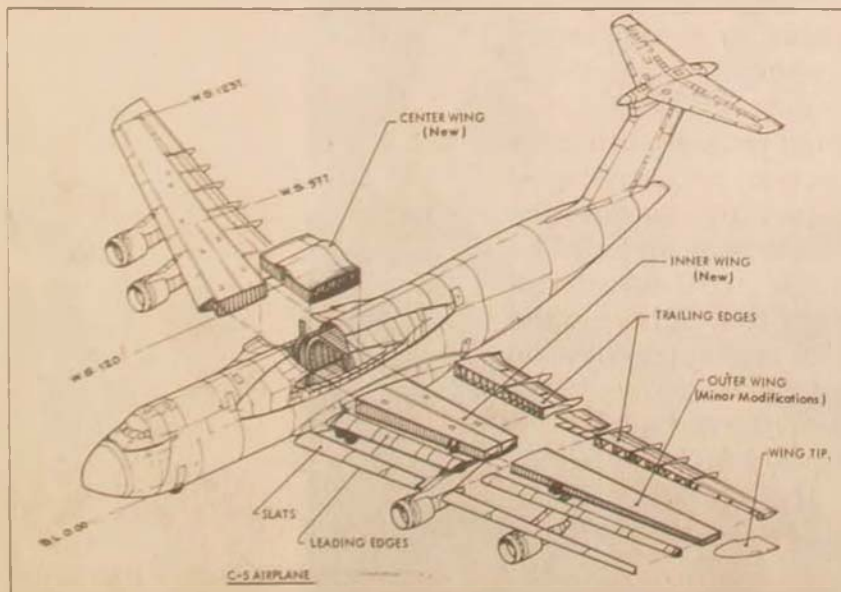
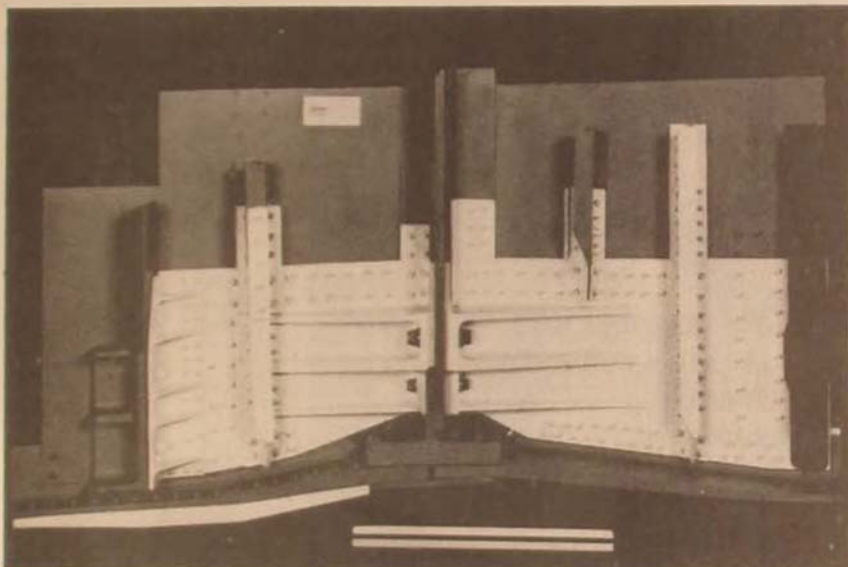
The eight-engined B-52 was showing its age, particularly in the wings where fatigue had led to dangerous cracks. Boeing undertook the modification of 80 of the tiring bombers, and worked on the fuselages (above and below) while the wings were being re-structured. . . . Other phases of the B-52D are shown overleaf. Following modification, the wings and fuselage were rejoined (right).





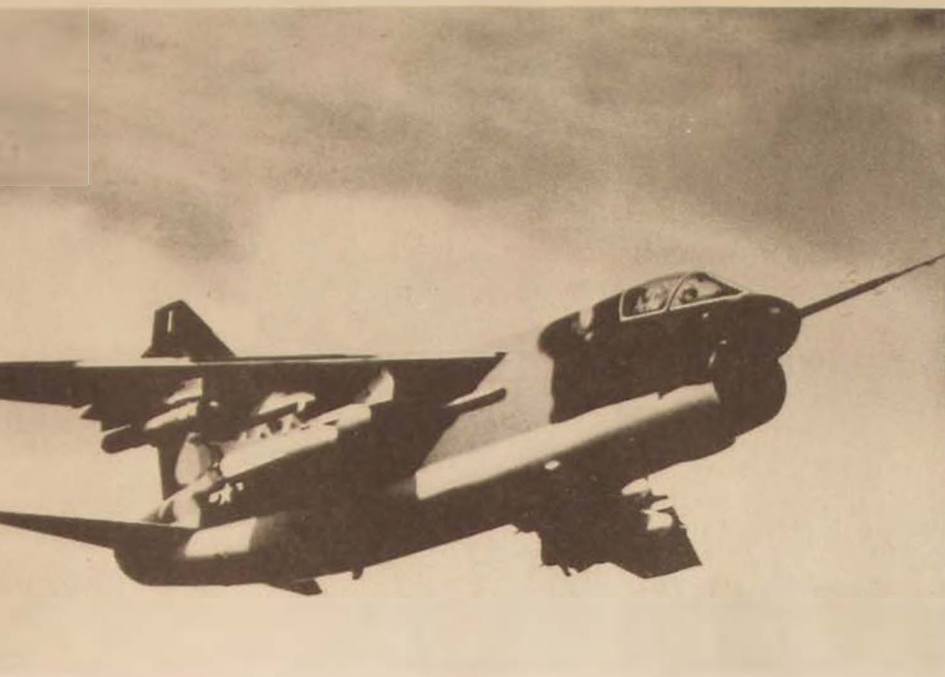
20-year-old airplanes. The relatively new C-5 transport fleet is also having its problems. The first indication of C-5 wing structural deficiencies occurred in July 1969, when the wing root failed in static test at 126 percent of design limit load. Then, in January 1970, cracks in the rear beam cap of the third C-5A built were discovered.

The Air Force Scientific Advisory Board (SAB) was convened in February 1970, to review the C-5 structural failures and plan corrective actions. However, by this time, the fortieth airplane was in final assembly, and major wing parts were already machined for the sixtieth article. It was clearly impractical to incorporate in production a major redesign for improved fatigue life.



C-5 Modifications

Wing distress is not restricted to old birds. The relatively young C-5 transport is having wing problems, too. Thus, strengthening of the C-5 wing is being accelerated. In the full-scale model (above), aluminum structural components (white) are added to the wing area where a crack occurred on a nonflying static test airplane and a structural flight test C-5. A 12-inch ruler gives size comparison. . . . The artist's diagram (left) indicates parts that are being replaced.



Modifications of the A-7D wing, undertaken by the Vought Corporation, include a maneuvering flap to improve turn performance and angle-of-attack flying qualities at low and medium speeds, and an outer wing of graphite and boron.

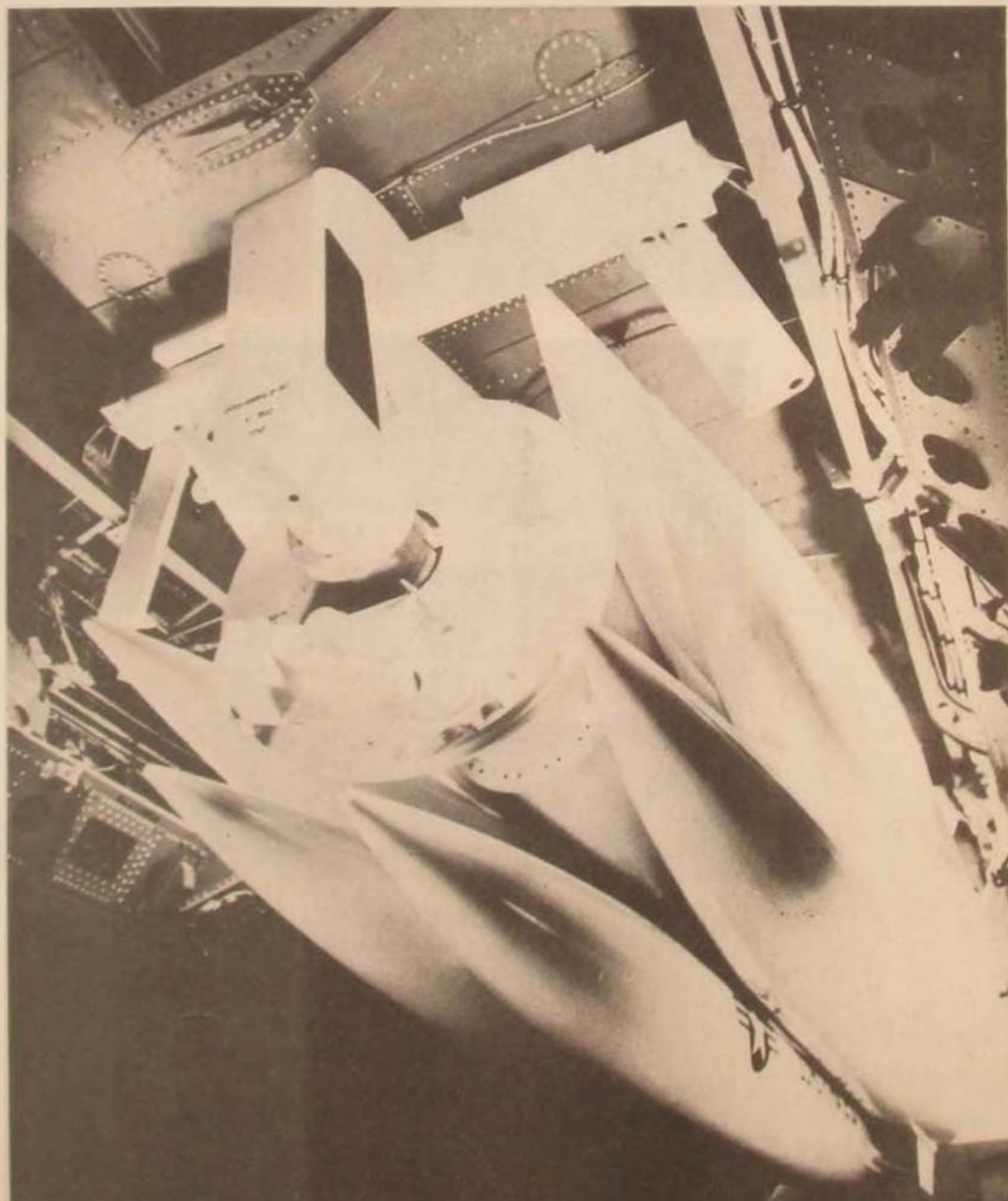
So, in 1975, the Air Force awarded a \$28,454,000 contract to Lockheed for design of a modification to the C-5A wing. The wing modification involved redesign of the center, inner, and outer wing boxes. The existing leading and trailing edge structures, as well as all wing subsystems, were retained. It was hoped that these changes, coupled with the use of an improved wing material with better fracture toughness characteristics, would ensure a long life wing. The design contract awarded in 1975 was the first phase in a four-phase program and covered the necessary engineering analyses and tests to define the modification details.

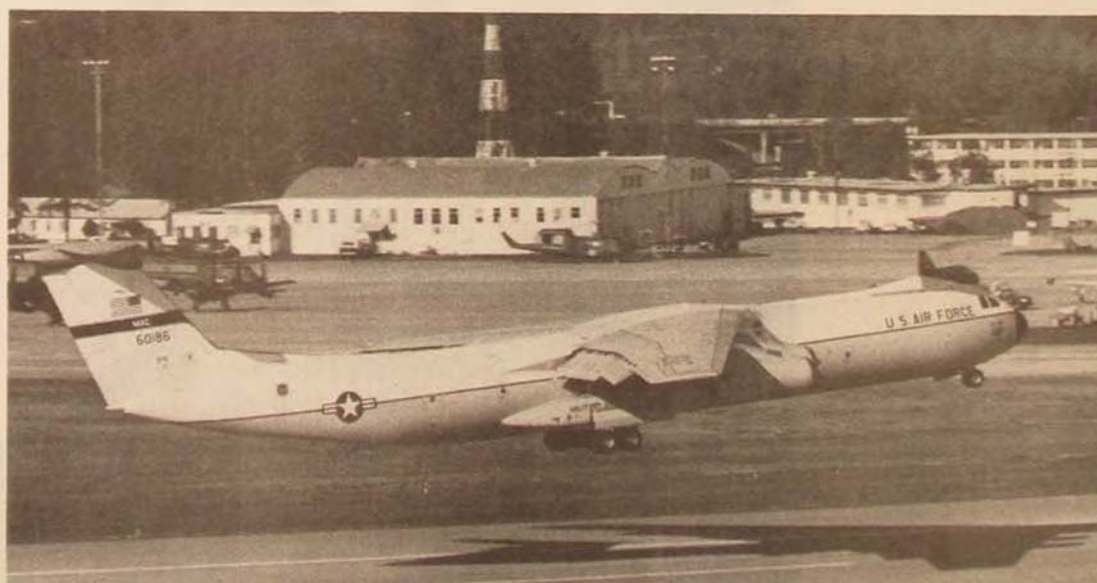
The second phase of the modification program called for fabrication of two kits of new wing sections and associated hardware. A C-5 fuselage (ground test article) outfitted with one "kit" would receive extensive fatigue testing. The second wing kit will be installed on a selected C-5A aircraft and flight tested at the Air Force Flight Test Center in the fall of 1980. If approved, Phase III, the production of wing modification kits, would be initiated in early 1980. Installation of the wing modification on the remaining C-5 force (76 aircraft) would begin in early 1982 and would constitute Phase IV of the program. The aircraft would be modified at a rate of 1.5 per month, with a downtime of eight months.

As part of Phase IV, an Active Lift Distribution Control



The electro-optical viewing system (EVS) involves structural changes to late model B-52s and the addition of costly hardware. The EVS consists of a television system and a forward looking infrared (FLIR) imaging system. Contract personnel (left) inspect a B-52 EVS FLIR turret installation. . . . Short-range attack missiles (SRAM) are launched from external pylons and from rotary launchers within the bomb bay (below).





The stretched C-141 StarLifter prototype (top, foreground), 23.3 feet longer than the standard C-141 alongside, was rolled out at Lockheed-Georgia on 8 January 1977. This expansion increases the cargo-carrying capacity by about 30 percent. . . . The YC-141B stretched StarLifter (bottom) takes off from Dobbins AFB, Georgia, on its first flight, 24 March 1977, a month ahead of schedule and \$4 million below the stated budget.

System will be reinstalled on the C-5 wing as a fuel conservation measure. It is estimated that this system, which automatically reduces wing loads in flight, will save six million gallons of fuel per aircraft over a period of 30 years, based on current usage rates.

Also, currently being proposed is a modification to the A-7D wing. The Vought Corporation (a subsidiary of the LTV Corporation) has a two-aircraft test program to test the feasibility of the concept which, unlike the previous examples, is not motivated by structural deficiencies. The concept consists of a maneuvering flap that has been tested as part of a continuing program to improve the close air support and search and rescue capabilities of the A-7D. It offers an effective means of increasing turn performance and high angle of attack flying qualities at low and medium speeds.

The maneuvering flap concept involves programming leading and trailing edge flaps to extend or retract automatically to configure the wing for best aerodynamic performance during widely varying maneuver conditions. Mechanizing the maneuvering flap on the A-7D is rather easy since it already has the essential element—a well-designed flap system. Installing a control box activated by the flap position handle to automatically position the flaps in the maneuver mode completes the basic package.

Development tests to date indicate that the maneuvering flap will substantially improve maneuvering performance of the A-7D at low and intermediate speeds. Also, the airplane can be flown to a five-degree-higher angle of attack without stall departure. Sustained turns with maneuvering flaps are buffet-free up to maximum g. In fact, sustained turn capability with the flap is greater than the instantaneous turn capability of this basic airplane over most of the flap flight envelope. The concept will be incorporated by the Air Force in their A-7s.

Vought is also examining the effects of a new outer A-7D wing constructed of graphite and boron. The advantages of these composites, depending on the structure to be replaced, are lighter weight and potentially lower costs as compared to the riveted aluminum structures that almost all the world's aircraft rely on today. The lighter weight can provide longer range and bigger payloads with less fuel consumption.

After additional flights by company test pilots prove the wing to be fully flightworthy, the contract calls for 12 other such wings to be delivered to the Air Force. The Air Force expects to give the wings service testing by substituting one composite wing on each of 12 different A-7D aircraft. The opposite wing structure on each aircraft will be of conventional aluminum construction.

weapons modifications

The B-52G and H models, originally designed as high-altitude nuclear bombers, have had their mission horizons broadened considerably. These late model B-52s, as we have seen, have already received a number of modifications.

Quick-start packages were added that enable all eight engines to be started simultaneously. The so-called electro-optical viewing system (EVS) was a much more extensive change in that it involved structural changes and more costly hardware. The system consists of a television system and a forward-looking infrared imaging system. The sensors are housed in two chin blisters, which required modification to the aircraft's nose. The system is tailored to counteract certain types of tracking radars.

But the biggest change to the G/H birds is their ability to carry the short-range attack missile (SRAM) and, eventually, the air-launched cruise missile (ALCM). The missiles are launched from external pylons and a rotary



launcher mounted on hardpoints in the aft part of the bomb bay. The eight-missile launcher can handle both of the radically different missiles.

The total additional weight for the missile-launching aircraft modification is well over five tons. A full B-52 load of SRAM missiles—20 in all—weighs an additional 44,000 pounds. The old birds just ain't what they used to be!

fuselage stretch

Stretching a fuselage for greater payload volume is not a new idea. The DC-8 commercial airliner is a good example of the technique, and that was done a number of years ago. But the DC-8 modification was accomplished as a new aircraft. The Air Force is planning a stretch, but it is going to be done to an already operational aircraft, the C-141 StarLifter. The modification will greatly enhance the aircraft's carrying capability and can be done at a fraction of the cost of a new transport. The prototype flew in March 1977.



Not to be forgotten is the KC-135 Stratotanker (left), also undergoing wing modifications to stretch its operational lifetime into the 1990s. This tanker was chosen because its wings can be easily modified, and the test results can be readily applied to other transport-class aircraft. . . . Artist's concept of an Air Force KC-135 testbed aircraft with winglets on the outer wings (above). Flight testing of winglets on a KC-135 is scheduled to begin late in 1978. Wind tunnel tests indicate that significant fuel savings can be had by transport-class planes with the winglets.

In addition to the 23.3-foot stretch in the C-141 fuselage (accomplished by a 160-inch plug forward of the wing and a 120-inch plug aft of the wing), aerial refueling capabilities have been installed, and improved wing fairings have been added. Aerial refueling will greatly improve the range capabilities of the new model plane and add to the operational command options; among other things it will enable mission completion without landing on foreign bases, should this be desirable.

New, improved wing fairings result in two benefits: (1) they decrease the aerodynamic drag, enabling higher speeds and lower fuel consumption; and (2) they change the wing lift distribution so that the aircraft weight may be increased, with greater payloads, without affecting the wing's fatigue life.

The stretched fuselage means 233 square feet of added cargo floor space and more than 2100 cubic feet of added volume (meaning the ability to carry three additional 463L pallets for a total of 13), giving a total of 8630 cubic feet of clear cargo compartment volume.

Spelled out, the stretch program will increase the productivity of each StarLifter by 33 to 45 percent—a tremendous saving of taxpayer dollars.

A RECENT program could produce the strangest looking update yet to the existing fleet. It is strictly a program to fight the same energy problem that we are all fighting with our homes and cars—namely, the energy problem. With the spiraling costs of jet fuel, any attempt at fuel conservation receives immediate attention. With that thought in mind, USAF and NASA recently undertook a joint program to demonstrate a set of winglets on a KC-135, which hopefully will effect an overall drag reduction of about eight percent. The winglets will be attached to the wingtips of the test KC-135, be made of aluminum, and weigh almost 300 pounds apiece. The KC-135 was chosen as the test aircraft because its wings can be easily modified, and its test results can be applied to other transport-class aircraft. However, should the results confirm the engineering predictions, there just might be a fleet of dog-eared KC-135s in the future inventory.

Dayton, Ohio

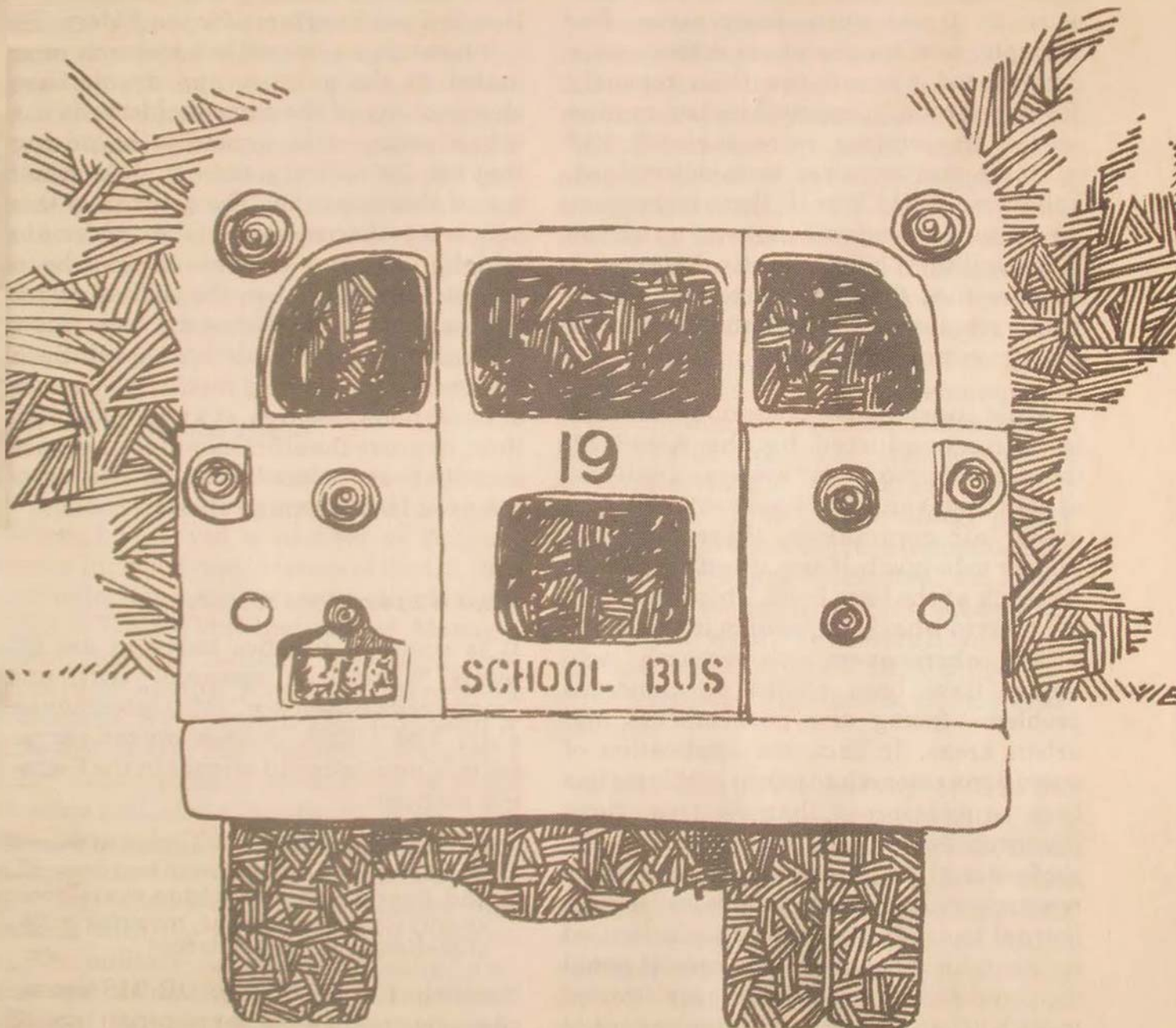
Author's Note

The contract has now been let to Lockheed-Georgia for the C-141 StarLifter stretch program and actual work to begin in September. The modification program should be completed by July 1982.

R air
force
review

OPERATIONS
RESEARCH
AND THE
AIR BASE

MAJOR CHARLES E. EBELING



ONE of the success stories that came out of American and British cooperation during World War II was the organization of teams of scientists to investigate problems concerning the conduct of military operations. These teams of physicists, chemists, mathematicians, biologists, economists, and statisticians were assigned directly to military commanders and assisted these commanders in developing new tactics and strategies. This type of activity became known as operations research, and its successes were at times quite impressive. For example, new tactics of air defense were formulated around the then recently developed radar, improved antisubmarine search procedures were devised, and optimum convoy sizes were determined. Following World War II, these techniques were applied in private industry as well as in the military. More recently, however, it appears that the success stories of operations research are to be found more in the civilian sector than in the military.

While considerable operations research is being conducted by the Air Staff (usually referred to as "systems analysis" at that level) and to a lesser extent by the major air commands, there does not appear to be much, if any, use of operations research at the base level. This is in direct contrast to what is happening in the public sector, where operations research techniques have been applied to numerous problems facing city governments and urban areas. In fact, the application of operations research to urban problems has been so widespread that the Operations Research Society of America (ORSA), a professional organization of operations researchers, has devoted entire issues of its journal to urban problems. In addition, at its semiannual conferences, special panel discussions and presentations are devoted to such urban and city problems as energy

conservation, law enforcement, health care, public services, environment, urban traffic, and land use, to name a few. Specific presentations at a recent ORSA meeting included "A Simulation Model of Subsidized Public Housing Projects," "The Relationship between Urban Form and Travel Requirements," "Problems Associated with the Evaluation of a Justice Information System," "Application of Automatic Feedback Control to Air Quality Management," and "Cost-Effectiveness Analysis of Alternative Health Care Programs for the Elderly."¹

Inasmuch as operations research originated in the military and an air base shares many of the same problems as our urban areas, it is somewhat surprising that we, the military, are not making full use of this potential. The purpose of this article is to discuss some of the problems to which operations research has been successfully applied in the civilian sector but has not, to the best of my knowledge, been applied at the air base level. Such discussion should help motivate more use of operations research at an air base and, thus, improve the efficiency of certain base activities or reduce some of the costs involved in performing these activities.

What is operations research?

It is common practice today to use the terms "operations research" (OR) and "management science" (MS) interchangeably. The ORSA defines operations research/management science in the following manner:

Operations Research is concerned with scientifically deciding how to best design and operate man-machine systems, usually under conditions requiring the allocation of scarce resources.²

Somewhat more briefly, OR/MS can be characterized as the application of the

scientific method to problems of management. Traditionally, the Department of Defense (DOD) has used a third term, "systems analysis," to describe this type of activity. However, a distinction is usually made between OR/MS and systems analysis. Systems analysis, as it is used in the DOD, is concerned with complex problems that are not well defined, involve uncertainties, and perhaps have, relative to their solution, multiple objectives or criteria. The analogy has often been made that OR/MS is to systems analysis what tactics is to strategy. Therefore, systems analysis is a scientific approach to problem solving involving *complex* man-machine systems and characterizes the type of analysis being performed at the Air Staff level. It differs from OR/MS primarily in the scope of the problem being addressed. Thus, systems analysis might be concerned with the proper mix of strategic offensive weapons while OR/MS would be interested in the least-cost inventory policy for a high-value item.

OR/MS in the Air Force

In an attempt to determine what type of OR/MS work is being conducted by the Air Force, I surveyed a number of sources. These included recent issues of the OR/MS journals, Rand reports, proceedings of the ORSA/TIMS (The Institute of Management Science) national meetings, Proceedings of the Military Operations Research Symposium (MORS), and a number of OR/MS organizations at the major air command level. None of these sources indicated a serious or concentrated effort to apply OR/MS concepts to air base problems. For example, the OR/MS journals described military studies concerned with the procurement of aviation fuels,³ military manpower planning,⁴ and optimal allocation of aircraft sorties.⁵ Typical Rand reports include such sub-

jects as current issues and future options of the U.S. intercontinental ballistic missile (ICBM) force and estimates of incremental costs of doing base level aircraft inspections during depot visits.⁶ I found no Rand studies dealing specifically with problems of an air base. The Military Applications Section of ORSA sponsors presentations of military OR/MS studies at the ORSA/TIMS meetings. At a recent national meeting, papers were presented on a simulation of air-to-air combat and a recoverable item support model,⁷ but nothing on air base problems. Even a military operations research symposium failed to turn up any base level OR/MS studies. A typical presentation at the 36th MORS was on an initial spare parts support model of combat flying.⁸ Work being conducted at the major air commands is, for the most part, functionally oriented. For example, at the Management Science Office, Air Force Logistics Command (AFLC), such problems as the design of an optimum logistics airlift system (LOGAIR) and the requirements determination for war readiness spares kits (WRSK) are being studied. At the Military Airlift Command, OR/MS studies on aircraft scheduling, engine reliability, and airlift requirements forecasting are being conducted. At Headquarters, Pacific Air Forces, studies are concerned with the centralized intermediate repair facility (CIRF), supporting sortie surges during a crisis, and air-to-air combat.

While the above survey of OR/MS military applications is not exhaustive, I believe it to be representative. That is not to imply, however, that no OR/MS work is being applied to base level problems. I am aware of several instances in which particular base decisions were assisted by OR/MS. One recent study was concerned with the location of bus stops in a base

housing area. In order to meet contractual agreements, a specified number of school bus stops could be located in the base housing area. In order to identify minimum walking distance locations for the bus stops, OR/MS techniques in facility location were used. Another study conducted by an Air Force Institute of Technology thesis team was concerned with the optimal assignment of maintenance activities in a number of existing buildings on a base.⁹ The analysis of the interactions of these activities with one another and their relative distances required a quantitative OR/MS model.

A number of studies have been conducted by graduate students in resident programs at the Air Force Institute of Technology (AFIT) for the medical center at Wright-Patterson AFB. One master's thesis was concerned with developing a computer-based blood donor information system.¹⁰ Simulations have been conducted of the medical center pharmacy,¹¹ emergency room operation,¹² and department of surgery.¹³ A study was conducted for a base communication center in order to determine manning configurations.¹⁴ The Army sponsored a recent study to determine the optimum land use for a base in which a certain level of residential (base housing) and commercial (base activities) land could be developed at the lowest level of expenditures for utilities (water, sewage, electricity, etc.).¹⁵ The results of this study provided information for the base construction program.

base level OR/MS

The types of problems that can be solved by OR/MS techniques at the air base are similar to those experienced by our cities and urban areas. These problems are generally service oriented and may be unique to a particular base. Examples of

such problems can be found by observing the civilian OR/MS applications and seeing how they could also be applied to an air base.

A recent study was conducted to determine the routing of salt trucks in a city so that the time required to spread salt over a given network of streets was minimized.¹⁶ Such a routing plan could, perhaps, improve the efficiency by which our northern bases (plagued by severe winter storms) are restored to full operation. Studies have been conducted concerning pollution monitoring and pollution abatement procedures.¹⁷ Since a base must conform to federal and local environmental standards, such studies could assist the base commander and base civil engineer in determining new air quality management strategies. A number of articles have appeared recently in the OR/MS literature on the scheduling of police and patrol cars in order to minimize the number of patrolmen needed while providing a specific level of response.¹⁸ Similar models could be used in assigning security police at an air base. OR/MS studies have been performed in analyzing urban emergency service facilities.¹⁹ These studies have attempted to place fire equipment in the most effective locations and determine response times for ambulance emergency equipment in order to provide the most rapid and complete response. A similar situation exists on an air base although on a smaller scale. Other relevant studies have included assigning students to schools in such a manner as to minimize the cost of fuel for buses,²⁰ the determination as to when to perform pavement or street maintenance,²¹ the design of telephone directories,²² the optimum manning of a telephone switchboard,²³ minimum cost repair and replacement policies for vehicles,²⁴ and models to assist public administrators in preparing affirmative action plans.²⁵

In addition to the above applications, a number of other base functions can be improved by the use of OR/MS techniques. For example, improvements could be made in the routing and scheduling of buses on a base and in the scheduling of motor pool vehicles for preventive maintenance. A waiting-line analysis of hospital, CBPO, commissary, and base exchange operations could lead to improved service and better utilization of personnel. The routing of sewage and water pipes or communication lines can make use of network models to reduce the amount of resources required. Inventory theory could be applied on the retail level to the commissary, base exchange, and clothing sales operations to reduce costs or increase customer satisfaction. Network design techniques and simulation can assist in traffic planning to reduce traffic volumes in and around a base during peak hours. In short, many problems on an air base are amenable to solution by OR/MS techniques.

organization for OR/MS

There appear to be two primary reasons for the lack of OR/MS research capability at the base level. One is that neither the scope of the problems nor the potential benefit from this type of analysis is, in most cases, as great as it is for those problems encountered at major command or headquarters level. Therefore, Air Force OR/MS resources are devoted to the more lucrative areas of study. Nevertheless, a potential benefit exists and often might well be worth the cost of providing an OR/MS capability at an air base. The second reason is not as obvious but is, perhaps, a result of the first reason. The organization of OR/MS activities in the Air Force is designed to provide systems analysis studies of major operational, personnel, and support problems facing

the service. It is not designed to consider smaller, independent problems unique to a particular air base. The Office of the Assistant Chief of Staff for Studies and Analysis is responsible for performing the systems analysis work for Headquarters USAF. Studies and Analysis consists primarily of the Directorate of Strategic Offensive and Defensive Studies and the Directorate of General Purpose and Airlift Studies. While the latter does perform analysis for the Chief and Vice Chief of Staff as well as for the Deputies of Plans and Operations, Research and Development, and Systems and Logistics, it is not structured to support individual base problems. The OR/MS activities at the major command headquarters are functionally oriented with most of the emphasis being placed on problems encountered by the headquarters itself. Even the Rand Corporation, contracted by the Air Force to conduct systems analysis studies (Project Rand), is organized into strategic, general forces, logistics, manpower, personnel and training, and acquisition programs. No program is designed specifically for support of individual base problems. As a result of the organizational structure of OR/MS in the Air Force, it is very difficult, if not impossible, to obtain OR/MS support at an air base without going to the Air Staff or a major air command for assistance. More important, there does not appear to be any attempt to obtain this assistance for the air base.

a solution?

Air Force Regulation 20-7, "Operations Analysis," establishes the authority for each major command to establish operations analysis offices at any level within the command, consistent with authorized personnel ceilings. If a real benefit can be determined for such a function at an air base, why not establish such an office as

part of the base commander's staff? The operations analyst or operations researcher would then act as consultant to the commander and the rest of his staff, identifying areas for possible application of OR/MS techniques and providing an in-house capability to provide some analysis while being the focal point for contracting out larger studies. Even if such a staff position cannot be created, many bases have individuals with OR/MS backgrounds. These individuals could be identified and, either on a volunteer basis or as part of their normal duties, they could provide OR/MS assistance to the base commander and his staff.

MANY management decisions face the base commander and his staff. It would seem reasonable to provide him with the quantitative assistance, which will make his job easier. Although systems analysis has matured at the headquarters level to the extent that it is used routinely in making decisions concerning weapon systems and major policies, OR/MS has not matured in the military in that it is not used systematically in aiding lower-level decisions. Yet, ironically, it is at this level where OR/MS has had some of its most noteworthy successes.

Wright-Patterson AFB, Ohio

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THE AIR FORCE CHAPLAIN'S ROLE

*functioning
in two institutions*

CHAPLAIN (COLONEL) MACK C. BRANHAM, JR.



THE installation chaplain picks up his telephone. The voice on the other end says, "Chaplain, Colonel James here. One of my staff officers has a little problem. Perhaps you can help."

"I'll be pleased to help if I can."

"Well, Colonel Robb's daughter wants to get married this weekend. He said she talked with Chaplain Jones about performing the ceremony, but Jones said that he couldn't do it—or he wouldn't do it."

"Several days' notice on performing a wedding ceremony isn't much time, Colonel, and there are requirements and sometimes restrictions placed on chaplains by their churches."

"What do you mean requirements and requirements of the church? Jones is a military chaplain, isn't he? He'll do what you and I tell him to do..."

Although this conversation never really took place, it is similar to conversations that have taken place many times. In this hypothetical situation the base commander, although a senior military officer, failed to understand that the chaplain's authority to perform marriages is not controlled by the Air Force but by the church. Had the commander realized that the chaplain's authority to perform religious rites is given to him by his church, it is unlikely that this misunderstanding would have existed.* In this situation, the commander's perception of the role of the chaplain was that of a hired professional, a member of his command who was there to perform certain functions at his request. In some respects this is true, but in others, especially those governed by the chaplain's denominational church, it is not.

Understanding the role of the chaplain both as an Air Force officer and as an ordained clergyman subject to the authority of the church will enable any commander to make more effective use of his chaplain, will lead to a better understanding between the chaplain and the commander, and will enable the chaplain to develop more effective ministries for the people he serves in the Air Force community.

The Air Force chaplain is a commissioned officer who wears the same uniform as other Air Force officers and obeys the same regulations, and yet he is also a minister, priest, or rabbi representing his church. Although he has left the job environment of the church or synagogue to serve as an active duty chaplain, he still retains his institutional status in the church. As a clergyman, he is subject to the ecclesiastical authorities of his denomi-

nation. He is required to attend meetings such as annual conferences or retreats sponsored by his church. He continues to function as a clergyman only because he has been ordained and endorsed by his church. He has, so to speak, one foot in the church and one foot in the Air Force. This institutional duality is a major factor in the way he perceives his role and how effectively he functions in it.

Understanding the institutional duality of the chaplain's role together with the concomitant expectations of the role by both the church and the Air Force is not an easy task. A model focusing on roles and their influence on social behavior, developed by J. W. Getzels and E. G. Guba, is helpful. First, we will examine the Getzels-Guba model and then look at a modified version of the model showing the dual-institutional environment in which the chaplain functions. It should enable the reader better to understand the Air Force chaplain, his role, and the way he functions as a clergyman in a military environment.

Getzels-Guba model

The Getzels-Guba model of social behavior, developed to explain the dynamics of social behavior in a given institutional environment, relates role expectations and role perceptions of individuals or groups operating within a given institution and cultural social structure. (See Figure 1.) The model is based on a sociopsychological theory of social behavior that conceives of any organization, or sub-organization, as a social system.

The model focuses on two dimensions, the institutional and the personal. The term "social system" is conceptual rather than descriptive and should not be confused with "society" or "state."¹ For the purpose of this article, the Air Force community may be considered a social

*When referring to the Air Force chaplain, I will use the masculine gender. I know women are serving on extended active duty as chaplains—five at the time of this writing—yet it is awkward to refer to the chaplain as "he or she" or use the plural "they."

system, with a specific military organization such as a wing as a particular organization within the more general social system. However, a wing or a chaplain section within a wing can also be considered a social system in its own right. The model is applicable regardless of the level or size of the unit under consideration.

In Figure 1 the institutional axis is shown on the top of the diagram and consists of institution, role, and role expectations. An institution is defined by its roles, and each of the roles is defined by its role expectations. In like manner, the personal axis, shown at the lower portion of the diagram, consists of the individual, his personality, and his need-dispositions. Again, each term defines the term that precedes it. The individual is known by his personality, and his personality is determined by his needs-dispositions.

Recognizing the influence of these two dimensions, we can better understand the behaviors of an individual as he tries to meet his personal needs while also trying to meet the expectations that the institution has for the role he occupies.³

When a person's behavior meets institutional role expectations, he has obviously *adjusted* to the role. When a person is able to meet all of his personal needs while simultaneously meeting the institution's role expectations, Getzels and Guba say that he is *integrated*. Of course,

it would be ideal for both the institution and the person if both institutional and personal requirements could be met.⁴ However, meeting all institutional expectations and personal needs is seldom, if ever, found in practice and perhaps too much to hope for. It is inevitable that a certain amount of strain or conflict between the person and the institution will result when all needs and expectations are not met.

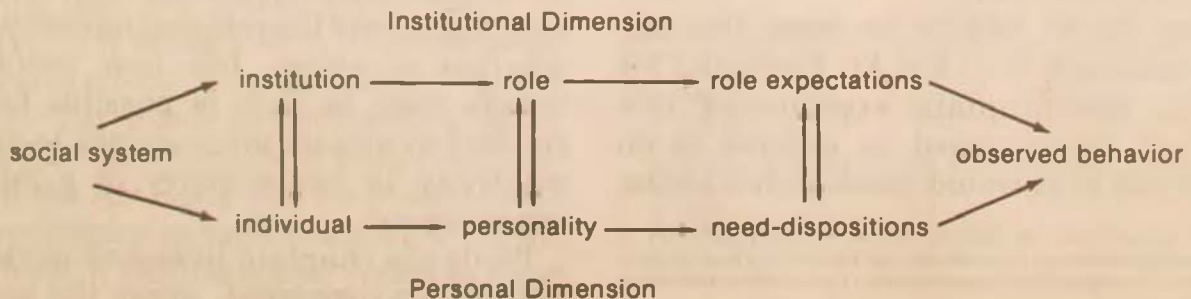
Sometimes a person must choose between meeting his personal needs or institutional requirements. If he chooses the latter, he will be unhappy. If he chooses to meet his personal needs, the institution will be unhappy. Generally, he compromises, and in so doing, he behaves in a manner that is not fully satisfactory either to him or the institution.⁵

modifying the model

Whereas the model in Figure 1 helps explain the behavior of people in institutional roles, it needs some modification to illustrate the role expectations of Air Force chaplains. Chaplains are members of not one but two total institutions, the Air Force and the church.* This can be illustrated by modifying the model as shown in Figure 2 to show not only the Air

*Erving Goffman in his book *Asylums* (Garden City, New York: Doubleday and Company, Anchor Books, 1961) defined total institutions as institutions that have an "encompassing tendency." They are different from other institutions inasmuch as they create something of a "world" for the people who belong to them. Both the church and the Air Force fall into this category.

Figure 1. The Getzels-Guba model of social behavior²



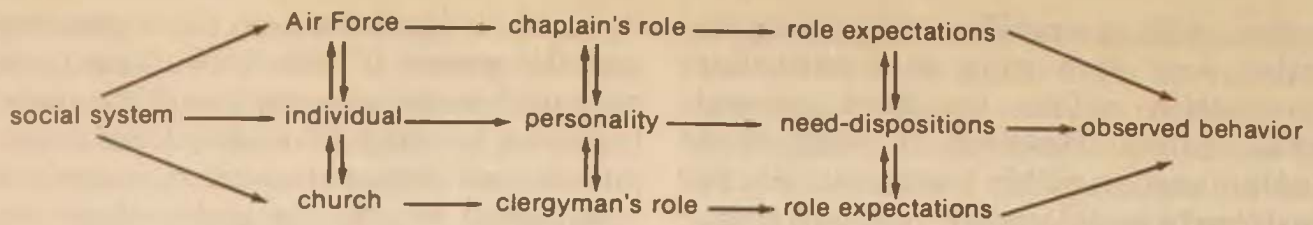


Figure 2. Modified Getzels-Guba model to show the chaplain's role as a member of the Air Force as well as a clergyman in the church

Force's role expectations for chaplains but the denominational church's expectations for its chaplains.

Of course, role and personality factors that determine a person's behavior vary with specific acts, roles, and personalities. Even in the military where roles are less flexible than the roles of a free-lance artist or writer, each person stamps the role he occupies with his own style of expressive behavior. No one would expect all commanders to operate in the same manner. Neither do people expect all chaplains to function in the same way. They have different personalities, different styles of leadership, and different styles of ministry. The individual dimension is always unique.

Denominational churches have certain expectations for their chaplains. A chaplain must meet these expectations if he expects to continue representing his church. If he does not, his church may decide that it will no longer allow him to represent it in the military chaplaincy. Without his church's ecclesiastical endorsement, a chaplain cannot continue to serve in the military.

When he is unable to meet the role expectations of both the Air Force and his church, the chaplain experiences role conflict.* When asked or ordered to do something that would result in his acting

*"Role conflict" can be defined as the awkward situation of occupying simultaneously two roles that are regulated by incompatible norms. It may be impossible, or possible only at great cost, to conform to all norms.

in a manner unacceptable to his denomination, the chaplain is placed in an awkward situation. He has to choose between the demands of the two institutions. If he chooses to meet his church's expectations, the commander may be unhappy. If he chooses to meet his commander's demands, the chaplain's church may chastise him for unacceptable behavior. If placed in such a situation, the chaplain will generally choose to meet the demands of his church. The hypothetical wedding incident illustrates this kind of conflict.

That a military chaplain experiences role conflict is not surprising, however. Attempting to meet all role expectations of two social institutions as different from one another as the church and the military is extremely difficult and sometimes almost impossible. Richard G. Hutcheson, in his book *The Churches and the Chaplaincy*, has pointed out that the surprising thing would be the absence of role conflict in the military chaplaincy, and that role conflict itself is not necessarily a negative factor.⁶ "The chaplaincy is a profession which deliberately makes role conflict a way of life, and the relevant question is not whether it exists, but how useful the results may be."⁷ It is possible for role conflict to inspire the chaplain to greater creativity in his ministry in a military environment.

While the chaplain lives and works in a military environment, wears the uniform

rather than a clerical, serves Air Force people, conducts services in an Air Force chapel, and obeys Air Force regulations, he remains very much in the institutional environment of the church. While many of his goals are military goals, the very nature of his role in his church makes his goals primarily religious goals.⁸ In the military environment, as Hutcheson has pointed out, chaplains work for goals established by institutions outside the military and are subject to both the authority of the military and to the authority of those outside institutions.⁹

The chaplain is constantly reminded by the denominational structure which oversees his work in the military that he is indeed a member of the clergy of his particular denomination and is expected to fulfill the expectations of the role. His church's representatives visit and counsel with him. He, in turn, is required to provide them with monthly or quarterly reports of his activities. All of this serves to remind him that he owes his primary professional allegiance to the church.

Hutcheson stated it succinctly when he said,

Although it is true, then, that a chaplain is a church professional whose ministry takes place in a secular institution outside the church, it is not true that he has "left the church and entered the military." In a real sense he takes the institutional environment of the church with him into the military. A substantial part of the perceived world in which he lives and works is determined by church norms rather than military norms.¹⁰

While the Air Force chaplaincy is effective as it exists today, it can be made even more effective when both the church and the Air Force recognize to a fuller extent that the chaplain is fully a member of both the Air Force and the church, with responsibilities to each institution. At the local level a chaplain can function more

effectively when he knows what is expected of him by his commander. The commander, on the other hand, can utilize his chaplain more effectively if he knows the limitations placed on the chaplain by his denomination. It is a wise chaplain who requests to have a conference with his commander—a conference in which the commander is candid about how he perceives the chaplain's role and the chaplain, in turn, shares his own perceptions of his role. It will do much to lead to a greater understanding between the commander and his chaplain, lessen role conflict dilemmas, and will quite likely result in a more effective chapel program on that base.

THE PRIMARY role of the chaplain is to serve people. He wants to meet not only their religious needs but their human needs as well. When the chaplain fully supports his commander and his commander, in turn, fully supports him, the entire Air Force community benefits. Together, they can do much to make the Air Force community an even better place to live and work, an environment where people are able to grow, to become more fully human, and in so doing meet personal as well as organizational goals. After all, that is what both the commander and the chaplain want—and what those who live in the Air Force community need.

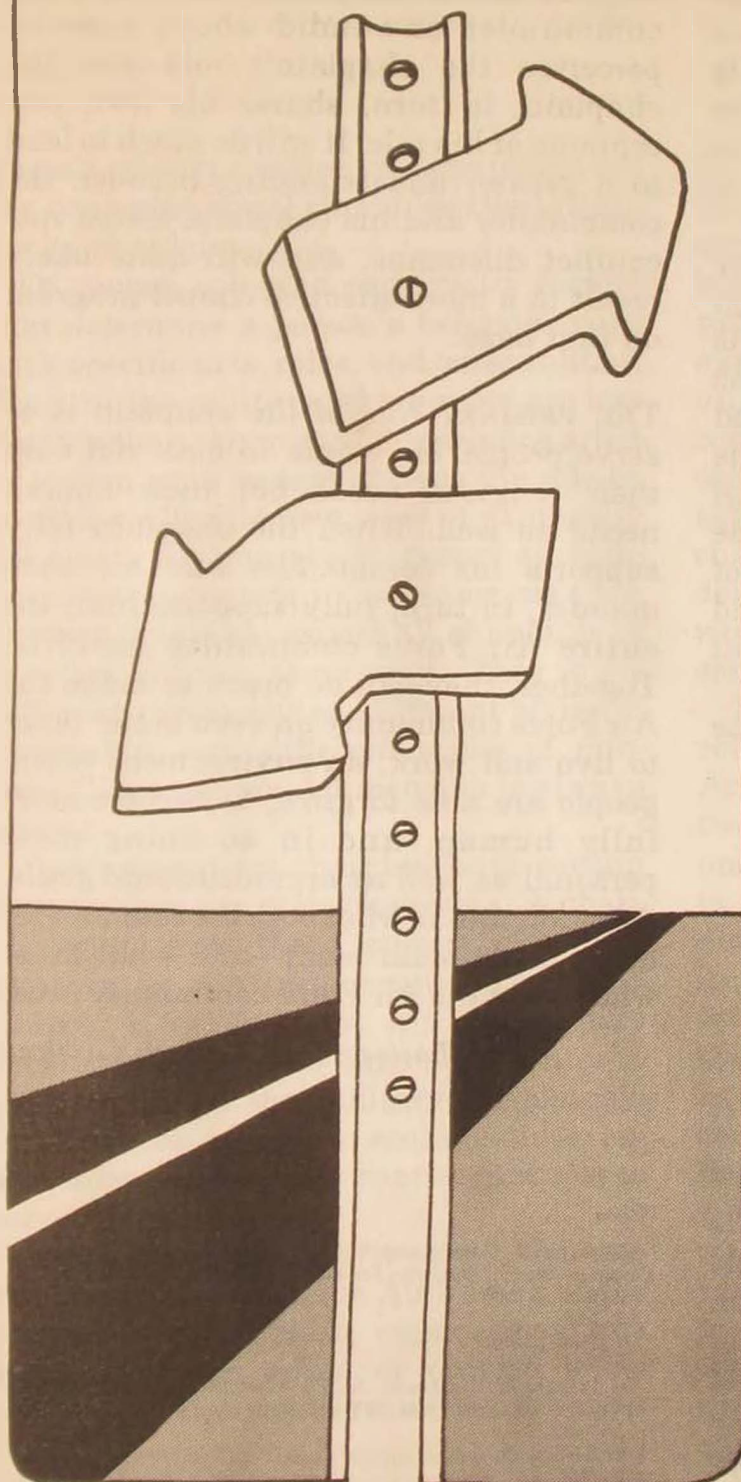
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UP-OR-OUT

a perspective



LIEUTENANT COLONEL
ROBERT O. HEAVNER

COMMENTS on the Air Force's up-or-out policy range from "essential" to "wasteful." This personnel management tool is an integral part of the proposed Defense Officer Personnel Management System (DOPMS). But the Defense Manpower Commission Report criticized up-or-out as a wasteful practice.¹ With growing military pension and training costs, many wonder why the Air Force should eliminate an officer for reaching a particular age or for being passed over. Since up-or-out is tied so closely with the management of the objective officer force and with retirement costs, we should examine several questions: What is up-or-out? What are its origins? Is it unique to the military? Is it advantageous?

Under DOPMS the Air Force will have only regular career officers. Those reservists who do not gain regular status by the eleventh year of commissioned service will be released from active duty. They must go out because they have not made regular after being considered by several boards. Up-or-out will also operate on the regular officer force. According to "Officer Career Information," tenure for regular officers is as follows:

- 20 years for major (if continued)
- 26 years for lieutenant colonel (if continued)
- 30 years for colonel (if continued).²

Thus, a regular continued major must retire at 20 years if he (or she) is passed over for lieutenant colonel. Regular lieutenant colonels and

colonels who are passed over will also be forced out but at higher years of service points.

Up-or-out is not unique to the U.S. military. The Japanese ground self-defense force employs a form of up-or-out. Second lieutenants to lieutenant colonels can serve to age 50. The mandatory exit age is 53 for colonels, 55 for major generals, and 58 for generals.³ But the Japanese system permits a passed-over officer to continue until retirement at 20 years of service.⁴

Some critics of up-or-out argue that this system is unique to the military: no rational nonmilitary organization would engage in such a wasteful practice. This is not true. First, major universities have used up-or-out in tenure decisions for years. Second, some prestigious law firms have also used up-or-out in their selection of partners from among associates. In his study of Wall Street law firms, Erwin O. Smigel describes up-or-out:

The "up-or-out rule" is designed to insure that lawyers who are not going to be made partners leave the firm, permitting a constant flow of new talent into the organization...⁵

Trying for tenure in these law firms, as in the Air Force, is a gamble, and losers must go out.

The lawyers who gamble on the chance of being made a partner and lose try to leave soon after they know they have been passed over.... Although they and their immediate colleagues feel such men have failed, the larger world may consider them successful.⁶

These firms assist in securing employment and keep such failures from the public's eyes. Occasionally, a law firm with an up-or-out policy keeps a passed-over associate with unique experience considered essential to the firm.

These law firms and universities elim-

inate candidates not selected for tenure to ensure that there will be positions to fill with other candidates they wish to consider. To continue an untenured professor or lawyer—when the number of candidate positions is fixed—has a cost: reducing the number of candidates for tenure in succeeding periods. Like military up-or-out, these systems are open to attack. They force competent trained personnel out with attendant trauma and costs. Criteria for tenure (promotion) are not explicit.

Like these major law firms and universities, the Air Force wishes to maintain a pool of promising candidates and avoid stagnation. The present Air Force up-or-out system is rooted in the Army's efforts to replace the strict seniority system after World War II. To understand why the Army espoused up-or-out and why Congress permitted it, we should examine the experience of two prominent advocates: Generals Marshall and Eisenhower.

When Marshall became the Army Chief of Staff, 1939, he faced the immense task of preparing a small peacetime army for an impending war. He was not a World War I hero, as was MacArthur, but he had served under Pershing in that conflict and had seen firsthand the failure of senior commanders.

He was haunted by recollection of the droves of unfit commanders sent in World War I by General Pershing to "Blooy" (Blois)—as the French used to send theirs to Limoges—for reclassification, and of his chief's almost frantic efforts on eve of battle to find suitable officers for combat assignments.⁷

Like many of his contemporaries and subordinates, Marshall had found the strict seniority system personally stifling. But the system's most glaring faults became known after General Marshall began to use large maneuvers to prepare and evaluate Army units. First, the strict

seniority system provided the Army with senior commanders who were advanced in age, near mandatory retirement. Many lacked the physical endurance required of a field commander.

As the Army expanded in 1940 and 1941, the Chief of Staff was shocked and saddened to find that many of his contemporaries, with fine records in peacetime or in World War I, could not meet the heavy demands of new command responsibilities. For some of the early appointments he had reached back in his memory and recommended for high place old friends from Fort Leavenworth or First Army. He was aghast when many of them broke under the pressure of their new duties.⁸

Second, senior officers often lacked appropriate experience because they had stagnated in the junior grades. Some were capable officers with short tenure as commanders; others were simply incompetent.

Marshall concluded that with his own World War I "hump" the strict seniority system provided senior officers who often lacked competence and nearly always lacked necessary experience and physical stamina. He began a strenuous campaign to replace unsuitable senior commanders with capable younger men. Firing older commanders was very costly to him personally because old colleagues sometimes had to go; his improvised up-or-out system brought criticism from those officers passed over (who accused the Army of a breach of contract), from Congress, and from the press.

Marshall formalized his up-or-out approach by establishing a plucking board.

To insure fairness in the elimination, Marshall selected for the task a committee of six retired officers—a "plucking board" as it was called—headed by his immediate predecessor, General Craig. The officers, after examining records and recommendations as to performance,

were empowered to remove from line promotion any officer for reasons deemed good and sufficient. He would then be subject to removal one year after the action was taken. As a guide Marshall passed on to the board, with his approval, G-1's statement that cases were to be decided not on an officer's past record but on his value to the Army. "Critical times are upon us," he warned, and the standard had to be "today's performance."⁹

By replacing deadwood with Eisenhower, Bradley, Clark, and others, Marshall assuredly paved the way for victory in World War II.

After the war, Eisenhower urged that the Army formally adopt a competitive up-or-out system. Since he had worked for Marshall at the beginning of the war, Eisenhower understood the failure of the strict seniority system. He testified before the Senate Armed Services Committee that a number of senior commanders "had to be replaced and gotten out of the way and younger men had to come along and take over the job."¹⁰ Eisenhower also described the dismal career profile that faced him and his contemporaries under strict seniority. "Until we got to the grade of general officer, it was absolutely a lock-step promotion; and short of almost crime being committed by an officer, there were ineffectual ways of eliminating a man."¹¹

Marshall's and Eisenhower's arguments carried the day, but not without debate. In a letter to the committee, Senator Guy Cordon stressed the costs of the proposed up-or-out system. He was careful to distinguish between combat and technical services.

It may be that some of the restrictions in the bill are justified for combat units but I feel strongly that they are inadvisable for the technical services.¹²

Noting that a colonel would be forced out at age 52, Senator Cordon stated, "This seems to me to be a most wasteful and

illogical requirement, particularly for the technical services."¹³ Referring to such retirement for a division engineer, the senator continued, "They are at the peak of their ability to render service in their profession and exceptions should most certainly be made from any requirement which, again might be desirable for combat units."¹⁴

Senator Cordon's objection is still with us, voiced by sincere critics of up-or-out. Indeed, the Air Force of 1978 is more technical than the Army of 1947. In terms of experience and training losses, up-or-out is a very costly policy. Marshall and Eisenhower argued that up-or-out was an essential replacement for strict seniority, which provided senior combat commanders who lacked youthfulness and relevant experience. Our continued use of up-or-out stems from the continual need to provide youthful, experienced senior combat commanders. Unfortunately, up-or-out, a policy to produce senior combat commanders, has been treated as *the* alternative to strict seniority. In fact, up-or-out is *an* alternative to strict seniority.

IN view of the costliness of up-or-out for regular officers under DOPMS, we should ask several questions about the senior commanders which up-or-out is to produce. First, how many senior combat command positions require youthful officers with broad command and staff experience obtained through frequent reassignments? Second, in what fields can an O-5 or O-6 serve until he (or she) is 55 or 60 years old? Third, how many bona fide candidates for senior combat command positions, e.g., O-7, do we wish to consider for promotion annually? With this number we can begin to determine the numbers of lower grade officers who should rapidly gain the experience required of a senior

combat commander. At present, we act as if most company and field grade line officers are such candidates. Many who lack either the interest or aptitude for senior command are encouraged to gain diversified experiences in many general areas and avoid extended assignments in any single specialty. And we maintain a youthful officer force in all fields without questioning the relevance of this dimension.

The modest number of senior command positions that require a youthful generalist and the accompanying need for bona fide candidates argue against up-or-out for all line officers. Such costly executive development must be limited to a portion of the line. At least two barriers stand in the way of such a move: an inability to identify potential senior commanders and a reluctance to identify explicitly and groom such officers. The controlled OER offers some promise of identifying candidates. Our willingness to identify them early is understandably hindered by considerations of fairness and fear of errors.

THE COSTLINESS of up-or-out and clamor of its critics will certainly increase. We must compete with the private sector for the shrinking youthful portion of the labor force. For as far as we can see ahead, we shall need youthful generalists as senior combat commanders. Up-or-out plays an essential role in the development of candidates for these positions. But our need for technical officers will certainly not diminish, and they do not need the youthfulness sought by Marshall and Eisenhower. Up-or-out is a process of examining and then either promoting or eliminating in the search for a modest number of youthful senior commanders. It is time to be more deliberate and to

discriminate between the need for youth in combat and the need for technical expertise where youthfulness is inessential.

USAF Academy

Notes

1. Defense Manpower Commission, *Defense Manpower: The Keystone of National Security* (Washington: U.S. Government Printing Office, 1976).

2. AFP 36-22, "Officer Career Information" (Washington, D.C.: Hq

USAF, 29 December 1976), p. 11.

3. "Japan: All-Volunteer Combat Oriented," *Air Force Times*, March 14, 1977, p. 32.

4. *Ibid.*

5. Barney G. Glaser, *Organizational Careers* (Chicago: Aldine Publishing Company, 1968), p. 342.

6. *Ibid.*, p. 345.

7. Forrest C. Pogue, *George C. Marshall: Ordeal and Hope* (New York: Viking Press, 1966), p. 91.

8. *Ibid.*, p. 92.

9. *Ibid.*, p. 97.

10. *Hearings before the Committee on Armed Services, United States Senate, 80th Cong., 1st sess., on H. R. 3830, 16 July 1947, p. 10.*

11. *Ibid.*, p. 1.

12. *Ibid.*, p. 5.

13. *Ibid.*, p. 6.

14. *Ibid.*

Some men are dissatisfied if they are too far separated from the earth upon which they live and what happens on and round it. I realized myself as a young officer that I should not have been content doing anything for a living in which it was never important to me what time the sun rose. Dawn, dusk, moonrise and moonset, what the wind does, the shape and size of woodland, marsh and hill, currents and tides, the flow of rivers and the form of clouds, whether the leaf is on the tree or the branches are bare, the seasons, the weather and the stars—these are matters of compelling importance in the lives of sailors, soldiers, airmen, some of more importance to one, some to another; and so, too, at all times and above all, are people.

LIEUTENANT GENERAL SIR JOHN WINTHROP HACKETT
"The Profession of Arms"



R in
my
opinion

**AIR FORCE OBJECTIVES
IN SPACE**

LIEUTENANT COLONEL
CHARLES H. MACGREGOR

MAJOR LEE H. LIVINGSTON

the objectives

- Maintain a free space environment.
- Deter actions in space which are adverse to the interests of the United States and, should deterrence fail, counter those actions.
- Conduct operations in space in support of other national security objectives and national space operations.
- Maintain a space oriented technology base that:
 - Minimizes the possibility of technological surprise.
 - Supports deployment of military space systems.
 - And permits identification of promising space concepts and doctrine to meet national security objectives in the future.

USAF Program Guidance

ASK any Air Force officer, rated or non-rated, to describe an F-15, F-16, B-1, or A-10 and its mission, and you will probably get a very credible response. Sure, many details will not be there, but overall we understand and are familiar with our new aircraft. Unfortunately, the same is not true of existing and new systems that will directly affect these aircraft's ability to operate in a strategic or technical environment effectively. Our officers do not know, nor in many cases do they care to know, the details of our military satellite systems, even though these systems may make the difference over tomorrow's battlefield.

In a complete reversal of the usual situation, our civilian leaders in the Department of Defense seem to under-

stand the significance of military space systems better than the professional military. For instance, Dr. Malcolm R. Currie, former Director of Defense Research and Engineering, speaking at an Air Force Association Symposium in Los Angeles on 22 October 1976, said, "For *airpower* and for *spacepower*, we cannot tolerate a posture of equivalence; we must maintain always a position of clear superiority; we must always seize the initiative."

The reason for this lack of understanding cannot be a lack of available information. The unclassified literature abounds with descriptions of the design, operation, and roles of our military space systems. Indeed, Soviet intelligence undoubtedly has a very complete and accurate picture of all our satellites. The sheer magnitude of Soviet space activity is eloquent testimony to their grasp of the pivotal importance of such systems in today's and tomorrow's conflicts. Yet, the U.S. military, by and large, has yet to learn this lesson.

We have reluctantly reached these conclusions after three years of lecturing at Air University schools. The general situation is professional parochialism. The only officers who have taken the trouble to inform themselves about space systems are usually those who work closely in the space field. Most others have no idea how we use space systems today, much less what systems are under development or what the overall impact will be. All too frequently the attitude is either indifference or a profound conviction that military space systems are merely flashy gadgetry.

Three factors contribute to these attitudes. To begin with, satellites are not airplanes. Those who advocate the military uses of space today are in much the same situation as Navy advocates of

aircraft carriers in the mid-1930s, or air power advocates until the end of World War II. Second, there is no single organization with primary responsibility. AFSC, ADCOM, SAC, DCA, and many others all have some piece of the pie. Space systems have no high-ranking spokesman, no single manager to orchestrate our efforts, below the level of OSD. Finally, much of the information is classified with a strict need to know, making lateral communication of existing capability difficult or impossible.

The net effect is that the United States is today operating with a badly flawed military posture regarding space. Our present systems are underutilized since the operating commands are unaware of current potential. There is little system architecture or military space doctrine. Some efforts, to be sure, are underway in these areas, but progress is painfully slow. The operating commands cannot generate the appropriate statements of Required Operational Capability to enhance the effectiveness of their current forces until the information is widely known and understood, and the issues analyzed and debated. Plans, and particularly joint plans, are inadequate to deal with conflict that includes space warfare. Soviet testing of antisatellite weapons leaves no doubt about their ability to cripple our space systems. In short, we are ill-prepared to perform the tasks cited at the beginning of this article.

We recommend two actions toward correcting the problem. The first step should be to reorganize. Colonel Morgan W. Sanborn has summarized this area in his excellent article in the January-February 1977 issue of *Air University Review*. We wholeheartedly agree with his assessment and recommendations concerning the need for a separate space command, which would offset some of the

parochialism mentioned earlier. Second, and just as important, we must have the active participation of the operating commands in formulating requirements and shaping the evolving doctrine. Just as it is folly to ignore space systems in our present plans, tactics, and strategy, so is it folly to try to design and structure a space architecture without integrating the functions into today's combat operations. The Air Force desperately needs a dialogue between the space planners and the organizational commands.

There has been a start. The Director of Space, Hq USAF, conducted an Air Force Space Symposium in January 1977. The purpose of the symposium was to provide a forum for exchange of ideas and concepts between the operating commands and the systems development community. Emphasis was to be on the identification of new concepts and operational requirements for the utilization of existing and future space systems to enhance DOD missions. However, only ADCOM was familiar enough with our present and planned space systems to provide substantive requirements for future operational capabilities.

A meaningful debate on space forces, functions, and doctrine requires that the participants be knowledgeable. How can this information be obtained? One method would be a series of briefings to the major command staffs, detailing what we can do now and where we are headed. The classification problem can be partly avoided by stating capabilities without revealing methods. This would at least provide a knowledge base to work from. Individuals can consult a host of periodicals and journals, such as *Aviation Week & Space Technology*, *Air Force*, *Aerospace Daily*, and *Space/Defense Daily* to keep abreast of current developments. Classified sources include *New*

Horizons II (June 1975) and reports from The Rand Corporation.*

The time for professional Air Force personnel to study the art of war in and from space is now. Spaceborne capabilities are not "something down the road" but a current reality. Space is vital to our operations now and will become more vital with time. To quote Colonel R. M. Cameron, Deputy Director of Space, DCS Research and Development:

The Air Force considers space as the fourth operating medium (in addition to the land, sea, and air) whose principal use is to aid in the deterrence of all levels of warfare. . . .

The Air Force is well into its second decade of involvement in space. We have made great advancements and tremendous strides in operating in this relatively new medium. I now see *satellites* playing key roles in *supporting military operations at all levels of conflict* and increasing our capability to project the

airpower of the United States, as necessary, to enhance our national security.

In the future, space systems will provide *in-being support mechanisms* ready to assist military operations worldwide. *Communications, navigation-positioning, and weather surveillance systems* will always be in place, awaiting the arrival of our forces deployed from the CONUS; thus, enabling us to deploy our military power, when necessary, to anywhere in the world on much shorter notice than is possible today.

Hence, the ability of space systems to *pin-point targets*, to allow friendly forces to locate themselves accurately, to permit all echelons to communicate information at high data rates—coupled with the *data processing* capability to assimilate enormous quantities of data and display information for decision-makers—suggest major impacts on military operations in the future. But what we have seen to date or can foresee in the immediate future is but a small part of the true potential of the utility of space.

*DOD personnel can obtain bibliographies by writing to ACSC/EDCW, Maxwell AFB AL 36112.

*Air Command and Staff College
Maxwell AFB, Alabama*

THE DANGERS OF CIVILIANIZING MILITARY PAY

CAPTAIN GEORGE T. NADDRA

THERE has been a demonstrable trend to reduce or eliminate certain military benefits. In those selected areas where a dollar saving can be realized, military pay and compensation programs are being converted to civilian pay scales and policies.

Air Force General George S. Brown, as Chairman of the Joint Chiefs of Staff, commented in his statement to the Congress on the U.S. defense posture:

Readiness of our force is being threatened by mounting concern among the Service members for their benefits, and standard of living. These true volunteers freely commit themselves to the defense of our Nation. In return, *they expect their leaders to commit themselves to the Service member* in insuring that they have an adequate standard of living.

Since 1972, there have been repeated attempts to reduce, eliminate, transfer, and transform military benefits which in the past have helped to convince the individual to enlist or to make Military Service a career. The GI Bill, which in the opinion of some recruitment officials has been the single most important enlistment incentive, has been restructured and replaced by a pay-as-you-go program.

Pay raises have been held below the rise in cost of living, resulting in reduced purchasing power. Medical benefits have been modified, reduced, or eliminated. Threats of further reductions are constantly highlighted by private publications targeted at the Service members.

Twenty percent of our Army's enlisted members work at a second job and

approximately 50 percent of their wives work. Over 60 percent of our current enlisted personnel have entered the Service since 1972. Since they enlisted they have, in effect, experienced only losses in their purchasing power and benefits. We must defuse this issue before it severely impacts on our readiness.¹

In addition to General Brown's concern for military readiness, there is a danger of eroding the "Service" concept.² This erosion and trend toward only "civilianizing" those programs that realize dollar savings may lead the military members themselves to move toward a total civilian compensation program.

The new recruits voluntarily accept the special restraints of the military career. The recruits view their employment as being unique. They are not committed to a normal civilian "job"; they are in the "service," the service of their country, and certain noncivilian demands are expected of them.

A civilian company that adopted any portion of the existing military restraints would have to pay extra compensation to maintain the same quality of its labor force. Some examples of these restraints are the following:

Rigid appearance standards. An airman can lose his job for not complying with the appearance standards. For example, since 1972, over 1900 airmen have been separated from the service for failure to comply

with Air Force weight requirements.³

Permanent changes of station (PCS) requirements. When a move occurs during a period of service obligation, the individual is usually required to move, regardless of his or her desires. These moves may come on relatively short notice.

Short tours. The service member must endure extended periods of family separation, both PCS (1 year) and extended TDY (179 days). These assignments include such places as Clear, Alaska; Greenland, and Diego Garcia.⁴ Civilian employers pay thousands of dollars to induce employees to endure such assignments. For example, in Clear, Alaska, a civilian motor pool vehicle operator receives over \$34,000 per year, and a cook receives over \$39,000 per year.⁵

Isolated tours. These assignments are family accompanied tours, but in areas of isolation. There is no additional compensation for family hardships experienced in such isolated areas such as Zaire, Iceland, India, Ryukyu Islands, Upper Volta, and Point Barrow, Alaska.

Hostile fire. Service members live under the threat of losing their lives, limbs, or becoming prisoners of war without adequate compensation. Most civilians who are employed in war areas are substantially compensated for the additional risk, often receiving two or three times more than their military counterparts.

Strict hierarchical progression. No matter how well one performs, he or she can be promoted only one step at a time and only after serving a required amount of time in a previous grade.

Discipline enforceable by the judicial process. Trial by jury and possible imprisonment—special rules, “action unbecoming an officer”⁶—a different code governs the service man. For example, a

serviceman could be imprisoned for committing an offense while a civilian committing the same offense might only lose his job. A prime example is Article 92, paragraph 3, Dereliction in the Performance of Duty. A person is derelict in the performance of his duties when he willfully or negligently fails to perform them, or when he performs them in a culpably inefficient manner.⁷ During 1976, 1367 specifications (one general court-martial, eight summary courts-martial, twelve special courts-martial, and 1346 Article 15s)⁸ were categorized as Dereliction in the Performance of Duty.

Political limitations. There are limitations imposed on a service member's political candidacy and candidate support, as is also the case with Federal Government employees. One Air Force regulation lists 18 political “shall nots” for members on active duty.⁹

Flexible contracts. The service member is subject to changes in leave policy, retirement plan, bonuses, veterans benefits, etc., yet he must adhere to other contractual commitments, such as service obligation incurred by enlistment or schooling. For example, the proposed Retirement Modernization Act (RMA) would rescind the 50 percent of base pay retirement plan that was in effect at a prior enlistment date.

No overtime compensation. Military members are subject to twenty-four-hour call with no overtime. During periods of conflict (Vietnam) and states of increased readiness (Cuban crisis), overtime is a readily accepted way of life. In addition, a portion of the military force must remain on constant alert (weekends and holidays). Portions of the Air Force, Army, Marines, and Navy (ships at sea) are “on the job” during holiday periods. Some civilian employees working during these same

periods receive double time compensation as "holiday" pay.

Restrictions in privacy. For example, rank, position, and pay are available for public knowledge; complete dossiers are maintained, some evaluations are secret, and a picture of the individual is furnished the promotion board.

No union representation of collective bargaining. Our military leaders may be asked to wear "too many hats." A system that forces the same individuals to represent both management and labor can lead to a dangerous type of criticism. For example, some may argue that the proposed Retirement Modernization Act was intentionally designed to include features that would increase the retirement pay for most generals (or anyone else who is allowed by law to serve 30 or more years) from 75 percent of base pay to 78 percent for the purpose of reducing any organized military effort to challenge the program.

Economically bound to a very rigid all-or-nothing retirement system. If, for any reason (the above restraints, job satisfaction, family considerations, or desire to enter another career) the service member does not complete 20 years of active duty, he or she forfeits all of the retirement benefits unless subsequently qualifying for reserve component retirement.* After 10 to 15 years of service, individuals today have so much invested in the retirement

program that they become economically bound by a very rigid, all-or-nothing retirement system. To protect civilian employees from enduring the above retirement restraints, Congress passed the Pension Reform Act of 1974. It is now illegal for private pension plans (even if the plan is noncontributory, which over 80 percent are) to establish a plan with no vesting.¹⁰

THE MILITARY work force accepts these 13 restraints without seeking extra compensation primarily because most service members believe they are serving their country and not working at a "job." If the "service" concept is eroded by "civilianizing" those military benefits that could save money, a door may be opened that could cost many times the amount the "civilianizing" is trying to save.

Most service members would be satisfied just to maintain their standard of living and receive those benefits that were promised at enlistment. However, if past trends continue, the service member may unintentionally be encouraged eventually to give up some military benefits (the base exchange and commissary) in exchange for civilian benefits (overtime, retirement vesting, no forced retirements, substantially higher compensation for isolated or remote tours, political freedoms, collective bargaining, etc.).

Colorado Springs, Colorado

*Note: The RMA provides for vesting at 5 or 10 years, depending on whether separation is involuntary or voluntary.

Notes

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2. Dr. Charles C. Moskos, Jr., Keynote Address, 5th Symposium on Psychology in the Air Force. U.S. Air Force Academy, 8-10 April 1976, *Proceedings*.
3. *Air Force Times*, 7 February 1977, p. 17.
4. AFR 36-20, Table 4-1, 30 June 1976.
5. FJCC Wage Adjustment Proposal, Number KA275000-DL-0224, 1 June 1976 rates.

6. *Manual for Courts-Martial United States* 1969 (revised edition), Uniform Code, Article 133.

7. *Manual for Courts-Martial United States* 1969 (revised edition), Chapter XXVII, paragraph 172 c.

8. *AMJAMS Monthly Report*, "Courts-Martial Activities and Reportable Article 15 Actions," December 1976.

9. AFR 110-2, 24 October 1975, Attachment 1, paragraph 3.

10. The Conference Board "FOCUS," volume XII, no. 2, February 1975.

R point counter point

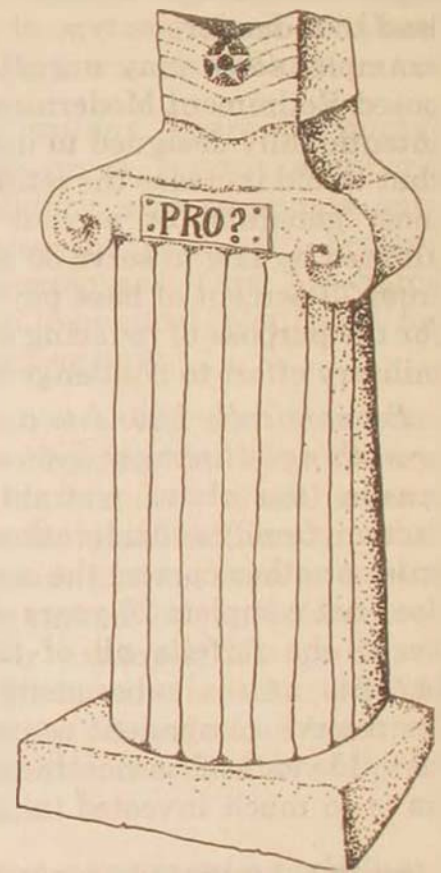
FROM its inception, the Air Force has been characterized by change, sometimes gradual, at other times fairly rapid, but seldom has change been as rapid as that which has occurred since the 1960s. In less than two decades, we have seen a series of changes that have touched almost every element of our society, including the military. Society has undergone change, the Air Force has undergone change, and with these has come a change in the noncommissioned officer.

The term "enlisted man" has become as archaic as the army that spawned it. It is not merely redundant, the mental image it generates no longer applies to the modern Air Force. "Enlisted man" conjures up a colorless conservative of indeterminate years, with about an eighth grade education. He was always broke because he had been on a five-day binge or had lost his last dollar in the almost nightly poker game at the NCO barracks. His greatest talent was scrounging around the base, filling his personal coffers which served as the basic supply system of his air force. He scarcely had a life of his own; his was a life of service. In return, he received a pittance benevolently bestowed on him, once a month, by a patronizing employer.

Does this portrait sound like nonsense? Dr. Samuel P. Huntington, a noted authority on the military, wrote in his book *The Soldier and the State* (1957):

NONSENSE, COMMON SENSE, AND THE PROFESSIONAL NCO

SENIOR MASTER SERGEANT
GEORGE H. DAY
Tennessee Air National Guard



The enlisted men subordinate to the officer corps are a part of the organizational bureaucracy but not of the professional bureaucracy. The enlisted personnel have neither the intellectual skills nor the professional responsibility of the officer. They are specialists in the application of violence not the management of violence. Their vocation is a trade not a profession. This fundamental

difference between the officer corps and the enlisted corps is reflected in the sharp line which is universally drawn between the two in all the military forces of the world.

This arguable evaluation of the enlisted airman and the noncommissioned officer is printed in *Concepts of Air Force Leadership*, published by the Air University.¹ It is used as a reference to train officer candidates in the Air Force ROTC program. The statement can also be found in the Squadron Officer School Correspondence Course. Worse yet, considerable research suggests that no enlisted airman or noncommissioned officer has ever challenged it.

This article holds that tremendous social, economic, and technical changes in the Air Force and our society have rendered Dr. Huntington's narrow and slanted definition of professionalism useless for the purpose of understanding Air Force leadership. Common sense tells us that the national belief in education, with its phenomenal growth during the past two decades, must have had an impact on the people serving in the Air Force. Have the men and women who serve as NCOs accepted this contemporary challenge of society, and are they educating themselves to levels comparable to those of the officers Professor Huntington calls professionals?

I feel that challenging this outdated concept of the enlisted person will improve interpersonal relationships between officers and NCOs and improve leadership in the Air Force.

DR. HUNTINGTON states that the military is a profession because it possesses characteristics of expertise, responsibility, and corporateness, which are generally accepted as necessary for

distinguishing a profession from an occupation or a trade. He adopts the concept of "management of violence" from Harold Lasswell and distinguishes it from mere application of violence, such as firing weapons, which gives one only technical competence or tradesman status.² Dr. Huntington's definition of professionalism is, "... perhaps the best known, most widely accepted, and certainly the most methodically developed conceptualization," based on the classical definition of the term.³

Lieutenant Colonel Zeb B. Bradford, Jr., USA, and Major James R. Murphy, USAF, in "A New Look at the Military Profession," have refuted Huntington's whole concept of professionalism. They state:

The officer corps must accept most of the responsibility for these faulty conceptions that dominate the thinking about its basic character, for it has failed to question its own assumptions or to state its own case. The military has been too willing to leave theorizing about the profession of arms to civilian intellectuals who, although often talented, have failed to grasp its essentials simply because their viewpoint from outside the military prevents sufficient insight.⁴

A summary of their position includes the fact that the problem with Huntington's definition is that "management of violence" is insufficient to describe what is actually required of the American military establishment. In this country, the military serves the nation by expanding its options when dealing with the power of nations. These options may or may not include the "management of violence." Therefore, the military profession cannot be defined in terms of functional expertise because it is not a constant; it is a contingent and relative element.⁵ Another important point is that the most violent means of destruction available to this nation is not controlled by the military but

by a civilian, the President of the United States.⁶

It becomes obvious that Professor Huntington's definition is insufficient to describe professionalism in the Army. It is doubtful that it ever came close to describing professionalism in the United States Air Force. More than in any other branch of service, it is the Air Force officer who applies violence, not the enlisted man. The Air Force is rapidly reaching the point where 98 percent of its personnel support the other two percent who serve in the combat roles. A single aircraft today can carry the explosive power equal to the entire amount used in World War II.

In rejecting Huntington's whole concept of professionalism, one realizes that his concept of enlisted men is also insufficient to describe the airman and NCO of the modern Air Force. This is particularly true when one discovers that the intellectual giants Huntington refers to had only slightly higher educational levels than today's Senior Noncommissioned Officer Academy graduates. Educational levels of Air Force officers and airmen as of 31 October 1957 were as follows:⁷

	Officer	Airmen
less than grammar school graduate	0.0	2.0
grammar school graduate	0.0	4.5
less than high school	0.6	22.6
high school graduate	12.4	56.9
college (less than two years)	14.8	9.6
college (two years or more, no degree)	25.0	3.7
college degree/equivalent	35.9	.5
law degree	1.4	0.0
master's degree	4.7	0.2
doctorate degree	0.4	0.0
medical/dental degree	4.8	0.0
	<hr/> 100.0	<hr/> 100.0

These figures show that 52.8 percent of Air Force officers did not have a college degree, and 29.1 percent of the enlisted force did not have a high school diploma. Both the officers and the enlisted men had a long way to go in 1957 to meet the Air Force goal of a college degree for every officer and a high school diploma for every enlisted man when Professor Huntington published his much-discussed definition of professionalism.

Thus, a new definition of professionalism would seem to be in order. Such a definition comes to us from Lloyd E. Blanch, editor of *Education for the Professions*. He writes:

The professions are not always sharply distinguished from other vocations or occupations. In general, however, they may be described as occupations which provide highly specialized intellectual services. These occupations, at their best, possess three principles: (1) a body of erudite knowledge, a set of attitudes, and a technique which are applied to the service of mankind through an educated group; (2) a standard of success measured by accomplishment in serving the needs of the people rather than by personal gain; and (3) a system of control over the practice of the calling and the education of its practitioners through associations and codes of ethics.⁸

Both the professional officer and the professional noncommissioned officer meet these criteria.

One result of the tremendous social and technical changes in the Air Force has been the creation of a body of professional knowledge for the enlisted airman and the noncommissioned officer. The enlisted Professional Military Education (PME) program serves this purpose. The entire program consists of five levels of instruction, comparable to that which has been provided the commissioned officer since March 1946.⁹

Enlisted PME

NCO Orientation Course
 USAF Supervisor Course
 Leadership School
 Noncommissioned Officer
 Academy
 Senior Noncommissioned
 Officer Academy

Officer PME

Squadron Officer School
 Air Command and Staff
 College
 Air War College

Blaunch defines professional education as "that form of education which prepares students for professional callings or employments."¹⁰ It is quite different from the specialty knowledge, which the NCO obtains at USAF technical schools, or a liberal arts education, which is general and has no specific vocation in view.

The *Air University Catalog, 1975-76*, states:

The major objective of the Air University professional military schools is to provide Air Force Officers and Senior Noncommissioned Officers a progressive program of education... by broadening their perspective and preparing them to assume responsibilities at higher levels of command and staff duties.

The Senior Academy was formed to prepare the superintendent level NCO for the expanded responsibilities he is required to perform. Today's Senior NCO performs many management duties formerly carried out by Commissioned Officers. At the same time his responsibilities have increased, the hardware and systems he uses have become more complex, and the resources needed to complete the job have diminished.¹¹

Economic forces acting on the military budget have resulted in expanded responsibilities for the NCO. A recent speaker to Class 77-E, Senior Noncommissioned Officer Academy, stated that the Air Force was in the process of replacing 1000 officer positions with 750 noncommissioned officer positions. One example of this was reported in a base newspaper: "CMSgt. Clarence L. Fairley, the new director of leadership and management education at

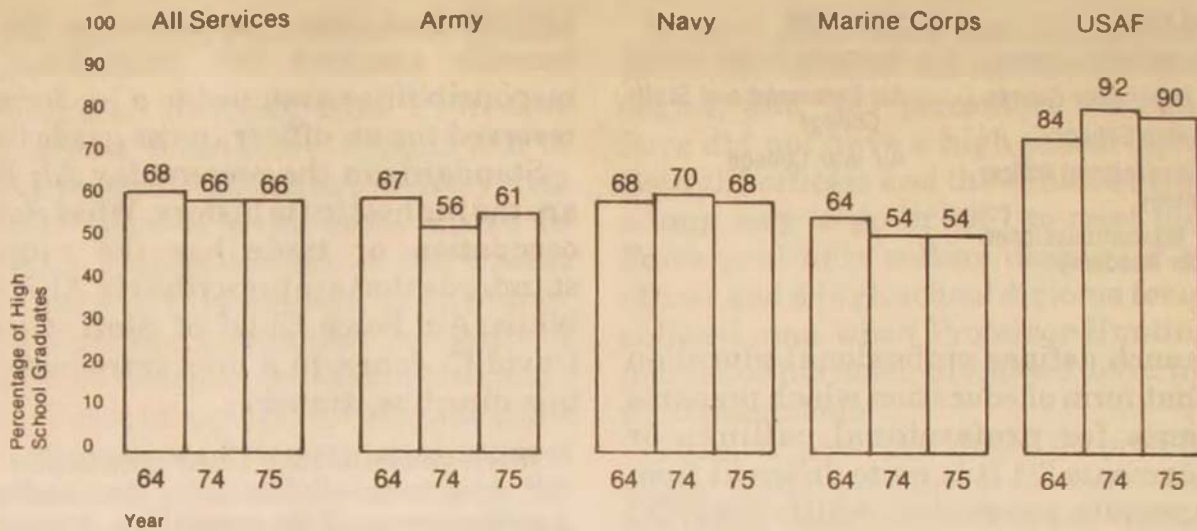
LMDC, has some big shoes to fill. He recently assumed the obligations and responsibilities assigned to a job formerly reserved for an officer in the grade O-6."¹²

Standards in the present-day Air Force are the highest in its history. What civilian occupation or trade has the range of standards that are prescribed in AFR 30-1? While Air Force Chief of Staff, General David C. Jones, in a brief introduction to this directive, stated:

When you joined the USAF, you began... a new way of life... a demanding profession... This regulation describes our standards,... These standards apply to all Air Force people and I expect everyone to live and work by them. They are our day-to-day code of personal and professional conduct.¹³

Our mission is "to prepare for and, if necessary, participate in armed conflict to preserve the security and freedom of the American people." That requires "disciplined, dedicated and educated people who live and work by the highest personal and professional standards."¹⁴ The NCO wears a symbol of his success, measured by accomplishments, on the sleeve of his uniform. Beyond the elimination of the unfit (AFRs 39-10 and 39-12), current quotas established by law provide for only one percent of the entire enlisted population ever to reach the top of the profession. Only two percent will make it to the second highest level, senior master sergeant.

Turning to the impact of education on the quality of the enlisted force, we find that, "The two yardsticks most frequently used to assess quality are the level of education achieved (high school graduate status) and the results of standardized tests which measure mental capacity and aptitude."¹⁵ Today, 90 percent of nonprior service recruits are high school graduates. This compares with 70.9 percent in 1957. "Whether measured by mental ability or



Source: "Two Years with the All-Volunteer Force." *Commander's Digest*, 10 April 1975, p. 3.

Figure 1. Educational levels of recruits in all U.S. services, July-December 1975

high school graduate status, the quality of the all volunteer force is higher than for the nation at large."¹⁶

The graph shown above (Figure 1) is a comparison of USAF recruits and those of the other services.¹⁷

Not only does the Air Force receive recruits who are a "cut above," but these individuals also become motivated to further their education while in the

service. A recent *USAF Fact Sheet*, "Educational Level of the Enlisted Force—End of March 77," states that only 3.9 percent of enlisted personnel with less than one year of service have attended college, while 1.8 percent have earned a B.S. degree or higher. The percentages for the total enlisted force are 14.2 percent and 2.2 percent, respectively.¹⁸ However, once an individual becomes a member of the

Figure 2. Educational levels of students in the Senior Non-commissioned Officer Academy, January-December 1977

Class	Students	High School	Some College	Two years or more (no degree)	B.S.	Graduate Work	M.S.
77-A	239	61	77	74	16	5	6
77-B	242	60	72	84	14	3	9
77-C	240	53	73	78	19	15	2
77-D	241	65	73	73	15	14	1
77-E	239	67	53	98	8	10	3
Totals	1201	306	348	407	72	47	21
Percent	100	.25	.29	.34	.06	.04	.02

Source: AUN-ACM(AR) 7403, "Educational Statistics—AFNCOA," January 1977 through December 1977

senior career force, he begins to reap the advantages of numerous in-service educational programs. The data, which were compiled from AUN-ACM(AR) 7403 reports for the USAF Senior Noncommissioned Officer Academy, January 1977 through December 1977, show the results of these educational programs.¹⁹ (See Figure 2.)

An interesting comparison can be made of these results with those of the officers Professor Huntington cited as professionals (Figure 3).

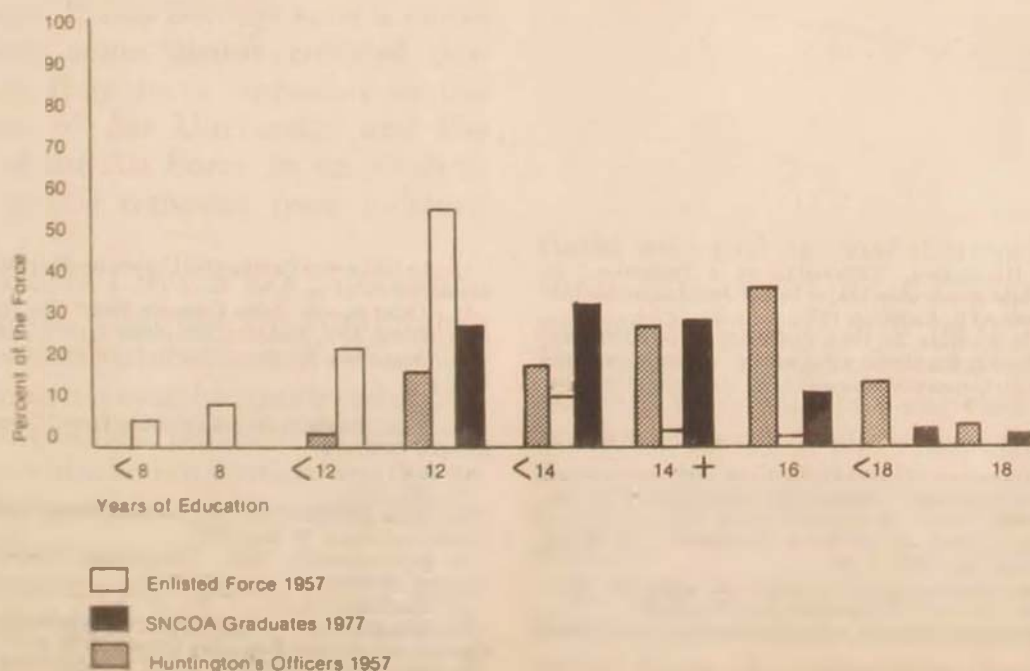
The educational accomplishments of the SNCOA graduate become even more significant when one considers that he has been through basic military training, technical school, on-the-job training, skill knowledge tests, promotion fitness examinations, general military training, human relations training, and five levels of professional military education. Is it any

wonder that it took him twenty years to catch up to Huntington's officers?

THIS article has explored the changing status of the enlisted airman and the noncommissioned officer. What effect does an outdated definition of professionalism have on the officer candidate or an officer studying his career development course? One of the operational points of leadership is to know your people. One can only conclude that it is carelessness, incapacity, and neglect that cause the Air Force to fail to recognize the efforts of so many of its enlisted people. Many of my colleagues have stated that they were appalled to learn that this kind of thinking was still around, let alone used to train future officers and commanders of the United States Air Force.

Almost a hundred years ago, the *Army*

Figure 3. Years of education achieved by Huntington's officers (1957), the enlisted force (1957), and Senior Non-commissioned Officer Academy graduates (1977)



Officers Guide is reported to have stated, "Enlisted men are stupid, but extremely cunning and sly, and bear considerable watching." As late as 1957, Professor Huntington put it, "...The enlisted personnel have neither the intellectual skills nor the professional responsibility of the officer."²⁰

In conclusion, it is the author's position that the NCO is a professional in every sense of the term. His profession is the same as that of the officer: service to his country. His relationship to the officer is marked by loyalty and mutual respect. Let's not forget that the word *sergeant* comes from the Latin word *servire*, meaning to serve. The complexity of the times requires even greater things of the NCO and the officers he supports; therefore, the meaning of the word "sergeant" is as important as ever.²¹

As NCOs we have a proud tradition, and a proud tradition is ours to make. But, in

the words of one of our most professional airmen, General Curtis LeMay, "It is not necessarily what we have done in the past but what we are doing today and will be doing tomorrow that will count in the final summation."²²

It is my recommendation that Air University review its course materials dealing with professionalism. Narrow concepts of the enlisted men and women, especially those dependent on the expertise of one individual outside the military, should be rejected as inadequate to describe the uniqueness of today's enlisted airman and professional NCO.

The Air Force should realize that the general belief that education offers opportunity has convinced the enlisted members of the Air Force to go to college. They now have excellent if not the best possible educational and professional qualifications for increased opportunity to serve their country.

Alcoa, Tennessee

Notes

1. Samuel P. Huntington, "Officership as a Profession," in *Concepts of Air Force Leadership*, Major Dewey Johnson, editor (Air University: Maxwell AFB, Alabama, 1970), p. 92.

2. Lt. Col. Zeb B. Bradford, Jr., USA, and Major James R. Murphy, USAF, "A New Look at the Military Profession," in *Concepts of Air Force Leadership* (Air University: Maxwell AFB, Alabama, 1970), p. 94.

3. *Ibid.*

4. *Ibid.*, p. 93.

5. *Ibid.*, p. 95.

6. Sam C. Sarkesian, "Political Soldiers: Perspectives on Professionalism in the Military," *Midwest Journal of Political Science*, May 1972, pp. 239-58.

7. "Educational Levels of Air Force Personnel," *Air Force Personnel Newsletter*, July 1958, p. 13.

8. *Encyclopedia Americana*, 1975 edition, see especially "Professional Education" by Lloyd E. Blanch, pp. 632A, 632B.

9. Department of the Air Force, *Career Fact Book for the Air Force Officer*, p. 24.

10. Blanch, *Encyclopedia Americana*.

11. *Air University Catalog* (Air University: Maxwell AFB, Alabama, September 1975), pp. 5, 47.

12. "Chief Fairley Takes Colonel's Post," *The Dispatch*, Maxwell AFB/Gunter AFS, Alabama, November 4, 1977, p. 2.

13. "Standards: Words to Live By," *Air Force Times*, November 7, 1977, p. 4.

14. *Ibid.*

15. "Two Years with the All-Volunteer Force," *Commander's Digest*, 10 April 1975, p. 2.

16. *Ibid.*

17. *Ibid.*, p. 3.

18. "Education Level of the Enlisted Force—End of March 77," *USAF Fact Sheet*, 19 May 1977.

19. AUN-ACM(AR) 7403, "Educational Statistics—AFNCOA," January 1977 through December 1977.

20. Huntington, p. 92.

21. *The Anatomy of the NCO* (Knoxville, Tennessee: ANG Professional Military Education Center, 1973), p. 17.

22. *Ibid.*, p. 18.

“The enlisted men subordinate to the officer corps are a part of the organizational bureaucracy but not of the professional bureaucracy. The enlisted personnel have neither the intellectual skills nor the professional responsibility of the officer.”

DR. SAMUEL P. HUNTINGTON

THIS statement, written by one of the most respected authorities on the military, is taken from his book *The Soldier and the State* and excerpted in *Concepts of Air Force Leadership*, a publication used in the Air Force ROTC Program.

Concepts of Air Force Leadership, edited by Major Dewey E. Johnson, is one of the outstanding books available on the subject of leadership and management and has thus found its way into most officer and NCO professional military schools in the Air Force.

NCOs reading this passage usually suffer immediate pangs of emotion, such as disbelief, anger, and sometimes out-and-out rage. It has become such a cause célèbre with some senior enlisted personnel that they have appealed to the Commander of Air University and the Secretary of the Air Force, in an effort to have the article removed from military textbooks.

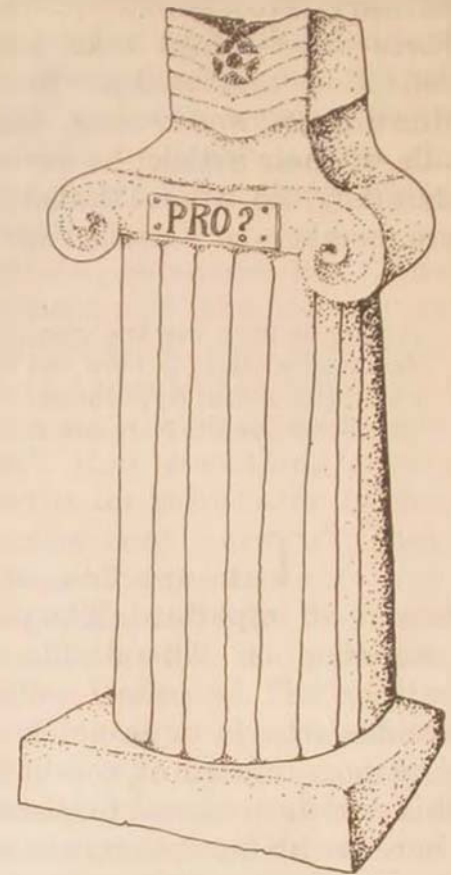
In this article I would like to examine several issues. What did Dr. Huntington say, and what did he mean? Was this intended, or can it even be construed to be a slander on enlisted persons? What is a profession, and who is a professional? And what of the question of the right of free expression?

The educated, perceptive reader may wonder why a review of Huntington's article is necessary and wonder, indeed, if

NCO PROFESSIONALISM

a straw man

SENIOR MASTER SERGEANT
ROGER P. SCHNEIDER



those who rail against it have read more than the offending passages. Those perceptive readers will have recognized Huntington's article for what it is, not an attempt to downgrade enlisted personnel but an attempt to show that the military service is a profession, akin to the recognized professions such as medicine and law.

In order to accomplish this task, Dr. Huntington found it necessary to postulate three characteristics that he deter-

mines are common to all generally acknowledged professions: expertise, responsibility, and corporateness. For one to agree with Dr. Huntington, it is necessary to accept his definition of a profession. Lieutenant Colonel Zeb B. Bradford, Jr., USA, and Major James R. Murphy, USAF, in their article "A New Look at the Military Profession," (*Concepts of Air Force Leadership*) take issue with his definition and outline their view that Huntington was wrong. Implicit in the title of their article, however, is the fact that they, too, believe that military officers are members of a profession.

And you give me the choice between a description that is sure but that teaches me nothing and hypotheses that claim to teach me but that are not sure.

Albert Camus

THE question of perspective here is all important. Who decides what a profession is? Who decides which occupations will be called professions? Who decides who is or is not a professional? And more important, so what? The facts in this case do not speak for themselves, since there are no facts; there are only opinions. Dr. Huntington defines the characteristics he believes distinguish a profession, then proceeds to fit military officers into the box he has created. To do this he must come up with an "area of expertise" for officers so they can qualify. He says their expertise is "the management of violence." Bradford and Murphy disagree. Officers are members of a profession, but they "engage in a multitude of tasks." There are, of course, other definitions of what constitutes a profession. According to *Webster's Third New International Dictionary* it is "a calling requiring specialized knowledge and often long and intensive [academic] preparation." Utilizing this definition,

could we not rule out military officers altogether? What exactly is the specialized knowledge required to be an officer? And how about long and intensive academic preparation? It has been only recently that a degree was required to be an Air Force officer, but that degree can be in anything—English, geography, zoology, fine arts—as long as it is a degree. You can receive long and intensive academic preparation in law, you can receive long and intensive academic preparation in medicine, but you cannot receive such preparation in "the management of violence" or "a multitude of tasks." There is even a trend afoot to move away from the generalist theory in officer professional military education. Army Major Robert M. Shea, writing in the March 1975 issue of *Military Review*, states, "The officer generalist will join the blocked hat and the technical sergeant as once good ideas now relegated to history by progressive thinking." The thrust of his article is that officer PME must move toward tailoring the education to the individuals' specialty requirements. In other words, officers are not professional officers, but are like NCOs, technicians, and specialists.

How do we define the term "professional"? We can define it as a person engaged in a profession. Or we can define it as anyone engaged in an activity for money, the opposite of an amateur. Or we can define it as a person doing an extremely good job, whatever the job may be. Using that definition, one could be a professional doctor, a professional street cleaner, a professional officer, or, indeed, a professional NCO.

I would like briefly to re-examine the specific charge that Dr. Huntington's statements are derogatory

to NCOs. In view of the foregoing paragraphs, it may be noted that Dr. Huntington's article is not derogatory to NCOs but is flattering to officers by attempting to include them as members of a profession. But because that requires a value judgment that people in professions are somehow intrinsically superior to people who are not, then that is a value judgment I am unwilling to make.

To those individuals who take offense at Dr. Huntington's statements, I would direct this question: What, specifically, do you disagree with? Look again at the quote at the beginning of this article. Can anyone rationally argue that enlisted personnel have "the professional responsibility of officers"? Of course not. Enlisted personnel manage shops and sections; officers manage squadrons, wings, and major commands. There can be no doubt that officers have much greater professional responsibility than do enlisted personnel.

And how about the question of "intellectual skills"? We are not talking here about intelligence. We are not talking about education. We are not talking about ability. We are not talking about common sense. We are talking about intellectual skills. Skills are a learned or developed ability.

What kind of training do officers receive to learn and develop intellectual skills? First, they must have obtained a college degree, and colleges are devoted to the development of intellectual skills. Then, during their careers they have the opportunity to further develop these skills through the officer professional military education program: Squadron Officer School, Air Command and Staff College, Air War College, and Industrial College of the Armed Forces. The enlisted person may or may not have a high school diploma; and the total time of all NCO

professional military education courses added together is less than half that devoted just to the Air Command and Staff College. It is true, of course, that there are many enlisted personnel who have more intelligence, more education, and indeed more intellectual skills than many officers. But taken as a group, enlisted personnel have neither the professional responsibility nor the intellectual skills of officers. Therefore, despite our gut reactions of anger and rage, we must, in the cold, hard light of logic, admit the obvious—Huntington, in these statements, is correct.

To those enlisted personnel who do not buy this argument and who feel they are indeed the professional and intellectual equal of officers, I pose this question: Why are you not writing for your professional journals? Isn't that something professionals do—write for publication in their respective professional journals? I have searched in vain for your articles, your ideas, your arguments. We are reduced to depending on officers like Major Pember W. Rocap ("The Unknown Professional Soldier," *Air University Review*, January-February 1977) to take up the banner for us. Major Rocap, however, is forced to defend us against ourselves. He says,

Within the Air Force, the exclusion of the subject of the NCO from the deliberations of the professional mainstream has also been noticed and commented on by NCOs. In a 1973 study for the Air Force Senior NCO Academy, "The Air Force NCO, Motivation or Complacency," Senior Master Sergeant Michael L. Farino and Chief Master Sergeant Carroll E. Vaughn wrote that [the] "professional military publications such as the *Air University Review* and the *Air Force Magazine* have largely ignored the NCO."

They state that attempts to collect authoritative background for their study were fruitless.

If NCOs have been excluded from the professional mainstream, we have only ourselves to blame. If we want to be included, we will be included. The plain fact of the matter is, we have defaulted. The *Air University Review* and *Air Force Magazine* cannot conjure up articles by NCOs. NCOs must speak for themselves. We cannot complain about the absence of articles if we do not write any. If intelligent, concerned NCOs had published articles, instead of decrying their non-existence, perhaps researchers would have been able to find some. In May 1977, Lieutenant General Raymond B. Furlong, in a letter to General Louis Wilson, then Commander-in-Chief, Pacific Air Forces, stated that Chief Master Sergeant of the Air Force Thomas N. Barnes had raised the issue of the Huntington article with him, and that it was suggested to Chief Barnes that some NCO write a rebuttal of Huntington for publication. Chief Barnes has reportedly presented this suggestion to many groups of NCOs. The response? No takers.

Where men cannot freely convey their thoughts to one another, no liberty is secure.

WILLIAM ERNEST

Now let us turn to the serious issue of freedom of expression and freedom to know. Those who have read history can readily cite examples of people like Galileo and others who are scorned and persecuted for views and ideas held to be unpopular or heretical, views that contradicted the conventional wisdom of the time. Unfortunately, intolerance seems to be one of the universal ills that still beset us.

To those who would have the Huntington article excoriated from military texts, I suggest they consider the implications. Are we to deny people the writings of one of the most respected authorities on

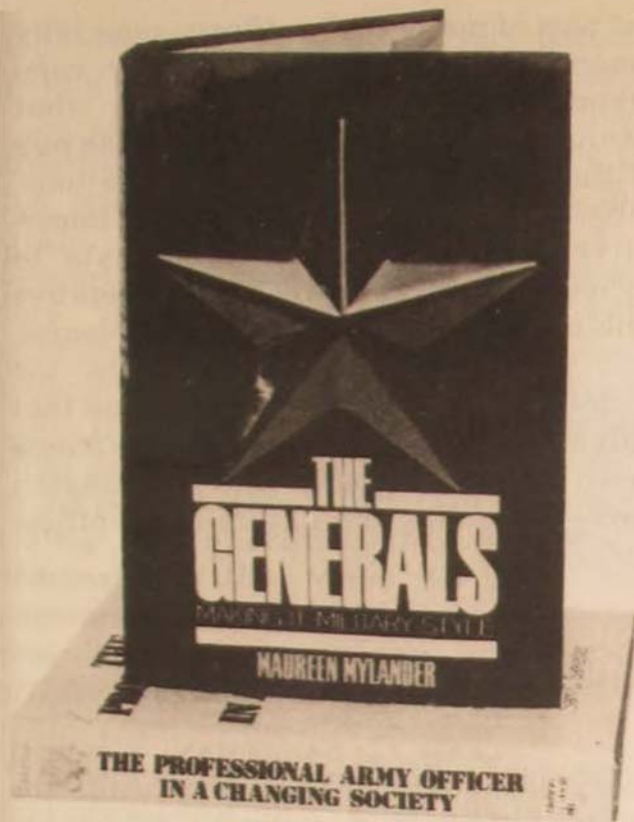
the military? I suggest that Dr. Huntington has an absolute right to his opinions, and I have an absolute right to know what his opinions are. Intellectual freedom dictates that ideas be opposed by other ideas, not by censorship. To those who want Huntington's article ringed with interpretations and rebuttals, I say that we are seriously questioning an individual's intellectual integrity when we make him read several articles before he is capable of evaluating a particular article for himself.

FINALLY, there is the larger question of perspective. So what? People have been writing articles about professionalism for many years. The Huntington article, for example, is twenty years old. Yet in the January-February 1977 issue of the *Air University Review*, there appeared the article by Major Rocap, who feels that Huntington's issue "clearly must be confronted and thoroughly examined." Why? Many very talented, indeed very professional, NCOs have made it through twenty or thirty years of military service without caring what Dr. Huntington or anyone else thought about their professional status.

There are many serious, important, relevant questions that need to be confronted and examined, however, such as the growing military strength of our enemies, the problems of recruiting and maintaining a quality force, the problems of doing more with less, of accomplishing the mission better, of taking care of our people, of drugs, of alcohol, etc.

The issue of professionalism is a bogus one that cannot be resolved and has no real bearing on anything. So let us get on with the business of being professionals and leave the debate to those with nothing better to do.

Pacific Air Forces NCO Academy



PRESCRIPTIONS FOR PROFESSIONALISM

MAJOR WILLIAM M. DOLLAR, USA

THE central problems facing the military profession today focus on two issues, identity and purpose. No reasonable man can be expected to pursue a profession of questionable utility in an environment of diminishing esteem. This "identity crisis" must be quickly resolved if we are to recruit and retain a high-quality officer force.

Contemporary evidence suggests that identity is directly related to organizational purpose. The most promising direction to search for a new purpose is in redefining professional roles while maintaining internal competence in the omnipresent requirement to direct the nation's combat forces during wartime.

A survey of recent literature reveals that soldiers and scholars share an unusual

consensus on both the sources and solutions to these problems. Evidence, however, tends to be scattered through publications not normally available in military working areas, or it springs from lecture halls and seminars oriented toward specialized audiences.

The idea persists that the military profession mirrors the society. Speaking to an audience of business leaders, academicians, and soldiers during the Civilian/Military Institute Symposium at the Air Force Academy, Lieutenant General DeWitt C. Smith, Jr., then the Commandant of the Army War College, defined the societal relationship of the military establishment in these terms: "There is no country in the history of the world less like Sparta than the United States. Members of

the military profession are also members of the society at large. We have the same dreams and aspirations as other members of American society."¹

General Smith's assertion is by no means original. A popular argument to counter hypercritical essays deriding present conditions in the Army is based on just such logic. The reasoning goes much deeper, however. It demands that we examine societal forces such as the internal political situation, current economic conditions, and the international environment since these elements define the role of the armed forces and shape its attitudes, ethics, and professional legitimacy. Researchers tend to treat the military society as a separate entity unaffected by these conditions. This oversight produces enormous distortion between traditional ideas of what the professional soldier is expected to be and contemporary realities that dictate what he is allowed to be.

As early as 1971, Lieutenant General Robert G. Gard, Jr., pointed out that "American society will set the tone and general limits within which the armed forces can adjust traditional concepts of professionalism to changing realities in international competition and cooperation, changing conceptions of the role of the United States in world affairs and changing social values."²

Efforts by the military establishment to respond to these new demands have produced considerable re-examination of institutional purpose, questioning its ethical underpinnings and launching a new search for a viable role in the society. It has also fostered considerable skepticism and an attitude of introspection on

the part of many Army officers, especially among those who have recently commanded troops. We face head-on what Samuel P. Huntington has called the nub of the problem of civil-military relations, "that of balancing the functional imperative stemming from the threats to society's security and a societal imperative arising from the social forces, ideologies, and institutions dominant within the society."³ Serious attempts to define that balance lead contemporary researchers down the same path that Huntington took—describing the nature of the officer corps.

SAM C. SARKESIAN, a retired Army lieutenant colonel who heads the political science department of Loyola University in Chicago, offers what he considers an insider's view in his book *The Professional Army Officer in a Changing Society*.† Professor Sarkesian rose through the ranks and brings to his study experience ranging from combat duty with Special Forces to service on the faculty at West Point. Although his outlook is colored by his background and is even now somewhat dated, the tone of the book is a welcome respite from the damning diatribes other former officers have presented to the public. The author makes it quite clear that he will neither "...attempt to diagnose the ills of the Army nor prescribe for its health." He portrays today's professional Army officer as a man torn between isolating himself in his traditional self-contained community while hoping for the return to normalcy that has

†Sam C. Sarkesian, *The Professional Army Officer in a Changing Society* (Chicago: Nelson-Hall, 1975, \$13.95), 268 pages.

followed other wars or actively participating in the search for a new legitimacy.

Sarkesian defines the tenets of professionalism much as did Huntington, in his seminal work *The Soldier and the State*.⁴ Huntington's "corporateness" becomes Sarkesian's "organization structure," "expertise" becomes "special knowledge and education," and "responsibility" becomes "self-regulation." He goes further than Huntington, however, and applies what he calls "commitment and calling" to the present state of affairs in the Army. Using this characteristic, Sarkesian demonstrates that while the profession possesses these attributes traditionally considered above reproach, accession to officer status does not automatically confer them on the officeholder.

Closely allied with Huntington's concept of responsibility, especially in terms of contributing to society, is Sarkesian's notion of the motivational element in the professional character. This variable often serves as the vehicle for substantive change. It can be greatly enhanced by family contentment, meaningful superior-subordinate relationships, and the development of a sense of organizational purpose. Certainly the financial rewards for a military career are more competitive than ever before, but money is obviously less motivational to the professional than the more cerebral issues: a feeling that the organization needs him; having an input into policies that affect him, his unit, and the soldiers for whom he is responsible; and above all, a feeling that the service he provides is essential for the nation's well-being. Expand these issues from the individual to the institutional level and we begin to address the root of the problem of social legitimacy facing the military establishment today. Sarkesian succinctly states it this way:

If the military profession is to regain its

past prestige and restore its integrity, it must recognize that it is the servant of society. The profession, therefore, cannot bestow legitimacy upon itself—this comes from society, and must be the fundamental professional premise.

With that beginning, Sarkesian goes on to present a point of view about what is happening both in and out of the Army as he imagines today's professional officer views it. Since the book is directed toward an audience unfamiliar with the service, uniformed readers can skip over chapters that describe duty in the Pentagon and skim briskly through material on the role of the wife and the socialization of the family, which Sarkesian dramatically refers to as "the shadow world." No doubt, to the uninitiated that intriguing title will conjure up some very distorted notions regarding the forces at work in this arena. It is unfortunate, too, because civilian readers will unduly weigh social relationships and ascribe to them much more influence than they actually enjoy. These aspects of military life are significantly affected by recent changes. Increased salaries, longer tours, guaranteed station choices following short tours, and the overall reduction in personnel turbulence have caused military families to become more and more civilianized. Combine these features with increased specialization in the career development system and Sarkesian's assessment of the influence of internal social factors is greatly diluted.

Sarkesian covers the grinding detail of officer efficiency reporting and ticket-punching in a thoroughly readable and informative package. He keeps his earlier promise and avoids numerous opportunities to editorialize. The result is a cohesive description of our system containing an implicit criticism of the tendency for cutthroat competition. He would argue that one serious flaw in the

present rating system lies in the danger of rewarding conformity and punishing mavericks who may espouse individual ideas. He recognizes that the profession is a conservative organization that philosophically values the group above the individual. Progress and meaningful change face the same institutional inertia as in any bureaucracy.

Sarkesian urges us to devise methods that will identify the conspiratorial ticket-puncher and the cutthroat career-climber while rewarding the committed professional. He emphasizes the pitfalls of the current system but offers no viable alternative for narrowing the gap between the professional ideal and contemporary reality. Meanwhile we must live with the imperfections of the current system.

Although the Army has incorporated a new system of efficiency reporting since Sarkesian's book was published, the squares and figures on the forms he describes remain a permanent part of the record. They are, theoretically, the only oracle to which promotion boards may speak; so whatever the changes since their completion, they are very much a part of today's promotion system. That system, regardless of its modified format, legal safeguards, etc., is an imperfect device subject to the frailties and prejudices of human manipulation.

Sarkesian comes very close to prediction in his discussion of the emerging elite, the aftermath of Vietnam, and the future character of the profession. It is here that his ideas appear most parochial due to his Special Forces experience.

Conveniently classifying the modern officer corps on the basis of age, he discusses the salient characteristics of each group and assesses their impact on the modern military establishment. He describes today's elites as a generation steeped in the traditions of conventional

professionalism. These "traditionalists" entered the armed forces before, during, or immediately after World War II. They remain convinced that the restiveness in contemporary society is a passing phenomenon and the return to traditional values is inevitable. Securely entrenched at the top of the hierarchy, the traditionalists view their role as preserving the rigid pre-World War II ideal of an isolated professional.

The next layer, the transitionalist, is comprised of officers who entered the service during and immediately following the Korean War. They are a generation who witnessed a limited war in Korea, observed the Lebanon crisis, the Cuban missile affair, and the commitment of forces to the Dominican Republic. Unlike the traditionalist, this group has always operated in an arena where military force was used as a political instrument to influence conditions in the international environment. They are accustomed to seeing armed forces committed to situations where political advantage is the ultimate objective and all-out combat is a condition to be avoided. Generally better educated and certainly more sensitive to the society, the transitionalists are imaginative and innovative. As this group evolves into the top leadership positions, Sarkesian implies that rigidity and resistance to change will begin to dissipate. This will result in some convergence between the profession and society and will accelerate the acquisition of social legitimacy.

The third group, the modernists, represents an era characterized by domestic dissent, rejection of authority, and a pervasive attitude of antimilitarism. These officers entered the service during the 1960s and served as captains and lieutenants during the Vietnam War. They experienced the effects of social unrest

prevalent during that period and will, therefore, reflect a more liberal attitude than their elders. As the modernists rise in the hierarchy, Sarkesian believes that professional ideology will become more reflective of the society. Modernists will tend to answer questions relating to the purpose and role of the military in consonance with societal realities.

In Sarkesian's opinion, the Vietnam War placed the American Army in a no-win situation from the outset. Conventional tactics, traditional concepts of victory, and a thorough misunderstanding of revolutionary warfare compounded the difficulties produced by a lack of public support. Salvation, he implied, depended on adapting traditional strategies to winning an unconventional war. In the final analysis, we failed to recognize that revolutions are bound to succeed unless they are crushed with overwhelming force or by offering the polity better conditions than the revolutionary. The former course of action was out of the question because it violated the American ideal of protecting noncombatants. The latter alternative was overlooked because most military and civilian elites did not understand unconventional warfare.

The draft caused many young men with strong antimilitary sentiments to enter the service. Their introduction into ambiguous combat situations eroded organizational cohesiveness, discipline, and military spirit. The national purpose was questioned. Military men at all levels found their tasks frustrated by ambivalence on the part of their leaders, peers, and subordinates. Ticket-punching created a lack of stability and continuity in the command structure at all levels. Meaningful superior-subordinate relationships

were rare, and the faith in leadership exhibited in previous conflicts was woefully absent.

The war ended with the withdrawal of public support. Left with the disappointment of failure and the memory of scandals that touched the very soul of professionalism, the American military establishment faces an uncertain future. That future, according to Sarkesian, must include the re-establishment of an attainable, operable, professional ethic coupled with a viable institutional purpose.

Sarkesian concludes that the profession of arms will be permanently modified as it becomes more and more involved with social issues. Such involvement is inevitable in the essential quest for a new legitimacy. His formula for change is ill-defined, but he suggests that military assets be turned to the benefit of society. Military civic action groups, Special Forces units, and medical rescue teams could possibly expand their operations to include service to civilian communities and institutions. Historical precedents and contemporary examples can be readily cited to support the efficiency of such endeavor. Sarkesian fails to account for the fact that such peripheral pursuits have always hurt the military establishment by detracting resources and attention from its primary task of combat readiness.

IF Sarkesian's work can be labeled as an "insider's view" of the military establishment, Maureen Mylander provides an "outsider's opinion" in *The Generals*.† The daughter of a West Point graduate, Mylander grew up in the Army but cut her military ties at the age of

†Maureen Mylander, *The Generals: Making It Military Style* (New York: The Dial Press, 1974, \$10.00), 397 pages.

eighteen. She went on to pursue a career as an information specialist and has since enjoyed wide success as a journalist.

Motivated by what she terms a need to "... get to know the men behind the guns," she provides an in-depth study of Army generals and the system whereby they ascend to the top of the profession. Her research is overwhelmingly subjective, and her style is often sensational.

She portrays the professional soldier as a man consumed by a desire for promotion. Competition is the single most pervasive feature of the system. It is instilled at West Point, nurtured through association with superiors who provide the role models, and tested in units and professional schools throughout the Army. There are no alliances, no margins for miscalculation, no room for the man who permits some human quality to pre-empt an opportunity to outdistance a classmate, a friend, or a fellow soldier. Success breeds success, and failure causes immediate and permanent disaster.

The man who embodies Mylander's necessary qualities for generalship is cold, calculating, and brutally self-serving. The system that produces generals, she implies, makes the institution insensitive to the needs and attitudes of contemporary society. Herein she identifies the problem with today's military establishment.

She provides what might be called a handy pocketguide of do's and don'ts for the would-be general. The list contains such guidance as "don't specialize," "don't buck the system," and "don't be overly critical." The do's include, "command at each level," "win medals," and "work hard." The items on the list could apply to any profession with but little modification. Mylander offers them as features that inevitably relegate the military to a less than professional status.

Certainly professional attributes must

be interpreted in terms of balance and degree. Failure is to be abhorred. We cannot afford to lose the ultimate battle so should we not expect the soldier to view failure with more disdain than the businessman? As far as competition is concerned, societies that place second in wars do not survive, so is it not essential that professional soldiers be more competitive as a group than, say, educators? Soldiers, particularly in the combat arms, always strive to command—that is the ultimate test. If we want our soldiers to be political scientists, engineers, or international relationists we have numerous institutions in which to train them. In fact, when we need those skills in the officer ranks, we can commission them as we did in World War II, but they are Christmas help, not military professionals. The university for the general must remain in the crucible of command. American society does not require the officer to be anything except a winner. The professional attributes embodied in competitiveness and the ability to command, therefore, are the most basic demands society makes on its soldiers.

The road that leads Army officers to the ultimate promotion is depicted in very realistic terms in *The Generals*. The officers who presently wear stars have ascended, almost to a man, through the channels provided by the combat arms. Infantrymen, artillerymen, and armor officers dominate the general officer ranks because their career patterns offer numerous opportunities for command. Candidates go from one job of high responsibility to another, from one specialty to another, never pausing in any area long enough to become polarized. Careers follow classic patterns that include necessary detours for schools and assignments where points of view are tempered through association with bright con-

temporaries. Generals-to-be share common experiences by attending prestigious universities, filling faculty positions at one of the war colleges or at West Point, and often working on highly visible Joint Staffs. Along the way most have benefited from the sponsorship of one or more of the famous patriarchs of World War II. All of them have demonstrated enormous capacities for work, dedication, and the best traditions of the profession. They have ridden out many storms and survived unscathed. Basically they demonstrate the intelligence and tenacity required to rise to the top of any profession. The paths they follow are not open to all members of the military service, and doors close for many reasons along the way.

Mylander implies that the system through which a man attains star rank rewards bureaucratic astuteness more than individual ability. She leaves the reader with a nagging fear that the most resourceful and the best qualified officers are many times eliminated by the drive for systemic conformity. This tendency rewards the officer who displays the attributes of an organizational man while stifling innovative intellectualism or efforts to attune the organization to the needs of the society.

Unlike Sarkesian, Mylander prescribes for the ills of the Army. She believes many of today's problems stem from ticket-punching or rising to stardom through highly stylized career patterns. She suggests that the Congress take a more active interest in general officer nominations to broaden the experience base and eliminate classic promotion patterns. The civilian elites in the Defense Department can also do much to break the mold by rewarding the specialist, the nontraditional careerist, and the devil's advocate. Longer tenure, especially for commanders, is another Mylander prescription and one

that has seen some amount of fruition since her book was published. She suggests allocating general officer billets on the basis of job responsibility rather than on the size of command. Such changes would require the dedication of general officer slots to the specialist fields and, thereby, provide multiple routes to the top.

Many readers can be led astray by Mylander's tendency to generalize and by her proclivity for overstatement; however, there is much substance and a great deal of truth in *The Generals*. Military readers would do well not to dismiss the message on the basis of the delivery. One way to ensure meaningful change is to consider outside opinion, especially when change is so obviously apparent. Mylander provides a view insiders are incapable of rendering. It is based on some well-documented research and at times is reminiscent of popular insiders' prescriptions. More recently she has updated part of the book dealing with the mechanics and psychology of the war colleges.⁵ This demonstrates a professional sincerity not associated with journalists who generally tend to espouse popular ideas for the benefit of readership. She recognizes current efforts to effect institutional change and warns that the Army must be careful to ensure that cosmetic adjustment does not forestall the pressing need for substantive organizational change.

SOCIAL legitimacy, professional relevancy, and military ethics are popular topics for contemporary writers. Sarkesian and Mylander provide two of the more articulate works, but they share the common fault of being apart from the military establishment either through time or vocation. Such points of view are worthwhile in redefining a new direction

for the military establishment, but soldiers ultimately choose and direct the course of the future in the profession of arms. The impetus for meaningful change must, therefore, come from within the profession.

Writing for the *Strategic Review* in the fall of 1976, Colonel William L. Hauser suggests that some evidence of adjustment is already apparent.⁶ He posits the notion that substantive change can only be realized after a redefinition of strategy. Currently it appears that strategy is tied to the maintenance of a sixteen division force with all the ancillary support required to sustain combat in Europe. Colonel Hauser quite logically concludes that the resources for such a strategy are out of the question. The idea is fostered and perpetuated, however, by a generation of officers who ascended to prominence during the latter days of World War II and in the years preceding Korea. This group now occupies high offices and wields great influence. Hauser calls them the "long generation." They equate to Sarkesian's traditionalist and provide an effective barrier to the essential strategic adjustments required to reconcile capabilities with missions in a modern world. He further suggests that in terms of size and purpose, the army of the future will be characterized by the maintenance of flexible forces tailored for rapid deployments. As the long generation passes and officers who have had recent line experience emerge in the sense of Sarkesian's transitionalist, more strategic realism, relevance, and organizational purpose will evolve. Internal reform will continue, but massive, rapid change is hardly a possibility.

There exists today an institutional uneasiness produced by recent social antipathy. This attitude will become less pervasive as new career management

programs and reasonable bureaucratic procedures are initiated by the transitionalists. Hauser points out that we are hardly on the verge of producing a mercenary professional who looks at his work only as a job. Soldiers still value patriotism, enjoy working in a profession where success is measurable, and the vestiges of systemic prestige still abide. Finally there is a psychological macho associated with soldiering that will persist, and we will continue to attract officers who are motivated, capable, and professionally sincere. He emphatically warns us, however, that we cannot rely on self-motivation and internal reward forever. At some point, society must mediate its attitude of antimilitarism and bestow legitimacy. He trustingly asserts that the society will deliver, and public respect will ultimately be reinstated.

Colonel Ronald P. Dunwell, United States Marine Corps, speaks for a large number of contemporaries when he suggests that the military profession has become overpoliticized.⁷ This condition has overburdened the organization with nontraditional military roles and mesmerized elites with management procedures and civilian organizational styles. This tendency has been amplified over the years as subordinates perceived such expertise as necessary for upward mobility. It has created excessive bureaucratic layering and severely diluted the armed forces' capability to perform its chartered role in the society. Further, it has created a generation of officers more adept in foreign affairs and management principles than in the business of training and leading soldiers. While agreeing that some degree of balance is necessary, Colonel Dunwell calls for a reversal of present trends and urges a return to emphasis on the uniquely military features of the institution.

ALL OF THESE suggestions represent an inordinate amount of intellect, expertise, and personal effort on the part of the authors. Sarkesian tells us where we have been and suggests a few ripe areas for future exploration. Mylander identifies some bureaucratic realities that are self-defeating, archaic, and divisive. Obviously she is not all wrong, and the Army is not the only guilty party. The two soldiers I have mentioned deal with the "now" issues. Can we field large standing armies capable of sustaining prolonged conventional engagement in Europe, or does Hauser's force structure make more sense?

Current strategic concepts do not square with the popular admonishment to do

more with less. When strategy is out of step with capability, some rationalization necessarily occurs. How does this affect our ethical code?

Officers are expected to be expert soldiers. When was the last time we wrote a field order or was that ageless military command tool covered in the curriculum? Certainly officers must maintain a broad information base, but is not an understanding of the unique elements of the profession essential to professionalism? Social legitimacy must be earned by the military establishment. To achieve this, there is a pressing need for the soldiers of all services to return to soldiering. It is a full-time job.

USAF Academy

Notes

1. Molly Riffel Parrish, "Gen Smith Says Criticism Needed," *Colorado Springs Gazette Telegraph*, February 13, 1977, p. 3A.

2. Colonel Robert G. Gard, Jr., "The Military and American Society," *Foreign Affairs*, July 1971, p. 710.

3. Samuel P. Huntington, *The Soldier and the State* (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1959), p. 17.

4. Huntington, pp. 8-14.

5. Maureen Mylander, "The War Colleges," *The Times Magazine: Supplement to the Army Times, Navy Times, and Air Force Times*, March 7, 1977.

6. Colonel William L. Hauser, "The Military Ethic," *Strategic Review*, Fall 1976, p. 76.

7. Colonel Ronald P. Dunwell, USMC, "Erosion of an Ethic," *United States Naval Institute Proceedings*, March 1977, p. 56.

AIR WAR AT SEA IN WORLD WAR II

DR. PAOLO E. COLETTA

IN tracing the experiences of two convoys, SC 122 and HX 229, sailing eastward early in March 1943, Martin Middlebrook, in his book *Convoy*,† covers every conceivable aspect of U-boat and antisubmarine warfare (ASW): the status of Allied merchant shipping between 1939 and 1943; the tasks of naval and civilian men in convoys and of U-boat crews; both American and British convoys and routing procedures; the organization of a convoy and its escort; the operations conducted at "Onkel" Karl Doenitz's U-boat headquarters, including Allied code breaking; and enough battles between U-boats and surface escorts to satisfy the most bloodthirsty naval war buff. At the time, Allied air cover on both sides of the ocean was minimal. Middlebrook then portrays the eventual closing of the air gap, or black pit, between Greenland and Iceland, which widened greatly from north to south, by the use of long-range aircraft and of hunter-killer groups. Included are excellent descriptions of air versus U-boat warfare.

Middlebrook used a great variety of sources. In addition to researching official documents and secondary data, he interviewed many surviving Allied men and

women who sailed in the convoys and the Germans who worked at U-boat headquarters and operated the U-boats, and American and British aviators as well. He notes the contest between Admiral Ernest King and the Army Air Forces for responsibility for air ASW and the fragmentation of the long-range American and British air forces in North Africa and in ensuing American operations in the Pacific and in the Mediterranean. From the dispersion of this air power he concludes that the Army Air Forces knew that they must end their chasing of the rainbow of winning the war by the strategic bombing of Germany. Until late March 1943, such fragmentation precluded extensive air operations against U-boats. On 18 March 1943, a suggestion by President Franklin D. Roosevelt caused King to find B-24 Liberator bombers to operate out of Newfoundland and to institute support (Huk) groups. Germany's acoustic torpedoes, schnorkel boats, and advanced-design U-boats simply came too late to overcome Allied countermeasures.

While neither the British in 1939 nor the Americans in 1942 were prepared for ASW, Hitler's blindness to naval power predicted that few U-boats were ready for operations in 1939 and that only 37 new ones were built in 1940. Hitler thus gave the Allies time to build up naval escorts and air power. In the last six months of 1942, the sinking of U-boats by aircraft exceeded that by surface escorts. By late 1942, B-24 very-long-range Liberators, B-17E Flying Fortresses, and Sunderland flying boats flying out of Newfoundland, Iceland, Northern Ireland, and the Outer Hebrides, began covering convoys and killing U-boats. Radar, high-frequency direction finders, star shells, and Leigh

†Martin Middlebrook, *Convoy* (New York: William Morrow and Co., 1976, \$12.50), 330 pages, appendixes, acknowledgments, illustrations, charts, index.

lights helped find U-boats so that they could be depth charged and strafed, and in 1944 Tallboy bombs finally destroyed U-boat shelters along the French coast. With the Allied "Happy Time" in the Bay of Biscay, Doenitz shifted from attacking North Atlantic convoys to tonnage warfare. Shortage of modern escorts and of air cover nevertheless had nearly enabled Germany to cut communications between the old world and the new during the first three weeks of March 1943. Thereafter, to the end of the war, 590 U-boats were destroyed—290 by aircraft, 174 by ships, and the rest by combined ships and air or other causes. Middlebrook's annoying use of the passive voice notwithstanding, this is the best account of ASW warfare in the Atlantic known to this reviewer.

JAMES MERRILL'S popularly written biography, *A Sailor's Admiral: A Biography of William F. Halsey*,† deals largely with Halsey's career in World War II. He devotes only sixteen pages to pre-Pearl Harbor days and only eleven to Halsey's life following the surrender of Japan. The work supersedes the Halsey and J. Bryan III *Admiral Halsey's Story* (1947) and compares favorably with Frank Benis's *Halsey* (1974).

Halsey is a fabulous subject to write about because he was so colorful and also because he commanded carrier forces for four years in the Pacific war. In early 1942 he raided Wake and Marcus islands, and in April he took Doolittle's planes to within reach of Tokyo. Too late to fight in the Battle of the Coral Sea, he missed the Battle of Midway because of illness. From

October 1942 on, as commander of naval forces in the South Pacific, he used his carriers to support the advance up the Solomons chain while MacArthur moved west along New Guinea. Not an intellectual admiral nor gifted with communications skills, he believed firmly in integral command; hence he stepped gingerly between serving under MacArthur's strategic direction while using forces provided by Nimitz. He chose good staff members and relied on their decisions except when his intuition told him to do otherwise. His expletives aside, he was a fighting sailor-aviator who became a sort of god to his men (this reviewer included). His apparent rashness at times grew out of the conviction of keeping pressure on the enemy at all times. He proved that carrier-based planes could knock out both Japan's carrier- and land-based air power. In part by leapfrogging, he helped the Allies break through the Bismarck Archipelago and knock out and neutralize Rabaul by early 1944.

By the summer of 1943, Nimitz had enough carriers to start his Central Pacific drive. While Raymond Spruance used the Fifth Fleet to take the Gilberts, Marshalls, and Marianas, Halsey, as Commander Third Fleet (the ships used in the Third and Fifth Fleet were the same), planned the next operations against the Western Carolines as a step toward the Philippines. Specific plans for the latter were made in conference with Admiral Thomas Kinkaid, Commander Seventh Fleet, early in September 1944. Strikes by "Pete" Mitscher's fast carriers, in Task Force 38, severely weakened Japanese air power from Iwo Jima and Okinawa to Formosa

†James M. Merrill, *A Sailor's Admiral: A Biography of William F. Halsey* (New York: Thomas Y. Crowell Co., 1976, \$9.95), 256 pages, bibliographical note, bibliography, illustrations, index.

and Mindanao (September 1944) and caused the invasion to be launched at Leyte, in the central Philippines, instead of at Mindanao, to the south (October 1944).

For Leyte, Halsey was to support Kinkaid while the latter served as MacArthur's navy. A problem to hinder the entire Philippine campaign was the lack of a unified command. Equals, MacArthur and Nimitz, took their orders from the Joint Chiefs of Staff, but Nimitz had no direct communications link with Kinkaid and MacArthur. Kinkaid was responsible to MacArthur for landing and covering the Sixth Army; Halsey was under Nimitz's command and "operated by agreement" with MacArthur. Another problem was Halsey's operation order, which Merrill says Halsey wrote and had approved by Nimitz: i.e., if an opportunity offered or could be created to knock out a major portion of the Japanese fleet, this would become the "primary task" of his forces. Availing himself of his option, Halsey went north to destroy Ozawa's decoy carriers, leaving San Bernardino Strait uncovered and making it possible for Kurita almost to reach Leyte Gulf. While Merrill assigns demerits to Kinkaid as well as to Halsey, he also criticizes the use of two autonomous tactical fleet commands in the same operation. As for Halsey, Kinkaid was a "skunk" (per Hanson Baldwin), and any historian of Leyte Gulf who criticized him (Halsey) was a "son of a bitch."

Merrill is more sympathetic to Halsey than most historians have been and perhaps too lenient in his treatment of Halsey's handling of his fleet in not one but two typhoons, in one of which he lost

three destroyers. He justifiably applauds his subsequent exploits in the South China Sea and notes that he probably did as well as a fleet commander with his "slapdash methods," which kept the enemy off balance, as did the logical and precise Spruance.

A Sailor's Admiral is good reading for those who like biography and for air buffs, too, for it shows how the Fifth Fleet—with a thousand or more planes embarked—greatly helped spell the doom of Japan.

JOHN WINTON, in his *Air Power at Sea 1939-1945*,[†] supplements Middlebrook and Merrill to a degree. His is a short book in which photographs take up as much space as the text.

The value of air power is proved on every page—to the Germans in the early days of World War II, to the Allies holding in the Mediterranean and finding and destroying the *Bismarck*, to the Japanese in their rapid conquest of the Southern Resources Area, to the Americans in the Battle of Midway. Winton jumps back to the Atlantic for the Channel Dash of the *Scharnhorst*, *Gneisenau*, and *Prinz Eugen*, delivers a fine account of the creation and operations of the "jeep" carrier, then hops to the relief of Malta. He devotes one chapter to the U-boat menace and one to operations in the Arctic (largely the destruction of the *Tirpitz*) before ending his story with two chapters about the victory over Japan.

Winton's work, though solid, is obviously a condensation of secondary sources, and it is extremely episodic. Nevertheless, it includes critiques of British and American naval and air

[†]John Winton, *Air Power at Sea 1939-1945* (New York: Thomas Y. Crowell Co., 1977, \$12.95), 187 pages, select bibliography, notes, illustrations, index.

organization and administration as well as of air operations. Its stress on the importance of air power at war is excellently illustrated.

OPERATION "Menace," launched in the summer of 1940, is both subject and title of an impressive historical monograph by Arthur Marder.† This operation was based on faulty intelligence, particularly about Dakar's defenses and about the willingness of the French in Dakar to capitulate to a combined British-Free French force, the latter led by Charles de Gaulle, who greatly overestimated the extent of his backing by Frenchmen in Africa. Security for the operation was nonexistent, as was strategic intelligence for landing operations. The operation encountered delays, and communication—difficult at best between men of two nations—was extremely poor. Moreover, the British force commanders took passage in one ship and de Gaulle in another. Again it was proved that warships are useless against well-designed coastal fortifications manned by determined defenders (including the immobilized but powerful 15-inch guns of the *Richelieu*).

In response to events in equatorial Africa, Vichy France directed its Toulon squadron to transit the Strait of Gibraltar and sail south. Admiral Sir Dudley North,

commanding at Gibraltar, already lacked the confidence of the Admiralty in consequence of the attack on the French Fleet at Oran (3 July 1940). As he read his ambiguously worded orders from the Admiralty, he felt justified in doing nothing about the passage of the French ships through the strait. He thus set himself up as the scapegoat for the operation desired by Churchill but opposed by almost all of his civil and military advisers. The Admiralty relieved North of his duties on 20 September 1940. Not until 1957 did Harold Macmillan issue a statement that might be characterized as a vindication for him.

Marder's account, based almost wholly on primary sources, is written in the only way that master naval historian can write—logically and lucidly. Air power played a part in the operation on 23 and 24 September, but fog hampered the work of planes carried by the *Ark Royal*, Britain's only modern carrier. But nature's fog was nothing compared with "the fog of war," or the lack of adequate intelligence on which to base an operation. Marder's book should be assigned reading for all statesmen and especially for staff officers, for everything that could go wrong went wrong in Operation "Menace." It is a masterful exposition of what *not* to do in combined operations.

U.S. Naval Academy

†Arthur Marder, *Operation "Menace": The Dakar Expedition and the Dudley North Affair* (London: Oxford University Press, 1976, \$18.75), xxxv + 289 pages, illustrations, charts, index.

POTPOURRI

Russia: The People and the Power by Robert Kaiser. New York: Atheneum, 1976, 500 pages, \$12.95.

The title of the book, *Russia: The People and the Power*, is the key to Robert Kaiser's view of contemporary U.S.S.R. It is Russia that Kaiser sees behind the trappings of the Soviet Union. Still a huge, multinational empire, the Soviet Union today, as in the tsarist past, is dominated by the Russians. And, as in the past, a huge gap continues to exist between the people and the Soviet bureaucracy—the real power. Kaiser sees a continuity of political tradition, culture, and everyday patterns of life extending from tsarist days to the present.

In 1971 the author became chief of the *Washington Post's* bureau in Moscow, a position he held for three years. Bringing with him a year's study of Russian, Kaiser set out on a voyage of discovery. Kaiser and his wife Hannah, who had also cared enough to spend a year learning Russian, interviewed countless ordinary Soviet citizens building the type of book they wish they had had when they first entered the Soviet Union. Although most of the incidents recounted took place in Moscow or its close environs, Kaiser was allowed to travel south into the Ukraine, visiting Kiev and Volgograd (formerly Stalingrad), Georgia (a fascinating description) and east, on the Trans-Siberian railway, through Khabarovsk on the Chinese border to the Pacific. These trips, plus a growing mastery of the Russian language, enabled Kaiser to construct his portrait with a depth and variety that rapidly impart a genuine feel for Soviet life.

Kaiser paints Russian society with an impressionistic brush. His book is full of anecdotes and stories that capture for the reader a certain essence of Russian life. In the social criticism which these incidents convey, themes emerge similar to those found in mid-nineteenth century Russian literature. Works by Turgenev, Gogol, Tolstoy, and Dostoevski depicted contradictions between the individual and authority, between the cities and the countryside, and between the rich and the poor. In light of these contradictions, it is interesting

that Kaiser did not find the glue that holds Russian society together in an Orwellian totalitarianism but rather in a marriage of Russian bureaucratic bumbling and Russian patriotic loyalty to a system in which the individual citizen's lot is improving.

A picture of a vast "U.S.S.R. Incorporated" emerges—a company town writ large. The company leadership, mistrustful and scornful of initiative, maintains a strange relationship, perhaps tied to the Russian national character, with the population sharing a belief that wisdom naturally comes from above and that leadership knows best. Yet, in attending May Day and October Revolutionary observances, the author received the impression of carefully staged, contrived, and nonspontaneous celebrations reflecting doubt on the part of the leadership as to their right to rule and suspicion of that same population.

It is with the description of this kind of inherent contradiction that Kaiser makes his most important contribution to our understanding of Russia. The author does not provide simple answers. His analysis instead conveys to the reader the manifold contradictions inherent in this vast country and complex people, Russia.

Lieutenant Colonel John A. Le Febvre, USA
Alexandria, Virginia

Soviet Naval Influence: Domestic and Foreign Dimensions edited by Michael McCwire and John McDonnell. New York and London: Praeger, 1977, XXXVI + 681 pages, \$40.00.

The Soviet Navy constitutes the best known symbol of the emergence of a worldwide Soviet military presence in the 1970s. It reflects the development of a Soviet ability to project power beyond the Eurasian landmass; it enables the Soviets to face off with United States conventional forces in areas other than Europe.

How did a World War II coastal defense navy evolve into a blue water force? How capable are its systems, and how capable are they likely to be a decade hence? How does the Soviet Navy compare with that of the United States? What are its future military and political prospects? And what of the goals of its helmsman of more than two decades, Admiral Sergey Gorshkov?

Beginning in 1972, Michael MccGwire, a retired Royal Navy officer and analyst, now professor of maritime and strategic studies, Dalhousie University, Halifax, Nova Scotia, brought together a group of leading naval experts and political analysts to grapple with these questions at an annual seminar on Soviet naval affairs, held under the auspices of Dalhousie's Centre for Foreign Policy Studies. *Soviet Naval Influence* is the outgrowth of the third of these seminars, which took place at Dalhousie in September 1974.

The meeting convened at a most appropriate time for the study of Soviet naval affairs, the aftermath of the Yom Kippur War. That war marked the first time a Soviet naval squadron and a full U.S. fleet had squared off against each other on the high seas. Speculation continues as to what might have happened had the first shot been fired. This volume addresses that encounter, examines the role of the Soviet fleet in other international incidents, and speculates about the future impact of the Soviet Navy on the international political scene. Indeed, discussion of the Navy's political role claims as much, if not more, of the volume than the extremely valuable technical analyses of Soviet naval capabilities.

Of the eight sections into which the book is divided, no fewer than four specifically address the international political ramifications of Soviet naval activity, while a fifth assesses the Navy's role within the Soviet policy-making process. The issues that these sections cover are as broad as Soviet interests themselves: the search for facilities in the Third World, submarine visits to Cuba, mine clearing in the Gulf of Suez. Students of the European balance will find Robert Weinland's study of the Soviet Navy in the North Atlantic particularly thoughtful and thought-provoking. Observers of the Soviet policy process will find James McConnell's study of Gorshkov's works a fascinating exercise in Kremlinology.

The three remaining "technical" sections are important in their own right and invaluable to the naval specialist. Addressing Soviet naval production and war-making and projection capabilities, they provide a comprehensive review of the strengths and shortcomings of the fleet's capabilities. Of particular note are K. J. Moore's contributions on antisubmarine warfare, Charles Pritchard's analysis of amphibious projection capabilities, Michael MccGwire's analysis of Soviet production trends, and last, James Kehoe's seminal study

of comparative U.S./U.S.S.R. warship design.

The book is thus one that should be attractive to all who take an interest in any aspect of Soviet naval behavior. It also provides an added bonus. Most of its pieces are quite well written, a testimony to both the authors and the editors who supervised the volume's production.

Dr. Dov Zakheim
Washington, D.C.

Arafat: The Man and the Myth by Thomas Kiernan. New York: Norton, 1976, 281 pages, \$19.95.

Mr. Kiernan's book purports to be a historical biography of Yasir Arafat, the leader of the Palestine Liberation Organization, yet it lacks the methodological and analytic rigor necessary to give his story a ring of authority and credibility. In fairness to the author, the reader would be remiss in not sympathizing with his unsuccessful efforts to obtain interviews with and documentation about the elusive commando chief. On the other hand, the reader does himself a disservice by accepting, out of the selfsame sympathy, the alternative assemblage of fact, fancies, opinions, recollections, and anecdotes about Arafat that the author proposes to us as the basis for his study.

These unfortunate constraints oblige Mr. Kiernan to be somewhat cavalier in his use of the historical method. In order to fit the narrative of Arafat's early years into the historical context of an increasingly irreconcilable struggle between Zionists and Arabs over Palestine—a narrative which, regrettably, is reconstructed in what the author suggests are Arafat's own words—Mr. Kiernan superimposes historical events on, rather than relating them to, the development of Arafat's mature personality. Hence, the reader will have difficulty in understanding exactly how the history of the Arab-Zionist conflict helped shape Yasir Arafat until the conclusion of the book, when Arafat himself becomes the principal protagonist of events.

Writing historical biography by hindsight is rarely the best way to proceed with the study of an important personage. Here hindsight inclines the author to invent historical explanations for Arafat's youthful predis-

position toward revolutionary activity. Mr. Kiernan suggests that the young Yasir's hatred of Zionists stems from a disdain for his father, whose reputation as a Gaza merchant had been besmirched through his commercial transactions with Jews. According to the author, this caused Arafat to turn increasingly toward his mother's family, the al-Husseinis, who produced the famous Mufti of Jerusalem, Hajj Amin al-Husseini. It was Hajj Amin whose rabid anti-Semitism sparked Arab nationalism in Palestine during the interwar period. Such an identification sets Arafat up for the classical Oedipal conflict and a tendency toward bisexualism, which the author does not fail to point out, especially in the context of Arafat's relationship with his school teacher, Majid Halaby, who later became a martyr to the Palestinian cause. Mr. Kiernan further complicates the issue with the patently erroneous claim that Islam, in the interest of male solidarity, condones and even encourages homosexuality as a response to the unavailability of women.

Whereas it is true that insights into the minds of important people frequently lead to a deeper appreciation of their historical roles, the author commits the fallacy of reducing the history of the Palestinian resistance movement to an isolated and unsubstantiated psychological phenomenon in Yasir Arafat's behavior.

In sum, I found Mr. Kiernan's book at best uneven although interesting in part. I would, however, hesitate to recommend it as required reading for the serious student of Middle East affairs.

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V Was for Victory: Politics and American Culture during World War II by John M. Blum. New York: Harcourt Brace Jovanovich, 1976, 340 pages, \$12.95.

Focusing on an oft-neglected aspect of military history, the relationship between war and society, *V Was for Victory* deals not so much with the impact of World War II on American society as with the influence of society and politics on the conduct of the war, the means by which it was fought, and the

determination of domestic and international objectives. The central thesis is that the American people wanted to end the war quickly with as little social, economic, and political disruption as possible. Moreover, their objectives for the postwar world were largely materialistic and personal rather than idealistic and collective. Most Americans, Blum stresses, "were more concerned about preserving their [new-found] personal well-being than about any precise foreign or domestic issue."

Reflecting this attitude of ending the war quickly and with a minimum of disruption, President Roosevelt did what he considered necessary to accommodate to the existing conditions. Together, Roosevelt's necessitarian approach to the war and the people's expectations of "a brave new world of material goods" not only influenced wartime decisions but also shaped the postwar world that would emerge with victory: by preventing a serious effort toward social and economic change, by reinforcing institutional patterns of prewar society, and by sharpening expectations of a better, more prosperous future.

Professor Blum does an excellent job of relating political and cultural aspects of the homefront, reminding us that politics is not a sterile field existing in and for itself but that political struggles ultimately reflect the social, economic, ideological, and even ethnic issues that concern people on a day-to-day basis. Second, his approach to these latter issues, while not totally unique, is novel enough to be both interesting and thought-provoking. Third, having no axe to grind, he seeks to understand the American people rather than merely to condemn or praise them.

V Was for Victory is not always pleasant reading. It shows an increase in prejudice in a war fought to defeat an enemy whose philosophy was rooted in prejudice. It portrays people "out for a buck" in a war where men were sacrificing their lives. It illustrates the lack of real understanding of what the war was all about. And it shows leaders being guided by those they were supposedly leading. Blum's book may not suit everyone's taste in either content or approach. For those interested in civil-military relations in the broadest sense, however, it is mandatory reading.

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The Encyclopedia of Military History, from 3500 B.C. to the Present (revised edition) by R. Ernest Dupuy and Trevor N. Dupuy. New York: Harper & Row, 1977, 1464 pages, \$25.00.

In today's society, when one reads statements like "History proves..." he tends to suspect a trap, and that all that follows is inevitably false! When Henry Ford said "History is bunk!" I suppose he meant that misused history is bunk. How, then, is one to protect himself from such bunk in his professional reading? There is no easy solution, but a start may be made by acquiring a proper set of desk reference books. For students of national security affairs, an encyclopedia of military history is essential. A reliable work of the kind was not available until 1970, when R. Ernest Dupuy and his son, Trevor N. Dupuy, brought their wide experience in military history to the task. Of course, any compilation of this magnitude is bound to contain errors, and military affairs change so rapidly that this second version (1977) is an improvement in many ways.

The Encyclopedia of Military History is well organized. Its chapters are arranged chronologically, and each begins with a general discussion of the trends in politics, strategy, tactics, technology, doctrine, generalship, and the like. This introduction is followed by a series of geographical subdivisions that outline

regional military history in chronological order. Where appropriate, the book gives ample attention to both sea and air warfare. The revised edition updates the original with a chapter covering the American debacle in Vietnam. The *Encyclopedia* is amply provided with illustrations, photographs, and maps. Space and single-color requirements limit the usefulness of many of the maps, but it is hard to see how multicolor, larger depictions could have been included without the bulk and cost of the work getting out of hand.

As is proper in a reference work, the bias of the authors is not apparent. Although they hail from an Army tradition and might be expected to have reservations about strategic bombing, especially as it was conducted in World War II, their treatment of the subject is evenhanded and gives credit where credit is due—even when read from the perspective of the Air Force officer.

Many perceive the Air Force as the "now" service and one not much addicted to the reading of history. Given the deluge of national security literature and the hectic pace of one's day-to-day duties, I suppose the hope that the professional officer undertake a comprehensive study of military history is but a pipe dream. Still, were such professionals to buy and use *The Encyclopedia of Military History*, they could avoid a good many of the traps to which their lack of time for study makes them vulnerable.

D.R.M.



AWARD

The Air University Review Awards Committee has selected "Are Professionalism and Integrity Only a Myth?" by Lieutenant Colonel Raymond F. Hamel, USAF, as the outstanding article in the May-June issue of the *Review*.

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