

# Fall Readings

- Joint Doctrine Development
- F-117A Classification



# AIRPOWER

JOURNAL

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# AIRPOWER

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# EDITORIAL

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## Snorkeling and Historical Surges

**S**NORKELERS familiar with Hanauma Bay on Oahu will remember three parallel reefs that guard it from the open ocean. In the reef closest to the beach is a narrow break perhaps six feet wide and 35 feet long. As waves roll in, they push water over the reef, which acts as a reservoir and retards the water's return to the open sea. However, the backwash rushes through the break in the reef as through the spout of a funnel.

It is quite easy to go with the flow when snorkeling out through the break, but coming in the other direction can teach one a lesson in patience and endurance. Swimming against the current, the snorkeler finds that progress is made in surges. While the backwash is rushing through the break, the snorkeler must exert significant effort just to maintain position. Then, when the backwash stops, the snorkeler surges forward. Normally it takes several cycles of maintaining position and moving forward to reach the end of the break and enter the calm waters inside the reef. Those new to this phenomenon can become concerned when they are swimming with all their strength and not making any forward progress. However, if they are patient and continue swimming, conditions will change. It is, of course, very important to take full advantage of the intermittent opportunities to move forward.

While each day is unique and has its own value, historical events also seem to come in surges. Perhaps this is one of those times in history when all the conditions are right for rapid progress. Having maintained relatively the same position for over four and a half decades in our containment policy toward the Communist bloc, we now see a strong tide of political

change. Rapid changes in Eastern Europe and the reduction in Soviet strength have led to significant changes in the way we view the world. That world view has led to hopes for reduced military force structures and an attendant peace dividend.

Along with the defense budget, the number of people serving in the US armed services is being significantly reduced. Rather than hollow out the old force structure as was done in the past during lean times, our leaders are searching for ways to restructure the Air Force so it will be as efficient and effective as possible—despite its reduced size. Proposed changes to the unified command structure, new major command structures, and ideas like the composite wing are moves in that direction.

As demonstrated in Desert Storm, technological advancements in areas like ordnance precision and lethality; stealth characteristics; intelligence gathering; command, control, and communications; and navigation are pushing aerospace power forward in this historical surge.

Along with restructuring and technological advancements there is also a need for new ways of thinking to take full advantage of the current surge in historical events. A new basic doctrine manual designed to capture our current thinking on the best way to employ aerospace power should soon be published. New concepts to involve airmen in a career-long study of the profession of arms are being considered as well.

Historical surges amplify the value of ideas. They offer opportunities to consolidate gains, to forge ahead, and to venture into uncharted regions. Such times magnify the effect of both the best and worst ideas, thereby placing a premium on rea-

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## PROFESSIONAL DEVELOPMENT

Please extend my compliments and congratulations to Lt Col Bruce L. Ullman for his exceptional article in the Fall 1990 issue entitled "Officer Professional Development for Lieutenants." His selection as the Ira C. Eaker Award winner for that issue was especially gratifying because it suggests continued recognition of concerns voiced for way too long about the state of institutional training and acceptance/assimilation of military ideals and standards in the Air Force.

For example, the Air Force director of personnel plans admitted in a March 1983 *Air Force Magazine* interview entitled "New Standards and Leadership: New Emphasis on Old Topics" that we had "drawn away from some basics....And adherence to standards is what defines an institution." Maj Gen Kenneth L. Peek, Jr., was setting the stage for the 4 May 1983 publication of a revised AFR 30-1, a pocket-sized guide that probably few Air Force officers have ever seen or used—yet its title is *Air Force Standards*. He then went on to say, "When you have supervisory responsibilities because of position or rank, you are in a leadership position, and you have to exercise the responsibilities that go along with that." Another pocket-sized primer to help one deal with these responsibilities was published 1 September 1985—AFP 35-49, *Air Force Leadership*.

son while appeals to authority and precedent are of reduced value. This is one of those rare times when a key catalytic idea could galvanize the institution we serve so it can better serve our nation and its people. The pages of this journal are dedicated to promoting that kind of thought and providing a place for the free exchange of those ideas.

In late 1987, Lt Col Stephen C. Hall brought to our attention the existence of "an amazing unanimity of concern" that "our young officers are far more militarily conservative than one would have ever expected, and they want far more military in their lives, not less." This four-time aircraft maintenance squadron commander and his younger officers developed a company grade officer training program which he took on the road to over 1,500 officers across the country. Perhaps Colonel Ullman missed this Fall 1987 *Airpower Journal* article—"Shortchanging Our Young Officers: Military Traditions Denied"—but it provided additional support for his conclusions and recommendations regarding a mandatory lieutenants' professional development program.

I wish I had known of the existence of the various programs Colonels Hall and Ullman mentioned when I was a squadron commander. I agree with Colonel Hall's claim that "failure to teach one's subordinate officers everything needed for a productive Air Force life should be viewed as nothing short of dereliction of duty" (page 56). As a result, I developed my own officer development program based on, inter alia, the previously mentioned AFR 30-1, AFP 35-49, our oath of allegiance, military history, and speeches/articles by Air Force leaders.

Unfortunately, many of my officers would return from extended TDYs both overseas and in CONUS expressing confusion over the same "mixed signals" that Colonel Ullman talks about; junior officers who augmented us during exercises also regularly registered their surprise at our adherence to military standards. I truly hope more leaders—not just commanders, but

*continued on page 84*

Our Air Force is on the leading edge of this historical surge. Wisdom would suggest we take full advantage of the opportunity to go forward while conditions permit. We will probably have to remain in whatever place we attain for a good long time—working hard to just stay in place and awaiting the next historical surge. RBC

# AIR POWER THINKING: “REQUEST UNRESTRICTED CLIMB”

LT GEN CHARLES G. BOYD, USAF  
LT COL CHARLES M. WESTENHOFF, USAF

## A Note from Lt Gen Charles G. Boyd:

This article evolved from an oral presentation I made at an air power conference in March 1991 at Canberra, Australia. Much of the chore of putting it in publishable form fell to Colonel Westenhoff. He therefore deserves equal credit in the endeavor.

Having said that, I would hasten to add that the ideas contained here are my own and that I alone accept responsibility for them.

**T**he Air Force is nearing the end of an extensive effort to refine its basic doctrine. Consisting of two books, the new edition will even look different from all previous editions. One volume is a thin, bare-bones summation of Air Force thinking, while the other is a collection of essays that explain Air Force reasoning, based on the record of air power in war.<sup>1</sup>

Although airmen have not been famous for reading history, they now have lessons





from the past 80 years, and most of them have been paid for in blood. There is no way to calculate an adequate cover price for that kind of knowledge. I am confident that most Air Force professionals not only will read our new doctrine with care, but will devote themselves to making it better in the future. My purpose in this article is to suggest some directions that our thinking might take in the near future.

One of the institutional strengths that has best served the Air Force has been its unswerving interest in the foreseeable future. Given that background, the Air Force should consider the dynamic events of the present time as an undeserved and unasked-for gift, keeping in mind that unsolicited good fortune imposes a weighty responsibility.<sup>2</sup> Like it or not, the world is changing, the place of air power is changing, and it is air power's day in the heat of the spotlight.

Just when the threats we have understood for decades appear to have diminished, the international security structure has entered a less stable phase. This almost paradoxical situation constitutes a novel challenge for the United States. For those of us serving in the Air Force, the future demands a surer, more comprehensive, and more penetrating understanding of air power and its uses. In that regard, let

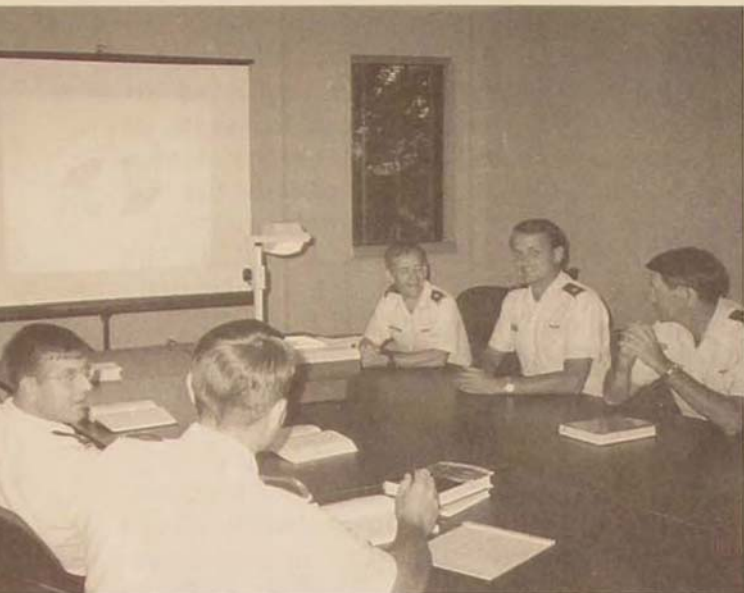
me make clear that I use the term *air power* in its most comprehensive sense of air and space power. Such inclusive air power values every role and mission, as well as all the support, services, and—most importantly—all the people the Air Force needs to be a fully capable service.

I submit that air power will play the leading role in our response to the security challenges of the uncharted future. It will in some circumstances be the only engaging form of military power and in others the form upon which successful surface operations depend. My reasoning in support of this assertion has two main points. The first deals with the maturity of air power within the context of modern warfare. The second concerns the nature of this potentially dangerous new world and the consequent importance of time. Because these points enrich our understanding of the new place that air power is likely to take in national security policy, each one deserves some discussion.

## The Growth of Air Power and the Nature of Modern Warfare

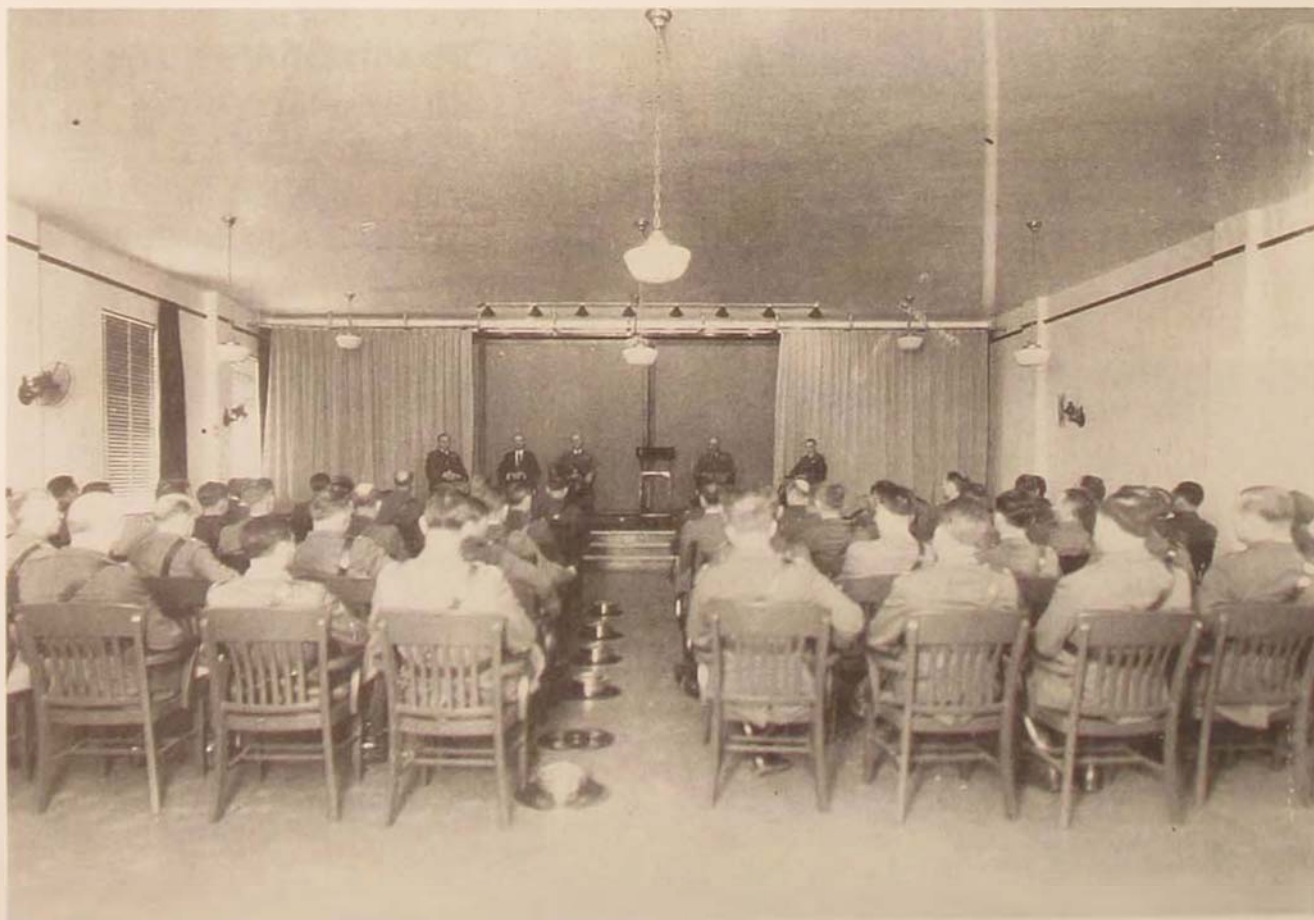
As we look to the future, airmen must be the first to admit that the history of air





power is replete with promises of too much too soon. The early prophets of air power—notably Gen Giulio Douhet (1869–1930), Gen William (“Billy”) Mitchell (1879–1936), and Air Marshal Hugh Trenchard (1873–1956)—based their visions on the very limited air power experience of World War I. I believe that their visionary reach exceeded their technological grasp by many decades. As a result, they seemed to promise quick, cheap victories from the air.<sup>3</sup> This was certainly true of General Douhet, who insisted that achieving “command of the air” would not only be necessary but also sufficient for victory. Let there be no doubt that he was certain of himself:

*“Airmen owe it to their country to take the lead and use their expertise in understanding and applying air power’s special capacities.” Below, opening-day formalities for a class at the Air Corps Tactical School (Maxwell Field, Alabama) in the 1930s. Top, members of the first class of the School of Advanced Airpower Studies (Maxwell AFB, Alabama). Right, Air Command and Staff College students review options during a war game.*





In spite of the close reasoning by which I have arrived at these affirmations, I am sure they will seem extravagant to many. That does not affect me in the least.... Such stubbornness leaves me absolutely unaffected, because I have the mathematical certainty that the time will come when air forces of nations everywhere will conform exactly to the concepts described above.<sup>4</sup>

Douhet was not an ambivalent man. For the most part, neither was General Mitchell, especially after his court-martial in 1925. The dramatic claims of the air power visionaries overshadowed the less provocative work of other air power advocates, such as Sir John Slessor and many of the Air Corps Tactical School staff, a group that has been termed the "air-first moderates."<sup>5</sup> Recent history appears to confirm the more tempered views of the moderates even more than those of the better-known visionaries. The perspective of Gen (then

Maj) Harold ("Hal") George on air power in war is a notable example:

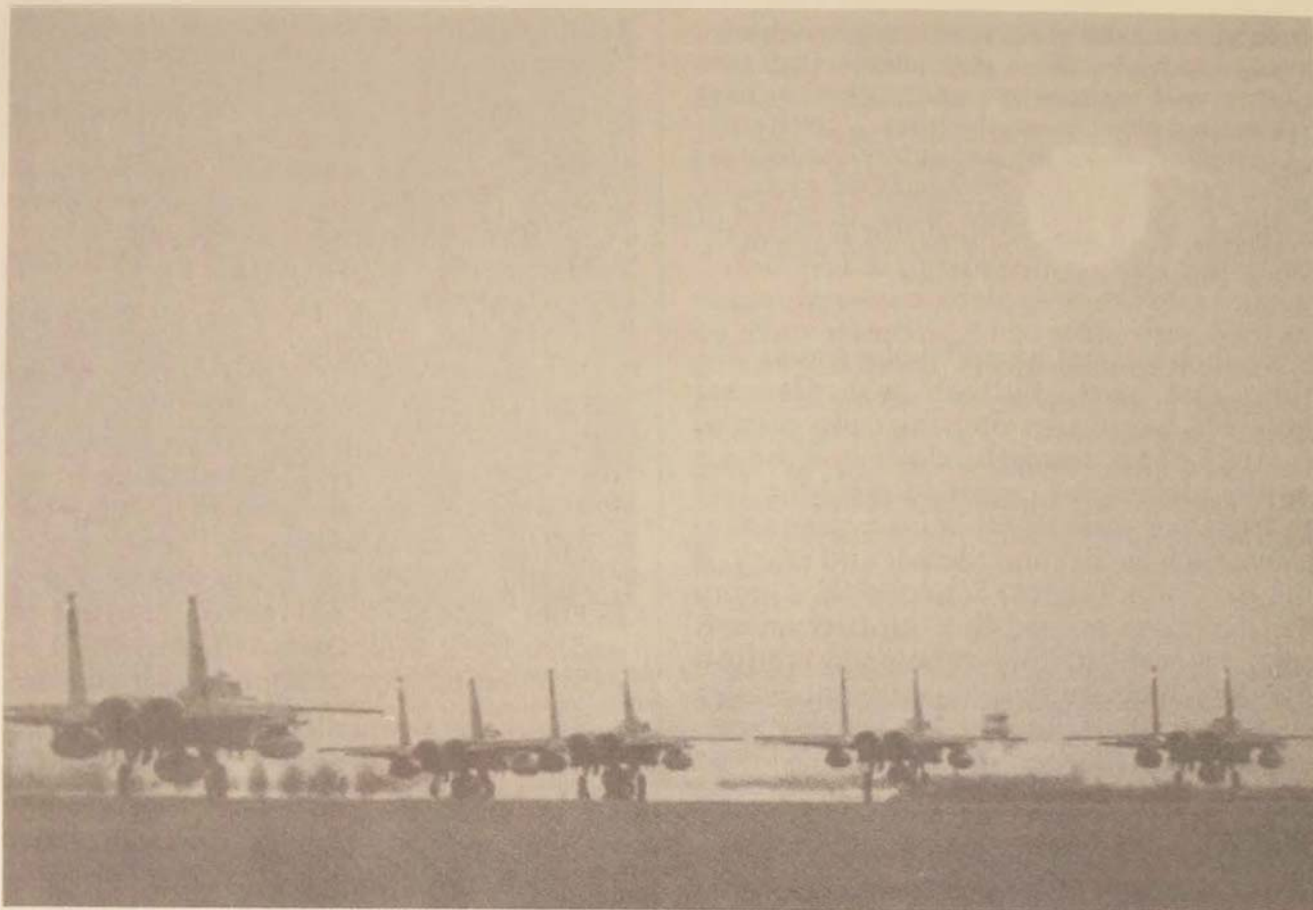
Whether air power can, by and of itself, accomplish the whole object of war is certainly an academic question; but that the air phase of a future war between major powers will be the decisive phase seems to be accepted as more and more plausible as each year passes.<sup>6</sup>

Of course, many assumptions and promises of the air power prophets, of whatever persuasion, fell short. That is not to suggest that there was anything wrong with their prophecies—as prophecies go. Technological shortcomings regarding carrying capacity, materials and fuels, speed, range, weapons accuracy, target intelligence, precision navigation equipment, and so forth took their toll. But so did a lack of experience in applying air power.

Airmen had to learn how to determine, find, and attack the enemy's vital centers,







how to conduct an effective interdiction campaign, how to organize, train, equip, command, and control air assets—along with learning how to take best advantage of emerging technology and, more importantly, how to drive and channel the pursuit of new technology. (A century ago, Adm Alfred Thayer Mahan, the great exponent of sea power, energized military study of how technical changes influenced history. Airmen learned that they could go one step further. Instead of harnessing the achievements of independent inventors, they underwrote major developments, experiments, and even basic research, the results of which subsequently helped change the world, giving us computers, telecommunications, satellites, and airliners.) Airmen also had to learn that the enemy had a capacity to interfere with air operations and that air war also involved friction, fog, uncertainty, and ambiguity—

*Only 34 hours after receiving deployment orders, the first coalition squadron arrived in Saudi Arabia from the United States. This type of responsiveness provides policymakers with attractive options in times of crisis. Here, F-15s prepare for takeoff in support of Operation Desert Storm.*

all the classic characteristics of war that Clausewitz described.

Shortcomings in both technology and experience meant that victory in World War II came neither quickly nor cheaply. As one result, many soldiers and sailors, as well as some of our civilian leaders, came to view the history of air power as a series of unrealized—perhaps unrealizable—dreams. Airmen, in short, paid a price in credibility for the expansive and premature visions of the early prophets. Yet, I am not sure that modern airmen have been mentally prepared to accept, much less to take advantage of, the

sudden consensus that the early air power prophets were basically right (although decades premature). Perhaps we have been floating on the stream of history but need to begin paddling, as did the air power prophets.

In truth, the history of air power has been a gradual maturation process over a period of some 80 years. *Gradual* might even be too hard a word. Compare the centuries required for gunpowder weapons to supersede the sword and pike or the decades required for motorized vehicles to outnumber horses in modern armies.<sup>7</sup>

Today, after 80 years of experience extending across the spectrum of conflict and after stunning technological developments that have largely solved many problems that previously limited air power, we are in a far better position to make the case that air power will normally dominate modern warfare. Consider the following:

- Surface forces have great difficulty operating in the face of strong, hostile air power—if indeed they can operate at all. After seeing the litter along the road from Kuwait City to Basra, Iraq, the whole world now has an image of how difficult it is to do anything—even to run away—when an opponent commands the skies.

- When augmented by strong, friendly air power, surface forces have a variety of opportunities open to them which would otherwise be denied. As Gen George S. Patton's Third Army sped across France, air power protected its southern flank and its "overhead flank."<sup>8</sup> One could even say that Patton's audacious reliance on air power set the pace for his army's offensive drive. Although defensive operations relinquish much of air power's advantage in using the initiative, the United Nations' defense of South Korea's Pusan perimeter in the summer of 1950 depended on air power, as did the defense of Khe Sanh, South Vietnam, in 1968.<sup>9</sup>

- Modern navies have capitalized heavily on the strength of naval air power—witness the role of the carrier as queen of the fleet and the new role of sur-

face ships armed with cruise missiles in projecting power through the air.

Air power's attributes provide ways to fight asymmetrically and to exert leverage. The latter quality applies at varying scales, from grand strategy to the individual engagement. Further, it applies to fighting different types of forces, as well as to conducting different forms of warfare:

- In what has been called the low-intensity conflict environment, air power provides the few advantages available to modern surface forces engaged with enemies using guerrilla tactics. Specifically, these advantages are mobility, aerial reconnaissance, and quick-response firepower.

- In conventional war, only air power can be rapidly applied simultaneously to every type of target—strategic, operational, and tactical. Targets in Operation Desert Storm, such as military command centers in Baghdad, the bridges near Basra, and Iraqi tanks, illustrate these categories clearly.

- Aerospace power is, of course, the *sine qua non* of strategic nuclear war.

In short, it seems clear that armies and navies must increasingly appreciate that their capabilities and roles are determined by the existing air power situation. At the same time—and to a greater extent than is generally acknowledged—air power retains its capacity to operate independently of surface forces. This combination of factors leads quite naturally to the conclusion that air power—especially in its extended form as aerospace power—has come to dominate warfare.

In truth, we are only beginning to frame how air power can dominate modern warfare—that is, how air power's tremendous leverage creates conditions for other forces to fight, shapes campaigns, opens up options, and denies the enemy not just battle and campaign choices, but whole strategies. Professionals from all the services will increasingly study air power as a catalyst and prerequisite to other military means, just as policymakers will view

air power as a key that opens and closes the doors of many strategy and policy options. An airman could, with equal ease, assume any role in this effort: that of amused bystander, critic, cheerleader, pliant respondent to others' applications, or leader in this art form. To my mind, airmen owe it to their country to take the lead and use their expertise in understanding and applying air power's special capacities.

None of this should be taken to deny the importance of surface forces, for whom many tasks remain, some of which (e.g., occupying territory and maintaining an extended presence) air power cannot now and almost certainly never will achieve. Rather, the emergence of air (and aerospace) power as the vanguard for all our forces requires new ways of thinking about warfare and new planning paradigms, as well as new ways of organizing, structuring, and commanding our forces.<sup>10</sup> The results of Desert Storm suggest that while we have made considerable progress in

these respects, this very progress opens up major new challenges on which to focus.

## The Role of Time in the New World Order

I suggested earlier that my second point had to do with time. One reason that the time factor has assumed increasingly critical significance is that the threats to American vital interests are much more diffuse in our brave new world:

- We no longer have the luxury, as it were, of preparing for the well-defined,

*Used with much success during Operation Desert Storm, "smart" weapons may lead many people to dismiss the chance of error that is inherent in any weapon and to confuse reliability with certainty. The Air Force cannot afford to generate a false expectation that its weapon systems have achieved "mechanistic perfection." Here, ground crew members load a Maverick missile onto an A-10 in preparation for a mission during Desert Storm.*





worst-case scenarios that characterized the bipolar world. (As known threats shrink, so will our forces, and forward-deployed forces are likely to shrink the most. The magnitude of the foreseeable changes in funding indicates that we can no longer continue business as usual [i.e., shrinking all things equally]. We will need to separate the essential from the less important and adopt new ways of doing things. For example, Desert Storm affirmed the critical value of bases. The first ground forces into the Arabian Peninsula during Desert Shield were charged with the security of key military airfields and ports, reminiscent of Gen Douglas MacArthur's classic use of ground forces to support his air campaigns. To consider an extreme example, if—hypothetically—our forward-deployed forces in NATO were reduced to, say, 10,000 troops, might not airfield and harbor defense missions be the most important role they could assume?)<sup>11</sup>

- The general relaxation of East-West tensions could well encourage regional aggressors of all sorts. These nations have increasingly dangerous military capabilities: the ability to move quickly, achieve an objective, and consolidate gains before any but the quickest forces can respond with positive effect (as we have so recently seen!). Triggers for such eventualities are legion; they include age-old ethnic and religious hatreds, attempts to monopolize markets or resources, irredentism, religious fervor, dreams of greater power and glory for individuals and/or nations, and so forth. Such threats could arise almost anywhere and could involve formidable foes. The very distribution of the threat picture requires a reexamination of how we think and plan and suggests that we need forces tailored to these new circumstances (i.e., forces trained, equipped, and postured for a faster-moving world). We surely need no further instruction about how quickly events can move.

- The *where*, *when*, and *by whom* are among the crucial unknowns regarding future threats. What can be known in

advance is that response time will often be the most important factor in deterring a threat or attempting to contain a crisis situation.

Recent events in the Gulf region provide a thought-provoking example of how air power's responsiveness complements the developing security picture. For example, in the months leading to Iraq's invasion of Kuwait, Saddam Hussein's verbal attacks were not confined to Kuwait but extended to neighboring Gulf nations. His Pan-Arab rhetoric assumed an ominous tone before Iraqi armies moved. (Monday-morning quarterbacks now suggest that Saddam's swift attack against Kuwait could have been anticipated. But no nation, as far as we know, believed that an Iraqi attack was imminent. Saddam surprised everybody.)

Once Iraq's forces moved, they secured their first objective in Kuwait very quickly, and they then—whatever their intentions—certainly had the capability to resume their march in a short time. (By the end of the Iran-Iraq war in 1988, Iraqi forces demonstrated that they could launch successive attacks in less than a month.) Iraq thus had the capability and opportunity to extend its gains, had declared a motive for doing so, and was organizing its means when the coalition responded.

Thirty-four hours after it was ordered to deploy, the first coalition squadron arrived in Saudi Arabia from the United States. In the Desert Shield buildup, airlift duplicated the movement of the 400-day Berlin airlift every 40 days or so. It did this five times without pause.<sup>12</sup> Fortunately, the United States had the capability to respond rapidly with air power. This quick response threw the Iraqis off balance and provided a deterrent and a breathing space until the US could deploy a full array of forces and the coalition could deliberately plan a method for rolling back the aggression. Air power not only curtailed many Iraqi options, but even reshaped the regional power balance—almost overnight.

The global spread of near-instantaneous

information highlights the requirement to adapt to rapidly changing circumstances, something which air power does so well. Iraq's Scud campaign was televised as it occurred, with unforeseen political impact. Although that campaign had no military value in the narrow sense, its great political potential demanded that it be dealt with immediately. The rapidly improvised "Great Scud Chase" and the swift marriage of Patriot missiles to rapid surveillance and cueing systems again showed air power's advantages in flexibility and responsiveness, as well as its unique capabilities to secure politically desirable military aims.<sup>13</sup>

Air power's responsiveness brings our policymakers distinct capabilities, discriminating means, and desirable options for rapid response. We need to see air power and its components in just such terms, and we need to explore their meaning for the future. To punctuate the point, we must note that when time is of the essence—as it is increasingly in this world—air power will be the only means by which our armed forces can

- go directly from the United States to any location in the world within hours;
- deliver massive firepower upon arrival; and
- deliver surface forces anywhere in the world within hours—witness the air bridge that linked the US and Saudi Arabia early in the Iraq crisis.

## Future Applications of Air Power

When one combines my two main points—the maturity (and its corresponding increase in utility) of air power and the significance of time (i.e., responsiveness)—it should be clear that the results of Operation Desert Storm provide several strong hints about the application of air power in the near future:

1. Technology works and saves lives, on both sides. The long-lingering debate over quality versus quantity should be put to

rest. The idea that "because our equipment is sophisticated, it therefore is unlikely to work" has been thoroughly discredited.<sup>14</sup> Our institutional bias, as airmen, to "lead turn" events and technology has been validated.

2. Low-observable (LO) technology is here to stay. We have demonstrated our long-standing goal of penetrating enemy defenses safely without unwieldy force packaging. The capability to put any feature of the enemy at risk—which includes the ability to threaten every asset an enemy possesses with unprecedented probability of target engagement and low risk of interference, loss, or capture—provides not just tactical but strategic leverage.

3. Precision guided munitions (PGM) work. Furthermore, if some ideas still on the drawing board or in early development are any indication, PGMs will reach new heights of capability. The marriage of PGMs to LO platforms provides enormous leverage, especially in terms of the level(s) of force required to attain specific objectives.<sup>15</sup> This marriage also helps us with another problem—the fact that the American public is loathe to accept high casualty rates, whether among its own sons and daughters or the enemy civilian population.<sup>16</sup> Precision munitions are an enormous help in holding down both types of casualties.

Above all, PGMs connect political objectives to military execution with much greater reliability than ever before. The political leader can have far greater confidence that discrete objectives can be met and can thus gain broader latitude in formulating the overall objective. This is not just a change in air power or even in military power; it is a fundamental change in warfare.

In past air campaigns, the random effects of ballistic weapons often created ambiguity and uncertainty as to intent. We can now expect enemies to rapidly assess the pattern of targets attacked by PGMs in an effort to predict future attacks. This



suggests that we need to contemplate the second-order effects of force application—human responses and target system responses—rather than just the immediate effects we intend to achieve. Understanding what up to now have been “unintended effects” is just a first step; airmen need to plan and perhaps even devise strategy around them. All the processes of adjusting to air attack (e.g., dispersing, digging in, moving, reorganizing) cost the enemy something and may deserve consideration as campaign objectives in themselves.

Of course, airmen need to be aware that the public—even policymakers—may now expect *all* attacks to be precise and may not understand or tolerate the small degrees of random error inherent in any weapon, no matter how precisely it is aimed. We certainly need to guard against creating a popular expectation that air power has attained some form of mechanistic perfection. Every single sortie is an effort that can be described in terms of probabilities—not certainties—of launch, refuelling, ingress and navigation, defeating the defenses, acquiring the target, attacking the target, fuze and weapon functioning, and egress recovery. I think that the example of Douhet’s inflated prophecies provides adequate warning of the dangers of oversimplifying the tremendous advances we have made and of the hazard of confusing reliability with certainty.

Nevertheless, a primary aspect of precision weapons that should shape our future thinking is their ability to achieve politically desirable military aims quickly and with ever-increasing reliability. The capabilities of air power have increased vastly in the 60 years since Air Vice-Marshal H. N. Wrigley of the Royal Australian Air Force explained that the potential of each sortie to create immediate political effects required every airman to understand the broad aspects and policy aims of the war at hand.<sup>17</sup> The precision and speed that air power now brings to force application increase the need for airmen to understand war in even broader terms.

Air power’s adroitness seems particularly useful in a time of increasing uncertainty. It also suggests future directions for thinking about air power. The flexibility and responsiveness of air power have long been a two-edged sword: because of its many capabilities, there has been a constant struggle between competing aims, roles, and target sets, and a consequent temptation to disperse air power. The need to concentrate air power on specific objectives and the effort to define those objectives best served by air power have been at the core of air power doctrine and should remain our principal concerns.

However that may be, I do want to apply a necessary flash of speedbrake to my emphasis on *time* and our capability of responding rapidly in the emerging security picture. In doing so, I again call to my assistance the late Air Vice-Marshal Wrigley, who warned us that in all we do, we must be on guard to “foresee the possible danger that the *precipitate* use of the air force may bring about a war [emphasis added].” As the editors of his papers note,

This is a significant observation. In the middle of his discourse on the causes of war, Wrigley notes that the immediate trigger of a conflict may not truly represent the underlying causes, and, in that context, sounds a warning that the careless use of air power could lead to “precipitate” hostilities. Wrigley’s logic for that judgment is central to doctrines of air power employment, for it arises from the aircraft’s singular speed, flexibility and capacity to concentrate force.

One of his major themes, recurrent and firmly stated, is that of the three forms of combat power, the air is the most suited to offensive action. An air force which is forced to defend tends to disperse and react; one which is on the offensive can concentrate, control and initiate. Wrigley warns that such a weapon must be handled with care.<sup>18</sup>

I could not agree more and hope that my emphasis on providing a *capability* for rapid response is not taken to imply any casualness of thought regarding the *implications* of providing such a capability. Although we must guard against being too



quick off the mark, we must be careful not to be too late. To argue otherwise would be tantamount to dismissing judgment from the art of war. In today's world—subject to the above caveat and given continuing advances in precision (above all, selectivity)—“air power [can] be a ubiquitous arm of the first hour, and thus escape the need to be employed as a weapon of last resort.”<sup>19</sup>

## Conclusion

My intent has been to suggest that the emerging security picture and recent trends in world events indicate that we will likely earn our paychecks the hard way at some time in the future. I have emphasized that the other services, national decision makers, and our countrymen expect more of the Air Force than ever before.

Our recent revision of Air Force doctrine presents our understanding of how air power has worked best in war and supports that view with comprehensive historical evidence. But, as Abraham Lincoln put it, “The dogmas of the quiet past, are inadequate to the stormy present.... As our case is new, so we must think anew, and act anew. We must disenthrall ourselves.”<sup>20</sup>

I expect that the publication of our revised basic doctrine—the first documented doctrine we have ever had—will stir debates and challenges, reexamination of the evidence, and new reasoning. I have proposed some directions that our future thoughts might take. But what I really look forward to seeing are those new directions—or even broader horizons—that have escaped my view. □

## Notes

1. Air Force Manual (AFM) 1-1, *Basic Aerospace Doctrine of the United States Air Force*, 2 vols. (forthcoming).

2. In 890 A.D., Alfred the Great, a remarkable military leader and one of the foremost scholars of his day, expressed the obligations of good fortune (in the form of position or rank) this way: “If, when such power is offered them, they refuse it, it often happens that they are deprived of the gifts which God bestowed on them for the sake of many men, not of them alone.” Alf J. Mapp, Jr., *The Golden Dragon: Alfred the Great and His Times* (Lanham, Md.: Madison Books, 1991), 109.

3. See David MacIsaac, “Voices from the Central Blue: The Air Power Theorists,” in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, N.J.: Princeton University Press, 1986), 624–47.

4. Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (1942; new imprint, Washington, D.C.: Office of Air Force History, 1983), 129.

5. See Stephen B. Jones, “Global Strategic Views,” in *The Impact of Air Power*, ed. Eugene M. Emme (Princeton, N.J.: D. Van Nostrand Co., Inc., 1959), 118–28.

6. Maj Harold Lee George, “An Inquiry into the Subject ‘War,’” undated lecture notes, c. 1936, USAF Historical Research Center, Maxwell AFB, Ala., file 248.11–9, page 9.

7. For example, when the vaunted Panzer armies of the Wehrmacht invaded the Soviet Union on 22 June 1941, they took with them 750,000 horses and only 600,000 motorized vehicles. Robert Goralski, *World War II Almanac: 1931–1945, A Political and Military Record* (New York: G.P. Putnam’s Sons, 1981), 164.

8. As the Allies gathered momentum after the Normandy invasion, Gen George S. Patton “turned over the task of pro-

tecting [Third US Army’s] southern flank to XIX [Tactical Air Command].” Wesley F. Craven and James L. Cate, eds., *The Army Air Forces in World War II*, vol. 3, *Europe: ARGUMENT to V-E Day (1951; new imprint, Washington, D.C.: Office of Air Force History, 1983)*, 247.

9. Gen Walton H. Walker, commander of the US Eighth Army, characterized air power’s effectiveness this way: “I will gladly lay my cards right on the table and state that if it had not been for the air support that we received from the Fifth Air Force we would not have been able to stay in Korea.” Quoted in Robert F. Futrell, *The United States Air Force in Korea, 1950–1953*, rev. ed. (Washington, D.C.: Office of Air Force History, 1983), 146.

10. For new USAF thinking on these matters, see Gen Merrill A. McPeak, “For the Composite Wing,” *Airpower Journal* 4, no. 3 (Fall 1990): 4–12.

11. This is not to relegate American ground forces to port or airfield security as their *raison d’être*; rather, it suggests that a new paradigm for warfare in a new era will require imaginative and creative use of *all* forces at the disposal of the joint forces commander.

12. News briefing, Department of Defense, Gen Merrill A. McPeak, Air Force chief of staff, subject: Operation Desert Storm, 15 March 1991, 1–2.

13. Speaking of hunting and attacking Scud missiles, General McPeak noted that “we put about three times the effort that we thought we would on this job.” *Ibid.*, 5.

14. In World War II, after a lengthy maturation of maintenance and supply practices, the US Army Air Forces achieved an in-commission rate of 55 percent; in Desert Storm the US Air Force maintained a 93 percent in-commission rate. In other words, out-of-commission rates of

the comparatively simple and far less potent World War II aircraft exceeded modern rates by over six times. Edward H. Kolcum, "Gulf War Reinforces Value of U.S. Stealth Technologies." *Aviation Week & Space Technology*, 18 February 1991, 40; Craven and Cate, vol. 6, *Men and Planes* (1955; new imprint, Washington, D.C.: Office of Air Force History, 1983), 396.

15. Two figures suggest the leverage that low-observable aircraft using precision weapons can apply, in combination with other force multipliers: (1) F-117s comprised a mere 2.5 percent of coalition aircraft involved in air attacks but accounted for 31 percent of the targets on the first raid; their targets were generally centers for air defense operations, communications, and command and control; (2) total coalition combat losses in the air effort of 109,876 sorties were 42 aircraft. The paralysis of Iraq's command and control structure can be seen in the coalition's ability to fly combat sorties—many at night and many in adverse weather—yet keep losses to a level that, a few years ago, would have been normal (or better) for peacetime training (see also note 15). McPeak briefing, 4, 6, 9–10, 12.

16. Reduction in the risk to human life as a result of better technology and sound practices is one of air power's great success stories. The combat loss rate of Tactical Air Com-

mand (TAC) during Desert Storm was about eight aircraft per 100,000 flying hours. In my days as a lieutenant, TAC lost 14.6 aircraft per 100,000 flying hours just by doing peacetime training. Central Command air forces lost one aircraft every three days in Desert Storm, whereas in the days of the F-86, we lost one aircraft a day—every day—for three years, just in training.

17. "If commanders fail to keep the national policy in view when planning their operations, they are wrong. And in order to understand this policy, they must look at the war from the broadest aspect. This applies especially to the case of the Air Force, because even a junior officer may have to make grave decisions as to the nature of the target he is going to bomb." Air Vice-Marshal H. N. Wrigley, *The Decisive Factor: Air Power Doctrine*, ed. Alan Stephens and Brendan O'Loughlin (Canberra, Australia: Australian Government Publishing Service, 1990), 11.

18. *Ibid.*, 6, 8.

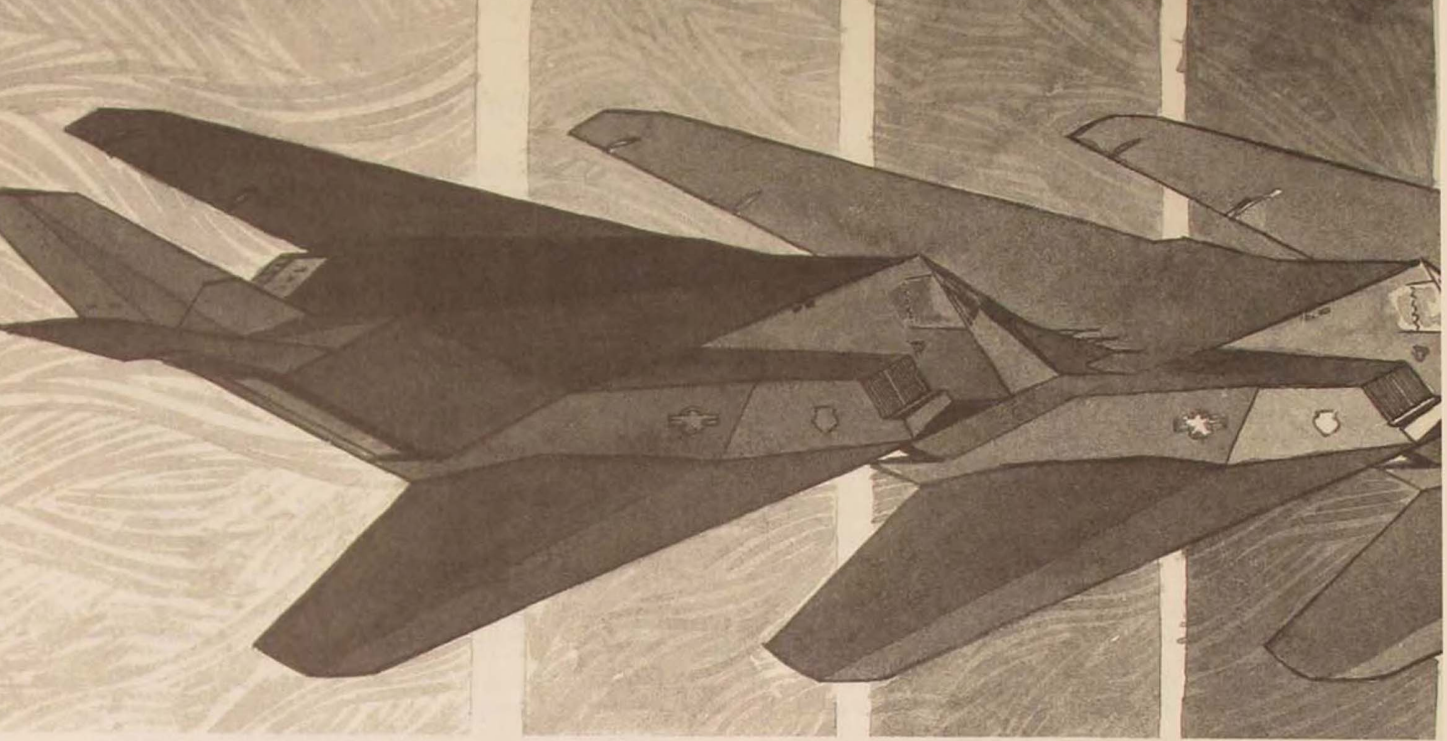
19. M. J. Armitage and R. A. Mason, *Air Power in the Nuclear Age* (Urbana, Ill.: University of Illinois Press, 1983), 257.

20. "Annual Message to Congress, December 1, 1862," in Abraham Lincoln, *Speeches and Writings, 1859–1865* (New York: Library of America/Viking Press, 1989), 415.

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# CRACKS IN THE BLACK DIKE

## SECRECY, THE MEDIA, AND THE F-117A

JIM CUNNINGHAM

**I**N NOVEMBER 1988 a decade of secrecy was lifted from one of the most enigmatic aircraft projects of all time: the Lockheed F-117A stealth fighter. In the 10 years since the program was officially announced by the Carter administration, numerous reports have been published in both the technical and popular media about the aircraft. Now that

the program has moved out of the “black” (secrecy) realm, it is possible to review the reports on the project, assess their accuracy, and discuss whether or not they compromised the aircraft’s technology or operational capabilities.

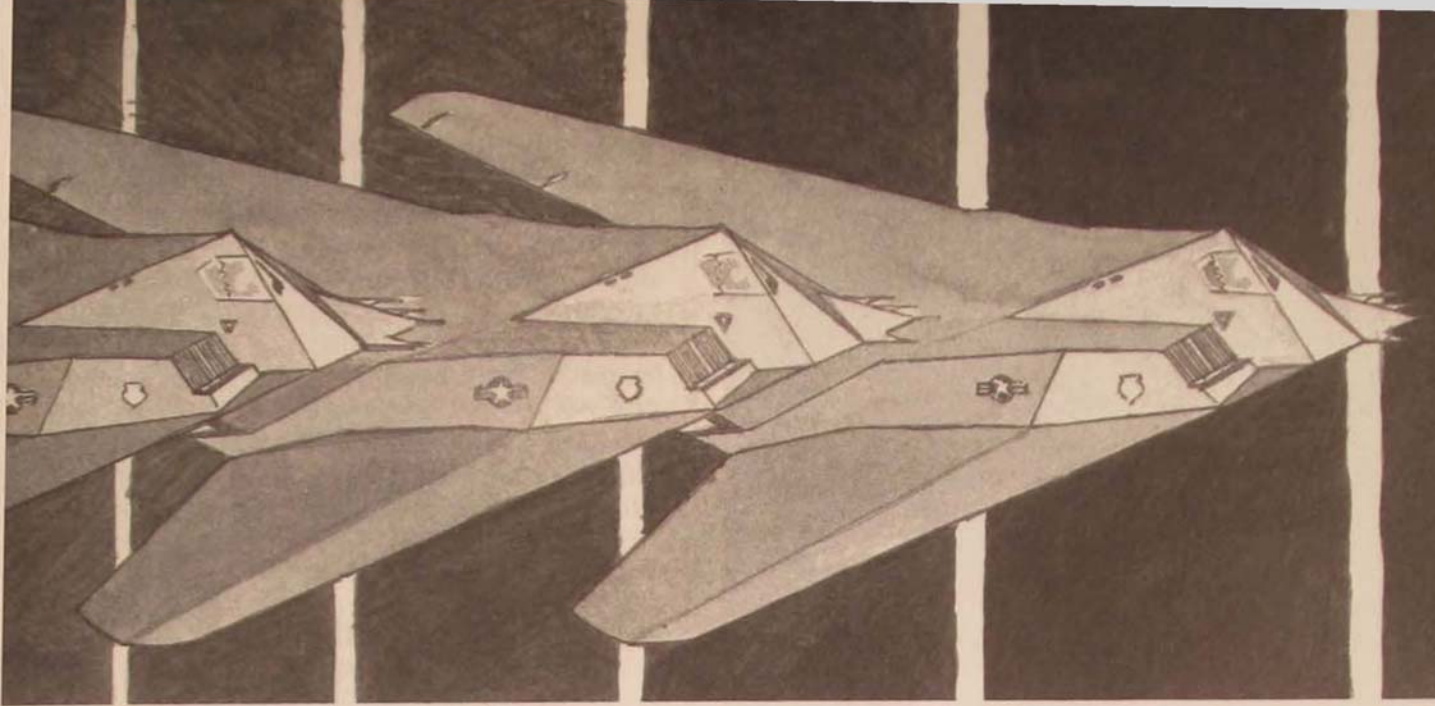
### Stealth before the F-117A

Stealth, or low-observable technologies, were in development long before the stealth fighter ever flew. The first stealth aircraft flew in the early 1900s—a German aircraft equipped with transparent wing

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Author’s note: This article was written entirely with unclassified sources. While every effort was made to ensure that information was the most current and accurate available, the secret nature of the subject matter leaves open the possibility that incomplete or inaccurate data was used in preparation of this article.





coverings intended to make the airplane more difficult to spot from the ground.<sup>1</sup> The Germans were also the first to incorporate radar absorbent material (RAM) into an aircraft. Production models of their Horten Ho IX were to incorporate charcoal and other primitive RAM. Only prototypes of the design were ever constructed, and these were not fitted with stealth features.<sup>2</sup> At the conclusion of World War II, the United States developed RAM that was only marginally effective and very heavy. The added weight of the RAM, known as MX-410, was considered prohibitive, and the substance was never used operationally.<sup>3</sup> The 1950s design specifications of the U-2 reconnaissance aircraft included a preference for a low radar cross section, which is a fundamental stealth characteristic.<sup>4</sup> Some experiments with a type of RAM known as Salisbury Screen were also conducted on the U-2.<sup>5</sup> Considerable effort was put into making the U-2's successor, the SR-71, a stealthy aircraft. The SR-71 used blended body shaping as well as various types of RAM to make radar detection more difficult. Stealth was not, however, a primary design concern of either the U-2 or SR-71 programs.<sup>6</sup>

Interest in stealth technology increased in the late 1960s and early 1970s, partly in response to lessons learned from the B-52

bombing campaigns in the Vietnam War. Bomber losses were high, and the US Air Force needed to design its later bombers in a way that would reduce losses. (The B-70 Valkyrie bomber project was canceled before the B-52 raids and did not incorporate stealth technology.)

A variety of small, obscure experimental aircraft were tested to determine the feasibility of stealth features. Among these were modified sailplanes and a variant of the Windecker Eagle, which incorporated composite airframe materials as well as internal RAM technology.<sup>7</sup>

The results of these tests were never openly published. Whatever the final outcome was, it was sufficient to propel stealth technology into full development. In June 1975, the *Defense Daily* carried a report that a small stealth fighter was being developed for the Air Force Flight Dynamics Laboratory.<sup>8</sup> In an article on the genesis of the advanced tactical fighter (ATF) published in January 1976, *Aviation Week & Space Technology* reported that a high priority was being given to the incorporation of stealth technology into the fighter designs. The article further stated that Lockheed and Northrop (which went on to develop the F-117A and B-2 stealth aircraft) were being given funding for design studies on the inclusion of stealth



*In August 1980, Secretary of Defense Harold Brown held what would become a controversial press conference to clarify recent "leaks" concerning stealth information and to officially confirm DOD's participation in the secret program.*

characteristics in the ATF because of their experience with low-observable technologies in their stealth fighter programs already in progress at the time.<sup>9</sup> In August 1976 *Aviation Week & Space Technology* carried a brief story that the development contract for the stealth fighter demonstrator had been won by Lockheed.<sup>10</sup> The 1977-78 edition of *Jane's All the World's Aircraft* marked the debut of the stealth fighter in that famous work. A one-paragraph entry under the Lockheed Corporation mentioned that a "small" stealth fighter was being built and was expected to fly in 1977.<sup>11</sup>

In June 1977 *Aviation Week & Space Technology* published another brief article that listed additional details of the pro-

gram. This article listed the engines of the prototype (General Electric J85 turbojets) and revealed that C. L. ("Kelly") Johnson, who had been the leading man in the U-2 and SR-71 programs, was involved with the project as a consultant. Like the *Jane's* entry, the article indicated that the first flight of the "Stealth Fighter Demonstrator" was to be conducted later in the year.<sup>12</sup> Photographs and technical information on prototypes, known as "Have Blue," were finally declassified in April 1991.<sup>13</sup>

## The Stealth Fighter Hits the Spotlight

Stealth hit center stage—as many high-tech weapon systems often do—in the political arena in an election year. In some ways similar to the SR-71 before it, the Lockheed stealth fighter was destined to become a political football.

The military capability of the United States was a major issue of the 1980 presidential election. The "defeat" of the United States in Vietnam and the more recent feeling of the country being "pushed around" by nations such as Iran led many to believe that this country needed a larger defense budget and that the Carter administration was neglecting the matter. (President Jimmy Carter had canceled the B-1 bomber program in 1977.)

In August 1980, during the height of candidate mudslinging, word of stealth technology was leaked and immediately picked up in all the media, technical and popular alike. (Until then the popular media had ignored stealth.) The leaks and rhetoric that followed made an extremely muddled picture from which it is all but impossible to fully determine exactly what happened.

During the week of 10 August, *Aviation Week & Space Technology*, the *Washington Post*, and ABC News all carried stories about stealth. The items were based on information from unofficial sources and stated that stealth technology was being developed for a variety of aircraft (includ-



ing bombers). The reports also explained what stealth technology was, what it might do, and vaguely described what such features would consist of: RAM and curved surfaces. (The latter, of course, proved to be entirely inaccurate with regard to the F-117A.)

On 22 August Secretary of Defense Harold Brown held a press conference to clarify the stealth "leak." At the conference, Brown confirmed the details published in the media. The purpose of confirming the leaks, Brown insisted, was to create a "firebreak" and prevent further information about the program being revealed. Unsurprisingly, official confirmation of a supposedly secret program was seized upon as an ideal political weapon by Republicans, who accused the Carter administration of revealing secret military technology to rebuff their own claim that President Carter had neglected defense matters.<sup>14</sup>

Gen Richard H. Ellis, then commander of the Strategic Air Command, said in a letter to Gen Lew Allen, Jr., USAF chief of staff at the time, that the release of such information, the announcement of a possible stealth bomber in particular, "brought the hair up on the back of my neck." He indicated that the reports gave the Soviets years of advance warning of the projects and time to prepare countermeasures that would greatly reduce the effectiveness of the systems.<sup>15</sup> These remarks seemed to ignore the reports on stealth published in earlier years that gave more detailed information than was leaked in 1980. Given the emphasis placed on such technical media as *Aviation Week & Space Technology* in the aerospace community, as well as the ability of Soviet intelligence organizations to gain information on other "black" programs, it seems unlikely that the Soviets first learned about the existence of stealth programs from the 1980 leaks.

President Carter responded to the criticism by downplaying the degree of detail revealed and in turn criticized his opponents for not classifying stealth when the program entered development under the Ford administration. Carter claimed that

stealth had been out in the open during public testimony for initial contract assignment until his administration classified the program in 1977. The leaking of information about the program was inevitable, he claimed, given that thousands of workers were involved with the project.<sup>16</sup>

The breaking of stealth information drew attention from the House Armed Services Committee, which prepared a report that was released in early February 1981. The origin of the report is probably linked to the fact that the committee was specially briefed on stealth technology two days before the media revelations, was given less information than was later leaked, and was told that the matter was highly secret. The report questions the official executive branch explanation for

*By the latter half of the 1980s, the mysterious stealth fighter had increasingly become a source of fascination to the media and public.*






revelation of stealth data. Of particular interest was testimony by Benjamin Schemmer, then editor of *Armed Forces Journal*, who withheld publication of an article on stealth in 1978 at the request of the Department of Defense. In August 1980, he was approached by Under Secretary of Defense for Research and Engineering William J. Perry, who encouraged him to publish a modified version of the article

no later than 21 August, one day before Secretary Brown's press conference on stealth.<sup>17</sup>

Further damaging testimony was given by Adm Elmo R. Zumwalt, Jr., former chief of naval operations. Zumwalt testified that the president had decided to deliberately leak information on the stealth program as an excuse to officially announce its existence and take credit for it. Furthermore,

*Although it looked nothing like the real thing, the 1985 release of the speculative "F-19" plastic airplane model of the stealth fighter generated understandable concern among officials not privy to the actual design of the aircraft. (Courtesy of Testor Corporation and Squadron Mail Order)*

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Zumwalt named the alleged leaker of the information: Deputy Assistant to the President for National Security Affairs David L. Aaron. Aaron filed an affidavit with the subcommittee which denied that he released any such information but he refused to testify before the committee under oath due to a dispute with the White House over executive privilege.<sup>18</sup>

Testimony given by Secretary Brown in which he explained his justification for the official announcement of stealth was deemed flimsy by the committee. Brown indicated that there were three options of dealing with the leaked information: the government could refuse comment on the leaks entirely, deny and discredit the story, or confirm the reports. The first option was discarded, Brown testified, because it would encourage media attention and additional leaks of possible technical information. (Given the predictability of the degree of attention paid to the program following its official announcement, this explanation seems unplausible.) The second option, discrediting the story, ran against the post-Watergate political climate of the time. Thus, the third option, official revelation, was chosen as a way of preventing further leaks. How focusing on the press conference about stealth technology would limit such attention on the matter was never fully explained by Secretary Brown. The committee also had difficulty in determining how this "damage-limiting tactic" was supposed to operate.<sup>19</sup>

The conclusions of the committee were cutting. Neglecting the fact that stealth technology had been written about in the technical media for several years, the report concluded that the official announcement did "serious damage...to the security of the United States and our ability to deter or to contain a potential Soviet threat." Similarly, the findings of the committee based on testimony given by Zumwalt and Schemmer, combined with a reluctance to testify by a key administration official and a flimsy explanation by Secretary Brown, supported the belief that the official dis-

closure was undertaken for political purposes by the Carter administration.<sup>20</sup>

Not all of the media reporting of the events was of sparkling quality. *Newsweek* ran a story in which stealth aircraft were described as being equipped with "electronic jamming devices to reduce 'radar echo' aircraft normally give off." Such a system, of course, would be of an active electronic nature and would call more attention to the aircraft than its normal radar return. The article was accompanied by an artist's rendering from CBS News of what a stealth fighter would look like. The aircraft depicted in the drawing bore no resemblance to what engineers theorized such an aircraft would look like at the time nor to the F-117A's actual configuration as we know it today. Instead, the rendering resembles an F-8 Crusader with the aircraft's engine intake atop the fuselage. Two oddly bent curved wings and a flat-tipped nose were also featured.<sup>21</sup> If this report was one of the pieces that the government was so concerned about providing sensitive information to the Soviets, there was no cause for alarm.

### The Stealth Fighter in the Early and Middle 1980s

The philosophy of the Reagan administration, which took the reins from the Carter administration in early 1981, had a much more conservative slant. For stealth projects this meant moving them "into the black" where they did not officially exist. While this proved all but impossible for programs like the stealth fighter, which were publicly acknowledged before the transition of power, it was done nevertheless. Information available to the public on stealth technology all but dried up, but the technical media kept rather accurate track of the programs anyway, although details were lacking and were occasionally in error. Reports in the popular media about the aircraft usually surfaced when an accident occurred.

In 1981 considerable study was being



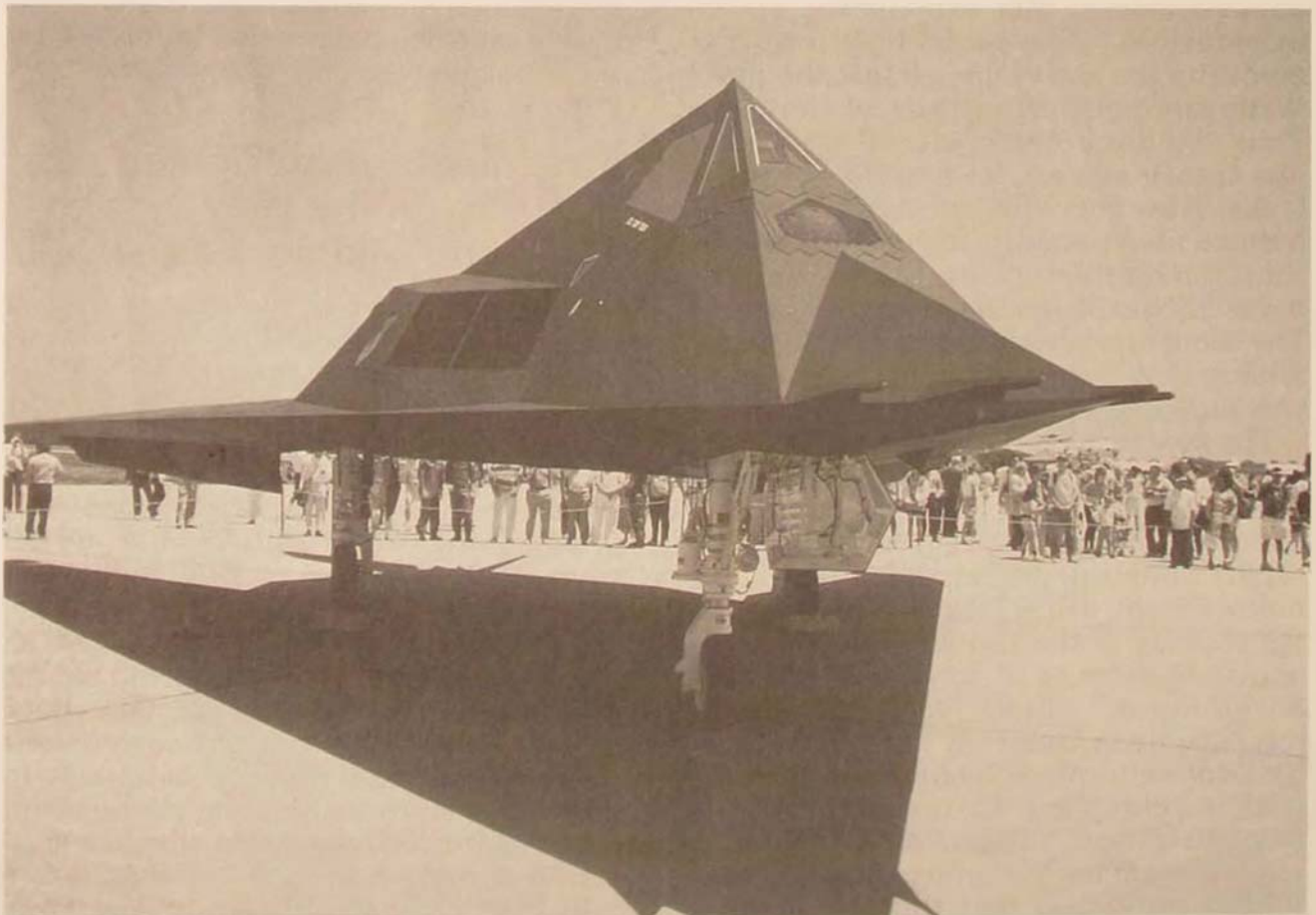
undertaken by the Pentagon on the direction for the nation's strategic weapon programs. Proposals for reviving the canceled B-1 as a stopgap measure until an advanced-technology stealth bomber could be designed were being scrutinized and the fundamental aspects of these programs were in public view. Questions of stealth technology applied to a new bomber led back to the stealth fighter.

A report in a June 1981 issue of *Aviation Week & Space Technology* regarding bomber proposals mentioned some interesting facts about the stealth fighter. The report mentioned that the Lockheed demonstrator was currently flying against Soviet equipment, presumably in Nevada. The aircraft were described as physically "rounded." A Pentagon official, who was not named, described the technology as working "better than we have a right to expect." The article also made reference to a fighter-sized stealth aircraft designed by

Northrop that was expected to have its first flight "soon."<sup>22</sup>

It is not known if this aircraft was an attempt to compete with Lockheed for the production of the stealth fighter or if it was an experimental demonstrator for testing stealth technology to be applied to the advanced-technology bomber (now the B-2) or the F-23 advanced-technology fighter then under development by Northrop. Given the differences in stealth design techniques in the F-117A and B-2 aircraft, the vehicle mentioned was probably a demonstrator. (Recent reports indicate that security was so tight during testing that teams from the various contractors were

*Sixteen months after the release of the initial, hazy photograph of the airplane, the Air Force revealed additional photographs and information about the stealth fighter. From a respectable distance, crowds view the F-117A on display at the May 1990 Joint Services Open House at Andrews AFB, Maryland.*





not allowed to view each other's aircraft for some time.)<sup>23</sup>

A demonstration of just how far the Reagan administration was willing to go with keeping stealth technology secret can be seen in statements by Air Force Secretary Verne Orr in July 1981. Contradicting what Secretary of Defense Harold Brown had stated the year before and disregarding reports of several years in the technical media, Orr called the stealth bomber a "paper airplane" and "wishful thinking." He also expressed doubt that American industry could handle such a "rush program," when in fact the F-117A was developed in record time.<sup>24</sup>

*In June 1991, the Air Force hosted "Stealth Week" at Andrews AFB, which allowed visiting congressmen to view up close the F-117A, the B-2, and the F-22 advanced tactical fighter.*

*Aviation Week & Space Technology* continued to obtain and print reports of the stealth fighter's progress despite the new official line of the aircraft's nonexistence. Nearly three months after Secretary Orr's denial, a report in the magazine's "Washington Roundup" stated that production for the stealth fighter had been funded with \$1 billion for the 1983 fiscal year for 20 aircraft. The report also stated that the planes were to be C-5 transportable and had a planform similar to the space shuttle.<sup>25</sup>

A report in the *Wall Street Journal* in March 1982 revealed more details of the stealth fighter than had been done previously in the popular media. The report mentioned that the stealth fighter was due to go into production that year, was to be produced in small numbers, and would best be employed in the surprise attack role against heavily defended targets. It also discussed the stealth bomber and





cruise missile projects. The report, while mostly factual, did include some pretentious statements. According to the author, one experiment performed by the United States Navy involved a missile boat coated with RAM, which made the vessel “undetectable by surface radar.”<sup>26</sup> This was almost certainly an exaggeration.

With the desire on the part of the Reagan administration to keep stealth black, little more was published about the stealth fighter until later in the decade. Even the 1984–85 edition of *Jane’s All the World’s Aircraft*, which included a very brief entry on the aircraft, made no new revelations about the aircraft except that it believed its designation was F-19.<sup>27</sup> This designation was widely believed accurate for several years, although at least one report uncovered the fact that the designation was inaccurate.<sup>28</sup>

## The Last Years of Classification

The last years of the 1980s saw the stealth fighter move back into the popular and technical media spotlights. Crashes, missing documents on the aircraft, and, oddly enough, a plastic model kit all focused attention on the program. In fact, so much information about the airplane was leaking that some officials felt that there was little point in attempting to keep

*The heavy security classification of the F-117A in the 1980s had a corollary effect of protecting the highly successful program from, depending on one’s point of view, either dissection in the political arena or thoughtful public review.*

the aircraft completely concealed. The program was kept fully classified, however, at President Ronald Reagan’s request.<sup>29</sup>

In 1985 the stealth fighter made headlines and national news in the form of a plastic model kit (which turned out to have almost nothing in common with the real thing). At the request of his boss, John Andrews at the Testors Corporation created a speculative model of what the “F-19” might look like. The design was well thought-out, complete with curved surfaces, inwardly canted rudders, and blended engine intakes. Technical data was obtained from unclassified sources such as those used in preparation of this article and a government study likely used in producing the F-117A, the *Radar Cross Section Handbook*. The only truly unusual source used was a thumbnail sketch by a pilot who claimed that he saw an unusual aircraft over the desert one day.<sup>30</sup>

Release of the model caused a political and media uproar. The kit was spread over newspapers and network news programs. An assembled copy of the kit was even passed around a hearing in the House investigating missing stealth documents. One representative demanded to know how a secret aircraft that even congress-

men were not allowed to see could be reproduced by a model company.<sup>31</sup> The government was particularly disturbed by the fact that the kit was a best-seller, especially among Lockheed workers at Palmdale, California (where the F-117A was built), which seemed to lend credibility to the model's configuration.<sup>32</sup>

In the end, however, the model was merely an intelligent guess. In many ways, the Testors kit looks more like what a stealth fighter should look like than the F-117A does: its surfaces are gracefully curved and it has a forward fuselage resembling an SR-71. Only one of the kit's features was accurate: the triangular, wedge-shaped nose tip. The model designer knew this configuration was correct because he had connections to the contractor that manufactured them.<sup>33</sup> In the final analysis, one can only imagine the frustration and perhaps amusement of top Lockheed and Pentagon officials who knew that the kit bore no resemblance to the real fighter but could not say so in public.

Congressional questioning about missing stealth documents during the same hearing in which the model was passed around were less amusing. In June 1986 two Lockheed employees working on the stealth fighter program brought to light that hundreds of documents, tapes, films, and photographs dealing with the aircraft were missing from the company's files. Representative John D. Dingell (D-Mich.), who later chaired an investigation into the problem, indicated that there was evidence that Lockheed had falsified audits to conceal the problem.<sup>34</sup> In one instance, an employee allegedly removed blueprints of the aircraft in a rolled-up newspaper. The employee then supposedly showed them to his ex-wife and girlfriend, who turned him in.<sup>35</sup> As a result of the lax document security, payments for the aircraft were withheld until the situation was corrected.<sup>36</sup> Some officials complained that the hearings and publicity associated with them had led to the program being unnecessarily compromised.<sup>37</sup>

Further publicity about the stealth fighter resulted when one crashed in July

1986 in California on a night training mission. The drastic security measures taken during the incident attracted media attention.

The aircraft crashed at approximately 2 A.M. on a night training flight and started a fierce brushfire near Bakersfield, California. The fire was so severe that it took some 16 hours to extinguish.<sup>38</sup> The crash site was proclaimed a national security area, which made overflights within five miles at altitudes less than 8,500 feet illegal. The ground area was also sealed off to the point that fire fighters were not allowed into the immediate area.<sup>39</sup> While the Air Force refused to comment on what type of aircraft the pilot had been flying or where the flight originated, there was no doubt in anyone's mind what had crashed. *Aviation Week & Space Technology* ran detailed articles on the incident, including an analysis of local airways and military operations areas. The article revealed that the F-19 designation was incorrect but also stated that the aircraft used thrust vectoring, which it did not.<sup>40</sup> A follow-up article the next week examined some of the operations that were taking place at the crash site, including the use of explosive charges to remove embedded aircraft sections.<sup>41</sup> (Reports later declassified indicated that the crash was so severe that "structural breakup was almost absolute.")<sup>42</sup>

In a fashion typical of the popular media, *Newsweek* ran a story that contained several serious inaccuracies. The report indicated that over 72 stealth fighters were in operation and that any debris from the crash could be analyzed and information obtained that "the Kremlin would love to get its hands on." As a result of this, the article claimed, Pentagon officials "wondered if they'd have to keep the entire area cordoned off—forever."<sup>43</sup>

In fact, the area was not kept cordoned off forever but rather for several weeks. A television crew investigating the site after the Air Force departed found numerous aircraft fragments, the largest of which was about two and a half inches square. The pieces were turned over to the Air Force,



which indicated that the remaining debris was not a security threat. Aviation author Bill Sweetman, when contacted about the scraps, indicated that they were probably unimportant.<sup>44</sup> In his new book about the F-117A, Sweetman indicates that the Air Force scattered fragments of a wrecked F-101 Voodoo before leaving the crash site.<sup>45</sup> This is most likely what was found.

Several detailed articles on the stealth fighter appeared in the popular media shortly after the accident. These pieces were more detailed and accurate than many previous reports published in either the technical or popular media and revealed data that made the further concealment of the program of questionable utility.

On 22 August 1986 the *Washington Post*, quoting "informed defense sources," wrote that approximately 50 aircraft were operational and combat-ready and listed the cost of the program as \$7 billion. (Official figures eventually released specified the cost at \$6.56 billion.) The report also specified that the F-19 designation was incorrect and described the aircraft's shape as "'ugly' because of its bulging, nontraditional shape." The article also discussed the operation of stealth technology as well as basing arrangements of the aircraft.<sup>46</sup>

The following day, the *Sacramento Bee* ran an article that described facilities at Tonopah, Nevada, where the F-117As were based. Operations at the base were divulged, including the daily transfer of technicians from Nellis Air Force Base. An account from a civilian pilot flying a restored P-51 Mustang who mistakenly landed at the base and was interrogated at length was published, as was a report by a charter pilot who intruded on the restricted airspace and was intercepted by an armed OV-10, which escorted him out of the area.<sup>47</sup>

In October 1987 another stealth fighter crashed, this time at Nellis. Because the accident occurred inside military territory, the extreme security measures that had called attention to the crash the previous year were not needed (this could be a reason for the later crash not being as pub-

licized). A short item in *Aviation Week & Space Technology* called the aircraft a "Nighthawk" and listed the quantity of aircraft as approximately 50.<sup>48</sup>

A report in the *Las Vegas Sun* was more revealing, listing the accident location as a section of the heavily restricted nuclear proving ground. The account stated that the fire fighters employed at the test site were not permitted to respond to the crash. Official statements were vague, as they were in previous accidents involving stealth aircraft. An Air Force spokesman would only indicate that the crash was under investigation and would not identify the type of aircraft involved in the accident. The article also stated that the crash occurred during Red Flag exercises but did not list a source for this information.<sup>49</sup>

Scarcely a month later, the stealth fighter was back in the media, this time from a peripheral perspective. An A-7D Corsair crashed into a hotel in Indianapolis, Indiana, killing 10 people. Media curiosity arose when it was discovered that the pilot of the A-7, Maj Bruce Teagarden, was assigned to the 4450th Tactical Training Group—the same unit that the pilot of the 1986 Bakersfield crash had been assigned to. The report indicated that the unit probably did something unusual, as it operated the only remaining A-7Ds in the active forces.<sup>50</sup>

This information led to a wealth of speculation, much of it accurate. Theories put forth by various experts based on the information indicated that the A-7s were being used to sharpen daytime attack flying skills since the stealth aircraft were only flown at night to avoid detection. It was also suggested that the A-7s could be modified to carry some stealth avionics either in the existing aircraft or externally. (It is now known that the A-7s were not modified in any way.)<sup>51</sup> Other analysts theorized that the A-7s were used as Soviet interceptor aircraft against which the stealth aircraft flew practice missions. The article carried one grossly inaccurate figure: the stealth fighters were specified as costing \$150 million each.<sup>52</sup>

## The F-117A Moves Out of the Black

Little more was written about the stealth fighter prior to its official unveiling in late 1988. Hints of the aircraft being declassified began circulating in October of that year. With the stealthy B-2 and the ATF programs about to come under some public scrutiny, the incentive to continue to invest great amounts of effort and funding to keep the stealth fighter under wraps was lessening.

In mid-October, various news services announced that the Pentagon was about to reveal some information about the fighter, only to be contradicted by official sources who indicated that there were no plans to release any information for "the foreseeable future." Reports also indicated that consideration was being given to revealing the program by Pentagon sources rather than in upcoming court cases involving Lockheed employees who alleged that they had suffered injury while working on the aircraft.<sup>53</sup>

Perhaps the main reason for the delay in releasing information was the concern that doing so would be seen as a political ploy. Conceivably recalling the uproar caused in the 1980 election, members of the Senate Armed Services Committee requested that the release of information be delayed until after the November election. The delay was also used to assess the potential effects on arms negotiations and to brief US allies.<sup>54</sup>

The official unveiling finally happened on 10 November 1988. A single vague and hazy photograph of the aircraft was released, along with various details on the program including the aircraft's correct designation. Quantities of the F-117As in service and on order were given, and accidents involving the aircraft, most of which had been reported widely in the media over the years with considerable detail and accuracy, were briefly listed. No information was given, however, about the aircraft's measurements, performance, or cost.<sup>55</sup>

The photograph was run on the front page of nearly every major newspaper the following day and astounded most people in that the aircraft was not configured as most of the conjectural drawings had indicated. Apart from the configuration, however, the official announcement was a disappointment. It gave little new information.

Perhaps the story was most anticlimactic in Tonopah where the F-117As were based. The front page of the *Tonopah Times-Bonanza* proclaimed, "Surprise, surprise—it exists."<sup>56</sup>

While many of the media reports on the F-117A's unveiling were virtually identical due to the limited amount of information released, some reports included unofficial information obtained by other sources. *U.S. News & World Report*, for example, ran an accurate account of the unveiling, but also included accounts of security measures taken to ensure secrecy. The article also claimed that the F-117A had been flown near the Soviet border undetected and that the Joint Chiefs decided not to use the aircraft in the 1986 Libyan air strike for fear of the enemy gaining information about it.<sup>57</sup>

The article in the 14 November 1988 edition of *Aviation Week & Space Technology* included more analysis than most other accounts. The standard information from the release was provided, along with technical explanations about the unique stealth-faceting contouring. Estimated dimensions were also provided.<sup>58</sup>

The indistinct nature of the single released photograph of the F-117A produced some interesting conjectural drawings of the aircraft. Even *Jane's All the World's Aircraft*, known for its accuracy even in speculation, fashioned a rendition that was incorrect. The F-117A pictured in a two-view drawing is compressed in length, being only slightly longer than the aircraft's wing span. The result is a squat, stubby airframe supported by a brawny landing gear. Curiously, however, the shape of the gear doors shown in this drawing are correct but were not shown in the initially released photograph.<sup>59</sup> Either



the individual who prepared the drawing made an intelligent guess or had access to some information not officially released.

With the F-117A now flying during the day, stealth buffs and aviation photographers started making trips to Tonopah hoping to see the famed aircraft. Some succeeded, and in several cases their photographs were published in such publications as *Aviation Week & Space Technology* and *Jane's Defence Weekly*. In most cases the photos were taken from quite a distance and often showed only the aircraft's underside. Most of the photos were blurred by distance.

As the B-2 project began to encounter cost difficulties and was being thrust into the spotlight in attempts to gather public support, there were fewer and fewer reasons to keep the F-117A secluded. In early April 1990, the Air Force revealed a great deal more about the aircraft, including costs, dimensions, detailed color photographs, and motion picture footage. *Aviation Week & Space Technology* ran a highly detailed and technical article explaining the aircraft's history, workings, and operations.<sup>60</sup>

Despite these revelations and the aircraft's popularity at air shows, a fair degree of secrecy still shrouds the plane. Crews of KC-135Qs refueling F-117As on the first stage of their journeys to the Middle East during Operation Desert Shield were not given refueling data on the airplane.<sup>61</sup>

## Did the Classification Scheme Succeed?

With all the publicity given to the stealth fighter over the years, can it be said that attempts to keep the aircraft's existence secret succeeded? The exact objectives for keeping the program secret have never been publicly stated. In theory, success would mean keeping data that could have been used to counter or duplicate the F-117A secret, but what type of information would that be? That question has

various answers depending on which presidential administration is examined.

As discussed previously, the amount of information considered acceptable for public consumption by the Carter administration was considerably greater than that released by the Reagan administration. Given the fact that the Carter administration announced the existence of stealth programs that the Reagan administration kept silent, reports published about the F-117A over the years that did not reveal sensitive aspects of the aircraft's operations or construction would likely have been deemed acceptable by that administration's standards. In fact, some believe that the F-117A would have been revealed to the public much sooner had Carter been reelected.<sup>62</sup> Under these standards, then, the classification program can be considered a success.

The evaluation of the secrecy of the program is very different if viewed from the stance of the Reagan administration. As one author points out, the stealth fighter became a classic example of the more conservative approach of the administration: when in doubt, classify; if doubt remains, upgrade the classification.<sup>63</sup>

If the goal of the administration was indeed to keep the aircraft's very existence completely secret, the classification program failed. By the tight standards applied to the program, each and every one of the reports discussed earlier in this article was damaging.

But was the objective to keep the aircraft completely secret? Given the degree of publicity surrounding the program before the Reagan administration clamped down on the subject, along with the continued reports in the technical media made by experts in the field as well as the difficulties with missing documentation of the aircraft, it seems unlikely that the objective was to keep the project completely hidden. Instead, it seems probable that the intention was to keep the quantity and depth of information revealed to minimal levels. A lack of official information on the aircraft also gave additional credence to rumors and reports of questionable ac-



curacy that would have been discounted in the face of authoritative data. If viewed from this perspective, the world was indeed kept guessing about the aircraft. For every accurate report about the stealth fighter published, several inaccurate ones were produced, although seldom were any completely inaccurate. (This trend continues today despite the declassification of the program.)

The wild card variable in this analysis is the Soviet intelligence community. Given the thoroughness with which that machine penetrated other black programs (most notably the Rhyolite reconnaissance satellite program), combined with the fact that many documents on the F-117A program disappeared, suggests that the Soviets may have learned a great deal about the aircraft despite the extreme security measures which surrounded it.

Security concerns regarding the stealth fighter are not limited to the Soviet Union, however, as recent events in the Middle East have demonstrated. The tight security measures may not have kept the Soviets from learning about the aircraft, but other potential adversaries may well have been kept in the dark about the aircraft and how to defeat it.

There are other dimensions to the classification equation; these are not matters of national security but of domestic politics. Details of black programs like the F-117A are known only to select officials, thus making the projects less prone to political criticism and cancellation. Some critics have charged that the number of black programs under the Reagan administration was excessive and that the motivations for making them black were to hide them from political rather than military adversaries. In 1982 Sen Barbara Boxer (D-Calif.) headed an effort to bring more details of black programs, particularly costs, more into the open. Citing the problems with the B-1's integration into operational status, Senator Boxer indicated that better track needed to be kept of programs like the F-117A.<sup>64</sup> This position was bolstered by a potential alarming increase in the number of black programs in the defense

budget. In 1981 black programs made up .5 percent of the defense budget; by 1988 this number had risen to 7.3 percent.<sup>65</sup> There seems to be little agreement on a balancing point between secrecy needed for national security and disclosure needed for public accountability.

### Did Published Reports on the Stealth Fighter Compromise Its Operational Capability?

Did all of the articles and books published about stealth technology over the years enable potential adversaries to interfere with the aircraft or copy it? This is doubtful for many reasons.

One of the primary features of stealth aircraft is their shape; configuration of the aircraft's surfaces determines the degree and direction of radar reflectivity. Knowing a stealth aircraft's shape can assist in detecting it.<sup>66</sup> Until the official unveiling of the F-117A in November 1988, no accurate rendering had ever been published, although some accounts had indicated that the aircraft was not a curved, blended design as most reports had made it out to be. The closest guess came from yet another Testors model kit, this time of a hypothetical Soviet stealth fighter, the MiG-37. The kit marked the first public release of a faceted stealth design.<sup>67</sup> The precise configuration of the faceting of the F-117A, which had to be known in order to compute even a rough estimate of an aircraft's radar cross section, was never revealed. There is little evidence to support that even the release of that information would cause any real harm to the program. The US Air Force gave some of its analysts, who did not have any knowledge about the F-117A other than what had been revealed in the media, plan views of the aircraft and asked them to compute an estimate of its radar cross section. The resulting estimates were far higher than the actual figure, and the conclusion was that the revelation of the air-

craft's basic configuration would not cause any significant harm.<sup>68</sup>

The external shape of the aircraft is only the beginning of the list of stealth features on the F-117A. Most reports on the aircraft, especially those of the popular media, emphasized only external configuration radar stealth features and ignored other aspects such as internal and external RAM and other low-observable technologies in areas such as visual and infrared masking.

Radar signals bounce not only off the aircraft's surface skin but also off internal structures, most notably engine components. Reports published over the years occasionally mentioned these problems and listed various means of solving them by using a variety of techniques and materials. None, however, described how the interior of the stealth fighter is actually configured.

A variety of RAM is available to reduce radar signature, including such materials as Fibaloy, Kelvar 49, and Spectra-100 to name a few. No definite reports of which of any these are used in the F-117A were published. Without knowing which materials are used, an adversary would not know which radar frequencies the F-117A is vulnerable to (if any) and therefore would be restricted in attempts to counter the aircraft. To have the best chance of countering such technology, an adversary would have to make an attempt to cover every possibility, an exercise that would be a massive and expensive undertaking. In addition, the composition of subsequent stealth aircraft (which includes virtually all future fighter and bomber types) will probably differ considerably in types and quantities of RAM used, which will give them different characteristics.

Another radar reflectivity problem of a stealth aircraft is its onboard radar dish. The dish is by its nature a good reflector of radar energy and therefore greatly increases the stealth fighter's radar cross section. One solution to this problem would be to construct a radome transparent only to the stealth fighter's radar frequency. The weakness of this solution is that the air-

craft would be vulnerable to detection in the frequency of its onboard radar, if an adversary knew what that frequency was.<sup>69</sup> Again, no official report has been released as to what type of radar, if any, the F-117A is equipped with.

If there is a threat of an adversary obtaining information about RAM, it is probably not from stealth aircraft programs. Information on RAM was and is available from a variety of sources other than stealth aircraft, if anyone chooses to research the subject. One example of RAM is manufactured by Rockwell International. Known as radar interference ghost eliminator (RIGEL), the material is used at airports to cover structures that cause clutter on radar screens.<sup>70</sup> In Japan, bridges were coated with a ferrite-based RAM paint that allows operators on ships to detect other vessels in the water without the interference the bridge structures would cause.<sup>71</sup>

As already stated, little or nothing was ever published about thermal stealth technology. There was a great deal of information on the technology available (RAM, for example) from sources not related to stealth projects. Infrared masking and reduction systems, which come in a variety of forms, have been available and in service for a number of years on a variety of aircraft including helicopters and fixed-wing.

The greatest heat signature of an aircraft is created by its power plant. This can be reduced by covering the engines in special material and by cooling the exhaust plume of the airplane.

Substances used for encasing engines to reduce their heat signature include a variety of ceramics and carbon-carbon similar to that used on the space shuttle's exterior as thermal shielding. Many of these are also RAM.<sup>72</sup> No definite reports on which substances are used or how they are arranged in the F-117A have been published.

Masking engine exhaust can also be accomplished with a variety of techniques. Primary methods involve using bypass air to cool down the hot airflow from the engines. The resulting mixture is cool



enough to make acquisition by sensors sensitive to the infrared (IR) range a difficult prospect. This system is used on a variety of aircraft. Another system uses a series of baffles to cool the exhaust.<sup>73</sup> A more recent development is the use of 2-D nozzles to mask the plume.<sup>74</sup> Some reports erroneously indicated that this system was in use on the stealth fighter. Full details of the exhaust system used on the F-117A have still not been revealed, but the system appears to use vanes in the exhaust nozzles to disperse the exhaust quickly over a wide area.<sup>75</sup> None of the published reports have ever indicated what the aircraft's exhaust characteristic would be. An adversary would then have to estimate this value to optimize his chances of detecting the aircraft.

A thorough infrared masking would have to be undertaken to dampen the aircraft's overall thermal signature as well. One possible method of accomplishing this would be to use a "closed-loop" cooling system, which would divert excess heat to various segments of the aircraft where it could be bled off harmlessly. The SR-71 is said to have dissipated heat into its fuel to accomplish this.<sup>76</sup> To date, no incontrovertible reports that the stealth fighter is equipped with such a system have been published.

In summation, none of the published reports on the aircraft seem to have compromised its operational capability. Popular reports emphasized concepts as configuration, quantity, cost, and the basics of the stealth fighter mission but did not discuss any of the technical details an adversary would need to detect or duplicate the aircraft. Reports in the technical media went further than those in the popular media, but even these were largely speculative and often contradictory. At best these reports gave clues as to the types of technologies that *might* have been incorporated into the aircraft. Photographs have revealed the F-117A's true appearance—one of its key stealth features—but nearly all of the aircraft's other stealth features are internal and would require extensive examination and analysis to enable an

adversary to counter or duplicate them.

The most damaging information revealed for military purposes gave the quantity of planes produced and alerted the Soviets that the United States had a weapon against which they had no adequate defense. Given the fact that stealth technology was being extensively researched for decades before the F-117A flew, this is information they likely already had, and their intelligence services may have very well obtained more. While exact details have yet to be published, preliminary results have indicated that the F-117A performed superbly in Operation Desert Storm against formidable air defenses of an enemy who was fully aware of the aircraft's existence, deployment, configuration, and capabilities.

## The Price of Keeping the Program Secret

The cost of keeping the F-117A a complete secret for nearly a decade must have been enormous in both human and financial dimensions. The entire facility at Tonopah, Nevada, where the F-117As are based until they are scheduled to be moved in 1992, was constructed for the stealth fighter program. Until the F-117As arrived, the only buildings there were those of an old World War II training facility.<sup>77</sup> Great expense was also incurred when Lockheed personnel commuted daily to the facility from the company's plant in Burbank, California.<sup>78</sup> These are but a few of the types of expenses involved in keeping a major program under wraps.

The extreme secrecy of the program had human costs as well. To keep the number of personnel assigned to the F-117A units as small as possible, pilots were made to carry out functions that otherwise would have been handled by a separate staff. This was likely a leading cause of fatigue among pilots flying the aircraft, which led to accidents that otherwise might have been avoided. Additional contributing factors to fatigue and accidents included radio silence orders and the constraint of



flying the aircraft only during night hours to avoid detection.<sup>79</sup> One report by a retired Air Force general indicates that the pilots of F-117As were all but ordered to die with their aircraft if it became necessary to come down in any unsecured location: "If you can't bring it home, then you auger it in...even if you have to go in with it."<sup>80</sup> Pilots flying in Red Flag exercises at nearby Nellis were supposed to have been "forced down" if they got too close to a stealth aircraft and refused orders to move away.<sup>81</sup>

Secrecy restrictions had implications on the operational aspects of the aircraft as well. In 1986 the United States executed an air strike on Libya, a mission for which the F-117A would have been ideal. The reason the airplane was not used in that operation, reports indicate, was concern by the Joint Chiefs that the classified aspects of the aircraft might have been revealed whether or not any were shot down. Furthermore, using them in the raid would have made denial of their existence more difficult. Similar concerns canceled their use in a planned but unexecuted strike on Syria in 1983 and perhaps other missions.<sup>82</sup>

## The Doctrine of Secrecy and the F-117A

Were security restrictions of this magnitude necessary to keep the aircraft's successful operations from being compromised or to keep the Soviets from copying the technology? There is little evidence to support that the extreme measures taken were required. As has already been discussed, most key stealth technologies cannot be revealed without knowledge of the aircraft's interior components and configuration. Operating the aircraft during daylight hours would not have compromised any of these systems, nor would have conducting operations at Tonopah in a more open fashion.

The holding back of the F-117A in the Libya raid suggests that the degree of secrecy assigned to the aircraft impeded it

from flying the types of missions it was designed to accomplish. If the very existence of the aircraft is to be protected at the expense of using it, what is the purpose for having such a weapon? The fear of the Soviets obtaining information from a downed stealth aircraft has been discounted by the Air Force itself, which has indicated that the Soviets would learn "'near zero' about how to counter stealth by poring over a captured U.S. plane."<sup>83</sup> The missing documents on the F-117A that disappeared may have done more damage than this.

The secrecy surrounding the F-117A appears to have been more of a philosophical than practical decision. Military benefits of keeping the program highly classified were outweighed by costs in some areas. As one writer has noted, the classification is partly a matter of military tradition and a tradition in the highly successful management style practiced at the Lockheed "skunk works" where the aircraft was designed, developed, and produced in record time.<sup>84</sup> The heavy classification also protected the aircraft from political fighting, which might have killed this successful program. Costs involved with the F-117A were so high that the number of aircraft ordered had to be diminished from 100 to only 59.<sup>85</sup> General knowledge of this would have attracted political opponents like a magnet, and much unfounded criticism from uninformed individuals would have resulted.

More recently the Navy's A-12 attack aircraft program has provided an example of what excessive "blackness" of a program can do. Shortly after Secretary of Defense Richard ("Dick") Cheney announced that the program was on course, contractors revealed that the program was behind schedule and over budget.<sup>86</sup> Accusations were exchanged between government, military, and contractor personnel in placing blame, but, due to the program's "black" nature, such accusations were difficult to prove or disprove. In short, the extravagant classification measures eroded accountability.

To prevent this and other problems from

bing in future programs, guidelines be developed to help determine the of classification required independent political considerations. The following questions should be addressed in delines:

What information would cause the n to be compromised to the degree ability to accomplish its purpose/1 would be jeopardized?

What information would allow potential adversaries to duplicate the techs of the systems involved?

At what point would costs (financial otherwise) outweigh the benefits d in keeping the program black?

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It will be some time before the entire story on the F-117A will be fully known. The aircraft is still a highly sensitive topic, and conducting research on the program is difficult. Reports and accounts, even those from well-respected sources, are often highly speculative and contradictory. As a result, it is difficult to draw any definitive conclusions. Much of what was written about the stealth fighter over the years has proven to be erroneous, and in future years aspects of this article will doubtlessly take their place with them. Some observers will conceivably claim that this ambiguity speaks well for justifying military secrets, and others will claim that it demonstrates the danger of letting expensive and potentially dangerous programs run unchecked. The F-117A will become a case cited by both opponents and proponents of secret programs. □

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- What information would cause the program to be compromised to the degree that its ability to accomplish its purpose/mission would be jeopardized?
- What information would allow potential adversaries to duplicate the technologies of the systems involved?
- At what point would costs (financial and otherwise) outweigh the benefits involved in keeping the program black?

Projects that do not need to be completely hidden could then be allowed to exist in a "gray" status in which their existence and very general information would be revealed while aspects such as special technologies could be kept secret. The stealth fighter would have been an ex-

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Summer 1991

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Capt Kenneth W. Polasek, USAF

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# JOINT DOCTRINE

## PROGRESS, PROSPECTS, AND PROBLEMS

LT COL WILLIAM F. FURR, USAF

*With limited forces, nearly everything that happens nowadays is a joint operation. No one service plays a paramount role.*

—Lord Mountbatten

**D**OCTRINE has been described as the “software of defense.”<sup>1</sup> This software, as well as its related “hardware” (force structure), has historically been developed along individual service lines. However, as operations Urgent Fury, Just Cause, and Desert Storm have vividly demonstrated, the realities of armed conflict in today’s world make the



integration of individual service capabilities a matter of success or failure, life or death. The software that binds the services together as an integrated fighting force is joint doctrine. Joint doctrine helps us capitalize on the synergistic effects of interservice coordination and cooperation.

Joint doctrine is not a new phenomenon.<sup>2</sup> However, a congressional mandate has given it new emphasis and importance. Prior to 1986, the Joint Chiefs of Staff (JCS), while recognizing the need for joint doctrine,<sup>3</sup> were not committed to the development of a comprehensive body of doctrine to guide the conduct of joint operation. The responsibilities for developing joint doctrine were unclear; there was no standard joint doctrine development system; the combatant commands<sup>4</sup> were not required to participate in the development process; and there was no requirement for consistency in joint, combined, and service doctrine.<sup>5</sup> In fact, the JCS had

published no how-to-fight doctrine at all.... Instead, the JCS, in UNAAF [JCS Pub 2, *Unified Action Armed Forces* (UNAAF)] and in their interpretation of the statute [Title 10, United States Code], hold the Services responsible for the development of essentially all operational doctrine, with provisions for coordination between the Services and for referring disputes to the JCS for resolution.<sup>6</sup>

In 1985 a Senate Armed Services Committee staff report on the organization and decision-making procedures of the Department of Defense (DOD) identified "poorly developed joint doctrine" as one of the nine major "symptoms of inadequate unified military advice."<sup>7</sup> This report went on to say that "the joint operational effectiveness of military forces is dependent upon the development of joint doctrine and sufficient joint training to be able to effectively employ it."<sup>8</sup>

Armed with the findings in this staff report, numerous other studies,<sup>9</sup> and intensive public hearings, Congress mandated far-reaching changes in DOD organization and responsibilities in the Goldwater-Nichols Department of Defense

Reorganization Act of 1986. This landmark legislation significantly expanded the authority and responsibility of the chairman, Joint Chiefs of Staff. Included in this expanded authority and responsibility was the requirement for the chairman to develop "doctrine for the joint employment of the armed forces."<sup>10</sup>

One of the first actions resulting from this mandate was a change to JCS Pub 2. This change incorporated the new authorities and responsibilities and set out procedures for the development of joint doctrine and joint tactics, techniques, and procedures (JTTP).<sup>11</sup> These procedures included the requirement for all joint doctrine and JTTP to be approved by the chairman, Joint Chiefs of Staff, and for service doctrine to be consistent with joint doctrine.<sup>12</sup> DOD Directive 5100.1, *Functions of the Department of Defense and Its Major Components*, was also changed to require the chairman to "develop and establish doctrine for all aspects of the joint employment of the Armed Forces" and "promulgate Joint Chiefs of Staff publications (JCS Pubs) to provide military guidance for joint activities of the Armed Forces."<sup>13</sup>

To carry out these responsibilities, the chairman created a new Joint Staff directorate (J-7, Operational Plans and Interoperability) as the "focal point for interoperability with responsibility for joint doctrine, exercises, and operational plans."<sup>14</sup> This new directorate included a Joint Doctrine, Education, and Training Division that was specifically responsible for managing the joint doctrine program.<sup>15</sup>

Joint Pub 1-01, *Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program*,

sets forth the principles, guidelines, and conceptual framework for initiating, validating, developing, coordinating, evaluating, approving, and maintaining joint doctrine and joint tactics, techniques, and procedures (JTTP) approved by the Chairman, Joint Chiefs of Staff, in consultation with the other members of the Joint Chiefs of Staff.<sup>16</sup>

## Factors That Inhibit the Joint Doctrine Development Process

- A lack of consensus on the meaning of the term *doctrine*.
- A question as to who should write joint doctrine.
- A cumbersome coordination process that dilutes joint doctrine.
- A simultaneous development of "keystone" and "supporting" joint publications that frustrates both writers and reviewers.
- A limited distribution of joint test publications

It also describes the Joint Doctrine Publication System shown in figure 1. This publication system includes a Joint Pub 0 series of "Capstone Joint Warfare Doctrine," which retains the *Unified Action Armed Forces* (UNAAF), now Joint Pub 0-2, "to provide the basic organization and command and control relationships required for effective joint operations of the forces of two or more Services."<sup>17</sup> Following traditional Joint Staff lines of responsibility as much as possible (e.g., the 2 series for intelligence, the 3 series for operations), it also includes a keystone manual as the first publication in each series.<sup>18</sup>

Joint doctrine is now produced in accordance with a formal doctrine development process (fig. 2) that begins with the submission of a project proposal by one of the services, combatant commands, or Joint Staff directorates. After the proposal is approved, a program directive is developed and staffed for the formal approval of the chairman, Joint Chiefs of Staff.<sup>19</sup> The designated lead agent then

assigns a primary review authority to research, write, and coordinate an initial and final draft. Comments on the final draft are incorporated as appropriate, unresolved issues are identified, and a revised final draft is submitted to the lead agent who attempts to resolve any remaining issues. After one last coordination with the services and Joint Staff, the Joint Staff/J-7 publishes the revised final draft as a test publication. Unresolved differences of opinion, if any, are included as an appendix to the test publication.<sup>20</sup>

The test publication is then subjected to a 12-to-18-month evaluation.<sup>21</sup> This evaluation, defined in a formally coordinated evaluation directive, normally includes testing of the concepts and procedures during joint exercises and may include interviews and questionnaires. The evaluation report, which includes recommended refinements to the publication if appropriate, is coordinated with the services, combatant commands, and Joint Staff. Based on this report, the test publication is revised, coordinated, and



ultimately approved as formal joint doctrine by the chairman, Joint Chiefs of Staff. The process is designed to take 35 to 43 months to complete.

On the surface, the process just described appears to be a logically constructed, methodical approach. However, a number of factors inhibit the development process. The first of these is a fundamental issue of what doctrine is. The term *doctrine* was first defined by the JCS in the 1968 edition of JCS Pub 1,<sup>22</sup> and that definition has not changed as of the latest edition. The term *joint doctrine*, on the other hand, was not defined until a 1984 change to JCS Pub 1, and that definition has changed twice, albeit not in substance, since its introduction. In spite of these definitions, some or all of the participants at nearly every meeting concerning joint doctrine find it necessary to discuss and debate what doctrine means in terms of its purpose and degree of specificity before they can proceed with the task at hand. Complicating these debates are various opinions concerning the difference between joint doctrine and joint tactics, techniques, and procedures.

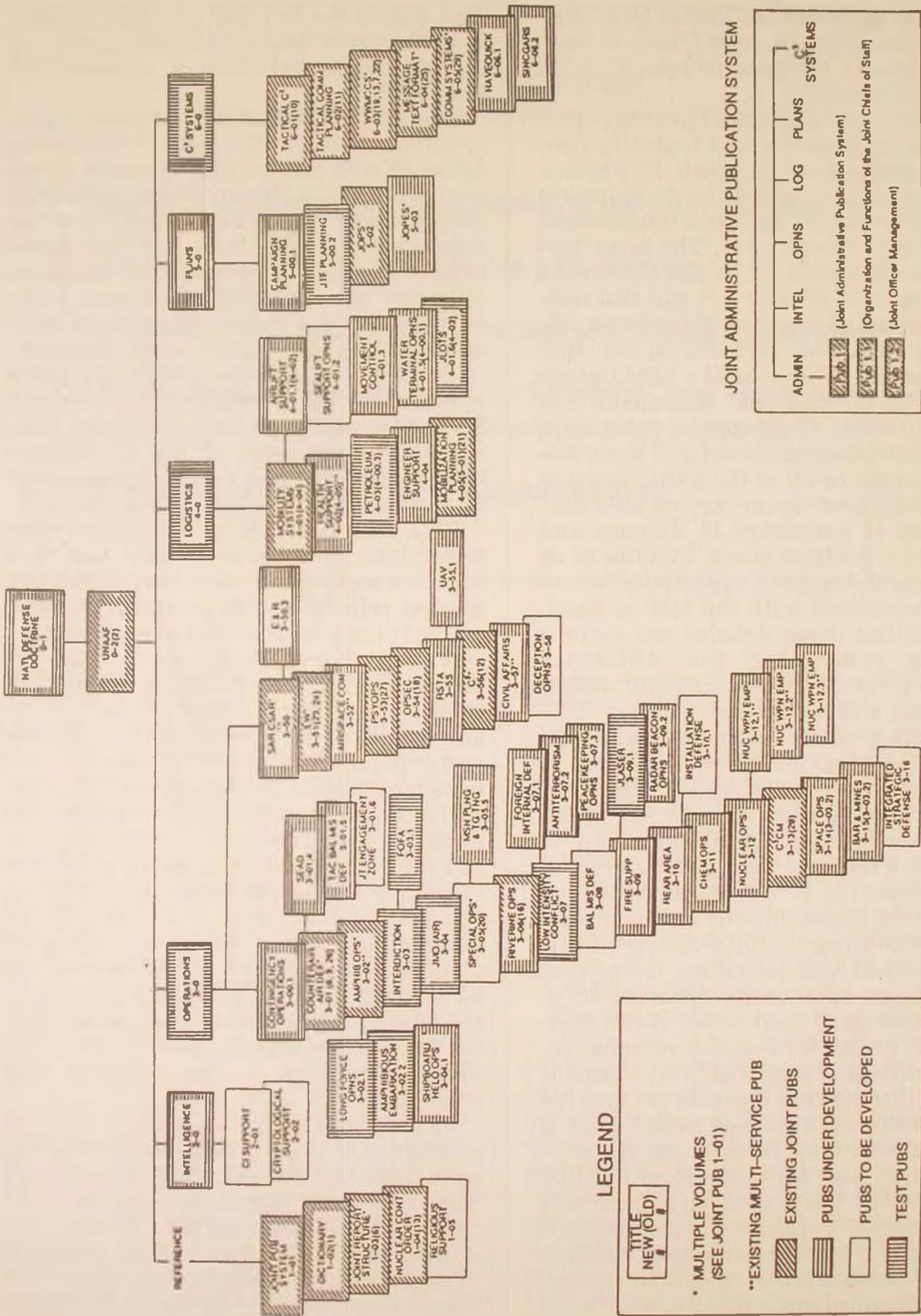
To some people, doctrine consists of broad principles that reflect "the way in which the organization and its members think and respond to events."<sup>23</sup> To others, doctrine tells them specifically how to fight.<sup>24</sup> As a result of these different expectations, doctrine is viewed as either too specific and limits options or too general and says nothing useful. Because of this lack of mutual understanding, the process has produced such vastly different documents, in terms of level of detail and overall thrust, as the Air Force-developed, 38-page final draft of Joint Pub 3-03, *Doctrine for Joint Interdiction Operations*, and the Navy-developed, 456-page initial draft of Joint Pub 3-02, *Joint Doctrine for Amphibious Operations*. While the Joint Staff/J-7 has attempted to come to grips with this issue, different perspectives persist. This is because the individuals who participate in the process are products of their service, and the services are a diverse lot, "none clearly predominant, each reflecting to its

own degree the fact that the United States is at the same time a maritime power, an aerospace power and a continental power."<sup>25</sup>

The existence of differing service perspectives leads to the second inhibiting factor of who writes joint doctrine. Since one of the major thrusts of the 1986 DOD Reorganization Act was a redressing of the imbalance between service and joint interests, it was clearly the intent of Congress, although not specifically stated as such, for joint doctrine to be written by individuals working in the joint arena. However, of the first 24 new joint doctrinal projects approved by the chairman, Joint Chiefs of Staff, 13 were assigned to one of the services for development. Of the 52 publications in the Joint Pub 3 series (operations), 32 were assigned to one of the services.<sup>26</sup>

With such heavy reliance on the services to produce joint doctrine, there is a need for some method to ensure that the writing process reflects a joint perspective. After all, service perspectives are shaped by service doctrine, which "stems from the particular logic and experience of the thinkers and policy setters of that Service and from their interpretation of the theory and experience of war."<sup>27</sup> However, there is no requirement for joint education or experience as a prerequisite for writing joint doctrine. In addition, neither the services nor the combatant commands were provided any additional resources to produce the assigned doctrine. As a result, the assignment of joint doctrine writing responsibilities, which often become an additional duty, is based on personnel availability instead of experience and ability. The poor quality of many of the initial drafts produced so far reflects this situation.

The third inhibiting factor, closely related to the issue of who writes it, is the coordination process. The 1985 Senate Staff Report on DOD Organization cited "Service logrolling" and the "cumbersome staffing process" as resulting in products "that have been 'watered down' to the lowest common level of assent."<sup>28</sup> While the current doctrinal development process



Source: Joint Publication 1-01, Joint Publication System, Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program (Washington, D.C.: Government Printing Office, 15 April 1988), V-2.

Figure 1. The Joint Publication System



provides for "Service differences of opinion" and makes the chairman of the Joint Chiefs of Staff the final approval authority,<sup>29</sup> the emphasis is on the resolution of issues before they reach that level. In addition, not all of the players have an equal voice in each step of the process.

The emphasis on issue resolution occurs at two levels. First, draft publications have to be coordinated and approved for release by the writer's bureaucracy, which may not include anyone with joint experience or perspective. If this bureaucracy is one of the services, coordination and approval are filtered through that service's doctrinal perspectives tempered by a reluctance at each level to admit an inability (failure) to solve unresolved issues. This same reluctance occurs even when a service is not responsible and is reinforced by the process itself, which requires the lead agent to "make every attempt to resolve any remaining outstanding issues."<sup>30</sup> While the lead agent and the Joint Staff are attempting to resolve issues, not all of the players are given an equal voice. After the revised final draft is released by the lead agent to the Joint Staff/J-7, the subsequent coordination does not include formal combatant command participation. As was the case with Joint Test Pub 3-0, *Doctrine for Unified and Joint Operations*, this procedure can result in significant changes being made without anyone outside of the Pentagon seeing them until the test publication is received.

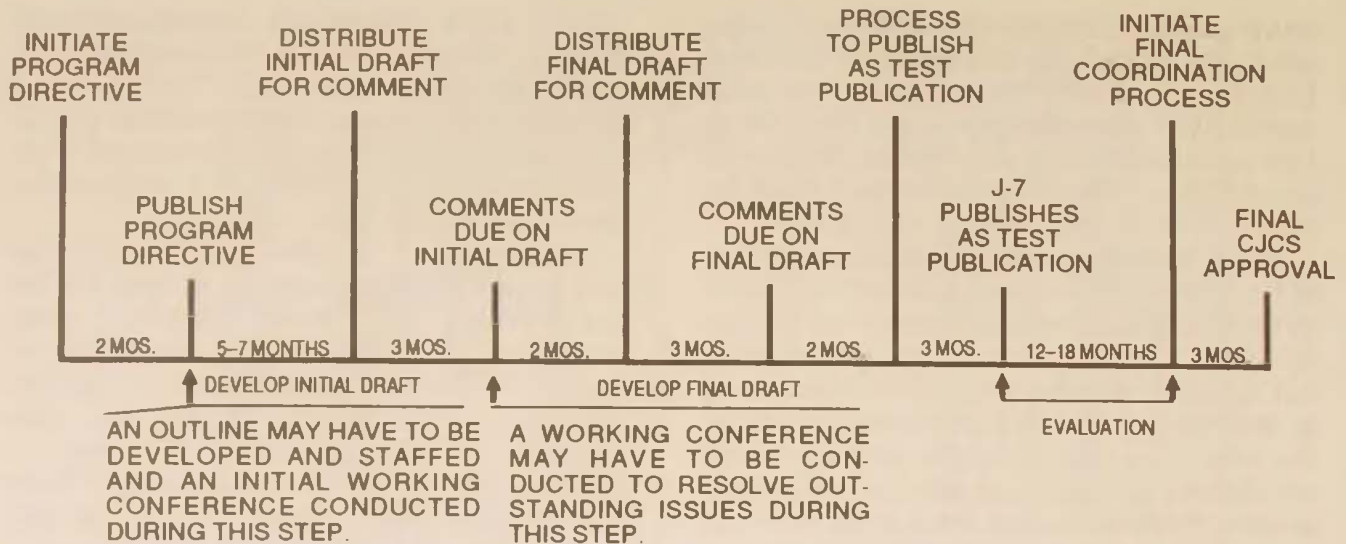
The fourth inhibiting factor is the timing of the development process. As would be expected, the first 11 top priority development projects included the five "keystone" publications. Each of the series (except the 0 and 1 series) begins with a keystone publication that constitutes the doctrinal foundation of the series.<sup>31</sup> Therefore, the development of supporting publications in a series would ideally wait until the keystone publication is approved, at least as a test publication. However, this has not been the case. Also included in these 11 projects were three Joint Pub 3 series (operations) projects (low-intensity conflict, special operations, and interdiction),

which were developed simultaneously with the development of the keystone publication. While the Joint Staff/J-7 has attempted to manage this situation, simultaneous development has presented frustrating challenges to both the writers and the reviewers of these publications.

The timing of the draft publications has also created a significant work load for the reviewers. The Joint Staff/J-7 has attempted to spread out this work load by staggering the completion dates of the initial and final drafts. However, this approach has had limited success. A March 1989 General Accounting Office report found some combatant commands were not able to meet joint doctrine development and coordinating requirements with their existing staffs.<sup>32</sup> The far-reaching effects of joint doctrine demand a rigorous, in-depth examination of the concepts and procedures being proposed. Such an examination takes time, and, if the services and combatant commands do not have the time to devote to this critical examination, the result will likely be inappropriate or inadequate joint doctrine.

The final inhibiting factor is the limited distribution of the test publications. Joint test publications are not distributed through the formal joint and service publication distribution systems. Instead, Joint Pub 1-01 states, "Normally, 10 copies will be sent to each combatant command and Service and 15 copies to the evaluation agency."<sup>33</sup> Further distribution is determined by the service and combatant command. As a result, the distribution of test publications is at best a haphazard process that does not ensure the widest possible exposure for these documents. For example, copies of all the test publications were not available at Air University Library until October 1990, and an admittedly unscientific sampling of Air University students revealed most had never seen a joint test publication.<sup>34</sup> Such limited distribution does not promote the vital discussion and debate necessary to ensure joint doctrine is valid and reflects the best possible wisdom and inspiration needed to prepare for the challenges of the future.





Source: Joint Publication 1-01.

Figure 2. Steps in Developing a New Joint Doctrine Publication

In spite of the inhibiting factors discussed above, the joint doctrine process has taken on a life of its own and continues to spew forth ever-increasing volumes of material on subjects ranging from nuclear operations to religious support. It is unlikely that the process can or will be significantly changed in the near future. However, there are a number of things that can be done to improve the quality of the doctrine being produced.

Probably the most significant positive contribution that can be made is to ensure that Air Force inputs are based on a solid foundation of well thought-out air power doctrine. Yes, the UNAAF does require service doctrine to be consistent with joint doctrine, but this occurs only after the applicable joint doctrine is formally approved by the chairman, Joint Chiefs of Staff. While joint doctrine is being written and while the test publications are being evaluated, the Air Force needs to actively examine and update, if necessary, related air power doctrine. The Air Force should not wait for joint doctrine to point the way. The new Air Force basic, operational, and functional doctrines specified by AFR 1-2, *Assignment of Responsibilities for*

*Development of Aerospace Doctrine*, are a step in the right direction, but only if the thinking about and development of these doctrines do not wait for the related joint doctrine to be published. The new documented approach to Air Force basic doctrine being developed by the Air University Center for Aerospace Doctrine, Research, and Education is also a step in the right direction.

Another positive contribution could be made by using the experience and expertise of Air War College and Air Command and Staff College students to evaluate joint doctrine drafts or, if time does not permit, to at least evaluate the test publications. This is not a totally original idea. Air University students have a long history of participating in the development and critiquing of concepts and doctrine.<sup>35</sup> The benefits of such an approach are manifold. The development process benefits from the rigorous practical and intellectual critique that can be produced by professional military education (PME) students. The students themselves benefit through the insights and internalizing that occur as a result of producing such a critique. Finally, the PME institutions benefit as a

result of enhanced student perceptions regarding the relevance of the curriculum and their contribution to real-world problems.

A final positive contribution could be realized if the writing of joint doctrine were done with more broad-based participation. The organizations responsible for the actual writing should actively seek inputs from and participation by each of the services and combatant commands early in the conceptualization and writing

*Joint doctrine helps US forces capitalize on the synergistic effects of interservice coordination and cooperation. Operations such as Urgent Fury prove that the coherent integration of individual service capabilities is vital to a successful war-fighting effort.*

process. This approach has been used by the Army-Air Force Center for Low Intensity Conflict, which has hosted "outlining conferences" and has actively solicited inputs in developing JTTPs for foreign internal defense and for peacekeeping. If each potential participant devotes the required time and effort, the result can only be a more coherent, comprehensive, and useful product.

Joint doctrine is here to stay, and "the filling of the joint doctrinal void will be an iterative process with lots of feedback among strategy, roles, missions, and joint doctrine."<sup>36</sup> As more and more joint doctrine is developed, it will touch every aspect of military operations and will have a significant impact on any future restruc-

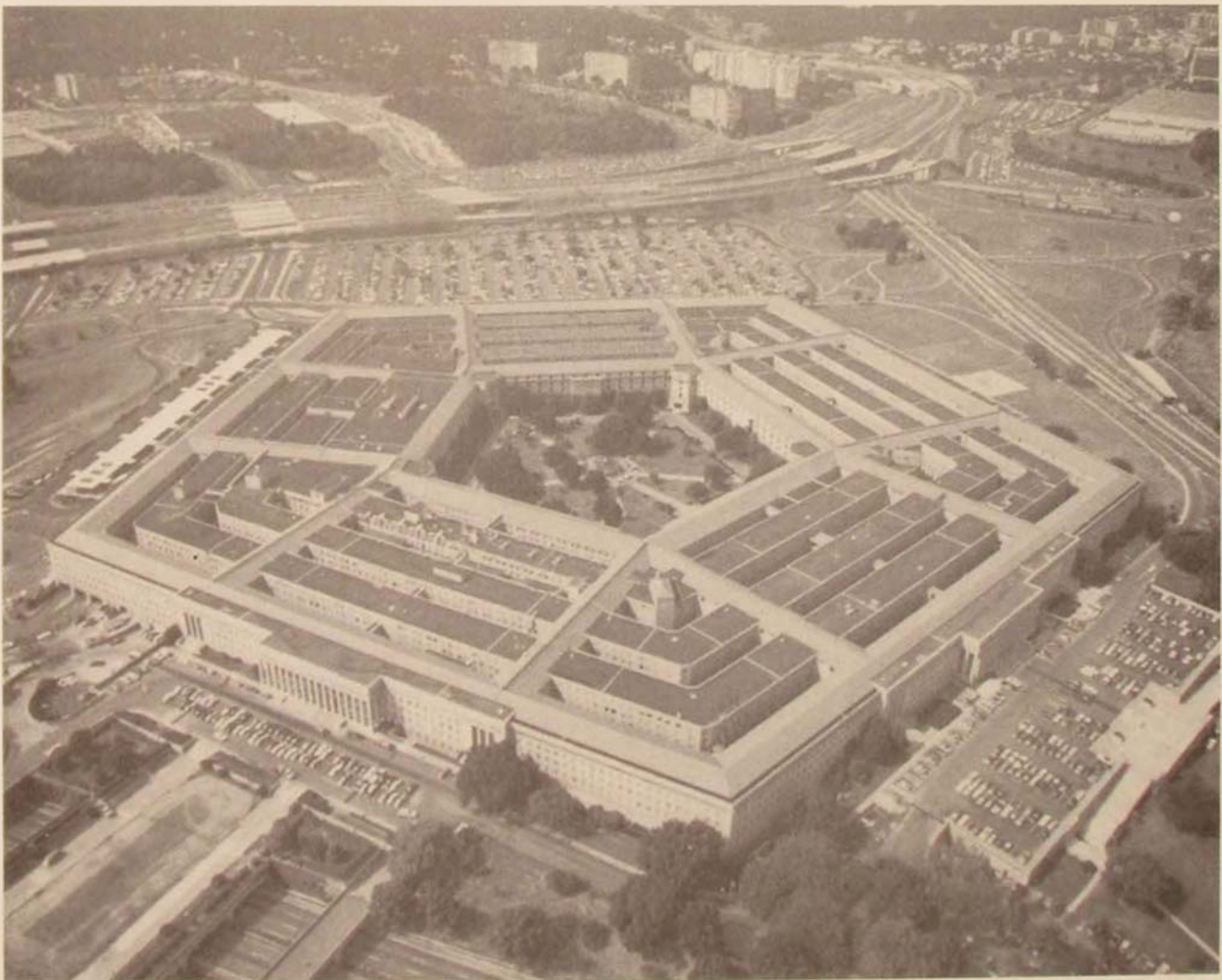


turing of the armed forces, including the Air Force. With the increasing emphasis on joint operations and the establishment of the joint specialty officer, joint doctrine has become, and will continue to be, an important part of both joint and service PME and will shape the way we think about war. □

*Heightened emphasis on joint operations and the establishment of the joint specialty officer highlight the fact that joint doctrine is here to stay. Once the factors inhibiting the development of joint doctrine are overcome, we will have the most effective armed service possible in a time of decreasing resources.*

#### Notes

1. Brigitte Sauerwein, "Military Doctrine: The Software of Defense," *International Defense Review* 23 (May 1990): 501. This article summarizes the discussions at the Conference on Security and Cooperation in Europe Seminar on Military Doctrines, held in Vienna from 16 January to 5 February 1990.
2. Lt Col William C. Smith, "The United States Needs Joint War-Fighting Doctrine" (Army War College study project, Carlisle Barracks, Pa.: 5 April 1988), 4.
3. Joint Chiefs of Staff (JCS) Publication 2 (now Joint Pub 0-2), *Unified Action Armed Forces (UNAAF)* (Washington, D.C.: Government Printing Office, October 1974), 12.
4. A combatant command is defined in Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, D.C.: Government Printing Office, 1 December 1989), 73, as "one of the unified or specified commands established by the President."
5. Briefing, Joint Doctrine and Allied Interoperability Division, Operational Plans and Interoperability Directorate (J-7/JDAID), Washington, D.C., subject: Joint Doctrine Development, 1990. (Hereinafter referred to as J-7/JDAID briefing.) See also F. C. Moen and D. T. York, *Compendium of Joint Publication Abstracts* (Norfolk Naval Air Station, Va.: Joint Doctrine Center, December 1990).





6. John H. Cushman, *Command and Control of Theater Forces: Adequacy* (Washington, D.C.: AFCEA International Press, 1985), 83.

7. Senate Committee on Armed Services, *Defense Organization: The Need for Change*, 99th Cong., 1st sess., Committee Print (S. Prt. 99-86), 16 October 1985, 163-65. (Hereinafter Senate, Staff Report.)

8. *Ibid.*, 165.

9. For example, the 1960 Symington Report, the 1970 Blue Ribbon Defense Panel, the 1978 Steadman Report, the 1982 Chairman's Special Study Group, and the 1986 Blue Ribbon Commission on Defense Management Report. Defense reform has been the subject of much debate and study since 1945. For a good overview of the defense reform movement, see Asa Clark, ed., *The Defense Reform Debate* (Baltimore, Md.: Johns Hopkins University Press, 1984).

10. Goldwater-Nichols Department of Defense Reorganization Act of 1986, Public Law 99-433, 1 October 1986, sec. 201, para. 153(a)(5).

11. The definition of joint doctrine and joint tactics, techniques, and procedures has changed over the past four years. The latest edition of Joint Pub 1-01 defines joint doctrine as follows:

Fundamental principles that guide the employment of forces of two or more Services in coordinated action toward a common objective. It will be promulgated by the Chairman, Joint Chiefs of Staff, in consultation with the other members of the Joint Chiefs of Staff.

It defines joint tactics, techniques, and procedures as

the actions and methods which implement joint doctrine and describe how forces will be employed in joint operations. They will be promulgated by the Chairman, Joint Chiefs of Staff, in consultation with the other members of the Joint Chiefs of Staff.

12. JCS Pub 2, 1 December 1986, 3-68. Change 2 (1 June 1990) to Joint Pub 1-01, *Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program*, retitled all JCS Pubs as Joint Pubs.

13. DOD Directive 5100.1, *Functions of the Department of Defense and Its Major Components*, 3 April 1987, 5 and 7.

14. Don M. Snider, "DOD Reorganization: Part I, New Imperatives," *Parameters* 17, no. 3 (September 1987): 92.

15. The Joint Doctrine, Education, and Training Division has been renamed the Joint Doctrine and Allied Interoperability Division.

16. Joint Pub 1-01, I-1.

17. *Ibid.*, V-1.

18. *Ibid.*, IV-1.

19. Chairman, Joint Chiefs of Staff (CJCS) Memorandum of Policy No. 9, Policy on Action Processing, 27 February 1988, 1, "provides for two types of implementing documents: those signed by or on behalf of the Chairman, Joint Chiefs of Staff, and staff documents used for staff-to-staff communications."

20. The only two examples of published service differences of opinion to date are Air Force concerns expressed in appendix B to Joint Test Pub 3-03.1, *Doctrine for Joint Interdiction of Follow-on Forces*, 16 June 1988, and appendix E to Joint Test Pub 3-0, *Doctrine for Unified and Joint Operations*, 1 January 1990.

21. The evaluation of joint doctrine and JTTP is conducted by the Joint Doctrine Center, Norfolk Naval Air Station, Virginia.

22. JCS Pub 1, *Department of Defense Dictionary of United States Military Terms and Associated Terms* (Washington, D.C.: Government Printing Office, 1 August 1988), 73, defined doctrine as "fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application."

23. Cushman, 85.

24. *Ibid.*

25. *Ibid.*, 86. See also chapter 3 of Col Thomas A. Cardwell III, *Command Structure for Theater Warfare: The Quest for Unity of Command* (Maxwell AFB, Ala.: Air University Press, 1984), for an in-depth discussion of the differences in service doctrine concerning the employment of theater-assigned assets.

26. Joint Pub 1-01, VI-1 to VI-21.

27. Cushman, 90. For an interesting discussion of how differing service perspectives interact in the joint arena, see Col Thomas A. Cardwell III, "How Interservice Issues Arise," *Air University Review* 37, no. 4 (May-June 1986): 76-81.

28. Senate, Staff Report, 177.

29. Joint Pub 1-01, II-1 and III-4.

30. *Ibid.*, III-3.

31. *Ibid.*, IV-1.

32. General Accounting Office, "Defense Reorganization, Progress and Concerns at JCS and Combatant Commands," Report B-230535 (Washington, D.C.: United States General Accounting Office, 1 March 1989), 28.

33. Joint Pub 1-01, III-4.

34. Of 25 Air War College and Air Command and Staff College students surveyed on 10 January 1991, two stated they had seen a joint test publication.

35. Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907-1980*, vol. 1 (Maxwell AFB, Ala.: Air University Press, 1989), 365-400.

36. Don M. Snider, "DOD Reorganization: Part II, New Opportunities," *Parameters* 17, no. 4 (December 1987): 55.



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## FRAMEWORK FOR START II

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LT COL ELWOOD C. TIRCUIT, USAF

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**E**very US president has advocated effective nuclear arms control since the use of a nuclear weapon by the United States against Japan in 1945.<sup>1</sup> Although the chance of nuclear war between the superpowers is low today, even the possibility of such a war is still the world's greatest concern. In 1985 President Ronald Reagan and Soviet leader Mikhail Gorbachev agreed that "a nuclear war cannot be won and must never be fought."<sup>2</sup> President George Bush has

echoed his concern and commitment for arms control:

We want an agreement that allows us to coexist with the Soviet Union in an atmosphere of mutual trust, security, and understanding. If we fail in our efforts to reach an arms reduction agreement today, we will be back at the negotiating table tomorrow and the day after that, for as long as it takes.<sup>3</sup>

On 31 July 1991, the leaders of the two nuclear superpowers signed the initial

Strategic Arms Reduction Talks (START) treaty. With that round of negotiations complete, it is time to consider a framework for future START discussions. The task of constructing an effective and enduring arms control agreement is founded on a basic goal. That goal is to increase our nation's security by limiting and reducing the military threat of potential adversaries. Arms control is not in conflict with, or a substitute for, military preparedness. Arms control seeks to complement military preparedness by increasing security at lower levels and creating more stable conditions.<sup>4</sup> Therefore, the United States, the Soviet Union, and other nuclear nations must design agreements to constrain and manage nuclear weapon confrontations.

Arms control will continue as a key element in US security strategy for the foreseeable future. Ultimately, the challenge for the United States is not only to work for a more secure world through effective arms control agreements, but to advance with caution lest we proceed to make our country and world more insecure.

## The Framework

A framework for effective future START negotiations originates from the president defining US national security interests and then deriving national security objectives. He also provides the national security strategy or ways to reach those objectives, arms control being one way to help secure US interests.<sup>5</sup> For effective arms control agreements, arms control objectives and subsequently START II objectives are required to give clear US direction for negotiations. Paralleling this structure, the military leadership forms national military objectives and strategy to guide military participation in arms control agreement development.<sup>6</sup> If the START II framework is established and direction is well defined at each level, the nation should attain its security objectives and national interests.

## National Security Interest

The 1990 edition of the *National Security of the United States* notes that our first national security interest is the "survival of the US as a free and independent nation, with its fundamental values intact and its institutions and people secure." Simply, we seek to "protect the safety of the nation, its citizens, and its way of life."<sup>7</sup> National security objectives are focused on protecting this interest.

## National Security Objectives

Following are some key national security objectives applicable to arms control:

- Deter any aggression that could threaten security and, should deterrence fail, repel or defeat military attack and end conflict on terms favorable to the US, its interests, and its allies.
- Improve strategic stability by pursuing equitable and verifiable arms control agreements, modernizing our strategic deterrent, developing technologies for strategic defense, and strengthening our conventional forces.
- Prevent the transfer of militarily critical technologies and resources to hostile countries or groups, especially the spread of weapons of mass destruction and associated high technology means of delivery.<sup>8</sup>

## National Security/Military Strategy

National security strategy integrates different instruments of power to attain our national security objectives. It provides the general ways the nation will obtain its objectives and protect its interests. Because arms control is only one way of attaining the security objectives of the United States and its allies,<sup>9</sup> it is therefore a strategy—not an end in itself. Through arms control, our nation aspires to reduce military threats to US interests, to inject greater predictability into military relationships, and to channel force postures in more stabilizing directions.<sup>10</sup>





OFFICIAL US NAVY PHOTOGRAPH

### National Military Objectives

National military objectives directly applicable to the arms control framework are as follows:

- Deter military attack by the Soviet Union, its surrogates, or any other nation against the United States, its allies, and other important countries; and ensure the defeat of such attack should deterrence fail.
- Reduce our reliance on nuclear weapons and nuclear retaliation by pursuing technologies for strategic defense, negotiating equitable and verifiable arms control agreements, and maintaining strong conventional forces.
- Encourage and assist US allies and friends to defend themselves against invasion, armed insurgencies, terrorism, and coercion.

*Arms control initiatives should advocate mobility of strategic nuclear arms. Mobile basing options, epitomized here by the ballistic missile submarine USS Georgia (SSBN-729), increase the survivability of the weapon and reduce the fear of losing one's ability to retaliate.*

- Increase US influence around the world.
- Halt the transfer of militarily significant technology and resources to the Soviet Union and other countries or entities whose actions are inimical to US interests.
- Retard the proliferation of nuclear, chemical, and biological weapons.<sup>11</sup>

### Arms Control Objectives

I believe that clear and definitive arms control objectives have been a missing link in US efforts to attain national security

objectives. There must be clear and definitive arms control objectives for the Air Force and other agencies to effectively develop coordinated and coherent objectives and initiatives within specific negotiations. These objectives incorporate guidance for all arms control negotiations. I believe that US arms control objectives should be as follows:

- Reduce the risk of war.
- Establish weapon system/warhead restrictions that prevent an unacceptable military advantage and improve military predictability.
- Obtain verifiable agreements.
- Protect emerging US technologies.
- Decrease our dependence on nuclear weapons.
- Protect the security of our allies and improve arms control consultations with them.
- Promote a spirit of understanding and cooperation between the United States and the USSR and other adversaries.
- Enhance the international position of the United States.
- Retard the spread of weapons of mass destruction and their delivery systems.

The United States desires arms control agreements that ensure our security by reducing the risk of war. We must design agreements to maintain military balance and to improve the predictability of potential adversaries. Even if the desired military balance is established, agreements are of little value if not verifiable. The United States must obtain sufficient verification to ensure effective agreements that lead to greater stability and diminish the risk of war. However, these agreements must protect our capability to pursue technology necessary to protect our global interests. Technology is also one of the key means to attain the objective of decreasing our reliance on nuclear weapons for the security of our nation.

Since our security is based on allied partnership, arms control agreements must protect the security of our allies. Consultation with our allies in negotiations will enhance the combined security effort

against potential adversaries. We should also seek to extend understanding and cooperation to our potential adversaries. By doing so, we reduce fear of aggression and decrease the likelihood of miscalculation.<sup>12</sup>

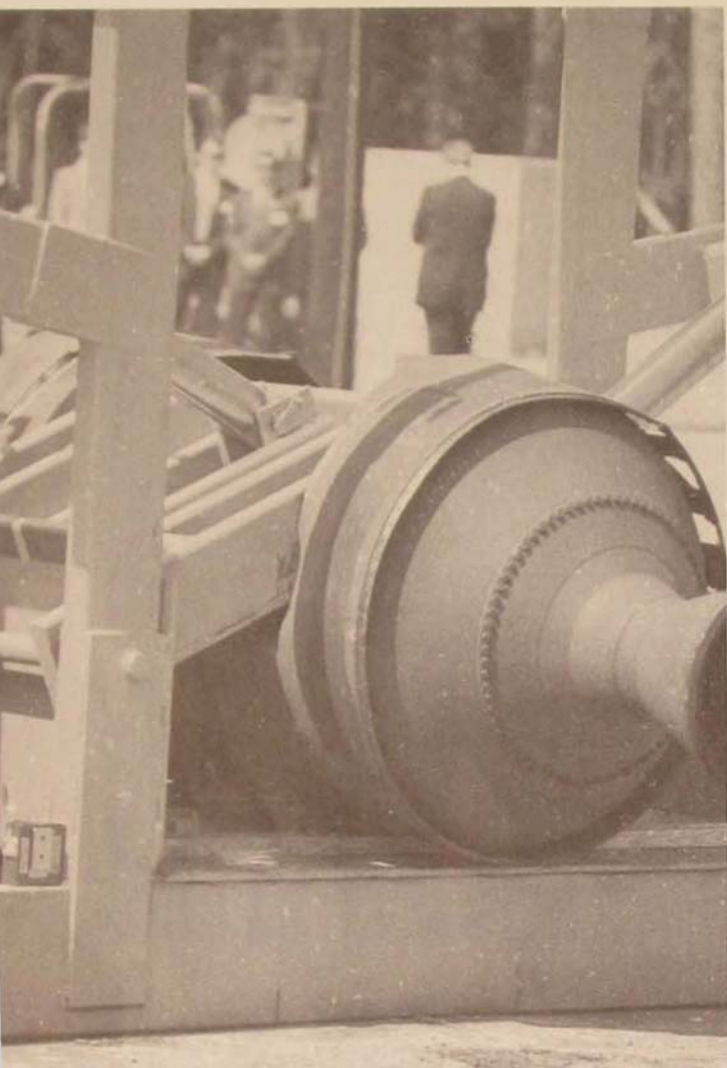
Arms control agreements should also enhance the international position of the United States as a world leader. From its position as a world leader, the United States can influence the international environment to increase its security. Finally, arms control agreements should contribute to stemming the proliferation of nuclear, chemical, and biological weapons, and the systems necessary for their delivery. The more nations that possess weapons of mass destruction and the capability to deliver them, the higher the risk that these weapons will be used.

#### START II Objectives

START II objectives are another key link in the framework needed to develop an effective strategic nuclear arms agreement. Some potential START II objectives include:

- Increase crisis stability.
- Reduce the incentive for a strategic nuclear first strike.
- Ensure equitable strategic nuclear arms capability.
- Reduce the number of strategic nuclear warheads consistent with enhancing stability.
- Ensure sufficient verification procedures to gain compliance with treaty provisions.
- Protect options to develop and deploy US technology.
- Seek a stable mix of strategic nuclear offensive and strategic defensive systems.
- Enhance multilateral consultations with other nuclear nations.
- Foster a closer relationship between the United States and USSR through more openness/transparency of our militaries.

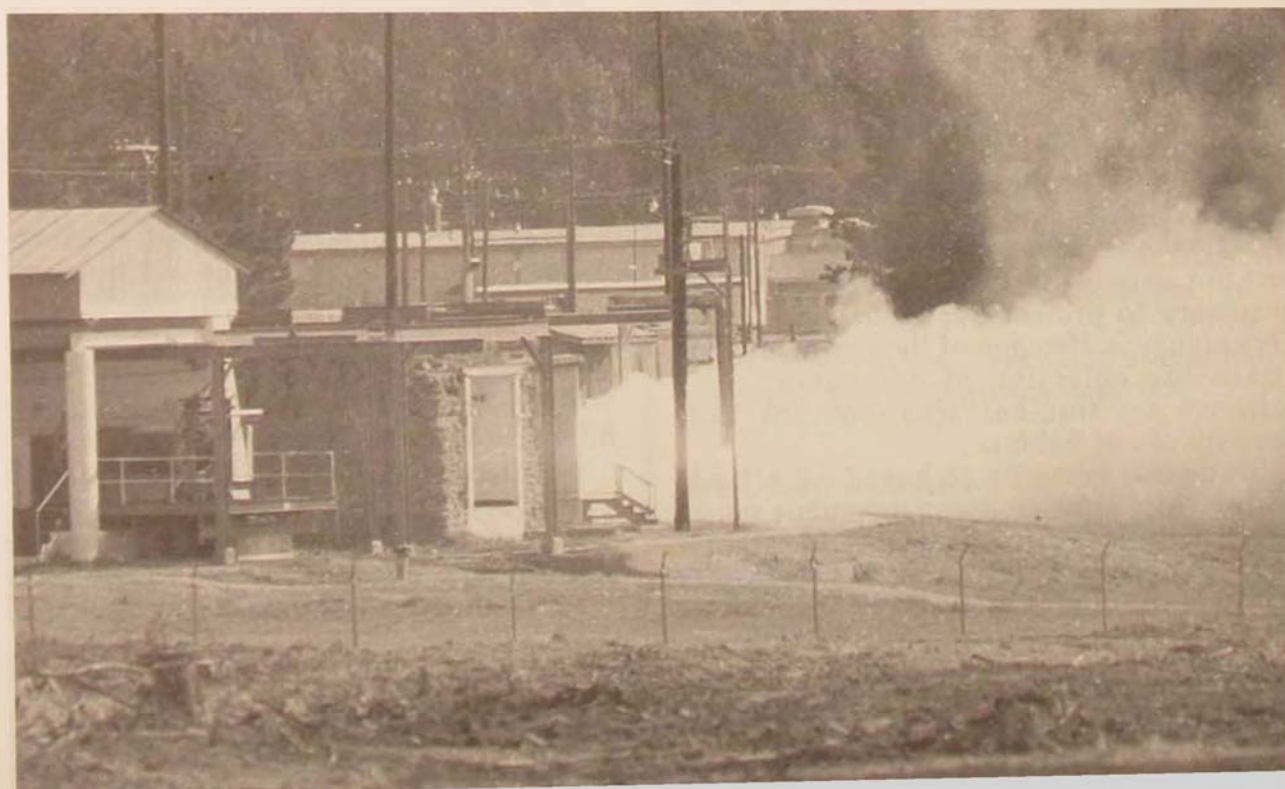




The prime objective for START II is to increase crisis stability. The United States and the USSR still maintain the concept of mutual deterrence—seeking to deter each other from nuclear attack through their ability to inflict an unacceptable level of damage even after receiving a massive attack. Crisis stability is the condition achieved between adversaries by reducing a nation's pressure and incentive for using its strategic nuclear weapons due to fear the weapons would be lost before they could be used.<sup>13</sup> If mutual deterrence persists, even in a crisis, the strategic relationship is "stable." During a crisis, real or perceived vulnerability of a nation's nuclear forces might be an incentive to attack.<sup>14</sup> Therefore, negotiators should direct their labor toward increasing crisis stability as the main objective in the arms control process.

A second and closely related objective is to reduce the incentive for a strategic nuclear first strike. START II negotiation efforts should strengthen and make the

*The first Pershing II is destroyed under the provisions of the Intermediate-range Nuclear Forces (INF) treaty of 1987. First, the solid rocket fuel is expelled in a static firing (bottom), and then the motor stage is crushed as treaty officials witness the event (left).*







*One method to enhance equitable nuclear capability and promote "slow-response weapon systems" such as the bomber is to limit strategic air defenses. The Soviets would probably oppose such limitations, but the initiative is consistent with the need to balance strategic capabilities to allow mutual deterrence.*

concept of mutual deterrence more effective. Instituting procedures in the agreement that discourage either side from attacking will decrease the probability that a strategic nuclear war will be initiated.

A third objective of START II is to ensure equitable strategic nuclear arms capability. Fear and mistrust have caused the United States and the USSR to attempt to acquire a favorable military advantage. One element of this objective is to increase force balance stability in START II. Force

balance stability occurs when potential adversaries can maintain the military capability needed to preserve mutual deterrence and a stable strategic nuclear arms relationship.<sup>15</sup> For example, if a side breaks out of the START II treaty, the opposing side must have a force posture capable of effectively responding or restructuring to deter the new threat. Another element of this objective is improving predictability of an adversary's military capability. START II initiatives need to channel strategic nuclear arms competition in a manner that constrains the threat. Limiting each side's military options diminishes the uncertainty of the threat and the actions of a side to gain an unacceptable military advantage in strategic nuclear arms.

A fourth objective of START II is to reduce the number of strategic nuclear warheads consistent with enhancing stability.<sup>16</sup> I believe that START II, as its name implies, should seek further reductions in nuclear offensive arms. Specifically, the numerical ceiling on warheads should be reduced. Reductions in nuclear warheads will safeguard stability and enhance the nation's security. However, as we move to reduce arms, we must proceed with caution since reducing nuclear arms to extremely low levels is destabilizing and is a detriment to our security as well as the security of the rest of the world. Reducing nuclear weapon levels "too low" threatens US ability to maintain crisis stability and force balance.

Building on the initial START treaty, START II should include sufficient verification procedures to ensure compliance with treaty provisions. Political differences and mutual distrust between the United States and the USSR demand sufficient and effective verification procedures. Even though there are warming relations between the superpowers, the United States should not let its guard down and allow an imbalance in military capability. A verifiable START II agreement adds to the trust of the nations and to stability with each other regarding their strategic nuclear arsenals.

A sixth START II objective should be to protect options to develop and deploy US technologies. Future agreements have the potential of capturing and limiting technology for modernization of both nuclear and conventional forces. Reduced nuclear force levels will put a premium on a modernized, balanced triad with the flexibility and survivability to maintain mutual deterrence. Within the constraints to promote predictability and force balance stability, technology must be safeguarded to modernize aging strategic nuclear forces and strengthen conventional capability.

START II should seek a stable mix of strategic nuclear offensive and strategic defensive systems.<sup>17</sup> In the defense and space talks, the United States has proposed a more stable and secure basis for deterrence in the future through a coopera-

tive transition to a balanced strategic posture including strategic defenses.<sup>18</sup> Likewise, START II must address this issue to reduce strategic nuclear offensive weapons to an appropriate and stabilizing level consistent with strategic defense development.

In START II, the significance of further reductions requires the United States to enhance multilateral consultations with other nuclear nations. As the USSR and the United States reduce their strategic nuclear forces, the strategic nuclear capabilities of other nations become more threatening and potentially destabilizing. Progress in START II will be closely tied to these nations' thoughts, ideas, and agreements regarding their strategic nuclear arms capabilities. Also, establishing close consultations with other nuclear nations in START II will provide a basic structure for formally including these nations in follow-on negotiations.

Finally, the United States should foster a closer relationship between the United States and the USSR through more openness/transparency of our militaries. Prudent and more frequent contact with our adversary through START II activities will improve our mutual understanding. Ultimately, transparency of our militaries will lead to better cooperation, less tension, and less chance of miscalculation of intent in both peacetime and crisis.<sup>19</sup>

## Implications for START II

From a comprehensive and coherent START II framework, the United States can effectively formulate negotiation initiatives for START II to realize its objectives and protect its security interests. Many of the initiatives suggested below are applicable for reaching multiple objectives. However, in some cases, we must make careful trade-offs between initiatives for objectives that may be counter to other objectives. The following proposals from the START II framework are not all-inclusive but serve as examples of initiatives that proceed from guidance that is carefully linked together.

The United States' primary focus in START II should be to increase crisis stability. Increased crisis stability can be attained through several initiatives. First, protecting the triad is a high priority since the concept complicates an adversary's attack and defense planning and protects survivability if a portion of our nuclear forces are negated by such factors as weapon systems deficiencies and technological breakthroughs. Weakening a portion of the triad decreases the chance of survivability and increases the pressure to launch weapon systems in a crisis before they are lost. Second, arms control initiatives should protect and advocate mobility of strategic nuclear arms. Mobility increases weapon system survivability and reduces the fear of losing one's ability to retaliate. The United States should preserve and advance the deployment of nuclear arms in mobile basing options such as submarines, bombers, and mobile intercontinental ballistic missiles (ICBM).

Another means of promoting crisis stability is to reduce the concentration of warheads. Concentration of warheads on ICBMs and submarines makes these delivery vehicles valuable and tempting targets to eliminate in a crisis before they can be used. Thus, downloading reentry vehicles from ICBMs and submarine-launched ballistic missiles (SLBM) will reduce warhead concentration, as would eliminating the number of SLBMs per submarine. A related initiative is to prohibit new testing and development of multiple warhead systems.

Crisis stability can also be enhanced through strategic defenses. Deployment of limited ballistic defenses will ensure survivability of a minimum retaliatory force while keeping intact the concept of mutual deterrence. Limited defenses will reduce Soviet fears of a US incentive for a first strike during a crisis and provide the United States with a system that can expand to counter a Soviet breakout. During a crisis with a third-world nuclear nation that has ballistic missiles, the defenses could aid in the deterrence and escalation control of a conflict.<sup>20</sup> Widespread and effective strategic defenses are



*Reducing the risk of nuclear war improves national security, but there is a point at which reductions in the strategic nuclear force become destabilizing. Negotiators must realize at which level the force must be maintained to assure deterrence and limit the possibility of war.*

potentially destabilizing. The other side may fear its adversary is building a first-strike capability by deploying a widespread system and may deem a first strike necessary before the defenses are in place to render the adversary's offensive weapons ineffective. In addition, a widespread deployment of these defensive systems may result in treaty breakout or attempts to find a counter to the defenses in order to maintain mutual deterrence.<sup>21</sup>

START II initiatives should also promote slow-flying weapon systems. These



systems enhance crisis stability because they do not threaten a first strike that may eliminate a retaliatory response. Therefore, I advocate incentives such as the bomber weapon-counting rules to encourage emphasis in areas that increase stability.<sup>22</sup> Also, I advocate other initiatives such as banning short-time-of-flight (STOF) systems—for example, the capability of nuclear-powered ballistic missile submarines (SSBN) to launch near an adversary's shore—to ensure available tactical warning or reaction time for the system under attack. STOF systems are destabilizing because they encourage strategies such as launch on warning by an adversary to protect key deterrent systems.

A key ingredient to a START II treaty is the reduction of strategic nuclear weapons, but not at the expense of stability with the USSR and third-world nuclear nations. The United States must remember that we conduct arms control negotiations to improve our national security. There is a level of weapons at which continued reductions destabilize and undermine our national security. Prior to embarking on START II, we must first determine what deters aggression by the Soviet Union and other potential nuclear nations. The United States and its allies cannot assume that its current deterrence strategy and targeting of adversaries will remain the same in the new strategic environment. This crucial reassessment of deterrence will provide the basis for determining force levels and capabilities that the United States must protect in START II. Failure to maintain the right level of weapons to hold at risk those targets deemed necessary for destruction, increases the risk of war.

In addition to the inability to hold critical targets at risk, low nuclear weapon levels threaten the US ability to maintain crisis stability and force balance. Extremely low numbers of forces constitute an easier target for a preemptive attack. Also, low force levels make the reward for cheating greater since even a small number of concealed forces would have a large impact on the balance. Sim-

ilarly, extremely low force levels would be more vulnerable to technological breakthroughs and weapon system deficiencies or breakdowns.<sup>23</sup> In light of the political reality to quickly establish a START II level of weapons before the suggested reassessment of deterrence can be accomplished, I believe the appropriate level of accountable weapons ranges from 4,000 to 5,000 weapons. This range represents a substantial reduction from the initial START treaty, yet ensures that we have sufficient weapons for deterrence. In addition, estimates by prominent national security authorities and initial analyses indicate that this range of weapons is an appropriate level.

To ensure that the United States maintains equitable strategic nuclear capability, we should pursue initiatives to help preclude an unacceptable force balance advantage. One initiative is to resist significant reductions in strategic nuclear delivery vehicles (SNDV). Allowing a significant number of SNDVs while reducing warheads helps maintain proper force balance by reducing target value and increasing the number of warheads needed to destroy SNDVs. Also, since procuring the delivery system is the long-lead item in responding to an expanded threat, the United States should retain as many SNDVs as economically possible by downloading weapons to provide a response to a Soviet nuclear weapon breakout. For example, downloading SLBMs and ICBMs and keeping the maximum number of launchers will increase stability, yet allow a relatively short-term means of restoring capability if needed.

Although difficult, the United States should continue to seek verifiable measures to promote essential congruence in as many measures of merit areas as possible. For example, the US should continue to pursue congruence in ICBM and SLBM throw weight. In addition, we should advocate prohibition of testing new generations of ICBM and SLBM systems with multiple independently targeted reentry vehicle (MIRV) systems. This initiative will help restrict breakout in the number

of weapons and increase military predictability.

Another initiative to enhance equitable nuclear capability and promote slow response weapon systems such as the bomber is to limit strategic air defenses. Although opposition from the Soviets is expected, the initiative is consistent with the need to balance strategic capabilities to allow mutual deterrence. Also, essential equivalence could be enhanced by imposing verifiable limits on all nondeployed ICBMs and SLBMs used for spares, test assets, and other purposes.

The question of restricting, limiting, and reducing the nuclear forces of other nations—the United Kingdom, France, China, India, and others—will continue in START II as a major issue. Progress in this area is important for progress in other START II areas. For example, as the United States and the USSR attempt to further reduce their nuclear forces, the numbers and types of weapons developed and deployed by other nuclear nations have significant impact on the security of the superpowers. Therefore, negotiations should incorporate multilateral discussions and consultations to enhance treaty progress and form a structure for strategic nuclear arms negotiations after START II. A multilateral agreement to cap smaller nuclear powers must be developed if superpower nuclear forces are reduced to a level that the security of the superpowers is threatened by a smaller nuclear power or combination of nuclear nations.

Verification procedures from the initial START treaty must be continued and strengthened. A primary means of strengthening verification procedures and resolving differences is through the participation of a neutral country, potentially through the auspices of the United Nations. In addition to verification regimes administered by the parties of the treaty, the neutral country could serve as an independent inspector and a member of the Joint Compliance and Inspection Committee (JCIC). We can also enhance START II verification procedures by verifying all nondeployed ICBMs and SLBMs that are

maintained as spares, tests assets, and for other uses.

As in initial START treaty negotiations, the Soviets may try to limit US technology applications through START II. The United States must protect technologies to modernize its nuclear forces and offset potential Soviet military advances. In addition, agreements regarding nuclear systems must not foreclose promising areas where technology can be successfully used in conventional areas. In this regard, the design of new weapon systems must include verification measures to discriminate strictly conventional weapon systems from nuclear ones. A difficult balance must be struck between protecting technology development and maintaining essential force capability.

START II negotiations present a forum that the United States and the USSR should use to enhance understanding and cooperation. We should advocate confidence-building measures that include professional military education exchange officers, participation in exercises, roundtable discussions of nuclear issues, liaison offices at key locations, and US Arms Control and Disarmament Agency representative exchanges. Gaining and sharing information with a potential nuclear adversary will enhance military predictability and reduce the fear of aggressive intent and the likelihood of miscalculation in the nuclear arena.

## Conclusion

Arms control negotiations will continue to hold a prominent place in our attempt to enhance our nation's security by reducing the risk of nuclear war. With the initial START treaty now signed, the framework outlined in this paper provides a coherent roadmap to initiate and develop an effective START II treaty. It links various levels of national guidance to ensure that the United States establishes a consistent and logical path for helping attain our nation's fundamental goal of preserving the survival of the United States as a free and independent nation. □

## Notes

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# SEX POWER & ETHICS

## THE CHALLENGE TO THE MILITARY PROFESSIONAL

CMSGT ROBERT D. LEWALLEN, USAF

Ethics Are Nice. But They Can Be a Handicap.  
Some Executives Declare

—Headline, *Wall Street Journal*  
8 September 1987

**I**N 1986 THE US Department of Justice's Public Integrity Section reported that 1,027 public officials had been convicted of crimes. This included 596 federal officials indicted for criminal activity.<sup>1</sup> Problems with ethics plague our society and make blaring headlines on a regular basis. The military is not exempt from such problems. Major studies of ethics in the Air Force in 1983 and 1988 showed that over one-third of Air Force personnel are convinced that integrity is a

problem, and the lower the rank of the persons polled, the more convinced they are of the problem's existence.<sup>2</sup> Military professionals are public officials and often executives. Due to the weight of their responsibilities, they frequently face tremendous challenges to ethical behavior. In no areas are such challenges more difficult than in those involving the potentially volatile equation of sex and power. Look at the following example:

Nine people work for a senior NCO [non-commissioned officer] supervisor who is by their own admission their hero—a truly fine person and a consummate professional. One day, while this paragon is on leave, his assistant, in his zeal to help his boss, opens the mail on his desk and discovers a letter from a young airman in a nearby work center expressing how much she enjoyed the sexual encounter they had experienced a few days previously.

So what does his assistant do? Tell everyone else and discredit the man? Confront the boss with a sermon on his sinful ways? Simply adjust to a shattered image? And, if the latter choice is elected, so what? Has the operational mission suffered in any way?

A valid question is, So what? Only three people know of the lapse of professionalism and the violation of Air Force standards in this case, and two of them certainly will take great pains to act as if nothing has occurred. But what has occurred? A volatile, potentially explosive mixture of sex, supervisory power, and unethical behavior has been brewed. Its effects may be nothing more than a shattered role model—or an eventual career-destroying, mission-blighting exposé. The intertwined subjects of sex, power, and ethics demand the honest attention of every military professional in the mixed-gender Air Force of the 1990s. Nothing is more pertinent to operational effectiveness than morale; nothing destroys morale more quickly and completely than unethical sexual behavior.

### The Scope of the Problem

Can relations between the sexes in the progressive workplace of the 1990s still

bedevil us? Have we not moved beyond those sexual and racial tensions of the 1960s and 1970s when equal opportunity and treatment, affirmative actions, and sexual-harassment training reoriented our actions but left us both fearful and resentful? Of course, society is not perfect; there will always be unreconstructed bigots and chauvinists.

While it is true that we have come a long way as a society, and outward forms of sexual or racial discrimination may have diminished, the problem has also undergone a subtle metamorphosis. Power has now assumed a far more prominent place in the equation; and power, a key ingredient in the effectiveness of the professional supervisor, makes the equation itself far more volatile. As Dr Peter Rutter



has recently written in a landmark study of sex and professional relationships, "Sexual violation of trust is an epidemic, mainstream problem that reenacts in the professional relationship a wider, cultural power imbalance between men and women."<sup>3</sup>

Obviously, a power imbalance exists between any supervisor and subordinate. Sex differences within a professional relationship add a troublesome new dimension to the nature and use of power by a supervisor. And this problem seems to be but one aspect of a far larger and very damaging ill plaguing American society—a lapse of ethics. We've been barraged with examples of questionable ethics in recent



years, from Lt Col Oliver North to evangelist Jim Bakker to Speaker of the House Jim Wright to candidate Gary Hart—the list seems endless. But the problem is by no means restricted to national figures. A recent study on college campuses indicates that perhaps 40 percent of the students have cheated on tests or assignments, and one university administrator notes that campuses “are becoming a breeding ground for the white collar criminals of the future.”<sup>4</sup> In our own profession, a Tactical Air Command lieutenant general was relieved from his position in November 1990 for “inappropriate actions and relationships with women, including subordinates.”<sup>5</sup>

The popular television drama “L.A. Law” features an attorney who seems to spend as much time in bed with his clients as he does in defending them, which reflects a growing concern in the legal profession over “emotional advantage” taken of a client.<sup>6</sup> That phrase perfectly describes the subtle power equation between supervisor and subordinate.

Attorneys are members of a calling universally designated as a profession. Unethical sexual relations certainly trouble the bar and afflict other professions, including the profession of arms. Two television series have recently dealt with the Vietnam conflict: “Tour of Duty” and “China Beach.” In the former, a continuing story line featured a platoon sergeant dating a major; in the latter, enlisted-officer sexual relations enlivened more than one beach scene. And in the eternally popular “M.A.S.H.,” Major Houlihan and Captain Pierce enjoyed a sexual encounter that affected performance and unit morale. But that’s just TV sensationalism, right? Unfortunately, it also occurs in the real world. In any profession that brings men and women into close daily working relationships, there is a key question that must be asked: Can a professional relationship be sexualized and still retain its integrity and effectiveness? In our particular profession, effectiveness translates into the ability of our people to execute critically important operational missions. Historically, this

question of sex within professional relationships has been emphatically answered in the negative within all professions. The Hippocratic oath of the fourth-century B.C. forbade sex between physicians and patients; Air Force Regulation (AFR) 35-62, *Policy on Fraternalization and Professional Relationships*, by implication forbids sex between supervisors and subordinates: “Unduly familiar relationships between members of different grades or positions...are almost always unprofessional.”<sup>7</sup> AFR 30-1, *Air Force Standards (Pocket Size)*, forbids personal relations that breach the bounds of propriety and warns that these become of official concern if they affect discipline, morale, or performance.<sup>8</sup>

## Sex and Relativistic Ethics

Hippocrates lived 25 centuries ago, however, and despite AFR 35-62 or the Uniform Code of Military Justice, we practice our professional responsibilities in the liberated and highly sexualized 1990s. Have the standards of professional conduct changed? This question can be answered in two ways. First, if society’s standards (or values or morals) have changed, this does not necessarily imply that the military’s standards must also change. In fact, much of what unifies our profession and links us to our predecessors is an adherence to an unchanging code of duty, honor, and country—and that word *honor* packs a real wallop in terms of ethical conduct. Second, even in the sex-drenched 1990s, have expectations of professional conduct really changed? A 1987 survey of psychotherapists revealed that “85 percent of the respondents considered sexual intimacies with clinical supervisees to be always unethical, no matter what the circumstances.”<sup>9</sup> Proscription of sex with clients still characterizes the formal codes of ethics for the medical profession, for teachers, for psychologists, and for military professionals. In short, it was wrong in ancient times, it is wrong now, and we know it is wrong.





Situational ethics nevertheless gained a certain following in the permissive, rebellious 1960s. While it is true that circumstances must at least be acknowledged when determining right and wrong, situational ethics can lead us step-by-step into ethical anarchy, particularly in questions of sexuality. Regulations simply cannot give us all the definite principles to govern conduct that may apply in dealing with people in every situation.<sup>10</sup> Where do we derive those first principles on which law and regulations are built?

Is there a sense of right and wrong—an ethical sensibility—innate within the human consciousness? And if so, who or what was its architect? God? Religion generally holds that there is a Supreme Being who stands for morality, who demands right behavior, and who judges us against immutable standards. The only alternative is to give to each person the right to decide what is good and what is evil—which may again invite us to ethical anarchy.<sup>11</sup> Anarchy is unacceptable in our profession. From somewhere we derive standards of right and wrong. Perhaps God provided them, perhaps society created them and ascribed them to God. Ultimately, we want to be held accountable, and accountability is certainly a state that the military professional can relate to! Whether or not our behavior matters to God, it must matter to us. In no area is this more critical than in the exercise of supervisory power in mixed-gender relationships.

### The Power Factor

A power differential is built into all professional relationships—educator and student, doctor and patient, lawyer and

client, supervisor and subordinate. Through the instruments of evaluation and through uncounted formal and informal ways, supervisors hold subordinates' lives in their hands. Supervisors (like lawyers, doctors, educators, and military professionals) are people with power. Yet we have ambivalent attitudes about power. Every military professional should know Lord Acton's dictum on the corrupting influence of power. The British writer Malcolm Muggeridge echoed that view in a televised interview on "Meet the Press" on 19 March 1968, when he observed that "power is evil, and everything that belongs to power belongs to the devil."

Sex and power combined make a volatile, potentially destructive combination—hardly a secret in the video age. For example, we have long recognized that sexual harassment involves a person motivated by power—power over another person's life. We know that much sexual harassment goes unreported in professional life because of a person's fear of a tormenter's power.<sup>12</sup> Yet power is an essential attribute of a supervisor. Reduced to its simplest terms, power is the ability to influence people. This distinguishes power from authority, which is the permission to influence. Leaders must have power—they must have the ability to influence people to cause the right events (the mission) to happen.<sup>13</sup> But power can be very subtly wielded, and its abuse—particularly where sex is involved—can be extremely hard to quantify. The US Supreme Court has stated that "for sexual harassment to be actionable, it must be sufficiently severe or pervasive to alter the conditions of employment and create an abusive working environment."<sup>14</sup> The supervisor today knows these limits and avoids transgressing them; nevertheless, power can be used delicately to elicit a certain desired behavior without an obviously "abusive working environment" ever existing. The supervisor can abuse many elements of the supervisor-subordinate relationship—power, dependency, vulnerability, and trust being the more prominent—for sexual purposes.

Such abuse is not compatible with operational effectiveness.<sup>15</sup> It is simply an undeniable fact that “superior status brings with it not only greater prestige and greater privileges, but greater power.”<sup>16</sup> This is true whether the supervisor is male or female, and although a good majority of supervisors in the military profession are male, the abuse of power for sexual purposes can certainly work for the female supervisor as well as for the male.

Professional military education (PME) for both officers and enlisted members constantly emphasizes the importance of leadership by example. We study great leaders of the past with a view to analyzing their traits and emulating them. PME embraces Gen Sir James Glover’s dictum that “character is a habit. The daily choice of right and wrong. It is a moral quality which grows to maturity in peace and is not suddenly developed in war.”<sup>17</sup> Ethical behavior is critical to leaders of national stature—but no less critical to supervisors at any level in a corporate or military hierarchy. As Dr Norman Vincent Peale has observed, “A manager... affects the ethical experience of his employees and affects the happiness of their lives; therefore, he mustn’t let them do a wrong thing if he can help it.”<sup>18</sup> Gen Matthew B. Ridgway has stated, “Character is the edifice on which the whole structure of leadership rests.”<sup>19</sup>

The supervisor—the person in the position of power—can best keep subordinates from doing “a wrong thing” by setting the example of upright behavior. The possibilities inherent in a position of power are legion, and when biological desires are thrown in, the allure of a *forbidden zone relationship*—a term coined by Dr Peter Rutter—can be overpowering. Do those involved in such a sexual relationship know it’s wrong, unethical? Of course they do! The person in power has no right to ever allow sexual misbehavior to take place. If there is any statement that captures the heart of sexual ethics for the military professional, it is Dr Rutter’s statement that “the professional in power has the complete obligation to uphold the

ethical standards of his profession.”<sup>20</sup> Failure to do this in the very personal relationship between supervisor and subordinate means betrayal of trust, abandonment of responsibility, and the creation of an exploitative relationship. A person in a position of power becomes an ad hoc parental figure and incurs the ethical responsibility for setting the example in behavior and conduct because our subordinates learn from us the meaning of right and wrong as defined by our institution. Our problems with male-female relationships in the 1990s are for the most part far more subtle than they have been in the past. Sexual harassment is out, and a more pernicious, more difficult to define problem is in—and it involves power, that “ability to influence.” Just as a psychologist, a doctor, or a teacher is a professional—a mentor—with incalculable (if subtle) power over peoples’ lives, so is the military supervisor whether that supervisor be an officer or an enlisted person. Just as a patient looks to a psychologist or doctor for help, or a student to a teacher, so do our people look to us for help. We



are trusted professionals, and, as Dr Rutter concludes, “Trusted professionals hold inordinate power over peoples’ lives precisely because they offer as much hope as they do.”<sup>21</sup>

## Biology and the Question of Right

The biological urges that help drive human behavior are neither inherently evil



nor socially unacceptable, but they can become so within professional relationships. Where one party has power—that ability to influence—and another party is dependent, reliant, and trusting, biology can become a powerful motivator to wrong behavior.<sup>22</sup> It is useless to wish this were not so. As rational human beings, we must control our desire to give in to such behavior. As Peter Abelard discovered in the twelfth century, “It is vicious to give in to our desires; but not to have any desires at all is impossible.”<sup>23</sup> Given the fact that we have desires, as professionals we must shape our conduct so that our actions can never offer even the slightest hint of impropriety. This is essential not only for operational mission accomplishment but also for our own psychological health and that of the people who work for us and with us.

There are several principles to keep in mind about the biological magnetism between men and women. First, such an attraction is normal; it should not inspire guilt or attempts to rationalize it away. Second, individuals have a choice in deciding whether or not this attraction will lead them into unethical conduct. Third, refraining from unethical conduct is an absolute professional imperative.<sup>24</sup> While doing the right thing and behaving ethically is not easy, it is based on a simple formula: giving serious, honest thought to the problems of human conduct and sexuality. We do not suffer from a majority of people determining to do wrong. Such people have very short military careers. Instead, we suffer from too much indifference to doing right, just as does civil society. Justice and right are not items stored on a dusty law shelf but are active principles that must be lived daily by real people. “One bent on wrong never lacks an excuse; and one seeking to do right can commonly find the way.”<sup>25</sup>

### Solving the Sex-Power-Ethics Equation

Given our professional obligation to shape our conduct and behavior in ways

that are ethical and right, we must look for help in doing so. As we have seen, discovering what is right is usually not so very difficult; doing what is right presents the challenge. Three sources of guidance are worth exploring. The first of these is friendship.

Socrates sang the praises of friendship 24 centuries ago—and the value of a trusted friend remains unequalled for today’s professional in a position of power. We need a person to whom we can talk without restraint—an intellectual comrade who provides inspiration, who can give us balance by providing alternative viewpoints, and who can point out both our virtues and our blind spots. A friend can be a critically important person to us in questions of sexual ethics—where our own judgment may be warped by biology, by poorly understood needs, or by the temptations of power.<sup>26</sup> There are several natural candidates for this role—your deputy, your assistant noncommissioned officer in charge, perhaps in some cases your boss, and in rare cases even a subordinate. How fortunate if we are connected to people in several of these roles who can qualify as our friends; how regrettable if we have none at all. However, several obvious caveats should be mentioned. Certainly we must be wary of friendships within the chain of command that become too close; we need to ensure that those we trust with our innermost thoughts merit that trust; we must surround ourselves with true friends, not a circle of sycophants or disciples. But given these significant qualifications, it is undeniably true that a good friend can save us from the inextricable morass of difficult ethical questions involving sex and power. If we prize integrity in our friends and associates, they will in turn help reinforce it in us, regardless of the temptations we may be exposed to. As Cal Thomas eloquently observed in commenting on the ethical situation in American society,

[In the military, our challenge becomes to] surround ourselves with advisors and friends who hold the same values as we do, [so] we will be able to be honest with them



and ourselves and more likely to maintain our integrity.... We must value integrity in others—in our staff members, our families, even among ourselves. How often do we focus on the quality of work our staff members produce instead of the quality of their characters.<sup>27</sup>

Our friends and associates can help us establish boundaries—a key procedure in maintaining professional relationships where sexuality is involved. While regulations and moral codes may describe or prescribe boundaries, the final decision to observe them is an individual choice. Men and women can be friends, coworkers and professionals together if boundaries exist and are observed. A trusted friend and



associate who is honest with us can see where these boundaries are threatened and can remind us of the potential professional, emotional, and physical consequences of transgressing those limits.<sup>28</sup>

A second source of guidance and assistance in defusing the sex-power-ethics equation involves written ethical codes. Certainly we in the military are well covered by such codes. The Uniform Code of Military Justice is an all-embracing example, as are the provisions of the United States Code cited in attachment 3 of AFR 30-30. *Standards of Conduct*. House Concurrent Resolution 175, passed in July 1958, states a code of ethics for all government employees; it requires "loyalty to the highest moral principles" and reminds us that "public office is a public trust."<sup>29</sup> Yet these statements, while laudable, do not

really touch the heart of our current problem. They are fine generalizations, but they ignore the often painful immediacy of biological needs in a situation where one person holds power over another. There is, however, growing societal awareness of this problem and efforts to deal with it.

The relationship between faculty and students—an inherently tempting power inequality—has led many universities to explicitly state codes of sexual ethics. The University of Iowa's written policy recognizes that "faculty members exercise power over students" and that where a faculty member has professional responsibility for a student, sexual relationships are simply wrong, even if there is willing consent in the relationship.<sup>30</sup> This statement clearly recognizes that important power factor that is extremely significant in the supervisor-subordinate relationship in the military. We too can benefit greatly from sensitively written yet frankly explicit guidelines in our own workplaces—guidelines that command authority backs to the hilt. Simply restating old prohibitions against sexual harassment is not enough; we must recognize and respect the "psychologically based power dynamics" of sexual relationships in an equation of power inequality.<sup>31</sup>

Developing a code of ethics—a statement that includes sexual ethics—is an excellent exercise if done right. But such codes will have greater impact and more staying power if developed jointly by the supervisor (the person in power) and the coworkers (the weaker partners in the power equation) and if they are published and displayed prominently. A group of people can learn a great deal about themselves and develop a greater sense of commitment to professional values through writing a code of ethics they all agree to support. As an in-service training exercise, an NCO Leadership School faculty was asked to draft up a simple code of ethics, and a class of 40 junior NCO students was asked to do the same. The two codes produced were almost identical; the results were the same in six subsequent classes. The broad ethical statements produced

included these principles: (1) do the right thing 24 hours a day; (2) state what is right and live by it always; (3) be open and honest with others; and (4) get the job done but do it in a way that makes you feel good about yourself.<sup>32</sup> Then, when such a statement or document is written and agreed to, post it! Make it part of the professional milieu of the work center.

Such a deliberate, conscious act of writing ethical codes leads to the third avenue for managing the sex-power-ethics equation—education and training. These ingredients are an essential part of our profession. We spend huge blocks of time receiving both training and education. However, we devote much too little time in covering certain areas of supervisory responsibility and virtually none to training in sexual ethics. Our profession is not alone in shortchanging this area. Amidst growing concern over sexual relationships between ministers and members of congregations, the church has begun to ask if pastors are adequately trained to deal with questions of sexual ethics. The answer is clear. Pastors recognize the danger signs of sexual misconduct only “by feeling, intuition, and instinct.”<sup>33</sup> Those tools are not good enough to ensure mission accomplishment in the highly stressful operational environment. Professionals need training to confront the ethical issues that taunt us in supervisor-subordinate relationships. As Gen Creighton Abrams noted, “The object of teaching is to enable the young man or woman to get along without their teachers.”<sup>34</sup> American business management is beginning to face the need to teach ethics so that upcoming young managers can handle ethical issues. Peter Madsen, director of the Center for the Advancement of Applied Ethics, Carnegie-Mellon University, has said that “only by educating managers and future managers about ethics and about strategies for resolving moral mazes” can the current crisis in ethics be properly resolved. “Only education can prepare a manager for the moral tests that occur in the workplace, and only education can help the manager see the folly of his/her contemplated mis-

chief.”<sup>35</sup> Professional military education and training for all supervisory grades must reach this same conclusion for us to begin to deal effectively with the sex-power-ethics equation in the Air Force of the 1990s—a force in which we are increasingly seeing males supervising females and vice versa, and a smaller force that can ill afford the operational impact of abuses of power by untrained supervisors. The 1983 and 1988 studies of ethics both revealed over two-thirds of our personnel believe we should teach integrity, and over half say to do so by formal training and personal contact.<sup>36</sup> The study recommended that “ethics and integrity standards should be emphasized during professional military education courses and during command information periods.”<sup>37</sup> The unethical supervisor has failed us and deserves punishment; we have failed the uneducated supervisor, and we deserve censure.

The shape this training in ethics in general, and sexual ethics in particular, should take must be left to specialists. As a general guideline, it must begin in basic military training and precommissioning courses and should be reinforced at all levels of both officer and NCO professional military education. Specifically, this instruction should include basic principles of ethics and guidelines on making sound ethical decisions. Such training must not be afraid to include open discussion about the really tough sexual choices and temptations offered by the 1990s workplace.

## Conclusion

Talking about and acknowledging the sex-power-ethics equation is the key to controlling it. We must always remember that one of many roles the military professional plays is that of teacher. We may teach others by classroom instruction, by one-on-one training, and by example, but teach we do, and “teachers are responsible for nothing less than the next generation’s code of ethics—a heavy weight to bear.”<sup>38</sup>



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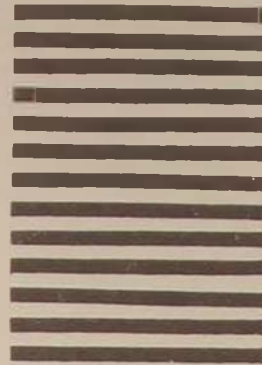
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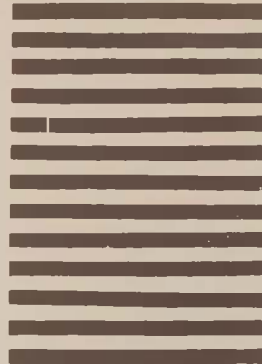
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To bear this weight successfully, to discharge our responsibilities as teachers, and to ensure operational effectiveness and mission accomplishment, we must reinforce ethical perspectives in our profession and in our society. Sex, power, and ethics are inextricably tied together for the supervisors of the 1990s. We must recognize the imbalance of power between supervisor and subordinate, and the sexual temptations such an imbalance can present. We must understand that rigid ethical standards are a must in our profession, and that we possess power as supervisors that must be used ethically. Justice and right behavior are active concepts that must be lived to be real, but we must admit that in questions of sexual conduct, doing right may be a most difficult task.

Fortunately, three sources of help are available to us if we cultivate them. Our friends—honest, sincere associates who are our intellectual companions—can help us preserve our perspective in questions of

sexual ethics. Written ethical codes can provide us a framework for measuring our conduct, and we can develop written codes for our units. Finally, training in ethical behavior can help us confront the ethical issues inherent in a position of power.

Ultimately, we come back to the operational necessity behind sex-power-ethics questions—the necessity for mission accomplishment. Without unimpeachable conduct by our people, without an irreproachable example from our leadership at every level, morale suffers and the operational mission suffers or fails. As Air Force Pamphlet (AFP) 35-49, *Air Force Leadership*, rightly observes, "Lack of self-discipline in a leader destroys the unit's cohesion and, ultimately, impairs its ability to perform the mission."<sup>39</sup> Whether this failure occurs in the stateside workplace or in the deserts of the Middle East, mission failure is the one thing we cannot stand. □

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# A REVOLUTION IN AIR TRANSPORT

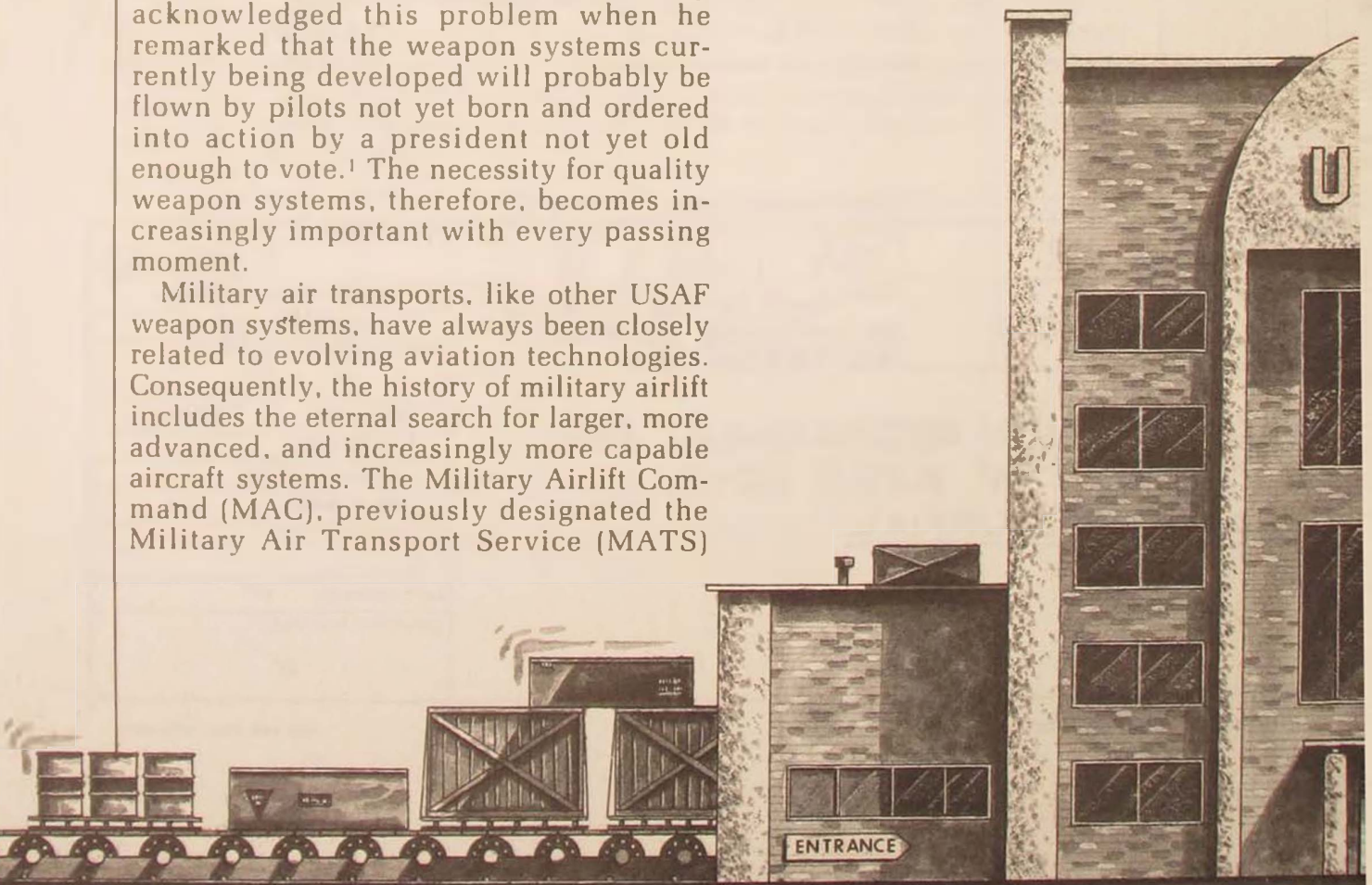
## ACQUIRING THE C-141 STARLIFTER

ROGER D. LAUNIUS  
BETTY R. KENNEDY

**T**HE NATION'S leaders are increasingly challenged by the difficult task of managing shrinking defense dollars more efficiently than at any time since the end of the Korean conflict. Deft handling of political, economic, technological, and managerial issues is required to provide future generations with an Air Force sufficiently capable to meet threats that are only vaguely discernible at the present time. In testimony before Congress in April 1990, Secretary of Defense Richard B. Cheney acknowledged this problem when he remarked that the weapon systems currently being developed will probably be flown by pilots not yet born and ordered into action by a president not yet old enough to vote.<sup>1</sup> The necessity for quality weapon systems, therefore, becomes increasingly important with every passing moment.

Military air transports, like other USAF weapon systems, have always been closely related to evolving aviation technologies. Consequently, the history of military airlift includes the eternal search for larger, more advanced, and increasingly more capable aircraft systems. The Military Airlift Command (MAC), previously designated the Military Air Transport Service (MATS)

from 1948 to 1966, has long been involved in aircraft development and acquisition as the Department of Defense's (DOD) single manager for airlift services. A study of the command's efforts to acquire the C-141 Starlifter, the strategic airlift workhorse currently operated by MAC,<sup>2</sup> illustrates the difficult road presented by even the most successful acquisition programs. Changing requirements and approaches, political priorities and apparatus, defense strategies and perceived threats, and the social and



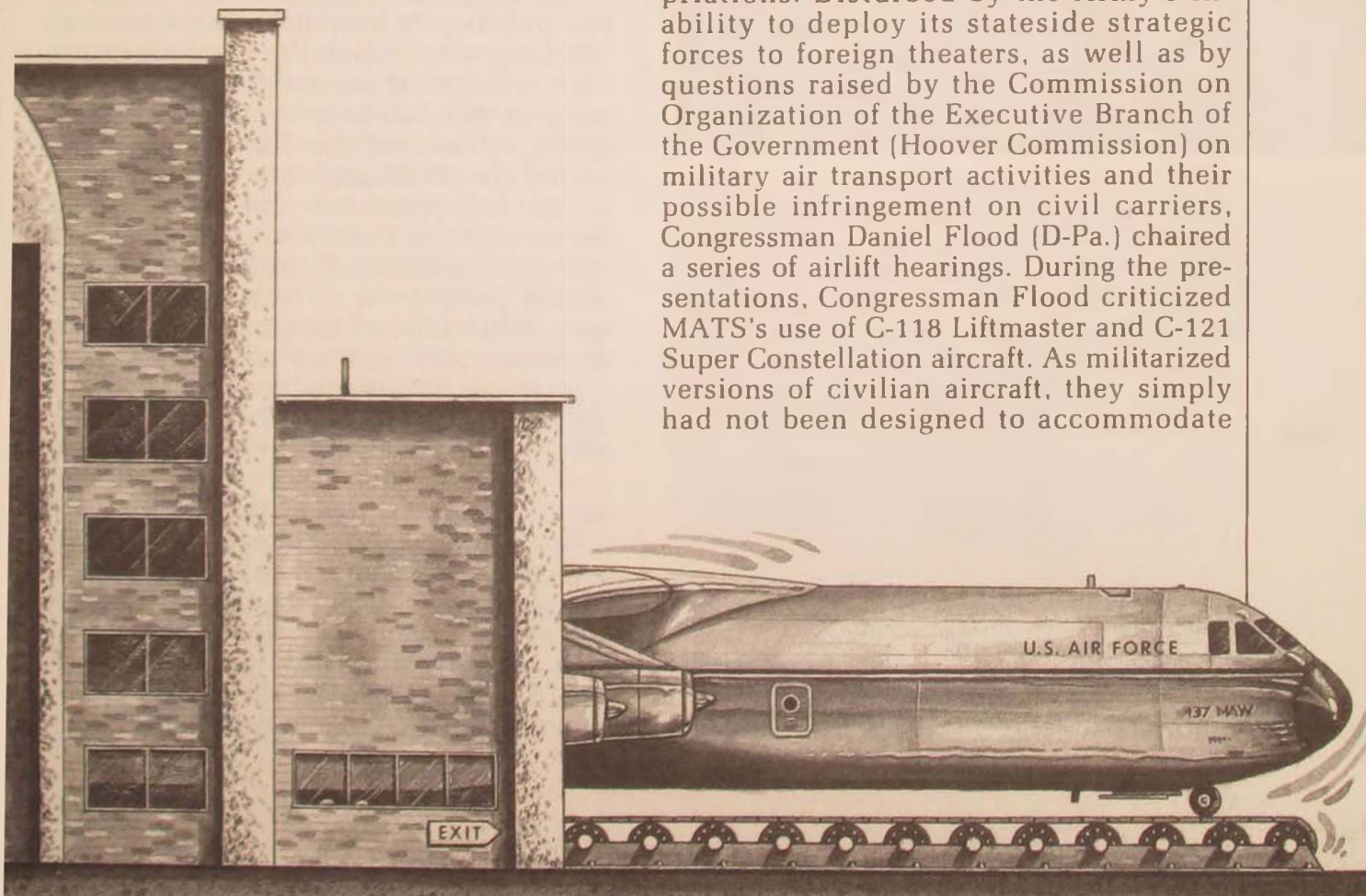
economic climates all play key roles in this process. Analyzing a past airlift acquisition program recenters the present debate over how much and what kind of airlift most rationally meets the needs of the United States' national security interests. Comparison also highlights the evolutionary development of military airlift and offers insights into future airlift acquisitions.

## Political Context

The acquisition of the C-141 transport followed directly the course of strategic and economic priorities of the cold war era. As airlift activities wound down following the Korean conflict, MATS found itself embroiled in a life-threatening debate with segments of the commercial aviation industry and members of Congress over the role of military airlift in peace and war. To many, the command's strategic airlift system of fixed routes

appeared more appropriately to belong to the private sector, especially when MATS pilots flew essentially the same routes as the commercial carriers. Intense competition among the scheduled and supplemental carriers<sup>3</sup> in the uncertain airline market had created a situation by the mid-1950s that appeared threatening to even the most financially sound airline. The heads of the commercial carriers saw a lucrative market with DOD and therefore wanted a much larger slice of its airlift business. Moreover, there was great public interest in reducing the expenditures and size of the federal government, and a move from an organic to a contract airlift system for DOD could yield potentially extraordinary savings.

In this environment, Congress showed sustained interest in the relationships between military and civilian air transport operations, and the C-141 eventually sprang from this interest. The first formal congressional discussions were the 1956 hearings conducted by a subcommittee of the House Defense Committee on Appropriations. Disturbed by the Army's inability to deploy its stateside strategic forces to foreign theaters, as well as by questions raised by the Commission on Organization of the Executive Branch of the Government (Hoover Commission) on military air transport activities and their possible infringement on civil carriers, Congressman Daniel Flood (D-Pa.) chaired a series of airlift hearings. During the presentations, Congressman Flood criticized MATS's use of C-118 Liftmaster and C-121 Super Constellation aircraft. As militarized versions of civilian aircraft, they simply had not been designed to accommodate







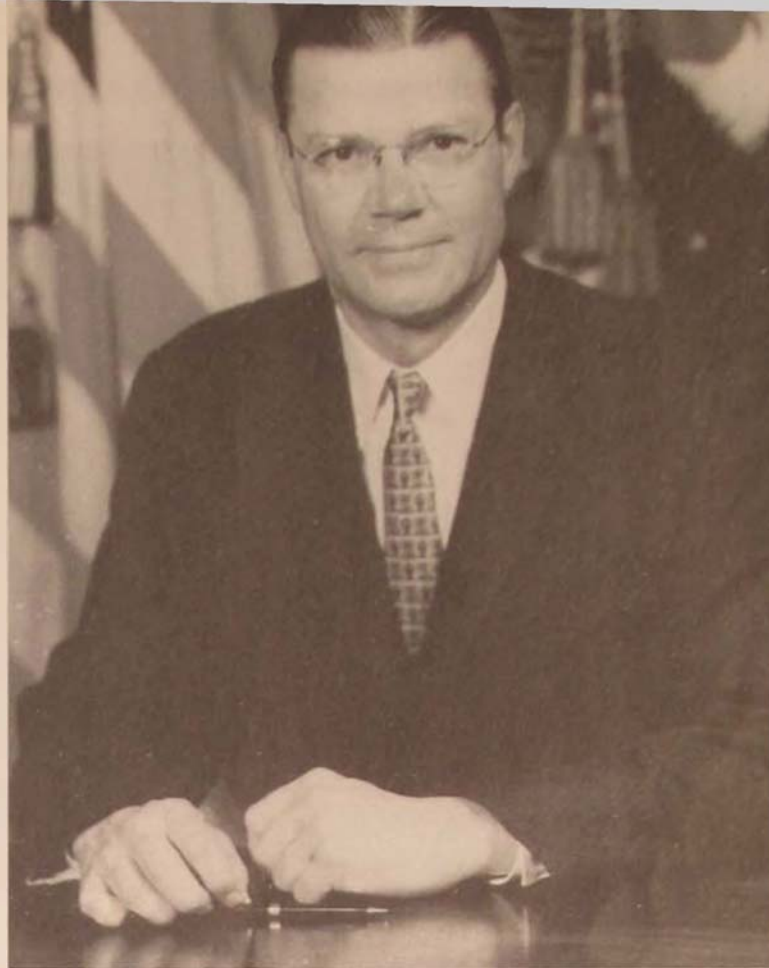
*During the 1950s the Air Force's airlift fleet consisted of converted commercial aircraft. The C-118 (top) was based on the DC-6A commercial freighter, the C-121 (middle) was a modified Lockheed Constellation, and the C-135B (bottom) was built on a Boeing 707 airframe. Pressure from Congress, especially from Rep Mendel Rivers, eventually influenced the Air Force to procure a jet-powered aircraft designed specifically for military airlift missions.*

the Army's air transport requirements. What was needed, in his view, was a large, modern aircraft designed solely for military use. It would be capable of transporting the Army's troops and heavy equipment together, thereby ensuring the timely arrival of cohesive fighting forces.<sup>4</sup>

Although MATS leaders objected to Congressman Flood's criticism, they found his statements on modernizing air transport most acceptable. It gave added weight to a command proposal dating from the early 1950s to replace its aging World War II fleet with two types of turboprop aircraft. These leaders sought a purely cargo aircraft capable of carrying 50 tons a distance of 3,500 miles and a passenger/cargo aircraft capable of transporting 15 tons or 100 passengers over the same distance. The long-range capability for the two aircraft was based on the realization that many en route air bases would in all probability not be available in wartime. Influencing the MATS plan was a Rand Corporation report which concluded, after reviewing some 1,000 aircraft designs, that transport aircraft with turboprop engines would have lower operating costs than those with standard reciprocating engines. Moreover, most military air transport officials were not overly concerned about higher altitudes and speeds that came as a result of the turbojet revolution; hence they did not seriously consider jet transports as possibilities at that time. Their views oriented the command toward an evolutionary upgrade in airlift capabilities. Not until the Boeing 707 appeared in the latter part of the 1950s, demonstrating so well the potential of jet transports, did MATS leaders become excited by the prospect and redirect acquisition efforts.<sup>5</sup>

Plans for modernizing the MATS fleet did not come to fruition until after the continued attention of Congress forced senior Defense Department officials to consider the problem anew. In January and February 1958, Rep Chet Holifield (D-Calif.), chairman of the Military Operations Subcommittee of the House Committee on Government Operations, led an investigation into all air cargo and passenger transportation. Not initially concerned with MATS's force modernization, the subcommittee addressed the issue as it proceeded. During the hearings, the president of the Air Transport Association, Stuart Tipton, outlined a plan for a national airlift program that utilized to a much greater extent the civil carriers to meet wartime airlift requirements.<sup>6</sup> Through an elaborate formula, Tipton essentially proposed that DOD look to the civil carriers first to meet its wartime airlift requirements and then allocate any remaining requirements to MATS. Tipton clearly envisioned commercial carriers taking the lion's share of DOD's airlift business with MATS limited specifically to "hard-core" military airlift missions that required specialized aircraft for outsized or exceptionally heavy cargo, unusual security measures, or direct support of tactical combat units.<sup>7</sup> This concept drew a pointed response from Dudley Sharp, the assistant secretary of the Air Force for materiel, who argued that the Air Force needed to maintain a strong transport force that could provide an instant response capability. Moreover, Sharp maintained that commercial airlift was complementary, not equivalent, to military airlift. Sharp further refuted those who claimed that the airlift capability of MATS was more than a by-product of peacetime training.<sup>8</sup>

Recognizing that the arguments of each side had merit, the Holifield subcommittee concluded that MATS had turned the flying hours allocated to the command for wartime training into a peacetime transportation system that could be regarded as competing with the commercial carriers. Thus, the subcommittee's report recom-



*Secretary of Defense Robert S. McNamara exerted strong pressure on the Air Force to move forward on the acquisition of the C-141. He and John F. Kennedy, the newly elected president, viewed a modern airlift capability as a key element in their concept of flexible response.*

mended that MATS concentrate on airlifting outsized and special cargo, leaving the passenger and conventional cargo business to the commercial carriers. Consistent with this division of airlift, the subcommittee also directed that the Air Force take action to modernize the MATS fleet—which primarily consisted of aircraft designed for commercial use—by procuring a large, long-range cargo aircraft. Such an aircraft, built specifically to carry the military's hard-core cargo and without a genuine passenger capability, would ensure that military transports did not compete with the commercial airlines for DOD dollars. Thus, by directing the procurement of a completely different type of aircraft for MATS, Congress would in effect remove the command from the passenger arena—





which was the bread and butter of commercial operations.<sup>9</sup>

This directive to modernize the MATS fleet received additional support during the months that followed. For example, Sen A. S. ("Mike") Monroney (D-Okla.), chairman of the Commercial Aviation Subcommittee, held hearings that reinforced the recommendations of the Holifield subcommittee.<sup>10</sup> More important, Cong L. Mendel Rivers (D-S.C.) of the House Armed Services Committee presided over an investigation by a subcommittee whose findings mandated a radical modernization program for MATS aircraft. Rivers advocated the procurement of jet aircraft as the ideal for MATS so that it could keep up with the turbojet strike forces it supported. This modernization program was necessary, he believed, because the United States was entering a new age that demanded a conventional intercontinental assault capability. The slow shift in the late 1950s from a nuclear deterrence strategy to one requiring flexible response in a variety of contingency environments increasingly necessitated the intercontinental airmobility of conventional military

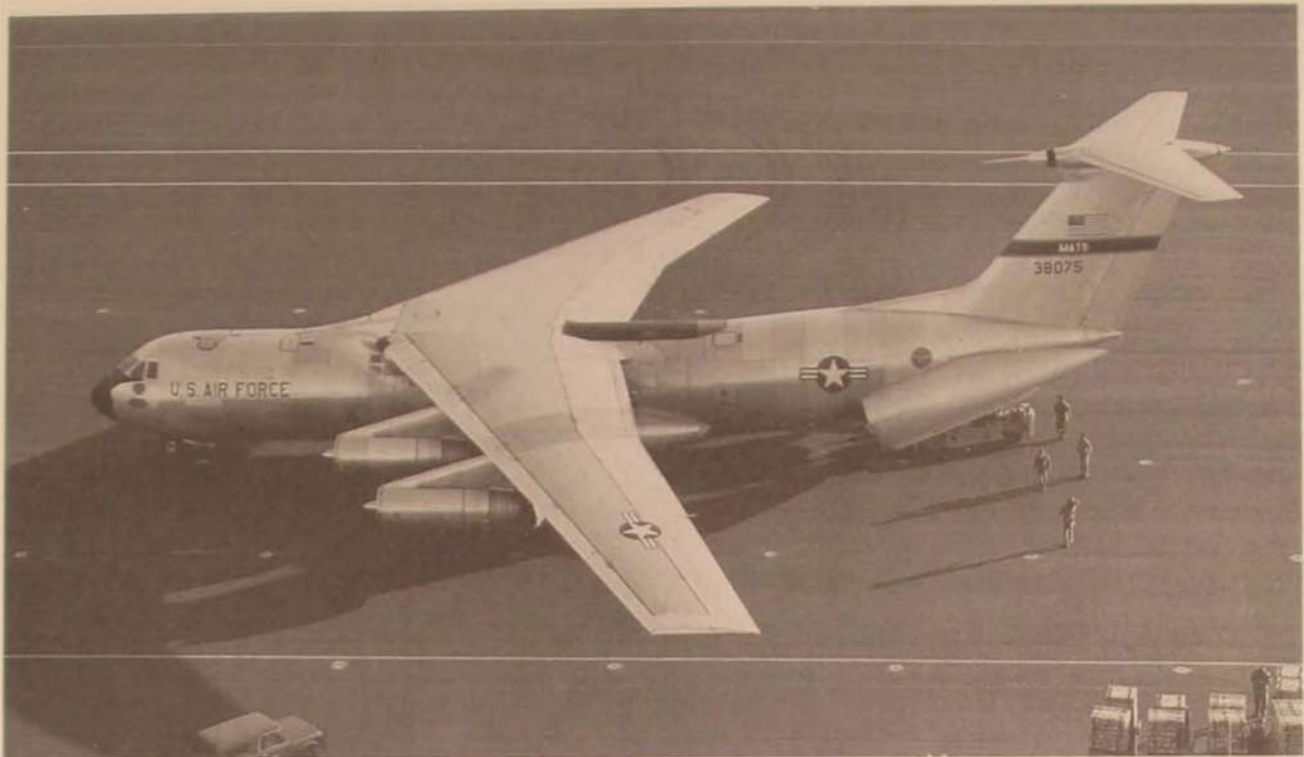
*The first C-141 Starlifter taxis in its first move under power after being rolled out from the Lockheed-Georgia factory. The new fan-jet airlifter could reach any spot in the world with only one refueling stop.*

forces. At a minimum, the Rivers subcommittee advocated procuring Douglas DC-8, Boeing 707, Douglas C-133, and Lockheed C-130B aircraft for this purpose.<sup>11</sup> These hearings also designated that specific funds be made available for modernizing military airlift along the course set by the Holifield subcommittee report.<sup>12</sup>

## The USAF Response

Responding to the congressional recommendations, DOD officials stated their concurrence on modernizing the MATS airlift fleet provided it was not placed ahead of other military procurement programs. In 1958, as at present, air transport modernization was not at the top of the Air Force's procurement list. Defense officials, however, did show a moderate commitment to the congressional recom-





*C-141s played a crucial role in airlifting troops and materiel to the Southeast Asia theater during the Vietnam conflict. This C-141 helped transport elements of the Army's 25th Infantry Division to Pleiku, South Vietnam.*

mendations. They made ongoing plans to retire the MATS piston-engined C-54 Sky-master and C-97 Stratofreighter aircraft and to introduce the C-133 Cargomaster, at that time the largest turboprop transport in the Air Force. Headquarters MATS and USAF planners also studied future airlift requirements and recommended acquiring both Lockheed's C-130B Hercules and a swing-tail cargo jet aircraft, the C-135 Stratolifter, to complement the C-133. The most important action to come out of the Air Force's 1958 modernization plan was the decision to begin developing from scratch a cargo jet to be fielded in the 1966–70 time frame. This aircraft became the C-141 Starlifter, perhaps the most significant transport aircraft brought into the USAF inventory to date.<sup>13</sup>

The C-141 program gained impetus toward realization as a result of congressional activities during the 1959 budget

cycle. Once again, the issue of modernizing MATS aircraft arose in a roundabout manner. In 1959 the Holifield subcommittee, holding follow-up hearings, listened to a far-reaching airlift plan presented by the head of the new Federal Aviation Agency, Elwood R. Quesada, a retired USAF general and former Lockheed executive. Quesada envisioned building an "air merchant marine" by developing a fleet of all-cargo transports that would form the commercially operated National Air Cargo Fleet. This action would effectively disestablish the Civil Reserve Air Fleet of private carriers under contract to DOD for wartime airlift. It would also significantly reduce MATS since Quesada's new commercial fleet would be able to satisfy the Army's request for airlift sufficient to move an entire division.<sup>14</sup> According to Quesada's plan, a minuscule MATS would move only the purely military or hard-core items required by the Army. The National Air Cargo Fleet would airlift everything else.<sup>15</sup> Quesada found strong support for his plan from a wide range of respected people and organizations, even among senior officials in DOD.



Quesada's plan resulted in Congress rejecting the Air Force's budget request to purchase 10 jet transports during fiscal year 1960, not because Congress as a whole opposed the modernization of the MATS fleet but because the Air Force wanted to buy essentially commercial DC-8 or Boeing 707 aircraft. Congressman Flood, for example, argued that the Air Force airlift modernization initiative at that time was an expensive vehicle designed to give MATS nothing more than the same type of jet aircraft capabilities as those maintained by commercial airlines. Senator Monroney expressed fears that the modernization package as presented by DOD would stifle the development of a genuine reserve cargo fleet by placing MATS in even more competition with commercial carriers than in the past.<sup>16</sup>

*The C-141 proved its value again when the Air Force flew the 101st Airborne Division to Vietnam. Troops deplane during a layover at Elmendorf AFB, Alaska (above), and disembark from a C-141 after their arrival at Bien Hoa AB, South Vietnam (right).*

In addition, Headquarters USAF did not help its bid for this acquisition money by several almost laughable miscalculations that raised the ire of key congressmen. First, required to report annually on initiatives concerning MATS, the Air Staff sent a lieutenant colonel instead of the expected general officer to accompany the assistant secretary of the Air Force for financial management. This created a negative impression in Congress about the USAF's support for modernizing its airlift fleet. Second, the Air Force had failed to



spend the \$140 million appropriated for fiscal year 1959 airlift modernization. That omission caused House committee members to conclude that the Air Force could simply do without. Also, influenced by the contention of certain airlines that the Air Force would use any new jets to compete with passenger airlines, Congress remained unconvinced that the service should have its own way in a MATS modernization program. These reasons, as well as others of a less tangible nature, made it possible for Senator Monroney to get the Air Force's modernization proposal voted down despite a concession by Secretary of the Air Force James H. Douglas that the Air Force would limit its acquisition to 50 jet transports and that there would be no additional transport purchases until after their arrival.<sup>17</sup>

These adverse actions prompted Headquarters USAF to make some last minute

efforts to rescue the air transport procurement dollars. With the assistance of Sen Howard Cannon (D-Nev.), the Air Force began seeking \$50 million for a supplemental appropriation for fiscal year 1960. In a letter to Cannon, Secretary Douglas indicated that \$30 million of the USAF request was to continue research and development (R&D) work on new jet engines that would benefit both the military and commercial airlines. This feature was very attractive to many members of Congress, but when Cannon presented the supplemental request before the appropriations committee, he failed to make that point. Instead, the committee got the impression that the money was for an Air Force plan to fund three different transports: the all-cargo military jet or its equivalent, 50 C-133s to carry outsized cargo and missiles, and several hundred civil-military cargo transports. Using his





influence, Monroney got the matter voted down only to learn later about the jet-engine R&D effort. During the conference session on the budget, Cong Albert Thomas (D-Tex.) refused to reinstate the \$30 million and got the item passed over pending a new study on the airlift issue during the next congressional session.<sup>18</sup> The net result of the budget deliberations for 1960 was that neither the Air Force (which now lacked funds to modernize strategic airlift) nor the airline carriers (which now with congressional meddling had intensified the competition among the various segments) were happy.

### Pivotal Actions, 1960–61

The quest for what became the C-141 took a new turn in 1960–61 with three critical actions. The first involved a study conducted at the direction of President Dwight D. Eisenhower. He asked Defense Secretary Neil McElroy to examine the role of MATS in all environments. Completed in February 1960, *The Role of Military Air Transport Service in Peace and War* contained the first national policy statement on airlift. Essentially the report's nine provisions directed that commercial carriers through the Civil Reserve Air Fleet program would augment the military's need for airlift; MATS, in turn, would provide the hard-core airlift. The provisions further stipulated that MATS would undergo modernization to fulfill its military requirements and proposed joint civil-military development of a long-range, turbine-powered cargo aircraft.<sup>19</sup>

The second action arose when Cong Carl Vinson (D-Ga.), chairman of the House Armed Services Committee, asked Congressman Rivers to head a special subcommittee to look into the Army's requirements for airlift in support of the increasingly important flexible response strategy.<sup>20</sup> As early as 1951, the Army's leadership had been harping on the need for a strategic airlift deployment capability and had asked the Air Force to be capable

of airlifting a tactical airborne assault force of two and two-thirds divisions and one other division to potential combat theaters worldwide. Tonnage requirements per division were placed at 5,000 for movement to established facilities and at 11,000 for austere locations. Just to deploy 5,000 tons of equipment earmarked for one of these divisions was estimated as requiring 272 C-133-type aircraft.<sup>21</sup> During the Rivers hearings, Gen Lyman L. Lemnitzer, the Army chief of staff, restated the Army's request for this capability and asked for sufficient airlift to move the combat element of a division within 14 days and two divisions within four weeks.<sup>22</sup> It quickly became apparent to Rivers that the Air Force could neither support these requirements nor did it have any realistic plans under way to reach that goal. The result was a stinging rebuke to both the Joint Chiefs of Staff and the Department of the Air Force for failing to create enough capability in MATS to meet potential contingencies.

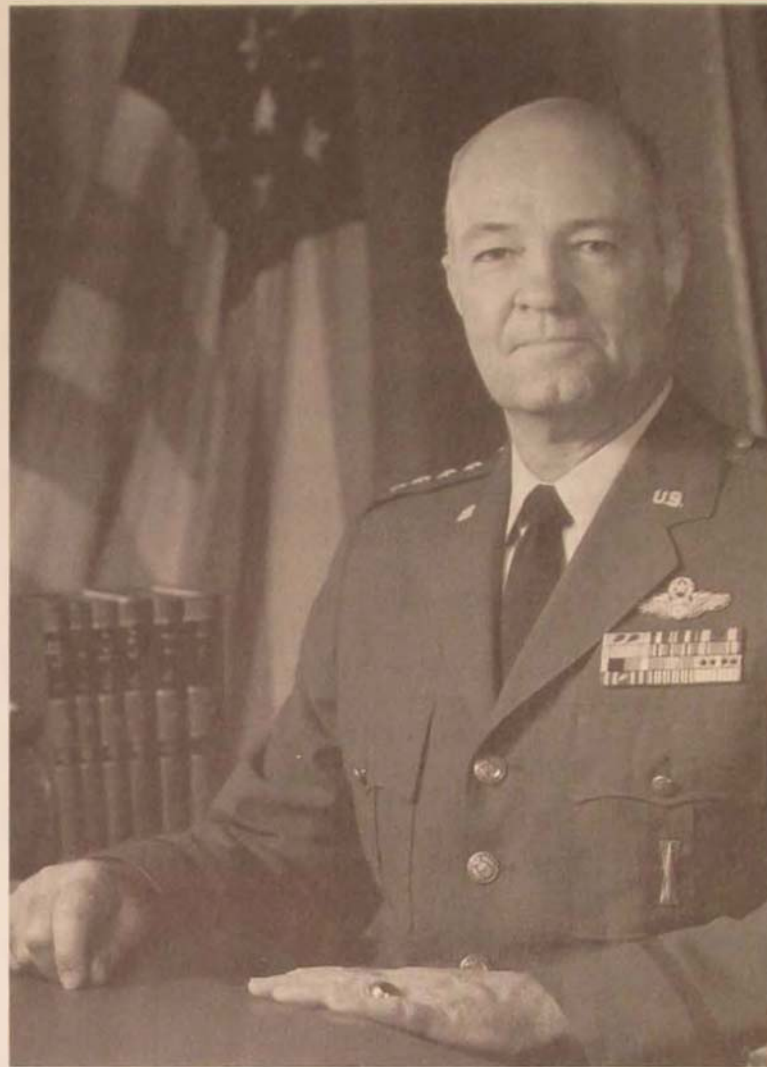
In discussing what kind of airlift it needed during the Rivers hearings, Army officials advocated the development of an aircraft that could perform many battlefield tasks: strategic and tactical airlift, airdrop, and low-level flights were only a few of the desired capabilities. Because it was already in production and had many of the desired characteristics, Army leaders were willing to accept a modified C-130 for this role. Viewing the airlift problem somewhat differently, Lt Gen William H. Tunner, the MATS commander, proposed the procurement of 45 swing-tail jets to support deployments by the Strategic Air Command; 49 other swing-tail aircraft as an interim solution to the Army's needs; 50 C-133s for outsized cargo requirements; and 188 additional jet aircraft especially designed to support Army requirements, which would become the C-141. Tunner estimated the cost of this modernization package at approximately \$2 billion. Unfortunately, DOD and USAF officials clearly opposed acquiring so many new transport aircraft. But MATS maintained that its future rested on

those jets, basing its rationale on the need for improved performance and reliability features to meet the rapidly advancing flexible-response strategy.<sup>23</sup>

Faced with these service differences, the Rivers subcommittee forged a compromise that also took into consideration prior congressional directives on modernizing airlift. Rivers asked the House Appropriations Committee to approve \$337 million for 50 C-130Es and 50 modified jets. While the House Appropriations Committee reduced Rivers's request by \$100 million as it revived the Quesada plan and gave priority to the procurement of the C-130s, the Senate Appropriations Committee disagreed and sought to redress the military's overall neglect of airlift. Congress subsequently passed Public Law 86-601 on 7 July 1960, allocating \$310.7 million for airlift, specifically \$140 million for C-130Es, \$60 million for modified jets, and the remainder for C-130Bs and the C-141 development program. The congressional conference report further stipulated that MATS use its jets for both Army and Air Force requirements.<sup>24</sup> The lasting value of the Rivers subcommittee hearings was to convince Congress of the great need for modern airlift resources to support the growing air mobility of conventional forces.<sup>25</sup>

The third critical action occurred during the presidential election campaign of 1960 when Sen John F. Kennedy (D-Mass.) made the airlift issue part of his presidential campaign. Indeed, his embrace of the doctrine of flexible response for the nation's defense strategy required the ability to project military power throughout the world. He even spoke of the need of developing "additional air transport mobility—and obtaining it now" in his State of the Union address in January 1961. Accordingly, rapid mobility became a key element of the Kennedy administration's posture of deterring the full spectrum of warfare.<sup>26</sup> Support for a MATS airlift modernization program had never been more certain.

It should be added, however, that the support for airlift had come largely from



*Gen Howell M. Estes, Jr. General Estes was the commander of the Military Airlift Command when the C-141 first entered the Air Force inventory. He recognized that the acquisition of the C-141 made possible a quantum leap forward in airlift capabilities.*

outside the Department of Defense. While certain Army leaders were advocating airlift, they perceived it largely as a means of deploying paratroopers, and special assault troops still regarded surface transportation as the primary mobility system. Likewise, the Air Force as an entity was not committed to airlift, with the general exception of officers in the Military Air Transport Service or airlifters who had moved to other positions throughout the Air Force. The reasons for this lack of concern were complex. Although airlift was



officially considered one of the primary missions of the service, most Air Force officers still did not accept it as coequal with missions performed by fighter and bomber aircraft.

Airlift, in essence, did not really fit into the scheme for the optimal use of air power. It remained a stepchild—an auxiliary force—not contributing directly to the quest for air superiority or strategic bombardment. Although airlift was important, perhaps the impression that it was closely tied to an essentially unglamorous logistical effort reinforced its stepchild position. In addition, the perception that airlift was tied to the Army probably determined the importance it was assigned in Headquarters USAF circles. The divorce from the Army in 1947 had been a difficult one, and the Air Force had sought to show how it had a mission and a significance beyond that of supporting ground operations.<sup>27</sup> For air transport acquisitions to be successful, therefore, sufficient congressional and key executive branch interest had to be developed to counteract the pervading apathy of most USAF leaders.

### The Flexible-Response Strategy and the C-141

The difficult task of mobilizing interest for an aircraft program received a major boost during the Kennedy administration when the rapidly rising defense strategy of flexible response in both nuclear and conventional arenas gained preeminence among the nation's leaders. An able advocate of flexible response, Secretary of Defense Robert S. McNamara pressed forcefully for the C-141's acquisition, sometimes facing opposition and always experiencing a subtle sense of apathy from Headquarters USAF. Even with the development of the C-141 in the offing, the rapid change in the national security posture had made an interim modernization program for MATS of utmost importance. As a result, McNamara worked first for an increase in the procurement of the longer-range C-130Es from 50 to 99, the modification of 17 KC-135 tankers under produc-

tion into transport configurations, and the purchase of 13 additional C-135s. The command would use the new C-130 and C-135 aircraft to fill the void until the arrival of the proposed C-141.<sup>28</sup>

The interim solutions in McNamara's plan were acceptable to most Air Force officials. Only airlift planners at Headquarters MATS raised questions about the viability of the turboprop C-130 Hercules for the command's strategic airlift operations.<sup>29</sup> The C-130 was originally designed for the Tactical Air Command as a short-range transport to support the Army's air assault operations, and it was a superb aircraft for this purpose. It was quite rugged and dependable, especially for intratheater operations where its airborne, short-field landing, and truck-bed loading height capabilities were especially valuable features.<sup>30</sup> Although the E model to be procured for MATS had a longer range, had more payload capability, and was serviceable as a strategic airlifter, MATS officials did not regard it as very suitable for long-range missions. While the E model's performance was an improvement upon that of both the C-119 and C-123, the aircraft it was designed to replace, its 18- to 23-ton payload could not compete with the cargo-carrying capability of aging C-97, C-121, and C-124 aircraft. Moreover, from the perspective of MATS airlifters, the C-130 was still a propeller-driven aircraft (although it was a turboprop), and its cruising speed of approximately 300 miles per hour did not significantly improve upon what was currently in the MATS inventory. Command officials plainly regarded the C-130 as a stopgap measure to meet airlift requirements until the C-141 was developed.<sup>31</sup>

The other interim aircraft, the C-135 Stratolifter, was simply a military version of the Boeing 707. First configured for the military as the KC-135 tanker aircraft for the Strategic Air Command, it was then adapted to transport requirements. MATS received its first Stratolifter in June 1961. Capable of flying at 600 miles per hour and carrying 87,000 pounds, or 43.5 tons, it represented a great advancement in military airlift. For example, in 1962 during



Exercise Long Thrust, C-135s completed the fastest transatlantic troop rotation in history, transporting one Army unit from Kansas to Germany and returning another unit to Fort Lewis, Washington, in 45.5 hours. Clearly, what piston aircraft had taken days to airlift, the C-135 moved in hours. Yet, because of flexible response at a time when there was great emphasis on airdrop capability, the C-135 had none. Nor were its cargo-carrying capabilities, especially its side-loading features, well suited to the transportation of military equipment; and the civil carriers, which flew essentially the same aircraft, argued that this created an environment ripe for direct competition with them. Additionally, fatigue analysis had determined that these aircraft had an effective service life of a mere 10,000 flying hours. Virtually everyone recognized these problems. In considering the purchase of additional C-135s during discussions on the budget for fiscal year 1963, Defense Secretary McNamara recognized the C-135's limitations and decided to wait for the C-141.<sup>32</sup>

Believing the near-term need called for a medium-sized transport "workhorse," DOD under McNamara emphasized the consummation of a program that had been first started in a very small way in 1959. With planners working closely with the Army, the C-141 Starlifter was designed to carry all but 2 percent of an airborne division's equipment a distance of 5,500 nautical miles at speeds up to 500 miles per hour. The C-141 revolutionized the MATS airlift system in terms of both speed and capability. It was, in part, such a successful aircraft because it represented a middle ground of technology. While it was not simply a military version of a commercial airliner—past acquisition efforts in that direction had always possessed serious drawbacks—it also did not represent the most advanced technology. The aviation systems that comprised the C-141 were mature and proven. Although there have always been trade-offs in designing military equipment, the C-141 achieved a success uncommon in most aircraft systems. It

balanced a worthwhile mixture of advantages and disadvantages in terms of capabilities, price, durability, supportability, and quality. The C-141 had a shorter fuselage than either the C-133 or the DC-8F. With a maximum payload of 34 tons, it fell below the Boeing 707-300's 44.9 tons and the DC-8F's 38.7 tons. Moreover, its maximum range fully loaded was 500 miles less than the B-707 or the DC-8, and the C-141 had no outsized cargo capability like the C-133 or C-124. At a time when other MATS military transports had speeds of approximately 300 miles per hour, however, McNamara was willing to trade this cargo-carrying capability for greater responsiveness.

In comparing the C-141 against the B-707 and DC-8, McNamara willingly accepted less than ideal range and tonnage-carrying capability for the ability to transport more oversized cargo. What the military got was a fast jet transport with good troop-carrying capabilities, excellent cargo capacity, and superb airdrop capabilities; all using available technology of the late 1950s and early 1960s—no more, no less.<sup>33</sup>

## Development and Acquisition

Events moved rapidly following the recommendation of the Rivers subcommittee to procure a new medium transport. By May 1960, the airplane's specific operational requirement document—SOR 182—was published, and by July initial funding for the program was available. In December 1960, Boeing, Douglas, Convair, and Lockheed received the government's request for proposal. Indicating the national importance ascribed to the new military transport, President Kennedy assumed the honors of announcing Lockheed as the winner of the design competition for its "Super Hercules" in March 1961. More than two years later, in August 1963, the first C-141 rolled out of the Lockheed factory, and on 17 December 1963 the C-141 Starlifter made its maiden flight. In its design and construction phase, the C-141 program was well executed. The air-

craft exceeded virtually all of the requirements established by MATS and fulfilled the needs of the Army except it could not handle outsized cargo.<sup>34</sup>

Of significance, the Starlifter was procured under the novel "concurrent acquisition and test" concept versus following a standard practice of developing a prototype aircraft for test and evaluation. Under this philosophy, the C-141 entered the operational force prior to the completion of the Category II Test Program.<sup>35</sup> The rationale behind the concurrent concept was to have a weapon system become productive sooner; many believed that testing a new aircraft in the operational environment would also enhance the evaluation process of the various systems. The pressing needs of the Vietnam conflict also made this new philosophy attractive. Although MAC received the C-141 at least two to three years earlier under this method, it also strained the aircraft's planned logistics support and led to a series of modification projects to correct deficiencies. These included structural, avionics, landing gear, flight control, aerial delivery system, and air-conditioning problems. By the time MAC acquired the last of the 284 Starlifters in February 1968, the C-141's deficiencies had been corrected and consequently had faded as a concern. The main lesson with respect to future programs was that while the concurrent acquisition and test concept would field a weapon system faster, it would not eliminate seemingly inevitable system problems. On the other hand, if the weapon system's design and construction is sound, there is no reason to believe that a concurrent acquisition and test program creates greater numbers of deficiencies than any other procurement strategy.<sup>36</sup>

Two military operations in particular silenced what little criticism there was of the C-141. In Operation Blue Light (December 1965–January 1966), MAC aircraft transported 2,952 infantry troops and 4,749 tons of equipment from Hickam AFB, Hawaii, directly to Pleiku, Vietnam. The new C-141s flew 88 of the 231 missions, and while the command's other

transports flew more missions, the C-141 flights represented a nearly fourfold increase in airlift capability. Moreover, the C-141s completed their missions in one-third the time of the C-124s and C-133s.<sup>37</sup> Again demonstrating their combat worth in November and December 1967, C-141s flew 369 of the 391 missions in Operation Eagle Thrust, moving 10,024 troops, the 101st Airborne Division (minus one brigade), and 5,357 tons of cargo directly to Vietnam, a distance of approximately 10,000 miles. While the C-133 mission elapsed time ran over 100 hours because of the need for more en route stops, C-141s made the trip, averaging between 27 and 30 hours.<sup>38</sup>

## Assessment

There are at least four major conclusions that can be drawn from the development of the C-141 Starlifter. First, the political process surrounding the acquisition of the C-141 was exceptionally convoluted. Had it not been for congressional and executive branch interest in the airlift modernization program—some of it because of the ulterior motive of seeking to remove MATS from competition with the commercial carriers—the C-141 would never have been built. Throughout most of the 1950s, few people in either the USAF or larger DOD communities, exclusive of people past or present having served in MATS, cared sufficiently about air transport to advocate spending significant funds on its modernization. This was especially true when precious research, development, and acquisition dollars went into airlift modernization to the detriment of other acquisition programs. Most USAF leaders at the time of the C-141's development were much more concerned with the acquisition of the fighter that eventually became the F-4 and preferred to see funds expended on that program rather than on a transport, suggesting again that the former was more central to the overall needs of the Air Force.

Key congressional leaders involved in defense issues, however, initially focused



attention on the airlift shortfall and eventually prescribed solutions from outside the Air Force to ensure that the MATS airlift modernization evolved.<sup>39</sup> Their investigations were focused in part by the Army's demand for a greater USAF commitment to meet its expanding airdrop and air assault requirements because of the flexible-response strategy. This attention elevated the airlift discussion to the highest levels of government, prompting the president and his top advisors to make it a matter of concern and action. This was clearly seen in the efforts of President Kennedy and Secretary McNamara in the early 1960s.<sup>40</sup> However, only after civilian leaders interested in defense management and strategy emphasized the issue, did the Air Force begin to support the modernization program.

Second, the late 1950s and early 1960s fostered an environment more conducive to building the C-141 than had any earlier period in the history of the Air Force. The flexible-response strategy greatly increased the importance of maintaining a conventional force, especially one that could be deployed quickly as was the case during the Lebanon and Taiwan crises. To accomplish this, airlift of a much greater capacity and more responsive nature was needed to support the Army. The acquisition of the C-141 fit beautifully into the new strategy and in essence became a linchpin of its success. Without capable airlift to move troops to flash points around the globe, any conventional capability was a hollow force. The civilian leaders of the nation and the Army understood this very well, and by the early 1960s, the Air Force establishment had also co-opted the philosophy. Of course, MATS leaders were delighted with this new course as it generated both the procurement of the C-141 and a heightened status for military airlift.<sup>41</sup>

Third, the technology of the C-141 was evolutionary rather than revolutionary, but the result was a radical—maybe even revolutionary—change in the manner in which airlift was regarded and utilized by the American military. Gen Howell M.

Estes, Jr., the MAC commander at the time that the C-141 entered the Air Force inventory, perhaps understood better than most people the revolution in airlift that came with the acquisition of the C-141. He suggested that the revolution really encompassed two phases. The first, which he believed was nearing general acceptance, was a recognition of the importance of airlift as a tool for executing US foreign-policy objectives whether in a peacetime or contingency environment. He wrote, "Global military airlift has been shown, throughout the era of the cold war, to be a principal medium of achieving maximum military flexibility."<sup>42</sup> By the time of the Vietnam War, he added, MATS had become "the key element in a far-ranging change in national policy: to a strategy of multiple options for flexible, measured response to any situation in the spectrum of war."<sup>43</sup> He called this linear progress; it was relatively straightforward with the obvious advantages of airlift outweighing its limitations for all but the most myopic and obtuse individuals.

Estes perceived the second phase of revolution as more ethereal and less easy to conceptualize and understand. General Estes played off the differences between technology and airlift in this arena and postulated that only when technology had eliminated constraints on the possibilities will this phase have been completed. He identified nine overlapping limitations on airlift technology: speed, range/payload trade-offs, flexibility of employment in a wide array of scenarios, cubic capacity, loadability, aircraft self-sufficiency, fuel efficiency, direct operating costs, and terminal base requirements. No single aircraft had ever overcome all of these difficulties, and Estes asserted that probably one never would. What General Estes did conclude, however, was the C-141 had made a quantum leap forward by obviating many of the historic airlift limitations due to its high speed, range/payload options, flexible runway requirements, favorable loading characteristics, and airdrop capability.<sup>44</sup> The realization of the ability to airlift large loads over intercontinental distances into



either a combat or nonthreatening environment in a matter of hours was the revolution that the C-141 fostered. It led to an entirely new avenue for the employment of airlift and its maintenance and logistical support systems.<sup>45</sup>

Finally, the C-141 program was a superb example of the integration of defense planning and systems acquisition at the highest levels. Richard P. Hallion, the preeminent historian of aviation technology, recently divided several of the aircraft procurement programs of the 1945–65 time period into four basic categories: (1) unrealistic proposals, (2) disappointments, (3) aircraft the USAF learned to live with, and (4) genuine successes. While Hallion did not discuss the C-141, it was one of the genuine successes, comparable to the outstanding pro-

grams that resulted in the F-86, B-52, KC-135, C-130, T-38, F-4, U-2, and SR-71 aircraft.<sup>46</sup>

The C-141 truly represented a brilliant airlift concept well executed, with an acceptable purchase price. Coupled with an outstanding design, the Starlifter has been a workhorse of the airlift fleet for some 25 years and is projected, at a minimum, to be in service until the mid-1990s. While the acquisition process was grindingly slow, the technology evolutionary, and the politics at times desperate, the result was a revolution in airlift capability and responsiveness. Military airlift's course as exemplified in the acquisition of the C-141 does much to explain the difficult birthing process of the future strategic airlifter, the C-17. □

#### Notes

1. Secretary Cheney appeared before a subcommittee of the Senate Armed Services Committee on 26 April 1990 to discuss major weapon system acquisition programs. See "Cheney Cuts Aircraft Buys," *Airman*, May 1990, 2–3.

2. Strategic or intertheater airlift is the movement of personnel or cargo over intercontinental distances, such as between the United States and Europe, usually in a non-threatening air environment. Tactical or intratheater airlift is the movement of personnel or cargo within a theater, often times in a combat situation.

3. At the time, scheduled carriers, as represented by the domestic trunk lines and the international carriers, flew set schedules over fixed routes and received a federal subsidy. Supplemental or nonscheduled carriers flew based on temporary needs and lacked subsidies. Another important category was the all-cargo carriers that had grown out of the supplemental group. They flew fixed routes and could obtain subsidies. In addition, there were a number of carriers that provided feeder service or served regional areas like Hawaii or Alaska.

4. Congressman Flood's colleagues were especially interested in the military's wasteful practices and relationship with the commercial carriers. Ignoring the need for aircraft specifically designed for military use, they directed in the Senate and House Appropriations Committees' reports that the Air force fully utilize the services of the commercial airlines. For instance, in 1957 Sen Stuart Symington (D-Mo.) sponsored a law requiring civil air carriers to handle 40 percent of the passenger and 20 percent of the cargo transportation requirements for MATS in fiscal year 1958. See House Committee on Appropriations, *Department of the Air Force Appropriations for 1957: Hearings before Subcommittee*, 84th Cong., 2d sess., 1956, 1464–65; House Committee on Appropriations, *Department of Defense Appropriations for 1957*, 84th Cong., 2d sess., 1956 H. Rept. 2104, 45–47; Senate Committee on Appropriations, *Department of Defense Appropriations for 1958*, 85th Cong., 1st sess., S. Rept. 543, 1957, 13–14.

5. History, *Military Air Transport Service (MATS)*, July–December 1953, 54–57.

6. House Committee on Government Operations, *Military*

*Air Transportation: Hearings before a Subcommittee on Government Operations*, 85th Cong., 2d sess., 1958, 3–20.

7. Initially "outsized" referred to the ability to carry bulky and heavy pieces of equipment like tanks, missiles, and fighter aircraft. Presently, "outsized" is defined as an item exceeding 828" by 117" by 105" high. "Oversized" is any item that exceeds the usual dimensions of a 463L pallet (104" by 84").

8. House, *Military Air Transportation*, 497–501, 506.

9. House, *Military Air Transportation: Twenty-eighth Report by the Committee on Government Operations*, 85th Cong., 2d sess., 1958, H. Rept. 2011, 2–6, 90, 92.

10. Senate Committee on Commerce, *Study of Military Air Transport Service: Hearings before Subcommittee*, 85th Cong., 2d sess., 1958, passim.

11. House Committee on Armed Services, *Investigation of National Defense: Phase II*, 85th Cong., 2d sess., Report of Special Subcommittee no. 4, 1958, 2–10.

12. Senate Committee on Appropriations, *Department of Defense Appropriations for 1959*, 85th Cong., 2d sess., S. Rept. 1937, 1958, 17–19; Public Law 85-724, sec. 634, 22 August 1958.

13. Lt Col Charles E. Miller, *Airlift Doctrine* (Maxwell AFB, Ala.: Air University Press, 1987), 248–49.

14. Established in 1952, the Civil Reserve Air Fleet is comprised of commercial carriers who dedicate a portion of their aircraft fleets to serve the Defense Department's airlift requirement in emergencies when the military's airlift capability is exceeded. In return for enrolling in the Civil Reserve Air Fleet program, the government awards its peacetime airlift business based on the numbers and kinds of aircraft committed by the carriers.

15. House Committee on Government Operations, Subcommittee on Military Operations, *Military Air Transportation*, 86th Cong., 1st sess., 1959, 201–7.

16. *Ibid.*; House Committee on Appropriations, *Department of Defense Appropriations for 1960*, 86th Cong., 1st sess., 1959, pt. 1, 85–86, 88; pt. 6, 585–98, 620, 653–54; Senate Committee on Appropriations, *Department of Defense Appropriations for 1960*, 86th Cong., 1st sess., 1959, 1600–1601, 1241–42.

17. House, *DOD Appropriations for 1960*, pt. 1, 85–86, 88, 124–25; Senate Committee on Appropriations, *Supplemental Appropriations Bill for 1960: Hearings before the Subcommittee*, 86th Cong., 1st sess., 1959, 803–20.

18. *Congressional Record*, 19 August 1959, 15504–6.

19. Department of Defense, *The Role of Military Air Transport Service in Peace and War* (Washington, D.C.: Assistant Secretary of Defense [Supply and Logistics], 1960).

20. See Robert C. Owen, "The National Military Airlift Hearings of 1960: Doctrinal Victory or Successful Turf Battle?" (Unpublished study, Duke University, April 1990).

21. House Committee on Armed Services, *Hearings before Special Subcommittee on National Military Airlift*, 86th Cong., 2d sess., 1960, 4071; Frederick C. Thayer, *Air Transport Policy and National Security* (Chapel Hill, N.C.: University of North Carolina Press, 1965), 136–39, 196–99; Air Force Pamphlet (AFP) 190-2-2, *Releasable Data on USAF Aerospace Vehicles*, vol. 3, 1 June 1964, 26.

22. House, *Hearings before Special Subcommittee on National Military Airlift*, 4075–78.

23. *Ibid.*, 4183–93, 4222–84, 4307–10.

24. House Committee on Appropriations, *Department of Defense Appropriations for 1961*, 86th Cong., 2d sess., 1960, pt. 7, 328–39; House Committee on Appropriations, *Department of Defense Appropriations for 1961*, 86th Cong., 2d sess., H. Rept. 1561, 1960, 16–18; Senate Committee on Appropriations, *Department of Defense Appropriations for 1961*, 86th Cong., 2d sess., 1960, pt. 3, 1502–4, 1656–57; Public Law 86-601, sec. 531, 7 July 1960; *Congressional Record*, 30 June 1960, 14105, 14106.

25. The Big Slam/Puerto Pine exercise in March 1960 especially convinced Rivers and other congressmen of the need for airlift modernization. Designed to test the ability of MATS to surge and to sustain its wartime aircraft utilization rate as well as to determine if MATS could transport a large Army force from the continental United States to respond to an overseas contingency, the exercise was a fiasco. While MATS did move 29,095 troops and 10,949 tons of cargo, it did so only by flying 1,263 sorties for a total of 50,496 flying hours, by using half of the MATS transport fleet and 32,000 personnel, and by requiring over a year of detailed planning to include massive repositioning of spares, equipment, and personnel. The exercise plainly disclosed the obsolescence of most of the MATS transport fleet. Newspaper reporters did not fail to note that commercial jets could have flown to Puerto Rico faster than the aging MATS force of C-124s. See presentation by Lt Gen William H. Tunner, MATS commander, before the House Committee on Armed Services, Special Subcommittee on National Military Airlift, *Military Air Transport Service Report on Exercise BIG SLAM and BIG SLAM/PUERTO PINE*, 20 April 1960. Copy in the Office of MAC History, Scott AFB, Illinois.

26. Quoted in Miller, 276.

27. The problems of creating a separate Air Force have been detailed in Herman S. Wolk, *Planning and Organizing the Postwar Air Force, 1943–1947* (Washington, D.C.: Office of Air Force History, 1984).

28. Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1961–1984* (Maxwell AFB, Ala.: Air University Press, 1989), 2:30.

29. These aircraft became the backbone of the Military Airlift Command's tactical airlift force when mission and resources that had been a part of the Tactical Air Command, Pacific Air Forces, United States Air Forces in Europe, and the Alaskan Air Command were merged into MAC. See Jeffrey S. Underwood, *Military Airlift Comes of Age: Consolidation of Strategic and Tactical Airlift Forces under the Military Airlift Command, 1974–1977* (Scott AFB, Ill.: Office of MAC History, 1989).

30. Martin Caiden, *The Long Arm of America: The Story of*

*the Amazing Hercules Air Assault Transport and Our Revolutionary Global Strike Forces* (New York: E. P. Dutton and Co., 1963).

31. History, Military Air Transport Service (MATs), January–June 1962, 50–57; AFP 190-2-2, 27; Headquarters MAC Management Information Summary, "Aircraft Performance and Characteristics, Tactical Airlift Turboprop," February 1990.

32. AFP 190-2-2, 30; Futrell, 2:47.

33. Walter L. Kraus and Jose M. Matheson, *C-141 Starlifter* (Scott AFB, Ill.: Office of MAC History, 1973), 1–2.

34. Futrell, 2:627.

35. Acquisition testing involves three phases or categories. Category I consists of the development, testing, and evaluation of individual components. Although under the oversight of the Air Force Systems Command, the contractor is mainly responsible for these tests. Category II tests and evaluates the integration of the subsystems as well as tests the complete system under near operational conditions. This category is primarily an Air Force effort with participation from the contractor. Category III determines the capability of the systems/equipment in terms of operational tactics, techniques, doctrines, or standards. It also determines deficiencies or limitations and evaluates the logistics system capability. The using command conducts this test phase.

36. Kraus and Matheson, 69, 73, 110, 111, 153–67, 384, 410.

37. History, Military Airlift Command (MAC), July 1965–June 1966, 429–38.

38. Mary L. Whittington, *EAGLE THRUST* (Scott AFB, Ill.: Historical Services and Research Division, Office of MAC History, 1969), 1, 6–8, 43.

39. For insightful discussions of how Congress has changed the manner in which it deals with defense issues, see James M. Lindsey, "Congress and Defense Policy: 1961–1986," *Armed Forces and Society* 13 (Spring 1987): 371–401; Edward A. Kolodziej, *The Uncommon Defense and Congress, 1945–1963* (Columbus: Ohio State University Press, 1966); Craig Liske and Barry Rundquist, *The Politics of Weapons Procurement: The Role of Congress* (Denver: University of Denver Press, 1974); Raymond H. Dawson, "Congressional Innovation and Intervention in Defense Policy: Legislative Authorization of Weapons Systems," *American Political Science Review* 55 (March 1962): 42–57.

40. Arthur M. Schlesinger, Jr., *A Thousand Days: John F. Kennedy in the White House* (Boston: Houghton Mifflin, 1965); Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961–69* (New York: Harper and Row, 1971); Robert S. McNamara, *The Essence of Security: Reflections in Office* (New York: Harper and Row, 1968); William W. Kaufmann, *The McNamara Strategy* (New York: Harper and Row, 1964).

41. Bernard Brodie and Fawn M. Brodie, *From Crossbow to H-Bomb*, rev. ed. (Bloomington: Indiana University Press, 1973), 281–85; Gerard H. Clarfield and William M. Wiecek, *Nuclear America: Military and Civilian Nuclear Power in the United States, 1940–1980* (New York: Harper and Row, 1984), 232–37; David Schwartzman, *Games of Chicken: Four Decades of U.S. Nuclear Policy* (New York: Praeger Publishers, 1988), 67–99.

42. Gen Howell M. Estes, Jr., "The Revolution in Airlift," *Air University Review* 17 (March–April 1966): 4.

43. *Ibid.*, 6.

44. *Ibid.*, 6–9.

45. Gen Howell M. Estes, Jr., "Modern Combat Airlift," *Air University Review* 20 (September–October 1969): 12–25.

46. Richard P. Hallion, "Circling for War: Perspectives on Research, Development, Acquisition, and the Decisionmaking Environment of the 1980s," *Air University Review* 27 (September–October 1986): 46–62.



## Ricochets

*continued from page 3*

all supervisors—will emerge from the closet and support Colonel Ullman's recommendations. Who can possibly disagree with his conclusion that "the Air Force needs to send a consistent message"?

**Lt Col C. J. Bohn III, USAF**  
Maxwell AFB, Alabama

I have to admit that I was extremely reluctant to ever open the cover of another issue of *Airpower Journal* after reading General Smith's deeply disturbing article "How to Get Promoted" in the Spring 1990 edition. However, the large quantity of negative responses you received and published confirmed my suspicion that there is a legion of USAF officers who are not solely careerist-oriented and who resent the implication. The general's response in which he (unsuccessfully) defended the importance of good manners in today's Air Force many of my contemporaries found humorous, although I assume it certainly was not intended to be.

I have just finished reading the Fall 1990 issue of APJ. Perhaps the crowning achievement in this edition was [Lt Col Bruce] Ullman's outstanding article "Officer Professional Development for Lieutenants." In addition to being both enriching and thought-provoking, from my perspective it is right on the mark. Much needs to be done to develop officers during the critical years before promotion to captain. Colonel Ullman points out how woefully inadequate the USAF is in this area compared to the Army and Marine Corps, but I think a key difference exists between the services that needs to be addressed.

I am a 1984 ROTC distinguished graduate. I completed Squadron Officer School by both correspondence as a second lieutenant (before the current grade restrictions) and in residence as a captain. Prior to the resident program, I also attended a three-day PACAF-sponsored lieutenant's professional development program (LPDP) in 1989. I found all of these courses informative, and I continue to attempt to relate the course material to my day-to-day duties and decision making.

I have been commander of a detachment composed of 30 enlisted personnel for approximately 15 months. As a third-year captain, I am somewhat of a rarity in today's Air Force.

Both the Army and Marine Corps have the advantage of placing their lieutenants almost immediately in responsible positions of leadership; that is, leading men, not just managing resources. During this period, the officer's trials and tribulations, successes, and failures are experienced at an age and time in his career where this practical experience will prove invaluable to him later on. Additionally, when the inevitable mistakes are made, they will more often than not be those from which he can recover without undue damage to his future and without any associated stigma attached to him personally.

Compare this to today's Air Force where it is not at all unusual to achieve the rank of captain or even major without ever acting as a supervisor or rater, or ever filling out one performance report (with the possible exception of one's own). This has been attributed to both the flying duties of many young officers and to the very technical nature of many of the USAF officer career fields. Many times it is simply not possible to provide this practical leadership experience, which arguably cannot be duplicated in any PME course.

So, by the time this captain or major with minimal leadership experience is thrust into a commander's billet, any opportunity is lost to properly train and provide feedback on his leadership abilities in a practical setting. He is now in a position where he must perform in a competent manner, where those in his command are directly affected by his day-to-day decisions. The welfare of his people, not to mention the combat effectiveness of his unit, is dependent on his ability to properly assume his leadership role.

Are we wrong in assuming a senior captain or major can immediately take command of a unit without any prior leadership experience? Are we causing reluctance on the part of newly designated commanders to be decisive because they are ill prepared to make the tough decisions in a timely manner? Is the Air Force somehow encouraging a one-mistake mentality by not providing adequate training to future commanders?

**Capt Marc F. Stratton, USAF**  
Clark AB, Republic of the Philippines

## STEALTH LESSONS

Concerning Capt James Patton's intriguing article "Stealth Is a Zero-Sum Game ..." in the Spring 1991 issue, who would have thought



you could draw operational parallels between the SSN and ATF? I can't wait to read the letters to the editor! Bravo for publishing an intellectually stimulating (dogma-shaking) article!

**Maj Paul D. McVinney, USAF**  
Tinker AFB, Oklahoma

### DESERT STORM RESCUE LESSONS

I read Capt Ed Westermann's article on the Air Rescue Service in the Fall 1990 issue with interest. Having just returned from seven months in Saudi Arabia, I believe Desert Storm has put air rescue in a new light, and in these times of reduced budgets it would not appear to be a very bright one. With the overwhelming success of the tactical air forces one must ask if a newly rejuvenated Air Rescue Service is really warranted or could the mission be performed by Special Operations Forces (SOF) and spend the money elsewhere?

The Special Operations Component of Central Command (SOCCENT) was responsible for combat search and rescue (CSAR) during Desert Shield/Storm. Air Force, Army, and Navy special forces of this joint component were used to support the CSAR mission (only pararescue specialists and a few staff billets from Air Rescue Service were in theater). At the outset, SOF helicopters were assigned CSAR as their primary mission, and as it became obvious that "shootdowns" would be few and far between, helicopters and fixed-wing assets were released for the other "traditional" SOF missions. With only a handful of viable rescue missions, CSAR could perhaps be permanently assigned as one of SOF's missions and the money saved could be spent on revitalizing the rescue world.

Captain Westermann discussed all new equipment necessary for the rescue vehicle of the future. Virtually all that equipment is on the MH-53 PAVE LOWs serving in the Middle East and several SOF MH-60s are in the "mod" line for much of it as I write! It all worked as advertised and was absolutely critical to our success. Unfortunately for Air Rescue Service, the Air Force cut the HH-60D Night Hawk five years ago!

With lessons learned fresh in our memory, perhaps we should look to the future with a more open mind and combine this mission under SOF and put the money saved into other projects like the V-22 or something more versatile. Several missions necessary for the ground phase were flown by helicopters 200 miles into Iraq. Rescue helicopters, even new

ones, would not be capable of doing it. And since 200 miles equates to three and one-half to four hours behind enemy lines, the V-22 or a heavy-lift alternative may prove to be a more viable alternative because of its speed and should be revisited again for the future.

Air Rescue Service has a proud and honorable history. I'm proud to have served three tours in the Aerospace Rescue and Recovery Service (ARRS), but the time has come to look realistically at the limited monies available and not duplicate or, worse, buy something less capable than we already have today.

**Capt Paul R. Harmon, USAF**  
Hurlburt Field, Florida

### COIN CONSENSUS

I read with great enthusiasm the article in your Spring 1991 issue entitled "The Other Side of the COIN: Low-Technology Aircraft and Little Wars." Too often over the course of my two-year tour in Latin America I witnessed nations plagued by determined Communist insurgencies waste precious and extremely limited resources on some of the world's most sophisticated fighter aircraft totally ill suited to the COIN role. Peru, a nation on the verge of economic collapse, provides a perfect example. While the nation is threatened by two separate guerrilla armies, the Peruvian Air Force attempts to fly the Mirage 2000. The Peruvians have neither the funds, infrastructure, or skilled personnel to keep these aircraft flying, yet they cling to them as a misguided symbol of their prestige despite the absence of any significant external air threat that would warrant their continued use. Time and again this story is repeated in nations like Columbia, Bolivia, and Paraguay. These nations would be far better served were they to heed some of Captain Morris's advice.

However, I must point out a number of factual errors the article contained. The El Salvadoran air force stations its OA-37 fleet at El Salvador International Airport (Comalapa) and not at Ilopango as was stated in the article. In addition, during the rebel offensive of 1989 Ilopango was attacked several times but was never in any danger of being overrun by the guerrillas. I had the opportunity to visit Ilopango during the rebel offensive and can attest to this firsthand.

Overall I found the article outstanding and, when coupled with Captain Bateman's article in the same issue on the role of tactical air power in low-intensity conflict, provides sub-

stantial food for thought concerning the United States Air Force's role in the "Little Wars" of the future.

1st Lt Robert M. Levinson, USAF  
Scott AFB, Illinois

### LIC CORRECTION

I found Capt Vance C. Bateman's Spring 1991 article, "The Role of Tactical Air Power in Low-Intensity Conflict," both timely and thought-provoking. Certainly, as the Air Force force structure draws down, we need to objectively assess the contribution air power can make to our national security in all areas of conflict. While LIC is viewed by many as the latest Pentagon bandwagon, the Congress has clearly indicated it considers LIC a very real and credible threat and has mandated improvements in the Defense Department's ability to deal with this threat. Captain Bateman's suggestions for improving Air Force LIC capabilities are worth considering.

Unfortunately, his discussion of the LIC concept reflects an all-too-common misconception concerning the Defense Department's role in providing support to insurgent groups and to host-nation counterinsurgency (COIN) operations. The statement "the Department of Defense bears the primary responsibility for insurgency/COIN operations" (page 73) is not accurate. Both national LIC policy and military doctrine state that the US military supports other US government agencies in these areas.

Support to insurgencies is generally conducted as Special Activities within the meaning of Executive Order 12333, "US Intelligence Activities." These activities fall under the authority of the Central Intelligence Agency. On the other hand, there is no such clear-cut designation of authority for support to host-nation counterinsurgency operations. However, according to national LIC policy and military doctrine, such support should take place within the framework of an overall political, economic, informational, and military effort under the oversight of the chief of the US Diplomatic Mission (ambassador), in consultation with his country team.

Lt Col William F. Furr, USAF  
Maxwell AFB, Alabama

### CLAUSEWITZ AND DESERT STORM

Carl von Clausewitz was a soldier and writer in the armies of Europe from 1793 until his death,

at age 51, in 1831. His most significant and lasting contribution was his book *On War*. In this work, which has stood the test of time and study by armies throughout recent history and around the world, he wrote the treatise on the subject. In it he discussed the nature and theory of war, strategy, tactics, and war planning. Its secret was that it was a general, theoretical work and did not succumb to the prescription of dogma or strict rules. In the first chapter of the first book—the only part of the work revised to his satisfaction prior to his death from cholera—he presents the primary elements of war: violence; the dominant role of rational, political policy in shaping it; and the element of chance. His thoughts on these subjects have been the grist for the mills of policy-makers and generals alike for generations.

A main theme, which from all indications would have been emphasized in intended revisions, was the dual nature of war. As an instrument of the political policy of a nation, war can be pursued to its absolute in the complete destruction of the enemy, or it can be applied to attain a more limited concession. This then leads to the most often-quoted contention of Clausewitz "that [policy] must be made absolutely clear, namely that war is simply the continuation of policy by other means." But, unhappily, Clausewitz is probably more often quoted than understood or even read.

In a roundabout way, this brings us to the recent situation in Kuwait. Here, one of the most powerful armies in history was poised for the total destruction of the forces of Iraq, only to be stopped short by the president. But, if war, in the ideal, is violence pushed to the absolute and if the military object of war is the complete destruction of the enemy, why would the United States stop? The answer is that President Bush stopped the army when he decided the political object of the war was achieved. This is not to say that the immediate military object of his commanders there was the same.

But could the president and Clausewitz not be on the same wavelength as far as the goals of the war? For explanation, we can turn to the pages of *On War*, which states that "the political view is the object, War is the means, and the means must always include the [political] object in our conception." So, according to Clausewitz, the military goal should have always been the complete destruction of the armies of Iraq. The political object, in its conception and later in its translation to the reality of the evolving regional and global situation, may well have been something different or

even something less. That the military and political objectives of a war may not be the same, or may diverge after the war begins, is probably intuitive for most. But the furor that ensues when somebody mentions it, regardless of whom, should and probably did surprise most.

The recent statements of Gen H. Norman Schwarzkopf included comment that he was prepared to sweep over Iraq and destroy the enemy force completely. He also indicated that he was stopped short of realizing this goal only by the command of the president. Further, the president's order to suspend offensive operations allowed the remains of the Iraqi army to beat "the mother of all retreats." In light of the explanation of General Clausewitz of the relationship between political and military goals and our constitutional subordination of military power to civilian control, all is as it should be. The president made the determination that what was desired had been achieved and further prosecution of the war would be excess. It was what the general characterized as a "humane and very courageous decision." At that moment, General Schwarzkopf had no option but to comply with the same courage and determination he showed in waging the

war. He probably never entertained a second thought.

Any interpretation of General Schwarzkopf's statements as to his desires conflicting with the will of the president are misinformed. There is no controversy here and by all accounts from the principals, no disagreement either. It seemed to be a fully supported consensus decision. In the Korean War, there was indeed disagreement between a president and his leading commander. There General Douglas MacArthur clearly, publicly, and repeatedly voiced disagreement and displeasure with the policy of President Harry Truman. He was the general and he knew how the war should be planned and prosecuted and on what terms it should end. We all know how that ended; the general was fired. The situation is, however, not analogous here. Any comparison or similarity represented is either bad analysis or bad journalism, or possibly both.

Clausewitz makes the following statement in *On War*: "Policy is the intelligent faculty, war is only the instrument, not the reverse. The subordination of the military view to the political is, therefore, the only thing possible." This is how it is. In history, it may not always have been the case. But in the United States it certainly is, especially today.

Maj Keith P. Hrebenak, USAF  
Wright-Patterson AFB, Ohio



# net assessment

**Chappie: America's First Black Four Star General** by J. Alfred Phelps. Novato, California 94949: Presidio Press, 1991, 333 pages, \$19.95.

The jacket for this book says "that readers will come to know a great American, and realize how one person with conviction and courage can effect positive changes." This is quite an advertisement indeed to entice someone to read about a true American hero and a modern-day Horatio Alger success story. If average readers expect to find nothing more than a good story about Daniel ("Chappie") James, they will not be disappointed. The book is an interesting anecdotal history of the general. However, if readers are serious about American biographies with depth and supportive research, they should save their money. The book is filled with unanswered questions, unsupported accusations, and a strong tendency by the author to rely on a thesaurus more than a dictionary.

J. Alfred Phelps, a retired (1967) Air Force master sergeant and author of two books on blacks in America, begins this work by describing Chappie James's early life in Pensacola, Florida; his college days at Tuskegee Institute (Alabama), where he trained with the Tuskegee Airmen; and his entrance into the segregated Army Air Corps in 1943. Phelps then deviates from his biography of James and devotes 10 chapters—over one-third of the book—to writing about the segregated Army Air Corps, a subject well covered in previously published works. He also makes some serious charges concerning General James.

Central to this portion of the book is the racial segregation under which black officers in the Army Air Corps lived, as well as the conflicts and dissension which segregation produced. Phelps tells of plots to murder two white officers—Lt Col Charles Gayle at Selfridge Field, Michigan, in 1943, and Col Robert R. Selway at Freeman Field, Indiana, in 1945—because the black officers could not tolerate their Jim Crow policies. Phelps claims that James was involved in the aborted plot to murder Gayle and stood by during an especially ingenious, though unsuccessful, attempt on Selway's life. Phelps relates telephone conversations of Maj Gen Frank Hunter,

commander of First Air Force, to his subordinate commanders. These indicate that Hunter demanded that segregation be enforced at all costs in order to provoke the black officers to riot so they could be arrested and shot.

Phelps then tells the story of the 1945 mutiny at Freeman Field, Indiana, by black officers who were barred from the officers' club. While this account is fascinating reading, James is hardly mentioned. There is good reason for this omission—James was assigned to Walterboro, South Carolina, during this period. Indeed, Phelps even admits that James was not involved in the affair, except for carrying a few messages from the arrested officers to newspapers in Washington, D.C. Yet, the author justifies going into such detail about the incident by saying it should be told "if for no other reason than to illustrate the immense obstacles he and his fellow black officers of the time were required to live with and ultimately overcome" (page 146). This subject, however, has already been well covered by Alan L. Gropman in *The Air Force Integrates* (1978).

Phelps also introduces another major black figure of those turbulent years—Lt Gen Benjamin O. Davis, Jr. Davis appears in the book as a "book officer" who is weak and spoken of apologetically for his attempts to maintain order and discipline in his struggle to create good black officers. Phelps intimates that Davis was a disappointment, failing to do more than he could have toward fostering desegregation. Davis's only shining moment in the book is his testimony before Congress, at which time he argued that the 99th Pursuit Squadron should retain its black officers. Phelps contrasts Davis with General James, praising the latter for being "headstrong, irreverent and mischievous," always circumventing the rules. "At least he [James] had the guts to be an 'original' within an aura of military rules and often-boring regulation" (page 163), while Davis believed in forcing black pilots to follow the rules and regulations to prove their place in the Air Corps.

The most disturbing aspect of this book is Phelps's lack of sources and documentation for his assertions. Phelps suggests that Gen Hoyt Vandenberg, Air Force chief of staff, changed his mind on integration simply because James, then a first lieutenant, talked with him on an

airplane ride. Then Phelps says that no one really knows what happened! Moreover, he uses telephone conversations and direct quotes of colonels, general officers, and cabinet officials—often involving extreme racial slurs—to tell of their resistance to desegregation. Not once does Phelps cite his sources for these conversations. No doubt, these conversations could have occurred, but the author should present some sort of supporting evidence.

When Phelps returns to telling the story of Chappie James and his rise through the ranks during the Korean and Vietnam conflicts, he again shares some impressive anecdotes. These include Chappie's standoff with Muammar Qadhafi at Wheelus AFB, Libya; his experiences in combat; and his tremendous popularity in promoting patriotism around the country during the Vietnam War. However, Phelps also makes an interesting assertion concerning James's promotions. Phelps says that General James actually received his fourth star and was appointed commander in chief of North American Air Defense Command by courting congressional influences. Indeed, Phelps indicates several times in the book that although James was a good officer, he had a tendency to put himself and his career first.

Phelps relies on personal interviews and phone calls to tell this anecdotal history of General James. He uses Gropman's work (mentioned above), Alan Osur's book *Blacks in the Army Air Forces during World War II: The Problem of Race Relations* (1977), and Robert Rose's *Lonely Eagles: The Story of America's Black Air Force in World War II* (1976) almost exclusively for his chapters on the segregated Air Corps. Not only is Phelps's book lacking in true research and depth, but also it is littered with inaccuracies, inventive language, and unanswered questions.

The story of Chappie James needs to be told in a scholarly, carefully researched, lucid fashion. This book does not fill that requirement. Phelps attempts to tell two stories—the life of Chappie James and the desegregation of the Air Force. He needs to stick to one or the other and find supporting documentation other than anecdotes and previously published works to tell it. Besides charging, with little documentation, that one of America's four-star generals was a conspirator in two murder attempts, the author seems to praise the alleged acts. Phelps also portrays James as irreverent and a careerist, while also attempting to present him as a man who "made a difference through voicing passionate beliefs in ideals" (book flap). Anec-

dotal biographies have a place; however, this book offers little or no support for some of its accusations. Certainly, this work is nowhere near the level of a serious biography. It attempts to tell too much, makes too many mistakes, and has too little documentation. General James deserves better.

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**War, Peace, and Victory: Strategy and Statecraft for the Next Century** by Colin S. Gray.  
New York 10020: Simon and Schuster, 1990.  
442 pages, \$24.95.

Now that the idealistic enthusiasms of 1989—the end of the cold war, the "evil empire," even history itself—have been cooled by the sobering events on the Arabian Peninsula, the painful process of devising a foreign policy to protect and promote the legitimate security interests of the United States resumes. While most observers have noted the difficulties inherent in creating a stable new world order, few have been willing to discuss the role of military strategy in completing this task successfully.

Although this reluctance to think seriously about how to employ—instead of build—military forces should not surprise us, Colin Gray argues in his splendid primer *War, Peace, and Victory* that strategy is not (perhaps he should have said *should not be*) "in demand solely in times of national peril" (page 9). The title is instructive, for while Gray's principal concern is *military strategy*—"the bridge between military means and political ends" (page 27)—he sees such strategy as essential not only to gaining victory in any future war, but also to maintaining the peace. In a wide-ranging yet closely reasoned work, the author, who is chairman of the National Institute for Public Policy, examines the components that shape all military strategy—about which, perhaps characteristically, Americans are little concerned. Such phenomena as geography, history, and distinctive national cultures—consigned by most of us, including too many Air Force officers, to grammar school or doctoral-level specialization—emerge under Gray's vigorous presentation as vital to the understanding or formulation of effective military policy. A fourth key theme, technology and its impact on war (one much more to the average American officer's taste), receives a rich,



multilayered treatment impossible to summarize adequately in a brief review. The text does highlight, however, our frequent reliance on weapons systems to take the place of a carefully formulated military strategy. Gray's fifth overarching theme is the holistic nature of strategy. In his pithy summation, "Everything pertaining to strategy relates, or at least might relate, to everything else" (page 14).

The author's purpose is not prescriptive but didactic. He holds strong views concerning the follies of our most recent arms control initiatives, the military's continued and often misplaced reliance on new weapons systems, and the relationship between the United States and the Soviet Union—which he sees as essentially adversarial into the foreseeable future. However, he seeks not to proselytize, but to compel the reader to think critically about how military power can be most effectively utilized both in maintaining peace or gaining victory in war. That one should agree with Gray's positions is irrelevant: "What matters is that one should learn to reason strategically" (page 13). To nurture this kind of ability, he provides in nine rich chapters a survey of some of the most important problems facing tomorrow's strategist, including nuclear weapons, the Soviet Union, and the "perils and pleasures of coalition" formulation and employment (pages 245ff.).

*War, Peace, and Victory* is an important book, combining impressive research with a sure grasp of the key issues that must be considered in the making of strategy. Gray makes an elegant and erudite contribution to the long-neglected study of this vital subject. His book should be read, both by those who make our strategy now and by those who will make it in the next century.

Lt Col Gary P. Cox, USAF  
Maxwell AFB, Alabama

**The Challenge of Military Leadership** edited by Lloyd J. Matthews and Dale E. Brown. McLean, Virginia 22102: Pergamon-Brassey's International Defense Publishers, Inc., 1989.

This is an excellent, easy-to-read book that should become a part of every serious officer's professional library. At first blush, some Air Force personnel may not recognize the importance of a book published by the Association of the United States Army's (AUSA) Institute of Land Warfare, but the institute's stated purpose is to enhance professional development in the

military, as well as to promote recognition and appreciation of the profession of arms.

Matthews and Brown have pulled together 15 articles to discuss the foundations and ethical dimensions of leadership, to define leadership at various levels of war, and to provide case studies of combat command and the "larger vision" required of a major general. Each article has been published in *Parameters*, one of the US Army's professional journals, between 1974 and 1989.

Space does not permit a detailed discussion of each article, although I will highlight some items with the hope of inspiring a complete reading of the book's 162 pages. If you can't find the time, however, I encourage you at least to read the eight-page introduction by retired Lt Gen Walter E. Ulmer, Jr. He superbly captures the essence of each author's argument and ties them together into a coherent whole. Additionally, he warns, "It is possible that we study too much the giants of military history (who may be born rather than made) and too little on the performance of the sergeants, captains, and colonels on whose collective shoulders so much rests" (page xiv). Not surprisingly, perhaps, he reminds us that tailoring leadership styles is such a challenge because "military leadership remains basically an exercise in human motivation" (page xi). In three years as a squadron commander, I certainly found this to be true.

The editors' selection of General of the Army Omar Bradley's article "On Leadership" to lay the cornerstone was truly inspired. We should all appreciate Bradley's admonition that "the test of a leader lies in the reaction and response of his followers. He should not have to impose authority.... He must make his influence felt by example and the instillation of confidence in his followers" (page 3). Some Air Force readers may be surprised at General Bradley's moral to an anecdote about a corporate vice president's lack of success due to his failure to follow through on things, despite his outstanding planning skills: This individual had been only a staff officer in the military; thus, he had "never had the advantage of a command job," so "his training was incomplete" (page 4). I am reminded here of a similar sentiment expressed in Col Roger H. Nye's outstanding book *The Challenge of Command* (another vital entry in the professional officer's library, previously reviewed in the inaugural *Airpower Journal* in 1987). Nye says that "all military officers will perform better in their staff and specialist roles if they see their work through the eyes of the



commander . . . understanding . . . his responsibilities and needs" (page viii). By knowing how we contribute to mission accomplishment (fly, fight, and win), we—as members of the aerospace and Department of Defense teams—should be able to maximize our potential. However, vital to that success and an "essential qualification of a good leader is the ability to recognize, select, and train junior leaders" (page 5). I'm not so sure we do that very well in the Air Force, especially as we get farther away from the flight line. Nonetheless, understanding and sound application of these points will contribute to a more cohesive effort.

This outstanding book contains historical anecdotes and illustrative discussions meant to be saved, savored, and applied. They are far more numerous than I have space to recount. For example, noted historian Dr Jay Luvaas provides wonderful insights from Napoleon's art of command. Here is one maxim (of many) that most people have heard: "An army of lions commanded by a deer will never be an army of lions." Clearly, the successful coalition forces and their counterpart Iraqi conscripts and Republican Guards who fought in the Gulf war of 1991 can appreciate the verity of this comment when they compare Gen Norman Schwarzkopf to Saddam Hussein.

The thoughtful piece by Lt Col John T. Nelsen II on the origin of mission-type orders (loosely termed *Auftragstaktik*) in nineteenth-century Germany includes the observation that Gen George Marshall "often issued students foreign or outdated maps, provided only sketchy intelligence, and compelled them to make their own decisions by cutting off communications with higher headquarters" (page 35). Reflect for a moment on the inevitable critiques of peacetime exercises and operational postmortems from operations Urgent Fury, Just Cause, and Desert Storm. Then turn the page to read that an antidote to a commander's insecurity and overcontrol is a "top-down command climate which deliberately tolerates the possibility of greater tactical error in confident expectation that the resulting explosion of initiative . . . will provide a massive multiplication of combat effectiveness at the operational level" (page 36). Yet, how often have we lamented the existence of micromanagement in the Air Force? Will "lessons" from Desert Shield/Storm support or refute the validity of this hopeful-sounding antidote?

Although this book has an Army flavor (12 of the 20 people associated with it are West Point graduates; 10 are Army War College graduates),

its principles clearly transcend service parochialism. Any successful commander today must be a student "of people and what motivates them; of weapons systems; of the enemy; of tactics; and of military history" (page 53). As we return to a "peacetime" Air Force and look for suitable role models in life and in history to guide our professional development, we should reflect on General Ulmer's penultimate comment: "If getting our leadership ducks in order—creating climates, expectations, and routines that will optimize our warfighting capabilities—is not the absolute first order of the day, I do not know what is" (page xviii). This is the key point that the editors are trying to drive home. It is one that we must never forget while we reduce the force, do "less with less," yet still provide the forces necessary to defend the nation. Amen!

Lt Col C. J. Bohn III  
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**The Lessons of History** by Michael Howard.  
New Haven, Connecticut 06520: Yale University Press, 1991, 217 pages, \$27.50.

Sir Michael Howard, Regius Professor of Modern History at Oxford before retirement brought him the Lovett Professorship of Military and Naval History at Yale, is one of the world's best-known military historians. Others have written more deeply researched monographs than he, many have written more popular histories than his, and some have provided more significant insight into strategic, operational, and civil-military relations than Howard. His particular genius is the essay filled with insights, bon mots, and entertaining asides that delight both the listening and reading audiences. *The Lessons of History* continues the reputation for excellence he began in earlier collections of his essays such as *Studies in War and Peace* (1971) and *The Causes of Wars and Other Essays* (1983).

This volume contains 13 essays written mostly during his Regius professorship (1980–89); they deal with two levels of historical inquiry. The first level concerns theoretical matters—the lessons of history—which are contained mostly in the first and last papers (his inaugural and valedictory lectures, respectively, in the Oxford chair). The second level concerns analytical matters—the application of historical tools to the analysis of past events—which in this case concentrate on develop-

ments mostly in the nineteenth and twentieth centuries.

Many of the latter deal with large themes such as the impact of military experiences upon literature, the role of Prussia in European history, and the impact of war on social change. Others reflect Sir Michael's latest interest in the intellectual aspects of fin-de-siècle Europe that led to the outbreak of World War I. Central to this inquiry is his famous essay entitled "Men against Fire: The Doctrine of the Offensive in 1914." Whatever the topic of these essays, the reader will profit from their literacy and perspicacity.

But it is the "lessons of history" that dominate the entire collection: "Far more than poets can historians claim to be the unacknowledged legislators of mankind; for all we believe about the present depends on what we believe about the past" (page 13). Such a charge requires the scholar to approach the past with caution. Evidence is incomplete and contradictory, the past is a foreign country to which we bring intellectual baggage that distorts reality, and history and historians can be used to create and perpetuate myths that can cause great damage to mankind.

History is not the unfolding of some divine, nationalistic, progressive, or ideological creed. Rather, it is a process, and for the past two centuries it has been a process of modernization that is filled with both beneficial and frightful consequences. Once we understand, Sir Michael concludes, that "the real justification for the study of history is process," then we can proceed to "discover what we have been, what we are, and gain intimations of what we might become" (page 199). The end is not necessarily a happy one; the outcome "depends on our skill in using that capacity for reason and judgement which has already brought us so far: reason and judgement both educated and created by historical experience" (page 200). Sir Michael's *Lessons of History* represents assignments that we should all learn and benefit from.

David Curtis Skaggs  
Bowling Green, Ohio

**Countdown!** by Fred Koger. Chapel Hill, North Carolina 27515: Algonquin Books of Chapel Hill, 1990. 183 pages, \$18.95.

Fred Koger, a bombardier with the US Eighth Air Force in World War II, has a simple story to tell. He does so in a very straightforward, unpretentious manner in *Countdown!*, an account of his 35 daylight missions in a B-17 in late 1944 when the Eighth Air Force was at the peak of its power.

Basic arithmetic shows that, on the average, he flew only once every five days. This meant that he had a lot of time to do other things. Trips to London were at the top of the list of favorite pastimes. Of course, much of his time on the ground was spent in a nerve-racking wait for his name to come up in the daily flight rotation. Koger does an excellent job of pointing out that an aircrew member's life was full of fairly routine, often monotonous, activities when he was not flying. In this sense, Koger paints a picture far more realistic and complete than the sensationalized versions produced by Hollywood.

Although Koger's pleasure trips to London are certainly colorful, they are not the primary reason for reading *Countdown!*. Koger is at his best in describing the anxiety and fear one feels when facing the prospect of a particularly horrifying death—not once, but 35 times. By late 1944, the Eighth could put 1,000 heavy bombers over Germany day after day with heavy fighter escort to protect them. The loss rate had dropped from the disastrous levels of 1943 to an acceptable plateau. However, acceptable did not mean no losses—just fewer losses. As if they were in a crazy game of roulette, some men seemed destined to make it home, and some seemed destined to die.

In the back of the author's mind was always the fear that the next mission would be his last. Koger eloquently describes the sense of loss he felt when he returned from London to find that his bunkmates had been shot down in his absence. His feeling of horror was compounded by the fact that this was the crew he had originally been assigned to fly with. But for a twist of fate, he would have died with them.

Readers interested in the air war's big picture should look elsewhere. *Countdown!*'s strength is in describing life at the cutting edge of the air campaign against Germany—days of monotony punctuated by moments of sheer terror. Koger has done a fine job of helping us feel what it was like to have been there, if only vicariously.

Maj James C. Ruehrmund, Jr., USAFR  
Richmond, Virginia

# notams

*Notices of upcoming conferences, seminars, and other professional events of a noncommercial nature should be sent to the Editor, Airpower Journal, Walker Hall, Bldg. 1400, Maxwell AFB AL 36112-5532. We reserve the right to edit material for length and editorial content.*

## **Air University Review Index**

The Air University Press has published a complete index of the *Air University Review* (1947-87). This reference work contains an author index, a title index, and a cross-referenced subject index. Any Air Force or other government organization, college or university library, or similar organization with a need for this index can be placed on distribution. Requests for distribution and other inquiries should be addressed to Capt John Doherty, AUCADRE/RI, Walker Hall, Bldg. 1400, Maxwell AFB AL 36112-5532. Captain Doherty can also be contacted at DSN 493-6629 or (205) 953-6629. Base libraries may contain copies of previously published issues of *Air University Review*.

## **Uniformed Services Medical School Training**

The Uniformed Services University of the Health Sciences is seeking students for its medical training and graduate medical-education programs. Medical students are commissioned as ensigns or second lieutenants and draw full military pay and benefits. There is no tuition, and all books and equipment are provided. At graduation, students are promoted to naval lieutenant or captain and have a seven-year service obligation. Both civilians and military personnel with a college degree may apply for the four-year medical program. Applicants must be no older than 27 (or 33 with prior military experience) when they enter school. The university also has a graduate program in basic medical sciences open to civilians and military. Civilians are not commissioned into the military. Graduate students serve as teaching and

research assistants. For more information, contact the Office of Admissions, Attn: PAC, Uniformed Services University, 4301 Jones Bridge Road, Bethesda MD 20814-4799 or call (202) 295-3106.

## **USAFA Instructor Opportunities**

The Military Studies Division at the United States Air Force Academy is seeking highly qualified captains for instructor duty. This duty involves motivating and teaching cadets in university-level courses that stress air power, the art of war, military theory, doctrine, and force employment. Since its inception in 1980, the curriculum in professional military studies has evolved into one of the most interesting and demanding areas of study at the academy. A master's degree is required of all applicants. Preferred degrees for military studies instructors are in history, military history, political science, and international relations, or in area studies of the Soviet Union, Eastern Europe, or the Middle East. Experience in tactical or strategic operations or in operationally related specialties is highly desirable. The division can sponsor a few highly qualified applicants with the appropriate background for a master's degree through the Air Force Institute of Technology (AFIT), with a follow-on assignment to the Military Studies Division. Applicants should have three to seven years of commissioned service, an outstanding military record, and impeccable military bearing and appearance. Interested individuals should consult chapter 8 of AFR 36-20, *Officer Assignments*, for application procedures or write Capt Jeff Cohen, Headquarters USAFA/CWIS, USAF Academy CO 80840-5421 or call DSN 259-3257/3248.



### Historical Research Center Grants

The United States Air Force Historical Research Center (USAFHRC) announces the availability of research grants to encourage scholars to study the history of air power through the use of the center's US Air Force historical document collection, located at Maxwell AFB, Alabama. Applicants must have a graduate degree in history or related fields, or equivalent scholarly accomplishments. Their specialty should be in aeronautics, astronautics, or other military-related areas. Residents of Maxwell AFB are not eligible. Topics may include—but are not restricted to—Air Force history, military operations, education, training, administration, strategy, tactics, logistics, weaponry, technology, organization, policy, activities, and institutions. Preference will be given to those proposals that involve the use of primary sources held at the center. Applicants may request an application from the commander, USAF Historical Research Center, Maxwell AFB AL 36112-6678. The deadline for submission of application is 31 October 1991.

### New Publications from Air University Press

Air University Press announces the release of *Setup: What the Air Force Did in Vietnam and Why* by Dr Earl H. Tilford, Jr.

Dr Tilford, a retired USAF intelligence officer takes a critical look at how the Air Force flew and fought in Southeast Asia. He argues that although the Air Force effectively applied air power in particular places at particular times

(e.g., Khe Sanh and An Loc), it was unable to devise a strategy and doctrine that reflected the nature of the conflict in Southeast Asia. Tilford surmises that the Air Force's institutional experience and the mind-set of its leadership doomed it from the beginning to expect much but achieve little with air power. He points out that the 94-targets list devised by the Air Staff was deeply rooted in the mind-set of the strategic bombing offensive plan that emerged during World War II. The Air Force leadership firmly believed in the efficacy of that strategy. Air Force doctrine, rooted as it was in the World War II experience and leaders, prevented the generals from realizing that Vietnam was a far different war and that North Vietnam did not have a clearly defined center of gravity (i.e., a modern industrial and transportation infrastructure that supported the war machine of North Vietnam).

Other recent books and monographs:

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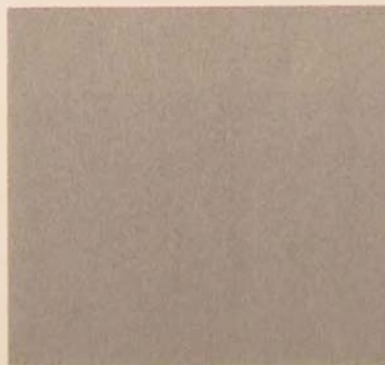


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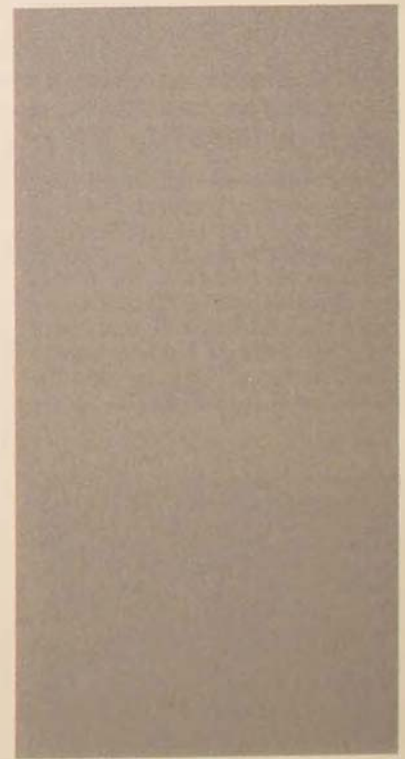
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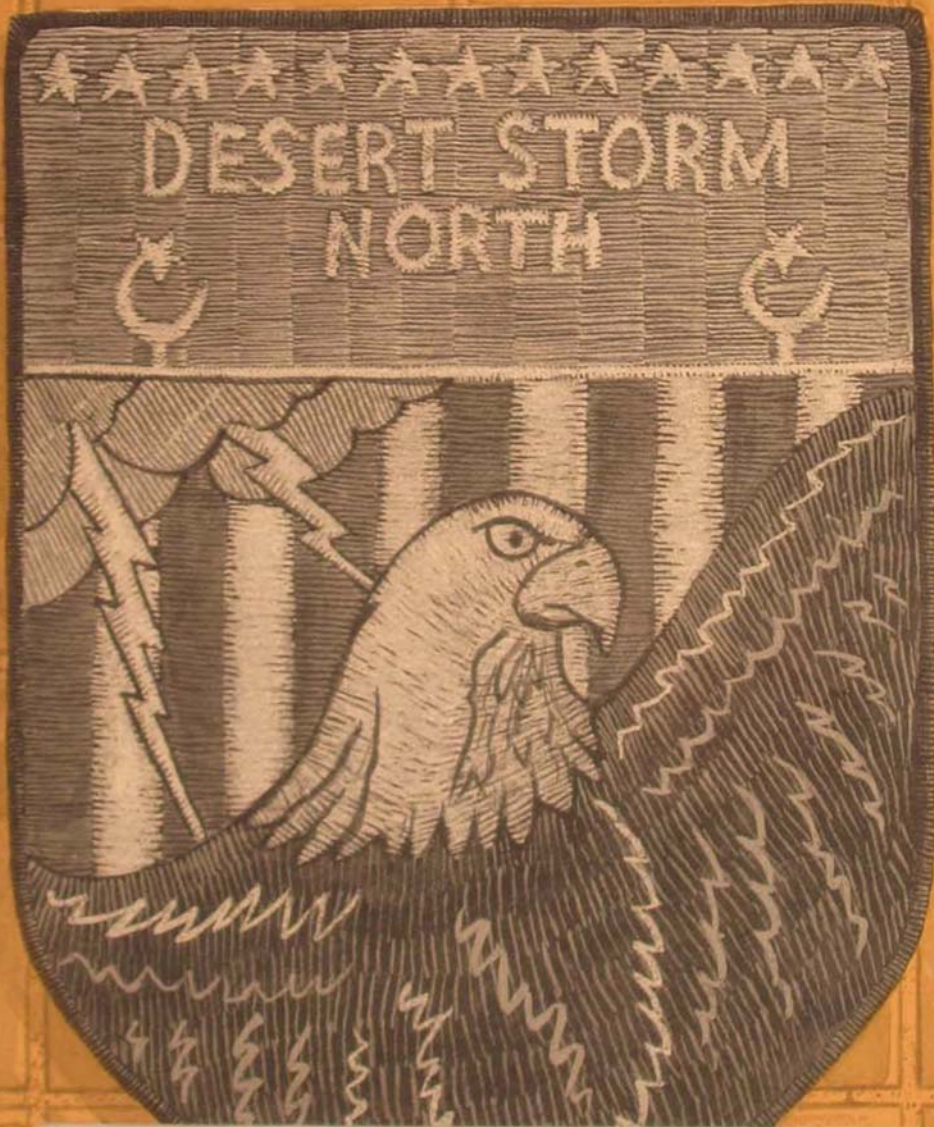


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