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- **Civil Engineering Combat Support Doctrine**
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EDITORIAL

Trilevel Thinking

AS THE STORY* goes, the chief of a tribe that lived deep in the jungle decided to move his village to another location. Because the jungle was so thick, however, the tribesmen would have to hack their way through it. The elders devised a thorough training program in the latest, most effective, and most efficient uses of their machetes, which were made of the best steel. They selected and trained some individuals to keep the blades razor-sharp and assigned others to provide food and shelter for the ever-advancing machete crews.

On the day the project began, the elders assembled their crews and gave them instructions. At first they worked slowly, but as the day passed, their training began to pay off, and they made good progress. As the machete wielders perfected their craft, they were able to work well beyond expectations. Elated, the elders regularly sent out scouts to check the jungle terrain and used this information to maneuver their crews accordingly.

After work had continued apace for several weeks, the chief came to check the crews' progress. Looking concerned, he climbed the tallest tree, shaded his eyes from the bright sun, looked around, and shouted down to the people, "You're going in the wrong direction!"

In this quaint but effective story, we find examples of three levels of thinking that are required in every human endeavor and that are especially important to the profession of arms. At the lowest level are the machete wielders, who do the work.

* Adapted from a story told by Dr Stephen R. Covey at the Quality Air Force Symposium of 1993.

The military equivalent of this task is the tactical level of war. At the next level—the operational level of war—commanders make decisions, based on the best available information (intelligence), about where and when to employ tactical capabilities. Operational art entails both the wise application of one's strengths against the enemy's weaknesses and the shielding of one's weaknesses from the enemy's strengths. Finally, overall purpose and broad guidance are developed at the strategy/policy level.

In our story, things got out of hand because of a failure to communicate strategy/policy objectives. The chief made his overall objective—moving the village—clear enough but neglected to give the operational-level elders directions to the new location. Although the elders effectively prepared and equipped their workers, obtained intelligence, made great operational-level decisions, and commanded and controlled the crews to move efficiently through the jungle, they failed to be sure about where they were going. In short, the elders succeeded in every aspect of their job but one. Unfortunately, in war, the enemy is not a stationary jungle but a living, breathing, thinking being—fully capable of striking forces heading in the wrong direction.

The pages of this journal are devoted to developing the ability to think and act at the operational level of war, with emphasis on the application of aerospace power at that level. However, all of us in the military—no matter the level of our assignments—must spend some time at each level of thinking, lest we place our mission at risk. RBC

Letters to the editor are encouraged. All correspondence should be addressed to the Editor, Airpower Journal, 401 Chennault Circle, Maxwell AFB AL 36112-6428. We reserve the right to edit the material for overall length.

INDUSTRIAL STRATEGY STRIFE

"A New Defense Industrial Strategy" (Fall 1993) contained some valid recommendations but failed to address some of the most important issues that the acquisition community will face in the coming years.

The author feels that the acquisition solution to the force structure reductions is to slow down production rates to a steady rate of one squadron a year. This has two major problems: first, that rate is well below an economical production rate (lower rates would drive unit cost higher); second, the gap introduced between existing systems and new systems (as in the author's F-15/F-22 example) places a significant combat capability shortfall in those transition years. Decreasing production rates to the level suggested would force companies to move away from economical production lines to more labor-intensive processes because they would be unable to justify investments in automated processes for such low rates. The gap that the author feels could be filled with service life extension programs would be costly and would not allow the forces to meet existing threats. Incorporation of new technologies to meet new threats is difficult on 20-year-old airframes (as in the author's F-15/stealth example).

The author equates "lean production" with reduced capability and smaller production lines. Currently, implementing lean production techniques into production lines is an ongoing goal of Air Force programs, but it will be more difficult when production rates are very low. The optimum size for a production run (meaning least cost, fastest production, and best quality) should not be determined artificially, based upon programmatic concerns, but

should follow the industry's needs to implement modern production techniques. This would require a Department of Defense (DOD) commitment to establishing good programs and then funding them to the required level. The author misses a major point: the ability of the American aerospace industry to meet the needs of DOD is most threatened by inconsistent, inadequate, and unpredictable funding.

Recent trends in annual budget drills make it impossible for programs to implement efficient development and production schedules. Aerospace companies typically plan their budgets five, 10, and 20 years in advance, yet DOD continues to fund for only one year. Past efforts to implement multiyear funding were good, but in the end they fell short since the process could never seem to give funding control to the responsible program officials.

The concept of encouraging foreign military sales to fill production gaps is flawed because it fails to acknowledge the impact of technology transition to other countries. It would not be prudent to make F-22 technology available to countries based solely on the need to help production quantities. These decisions need to consider the international situation, the technology involved, and the impact of a new weapon system on a political region.

One last point made by the author greatly misses the mark. While it is true that the services' depot structure is oriented around the cold-war threat, destroying that capability in the interest of economy could seriously impact our ability to regenerate forces on short notice. If periodic maintenance contracts were competed on a yearly basis, there would be no continuity in the life of the system. The services would be faced with a new logistics support team every two or three years. The current depot structure, although in need of repair, gives the service continuity in the care and feeding of aging weapon systems. The author feels we could keep a war production capability by competing the depot work, but the reality is different. In the pre-World War II

continued on page 71

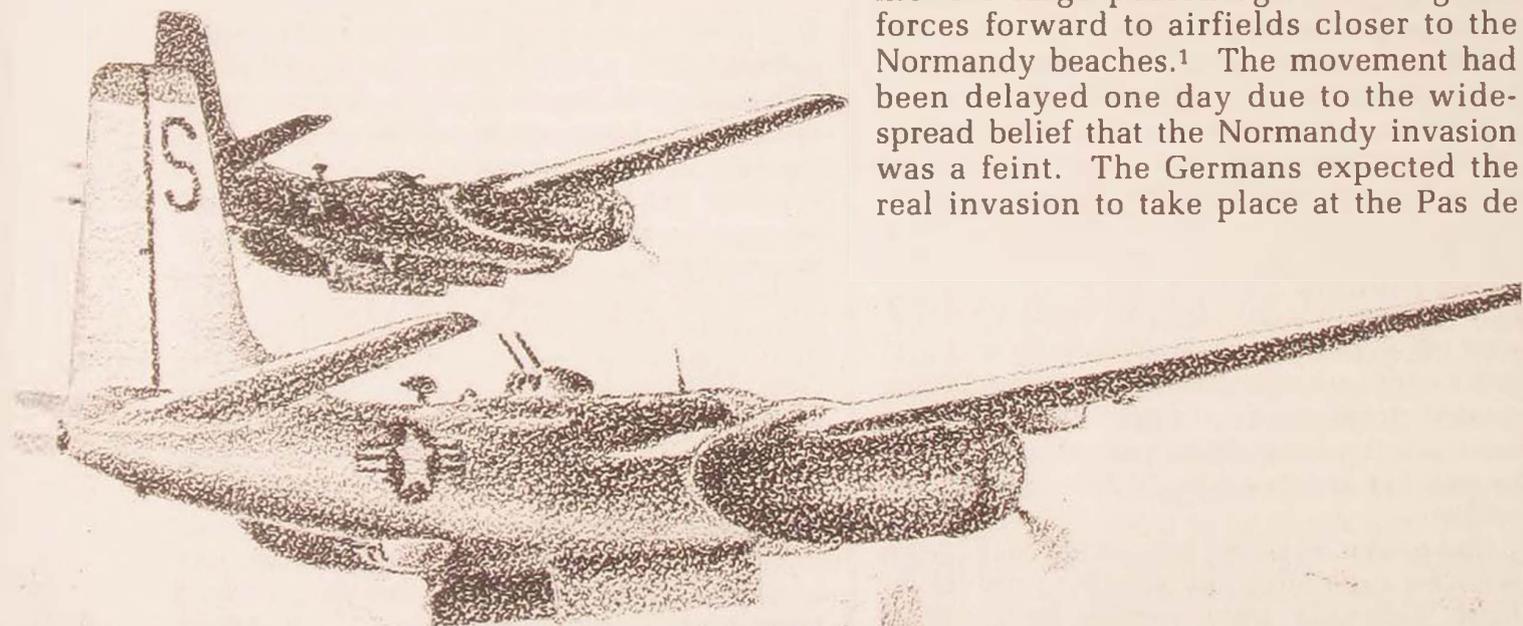


DROHENDE GEFAHR WEST

The Pre-Normandy Air Campaign

LT COL MARIS MCCRABB, USAF

ON 7 JUNE 1944, under the German code name *Drohende Gefahr West* ("Imminent Danger West"), the Luftwaffe started to move a large percentage of its fighter forces forward to airfields closer to the Normandy beaches.¹ The movement had been delayed one day due to the widespread belief that the Normandy invasion was a feint. The Germans expected the real invasion to take place at the Pas de



Calais. Less than two weeks later, those same units—bloody and largely decimated—returned to Germany to shore up the defense of the Reich.² Meanwhile, the German Fifteenth Army, also being held for an invasion at the Pas de Calais, had attempted to move towards the Normandy landing sites. Its movement was hampered by destroyed bridges and devastating and relentless attacks by Allied air power.³

The purpose of this article is to examine the air campaign that ensured the success of the Normandy invasion (Operation Overlord). Too often this campaign is relegated to the backwaters of larger studies dealing with the strategic bombing of Germany. Further, analysis of this campaign often becomes a discussion of the personalities and ideological issues that framed the “transportation plan” versus the “oil plan.” We will not ignore these important issues. Rather, we will attempt to place them in the larger context of the need to ensure the success of the largest amphibious landing ever attempted.

The relevance of studying this campaign is not to glean tactical or even operational guidelines for future campaigns. Rather, the lessons learned from this operation focus on the *process* that Allied planners used to put together such a massive undertaking. It is my contention that the process is what is important and that process applies to operational-level cam-

paign planning today. In that light, this article analyzes the Overlord air campaign using a current air campaign planning model.⁴ It looks at the objectives of the campaign and at the strategy that planners chose to achieve those objectives, including why they selected one of many possible choices. It then turns to the planners’ center of gravity⁵ analysis that identified key chinks in the German armor and how planners weighed the pros and cons of attack versus denial or exploitation of those chinks. The article then turns to the actual campaign plan itself. It looks at counterair operations, strategic attack operations, interdiction plans, and air support plans for the invasion.

There was no named “campaign plan” for air support of the invasion. Operations Pointblank,⁶ Crossbow,⁷ and Argument⁸ were all previously conceived and executed to at least partially achieve Overlord objectives. In like manner, there is no particular “starting” or “ending” point to the invasion support air plan. This study examines the period from January 1944 through the consolidation of the beachhead on 12 June 1944.

Objectives of the Allied Air Plan

Determining the objective is the most important part of campaign planning. The



primary air mission in the air plan for Overlord, issued on 23 April 1944, was "the attainment and maintenance of an air situation in which the German Air Force would be incapable of interfering with the Allied landings."⁹

In the directive issued to the commanders of his strategic air forces on 17 April 1944, Gen Dwight D. Eisenhower listed the tasks for the Allied Air Forces: to assist the Allied armies in establishing a lodgment; to maintain the combined bomber offensive; to secure and maintain air superiority; and to attack rail communications in the Overlord area.¹⁰ These tasks mirror those set forth in Field Manual (FM) 100-20, *Command and Employment of Air Power*, which was formulated largely on the experiences of the US Army Air Forces in the North African campaign of November 1942–May 1943.¹¹

Strategy

There is a fine line between objectives and strategy. What one wants to achieve is largely predicated on how it can be achieved. While there was a large degree of unanimity on the Overlord objectives, there was strong disagreement on the means to attain these objectives. The disagreements centered on two areas. The first was over the method of accomplishing the counterair objective. This disagreement was rooted in whether it was more efficient to destroy the Luftwaffe through destruction of the means of production or to destroy it in aerial combat.¹² Even the latter school had two branches. One branch claimed that the quickest way was through air-to-air combat, while the opposing view was that it was quicker to destroy the Luftwaffe on the ground.¹³ For Overlord, this area of disagreement focused on the conception of Air Chief Marshal Sir Trafford Leigh-Mallory, commander in chief of Allied Expeditionary Air Forces (AEAF), that the Luftwaffe would be destroyed in one climactic air

battle over the Normandy beaches. This was opposed by the commanding general of the United States Strategic Air Forces (USSTAF),¹⁴ Carl A. Spaatz, who wanted to decimate the Luftwaffe through continuance of the strategic bombing campaign against Germany.¹⁵

The second area of disagreement over strategy centered on how the landing beaches were to be isolated from German reinforcement. One side claimed the battlefield should be isolated by attacks on the enemy railway system, specifically railroad marshaling yards.¹⁶ This plan became known as the transportation plan (discussed more fully later). The opposing view believed that the most effective means of isolating the beachhead was through a classic interdiction campaign of attacking locomotives, supply columns, and the like as they moved to counter the Allied invasion.¹⁷

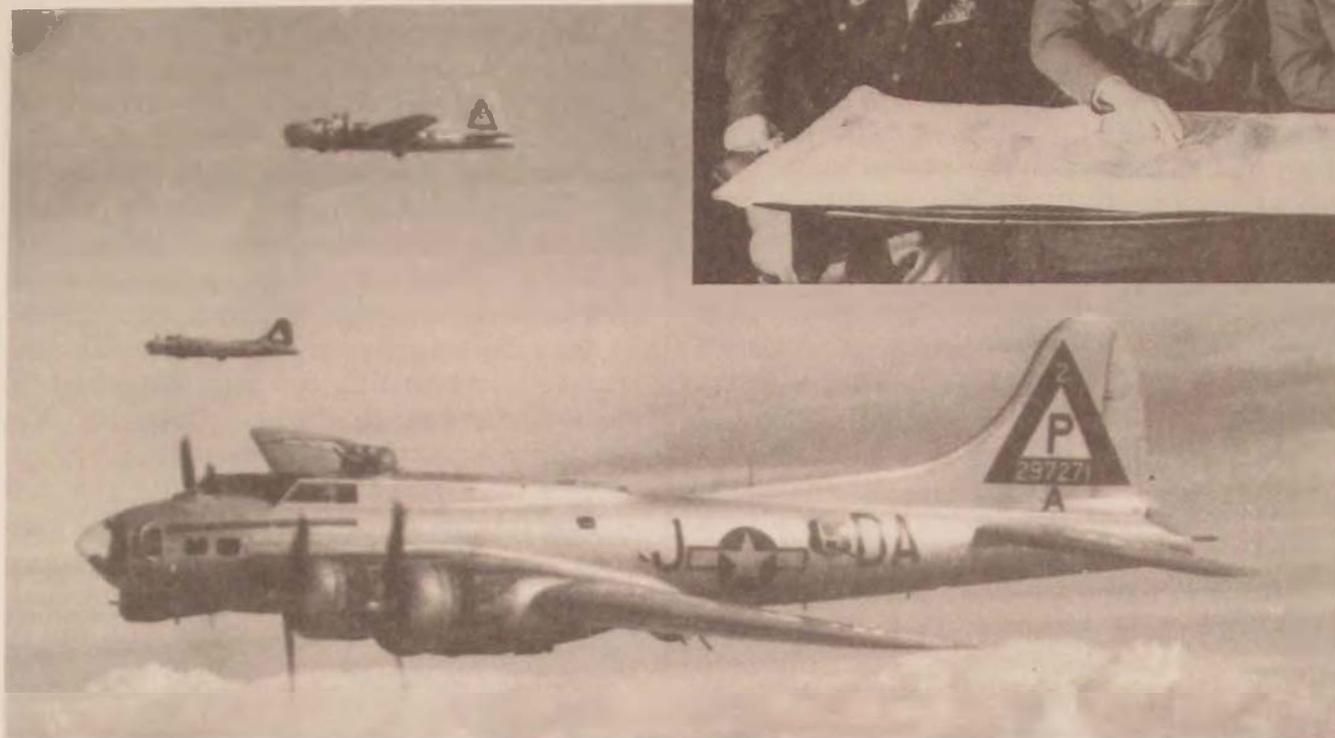
Center of Gravity Analysis

Determining the enemy's center of gravity is second in importance only to determining the operation's objectives. A useful tool in this effort is to disaggregate the enemy into categories of potential centers of gravity, analyze individual target sets within those categories, then select those specific nodes within the target sets that promise to offer the highest degree of leverage. As mentioned earlier, Allied air planners for Overlord did not specifically follow this process, though, as will be shown, the outcomes were the same. The important point is that they did have a means of analyzing the enemy to find the significant chinks in his armor.

Leadership/Command and Control

There is no evidence that Allied forces attempted to attack German leadership directly. However, they did make a concerted effort to blind the enemy. The primary area of effort was the coastal radar

Carl A. Spaatz, (seated, center) commanding general of the US Strategic Air Forces, opposed destroying the Luftwaffe in one climactic air battle over Normandy beaches. General Spaatz wanted to decimate the Luftwaffe through continuing strategic bombing against Germany. B-17s such as these (below) helped in that effort.



installations that spread from Norway to Spain. In attacking these sites, the Allies encountered a problem that was to plague them in many areas of the preinvasion air campaign: how to attack critical targets in the invasion area without highlighting Normandy as the specific landing site. The Allies orchestrated an elaborate deception plan to delude the Germans into identifying the Pas de Calais as the invasion site.¹⁸ Allied air attacks had to reinforce this idea. To achieve this, planners developed a "2-for-1" strategy in which two targets outside the invasion area would be struck for every one inside the invasion area.¹⁹

Planners identified as the critical command and control (C²) nodes those radar

installations between Ostend, Belgium, and the Channel Islands because these facilities could not only identify the invasion fleet and be used to sight coastal guns against the ships but could also be used to guide enemy night fighters. This was considered a special hazard to the planned airborne assault force.²⁰

Industrial and Economic Targets

The planned attack against German logistics was part of the overall campaign against the German industrial system. This was part of the ongoing debate over the use of the heavy bombers. The Combined Bomber Offensive (CBO), formerly authorized on 10 June 1943 and code-

named Pointblank, had as its mission "to conduct a joint US-British air offensive to accomplish the 'progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened'."²¹ Further, the CBO was given the task of weakening the Germans so "as to permit initiation of final combined operations on the Continent."²² The primary intermediate objective of the CBO was the destruction of the Luftwaffe and the achievement of air superiority. This served two purposes. First, air superiority would allow for the successful invasion of the Continent. Second, air superiority would permit the strategic bombing of German industrial and economic targets without prohibitive losses.

This priority scheme did not necessarily sit well with senior air force commanders. They believed that unremitting air attack against the vital industrial and economic targets in Germany would be sufficient to cause her capitulation.²³ They understood the need for air superiority, but only as a means to an end. That end was more effective strategic bombardment of Germany.²⁴ However, for the US and British political and military leadership, the goal—the unconditional surrender of Germany—could only be achieved through the fields of France.²⁵

Infrastructure

The primary purpose of the Allies' attack against infrastructure was to isolate the battlefield—that is, to prevent (or at least to slow) movement of enemy troops or supplies to the battlefield. As discussed later, preparation of the battlefield—that is, concentrated direct attack on German forces in and around the Normandy landing sites—was held to just a few days before the invasion. This was necessary to prevent the Germans from identifying the location of the invasion. The basic dis-

agreement was over the means of isolating the battlefield. Should classic interdiction against either rail centers, bridges, or moving locomotives be used to attempt to physically stop movement into the area of interest? Or should the transportation system be brought to a halt by cutting off the supply of fuel?

The Transportation Plan. The primary proponents of the transportation plan were Air Chief Marshal Sir Arthur W. Tedder and a civilian scientist, Solly Zuckerman. The original plan developed by planners at Supreme Headquarters, Allied Expeditionary Forces (SHAEF)²⁶ called for bombing 20 railroad targets 50 to 60 miles from the invasion area. Zuckerman felt the plan insufficient and devised one calling for attack against 76 railway centers in France, Belgium, and western Germany.²⁷

The rationale for bombing the rail centers was twofold. First, Zuckerman believed that destruction of the marshaling yards would decrease the volume of rail traffic and channelize it to a few key areas. This would prevent the German ground forces from rapidly moving forces to counter the invasion and also expose those forces to air attack. The second rationale was even more compelling for Zuckerman and Tedder, his boss. They believed that "attacks on rail centers in western Germany would contribute both to reducing the volume of military traffic flowing westward and to restricting and ultimately halting industrial activity in the Reich."²⁸ These ideas grew out of Zuckerman's analysis of the bombing of the Sicilian and Italian railways in 1943.²⁹

Opposition to Zuckerman's railway centers plan was quick to rise. The arguments centered on two key issues. The first dealt with the use of heavy bombers of Eighth Air Force and RAF Bomber Command. Zuckerman's plan would require extensive use of these to attack the rail centers "for a substantial period

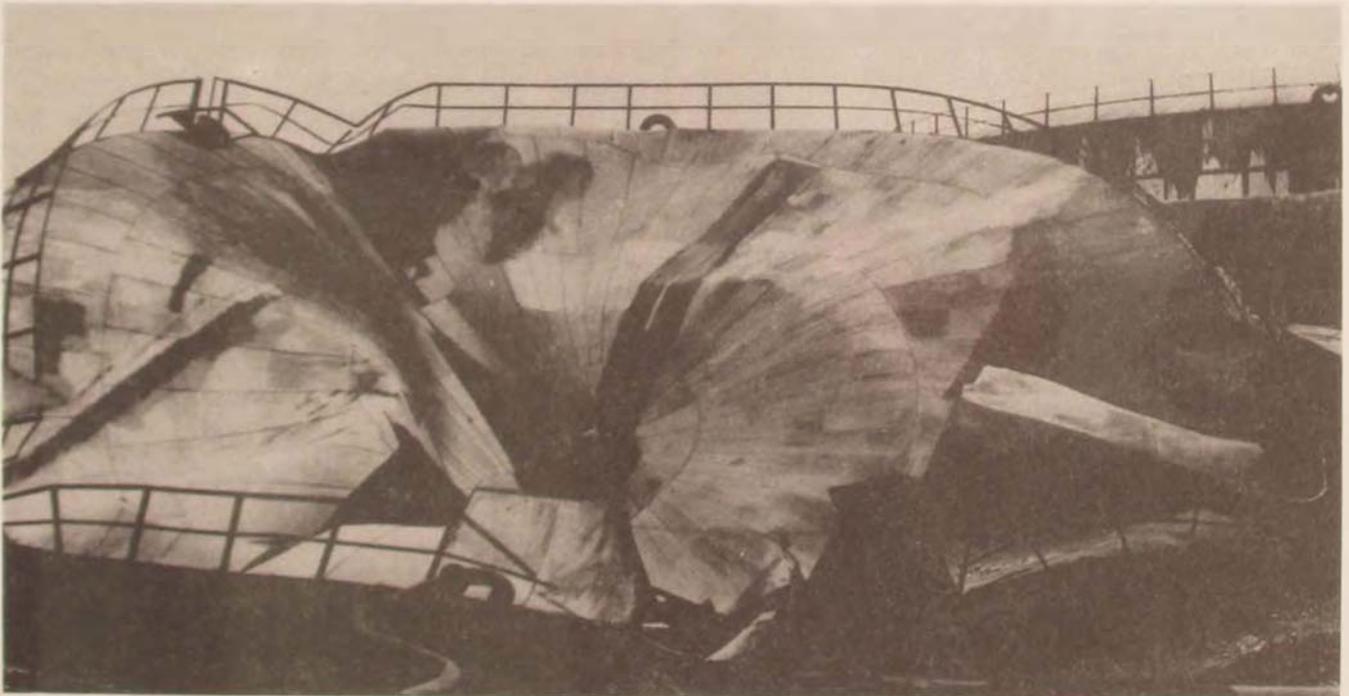
prior to the early June landings."³⁰ From the RAF perspective, its bombers were engaged in night area bombing and were not trained to achieve the necessary accuracy required for hitting a somewhat smaller target.³¹ For USSTAF, the issue was diversion of the heavies away from the critical battle for Germany and air superiority that was yet to be decided.³² A counterproposal placed the emphasis on interdicting German forces through the use of medium bombers and fighter-bombers of the tactical forces (Ninth Air Force and the RAF Second Tactical Air Force). Tedder's plan had envisioned the use of fighter-bombers to augment the attacks against the rail centers, particularly as the invasion drew near.³³ Operation Chattanooga Choo-Choo, starting in late May 1944, was an outgrowth of sporadic attacks conducted earlier primarily against Luftwaffe aircraft on the ground but encompassed attacks against trains, barges, motor transports, and barracks.³⁴

The Oil Plan. The controversy over the transportation plan also centered on the most effective means of bringing the entire war to an end. Again, this concerned the

use of the heavy bombers in the oil plan, which was not strictly part of the Overlord air plan. However, the controversy over the transportation plan versus the oil plan promised to have great impact on the invasion preparation.

The main advocate of the oil plan was USSTAF commander Spaatz, but the idea of hitting German petroleum facilities dated from Air War Plans Division-Plan 1 (AWPD-1) *Munitions Requirements of the Army Air Forces*.³⁵ The argument for the advocates of the oil plan centered around the vulnerability and scarcity³⁶ of Germany's fuel supply, and the fact that the machinery used by the Germans to produce synthetic products "was complex, very expensive, not at all mobile, and difficult or impossible to hide."³⁷ In addition to the ease with which they could be attacked, the targets were relatively out in the open, and thus civilian casualties would be minimized. However, the pri-

One objective of the Combined Bomber Offensive was the achievement of air superiority, which would permit strategic bombing of industrial and economic targets like this collapsed fuel storage tank.



mary reason Spaatz advocated oil was his belief that the Luftwaffe would rise to defend those plants.³⁸ Spaatz maintained that the success of the invasion centered around Allied control of the air.³⁹

The Bridge Plan. The final disagreements over the interdiction centers of gravity concerned the destruction of bridges leading into the invasion area. Prior to the spring of 1944, destruction of bridges was considered too difficult. The construction of the bridges themselves, the presence of anti-aircraft defenses, and the high tonnage required all argued against bridge attack.⁴⁰ Spaatz, however, conducted trials in early 1944 that showed that bridges could be successfully attacked at not too high a cost. Additionally, information arriving from the Italian theater confirmed the viability and high payoff that could be expected from destroying bridges.⁴¹ Finally, 21 Army Group Headquarters requested air destruction of key bridges to isolate the invasion area.⁴²

Population

The two primary concerns over population as it related to the Overlord air plan were attempts to minimize French civilian loss of life and the diversion of heavy bombers from RAF Bomber Command. As shown with the transportation plan, a large concern was expressed by air planners and civilian leadership alike on the potential side effects the bombing would have on the civilian populace.⁴³

Fielded Forces

The primary target set of German fielded forces included those forces located in the immediate area of the landing beaches. As with command and control, planners faced the dilemma of attacking targets of critical importance to the success of the invasion, yet not giving away the location

of the invasion. This necessitated continued use of the "2-for-1" strategy.

Of most concern to the planners were the coastal guns. They identified some 50 batteries, containing two to six guns apiece, ranging in size from 105 to 400 millimeters, that commanded the sea approaches to the invasion beaches. These guns posed a potentially devastating threat to the assault craft. The difficulty was that these batteries were camouflaged, cleverly concealed, and buttressed with steel and concrete. Air planners, believing that air-delivered bombs would be ineffective against these casements, planned on attacking the crews that manned them shortly before the invasion. Additionally, air planners counted on the prelanding naval bombardment to silence the guns.⁴⁴

Additional target sets were underwater obstacles and mines. Leigh-Mallory urged a plan of using fighter-bombers to attack these obstacles. Again, however, the concern over highlighting Normandy as the invasion site overshadowed the benefits that might be gained. Finally, air planners were faced with the difficulty of isolating the beaches from immediate reinforcement by German troops in the vicinity of Normandy and of securing key bridges that would be necessary for the Allied advance inland. The proposal to use airborne and glider-landed troops was opposed by Leigh-Mallory on the grounds that casualties would be prohibitive. He was overruled, however, by Eisenhower and supported in that decision by the key ground commanders, British general Bernard L. Montgomery and US general Omar Bradley.⁴⁵

The Air Campaign

The counterair master plan for Allied air supremacy consisted of three main programs: continued policing to keep the Luftwaffe in a reduced state, strategic

attack missions into the heart of Germany to keep German fighters tied down hundreds of miles from the invasion beaches, and wholesale attacks on airfields in France that the Luftwaffe could use to stage aircraft against the invasion.⁴⁶

The constant pressure against the German Air Force was to be accomplished primarily through the aerial "guerrilla war" conducted by Eighth Air Force fighters. Ever since the decision in January 1944 to unleash the US fighters against those of the Luftwaffe "whenever and wherever they're found,"⁴⁷ US fighter aircraft began to chase German aircraft down to treetop level and back to their bases.⁴⁸ However, this change in strategy had a demoralizing effect on the bomber crews, who saw themselves as "bait" for the enemy fighters who would be left by their "Little Friends."⁴⁹

The strategic bombings against Germany were continued until a week before the invasion, though some missions were diverted to specific preinvasion targets.⁵⁰ On 25 March 1944, Eisenhower had decided in favor of the transportation plan over the oil plan.⁵¹ However, he did accede to Spaatz's desire to retain control over the heavy bombers until the last moment. Further, he informally allowed Spaatz to conduct some missions against oil targets.⁵² Spaatz fervently believed these attacks would destroy the Luftwaffe as an effective fighting force. By placing such high-value targets at risk, he was sure the Luftwaffe would be forced to defend them. He was further convinced that US fighter forces could take on the Luftwaffe anywhere, anytime and defeat them.⁵³

The third part of the counterair campaign dealt with attacking the air bases in France. These largely unused airfields were considered a difficult target. First, any German fighters staging from them could rapidly shift to other locales before the attacks. Second, damage to runways could be quickly repaired. Furthermore, American experience in the Pacific had

shown that aircraft had operated successfully off very difficult surfaces. Finally, just the sheer numbers of airfields—approximately 100 within 350 miles of Normandy—would strain the capacity of Allied air forces, even with the use of the heavy bombers of RAF Bomber Command and Eighth Air Force.⁵⁴

The final part of the air campaign was the provision of an air umbrella over the invasion fleet and the landings themselves. Despite the success the Allies had achieved over the Luftwaffe, intelligence estimates prior to D day still placed enemy air strength at over 900 aircraft, including 450 bombers.⁵⁵ Planners provided for a full complement of air cover. Eighth and Ninth Air Force P-38s maintained continuous cover over the invasion fleet. As forces moved ashore, the RAF furnished low cover while Ninth Fighter Command provided high cover.⁵⁶ Eighth Air Force fighters conducted a sweep of the invasion area out to the periphery.⁵⁷

Besides the attacks mentioned above, strategic forces in the months prior to the invasion continued to seek ways of getting the Luftwaffe airborne to fight. One of the most profitable proved to be attacks on Berlin. In many ways, this battle proved to be the "straw that broke the camel's back." German defenders pulled out all the stops, including recalling fighter units from the Eastern Front to repel the attacks. In a dramatic series of Allied raids in March 1944, the Luftwaffe was so drained that its leaders were forced to change tactics. Previously, while weather somewhat dictated response, they had attempted to oppose every raid. Now they realized that attacks on Berlin and Munich were being used to bait the Luftwaffe to fight. Therefore, they chose to become more selective in which raids they would counter. They attempted to catch the American forces off guard. Increasingly, they resorted to large mass attacks against the bomber streams—upwards of 300 heavily armed and armored "storm" fighters. The Allied

fighters countered by attacking these "flying wedges" as they formed.⁵⁸

The transportation plan singled out rail centers in Belgium and the northern region of the French rail system. These were selected for two reasons. First, chaos there would prevent the Germans from using their reserves, which were mainly in this area, to reinforce the invasion area. Second, coal for locomotives would be cut off from the rest of France, further inhibiting the movement of forces to Normandy.⁵⁹

Initially, most of the attacks were carried out by the Ninth Air Force and the British Second Tactical Air Force. These started in early March 1944. The tactical air forces were used instead of the strategic forces for two reasons. First, the British War Cabinet had reservations about the use of the heavy bombers. As mentioned earlier, there was great fear that many friendly civilian lives would be lost in such attacks on targets close to urban centers. The second reason was due to the continued disagreement RAF Bomber Command's Harris and the USSTAF's Spaatz had with Tedder and Leigh-Mallory over the efficacy of using the heavies to attack such precise targets. Thus, the heavies were slow to take up the transportation plan, necessitating the use of the tactical air forces.

To supplement the rail center strikes, the plan called for attacks directly against moving stock. Again there was concern over the potential loss of civilian lives. However, by mid-May 1944, attacks against moving trains were intensified. These were to be carried out primarily through fighter-bomber sweeps (the Chattanooga Choo-Choo missions) conducted by both AEF and Eighth Air Force units. Planners saw a side benefit in these missions: they would sharpen the skills of the pilots in anticipation of ground support missions that they would be called upon to fly in support of the invasion forces.

The final assault by air power against

the invasion beaches was to be a truly awesome display of might. RAF bombers plastered the beaches and coastal batteries in the early hours of D day followed by Eighth Air Force heavies at day-break.⁶⁰ Two major concerns were dealt with in these attacks. First, air planners expressed concern that such heavy saturation bombing would leave the beaches hopelessly cratered and would actually inhibit the movement of friendly invasion forces. To mitigate this problem, lightweight demolition and fragmentation bombs with instantaneous fuzes were used. The second concern dealt with the accuracy of the heavy bombers' delivery. Ground commanders wanted the heavies to attack within minutes of the forces hitting the beaches. Air planners were concerned, however, that this tight schedule could result in disaster if there was but a small error in delivery accuracy. Eisenhower made the final decision that called for the amphibious forces to land 10 minutes after the bombers' attack if skies were overcast and a scant five minutes if the bombers were able to attack visually.

After the beach attacks, heavy bombers returned to England to refuel and rearm for their second mission against towns and bridges inland from the beaches. These attacks were to slow any immediate German reinforcement. USSTAF commanders opposed these attacks on the grounds that they might needlessly kill thousands of civilians.⁶¹ They were overruled by Leigh-Mallory, who had assumed command of all the heavies on 1 June 1944.⁶²

Results and Conclusions

One of the most remarkable facts of the entire war is that the Luftwaffe did not make any significant daylight attacks on D day against Allied forces in the Channel or on the beaches.⁶³ The Allies flew over 14,000 sorties in support of the landings

alone while the Luftwaffe was only able to muster 319 sorties the entire day!⁶⁴ This success is directly attributable to the length of the counterair campaign. The Luftwaffe had been finished. The remnants were tied to the defense of the Reich.

By late April 1944, it was apparent that much damage had been done to the rail centers. However, the system was proving much more resilient than planners had anticipated. The Germans had been able to repair bomb craters quickly and in some cases had been able to reroute rail traffic within a few hours. Moreover, the Allies had a difficult time assessing the effectiveness of the attacks.⁶⁵ It was not due to a lack of intelligence data. Numerous photo reconnaissance missions and reports from occupied Europe showed great damage. But was physical damage an adequate measure of effectiveness? It appeared that there was a high degree of slack in the transportation system. Analysts concluded that the delays were being felt by the French and Belgian civilian traffic and not by the German military traffic.

The attacks against the moving stock were highly successful. They not only destroyed and disrupted enemy traffic but had a tremendous psychological impact on the train crews. French crews pressed into service by the Germans to operate the rail system deserted in large numbers, particularly when fighter-bomber pilots started the practice of dropping their nearly full belly tanks on the trains, then setting them afire through strafing attacks. The Germans were forced to replace the French train crews with their own troops, further reducing the capabilities of the German forces.⁶⁶

Perhaps the most successful aspect of the preinvasion interdiction plan was the campaign against bridges. Those remaining were hit on D day. Ninth Air Force aircraft struck the Seine bridges while Eighth Air Force heavies attacked those over the Loire.⁶⁷

Determining the efficacy of air attacks against the invasion sites is very difficult. First of all, little direct air support was requested.⁶⁸ Second, postinvasion analysis found it extremely difficult to separate the damage done by naval bombardment and that done by air attack.⁶⁹ Perhaps the best testimony comes from the success of the invasion itself. From 6 June on, German counterattacks, belatedly staged, were ineffective due to Allied air interdiction and close support.⁷⁰

Lessons Learned

The lessons learned from Overlord planning are very applicable to the process of campaign planning today. First, the preinvasion planning was based upon sound principles of air warfare: (1) establish and maintain control of the air in the critical area for the purpose of eliminating the enemy's capacity to interfere from the air; (2) isolate the battlefield by interdicting enemy movements of troops and supplies; and (3) render immediate support to the ground forces on the battlefield. The CBO accomplished the first task. The transportation plan (including the bridges part in that plan) accomplished the second. Finally, the combination of those two plans in decimating the Luftwaffe and rendering the German forces virtually immobile accomplished the third objective.

The second lesson learned is that integrated planning between air and ground forces works. This is not to say that such integration was voluntarily forthcoming and that it was always smooth and congenial. However, the fact remains that air planners consciously considered the requirements of the ground and naval forces in planning for Overlord. This was a reversal of previous invasions. During the planning for Operation Torch, air planners were ignored.⁷¹ During the planning for Operation Husky, air planners vir-

tually ignored the ground invasion planners.⁷²

The third lesson learned is a repeat of one that was painfully learned in North Africa: effective use of air power requires centralized command of air forces. Only at Eisenhower's level—and then only after mid-April 1944—were all Allied air forces under one command. Why that occurred is outside the scope of this study, but any analysis must include aspects of bureaucratic politics, ideology, and personalities.

The fourth lesson was that a systematic and comprehensive air campaign planning process is a necessary but not a sufficient antecedent to successful air operations. Further, such a process must start from an understanding of the objective to be attained and then proceed to the means of achievement. The end state was the surrender of Germany. The senior political leadership decided that the strategic air campaign *and* the invasion were the means to that end. The objective of the invasion planners was the successful lodgment on the Continent. One of the means they chose was the use of air power. Therefore, the objective of the *air planners for the invasion* was the efficient use of air power to achieve that end. By analyzing the enemy, they determined how best that goal could be accomplished. One can argue whether the transportation plan or the oil plan was best suited to achieve the invasion objective, but the fact remains that senior military leaders (i.e., Eisenhower and Tedder) chose the transportation plan because, in their judgment, it best fulfilled the objective *for the invasion*.

This leads to the final lesson learned: prudent planning requires a balance in targeting because of the uncertainty of war. The argument was not oil *versus* transportation. The plan was oil *and* transportation. The great British nineteenth century economist Alfred Marshall, when asked which was more important, supply or demand, reportedly replied that asking such a question is like trying to

determine which blade of the scissors cuts the paper. It was in determining the balance between these opposing ideas that the argument lies. But referring to the above lesson, military planners must ask themselves, What is the objective I'm trying to accomplish? Spaatz played his role perfectly. He presented his case, and when he lost, he saluted smartly and carried out his mission to the best of his abilities.

Summary

The successful invasion of France is one of the most monumental military achievements ever recorded. The role that air power and air planners played in that success is perhaps best summed up by the words of the official Army Air Forces history of World War II:

So much of air's contribution to the success of the Normandy landings depended upon the cumulative effect of operations extending back through the days, months, and even years which preceded D day that D day itself, though providing an obvious climax to this preparatory work, seems almost an anticlimax.

There were no great air battles—so well had the preparatory work been done and so overwhelming were the Allied air forces that the Luftwaffe refused the challenge. The record of air operations in its most significant aspects points chiefly, therefore, to impressive evidence of a victory already won and to a massive effectiveness speaking first of the singularly undramatic skills of organization and planning.⁷³

It is a lesson well worth remembering. □

Notes

1. Due to the indecision of the German high command in issuing the orders, the Luftwaffe took the movement based upon its own authority. See Stephen L. McFarland and Wesley Phillips Newton, *To Command the Sky: The Battle for Air Superiority Over Germany, 1942-1944* (Washington, D.C.: Smithsonian Institution Press, 1991), 242. McFarland

and Newton translate *Drohende Gefahr West* as "Threatening Danger West." The author wishes to thank Dr Richard Muller of the USAF Air Command and Staff College for his more correct translation.

2. *Ibid.*, 243.

3. Much of the debate over the Germans' lack of aggressive movement toward the landing beaches on D day concentrate on the egos of German general Erwin Rommel, who had responsibility for the Channel forces and Field Marshal Gerd von Rundstedt, commander in chief in the West. Liddell Hart expresses the idea that the point is moot: "By smashing most of the bridges over the Seine on the east and over the Loire on the south, they [the Allies] turned the Normandy battle-zone into a strategic isolation-zone." B. H. Liddell Hart, *History of the Second World War* (New York: G. P. Putnam's, 1970), 547.

4. Readers interested in a deeper discussion of this model may examine the author's "Air Campaign Planning," *Airpower Journal* 7, no. 2 (Summer 1993): 11-23.

5. A note on usage. Throughout this study, I will use phraseology commonly used in the armed forces today. Planners in 1944 did not refer to "center of gravity" or other such phrases, though they did identify those concepts.

6. Pointblank was the code name for the Combined Bomber Offensive. See Col Ed Crowder, "POINTBLANK: A Study in Strategic and National Security Decision Making," *Airpower Journal* 6, no. 1 (Spring 1992): 55-65.

7. Crossbow was the code name for Allied air attacks against the German V-1 and V-2 operations. It encompassed all phases of the German long-range weapons program. Started informally in late spring 1943, it was formalized in December 1943 and continued literally to the last days of the war in Europe. See Wesley Frank Craven and James Lea Cate, *The Army Air Forces in World War II*, vol. 3, *Europe: ARGUMENT to V-E Day, January 1944 to May 1945* (Washington, D.C.: Office of Air Force History [New Imprint, 1983], originally published 1951 by the University of Chicago Press), 84-106.

8. Argument was the code name for Allied air operations specifically against the German aircraft industry. As such, it was designed to help achieve Pointblank's intermediate objective of destroying the German single-engine fighter force. It was the plan that became famous as "Big Week," 20-25 February 1944. See McFarland and Newton, 169-92.

9. Craven and Cate, vol. 3, 138.

10. Walt W. Rostow, *Pre-Invasion Bombing Strategy: General Eisenhower's Decision of March 25, 1944* (Austin, Tex.: University of Texas Press, 1981), 6-7.

11. War Department Field Manual (FM) 100-20, *Command and Employment of Air Power*, 21 July 1943.

12. McFarland and Newton, 2.

13. *Ibid.*, 169.

14. This command was established on 1 January 1944 to oversee administratively all US Army Air Forces in Great Britain (Eighth Air Force was commanded from 1 January 1944 by Maj Gen James H. Doolittle and Ninth Air Force was commanded by Maj Gen Louis Brereton). It also conducted the strategic air campaign against Germany, controlling both Eighth Air Force in England and Fifteenth Air Force headquartered in Foggia, Italy.

15. The command arrangements of the various air forces that took part in Overlord can be somewhat confusing, and they oftentimes caused a great deal of bitter debate. The issue (for the invasion) was resolved on 11 April 1944 when Eisenhower was given control over virtually all the air forces in Europe. He delegated to his deputy, Air Chief Marshal Tedder, responsibility for coordinating the air operations, USSTAF, AEF, and RAF Bomber Command (under Air

Chief Marshal Harris) were given equal stature. Air Chief Marshal Leigh-Mallory was officially designated air commander for Overlord and was given control of USSTAF and RAF Bomber Command's heavy bombers on 1 June 1944 for the invasion. See Craven and Cate, vol. 3, 80-81.

16. *Ibid.*, 150.

17. *Ibid.*, 157.

18. This was the famous Operation Fortitude. It was no easy task. As Sir Michael Howard writes, "For the past six months [summer and fall of 1943] they [the deception planners] had been trying to persuade the Germans that they faced a major invasion threat from the United Kingdom [in order to tie up forces from reinforcing Mediterranean operations], when in fact they did not. Now they had to persuade them that they did not face such a threat whereas in fact they did." See his *British Intelligence in the Second World War*, vol. 5, *Strategic Deception* (New York: Cambridge University Press, 1990), especially chapter 6, 104.

19. Craven and Cate, vol. 3, 168.

20. *Ibid.*, 171.

21. "General Eaker's Presentation of the Combined Bomber Offensive Plan to the Joint Chiefs of Staff," reprinted verbatim as the appendix in Barry D. Watts, *The Foundations of US Air Doctrine: The Problem of Friction in War* (Maxwell AFB, Ala.: Air University Press, 1984), 136. He quotes from the Casablanca Directive, issued in January 1943.

22. *Ibid.*

23. The idea that strategic bombing would alleviate the need for an invasion was not a universal concept among all US air commanders. In his defense of daylight precision bombing at the Casablanca Conference, Gen Ira Eaker, commander of the Eighth Air Force, specifically couched his arguments in terms of preparing the way for the ground invasion. See James Parton, "Air Force Spoken Here": *General Ira Eaker and the Command of the Air* (Bethesda, Md.: Adler & Adler, 1986), 220-23.

24. DeWitt S. Copp, *Forged in Fire: Strategy and Decisions in the Air War over Europe, 1940-45* (Garden City, N.Y.: Doubleday & Company, 1982), 381-84. See also Watts, 17-23; and David R. Mets, *Master of Airpower: General Carl A. Spaatz* (Novato, Calif.: Presidio Press, 1988), 200.

25. The historical debate over why the Americans and British believed the invasion was necessary is widespread. J. F. C. Fuller believes it was due to the "unconditional surrender" policy announced at Casablanca. See his *A Military History of the Western World*, vol. 3, *From the Seven Days Battle, 1862, to the Battle of Leyte Gulf, 1944* (New York: Da Capo Press, 1956), 506-9. Another avenue suggests it was necessary to keep the Russians in the war. Whatever the reason, it had been agreed since the first US-British senior meetings in December 1941 that there would be an invasion of Europe. The arguments centered over where and when. See Gordon A. Harrison, "The Roots of Strategy," in Gordon A. Harrison, *United States Army in World War II: The European Theater of Operations: Cross-Channel Attack* (Washington, D.C.: The Office of the Chief of Military History, 1951), 1-45.

26. Supreme Headquarters, Allied Expeditionary Forces. This was General Eisenhower's headquarters, collocated with Spaatz's headquarters at Bushy Park, Teddington, on the outskirts of London.

27. See Alfred C. Mierzejewski, *The Collapse of the German War Economy, 1944-1945* (Chapel Hill, N.C.: The University of North Carolina Press, 1988), 81.

28. *Ibid.*, 82.

29. See Craven and Cate, vol. 3, 373-84. Operation Stran-

gle was the air campaign designed to stem the flow of German supplies and reinforcements to the Italian front. It lasted from 19 March to 11 May 1944, when it was absorbed into Diadem, the campaign for the capture of Rome. Strangle grew out of earlier efforts by Mediterranean Allied Air Forces' attempts to cut enemy supply lines.

30. Mets, 200.

31. Another major concern was the potential levels of civilian casualties. Since the rail centers were in and around large population centers, estimates of French and Belgian civilian casualties reached well over 100,000. See Mets, 210; and Craven and Cate, vol. 3, 79.

32. The issue came to a head at a 15 February 1944 meeting that included Tedder, Leigh-Mallory, Harris, Spaatz, Brig Gen Fred Anderson (USSTAF deputy commander for operations), Zuckerman, and their staffs. "Big Week" was still a week away.

33. Mierzejewski, 81.

34. McFarland and Newton, 229.

35. See Maj Gen Haywood S. Hansell, Jr., *The Air Plan That Defeated Hitler* (Atlanta, Ga.: Higgins-McArthur, 1972 [New Imprint, Air University, 1973]), 78-88. Interestingly, in AWPD-1, the German transportation system was ranked number two ahead of the oil system.

36. USSTAF estimated in early 1944 that only 14 plants produced 80 percent of the German synthetic petroleum supply, most of which went to gasoline. Spaatz argued that Germany could probably afford to lose 14 rail yards, but could ill afford to lose a like number of synthetic fuel plants. See Craven and Cate, vol. 3, 78.

37. Mets, 202.

38. Perhaps the most famous attack against oil refineries up until this time had been the 1 August 1943 attack by Ninth Air Force B-24s against Ploesti, Rumania. Of the 177 attacking heavies, 54 had been lost, most due to anti-aircraft fire. While an estimated 42 percent of Ploesti's refinery capacity had been destroyed, the attack was not considered decisive. The Germans quickly repaired the damage and brought idle capacity at Ploesti on line. See Craven and Cate, vol. 2, *Europe: TORCH to POINTBLANK, August 1942 to December 1942*, 477-84.

39. It is interesting to note how senior ground commanders viewed this controversy. General Bradley, in command of all the US forces for the invasion, doubted whether air power could defeat Germany through oil attack nor did he have much confidence in their ability to defeat the Luftwaffe. He favored the transportation plan. See his *A General's Life: An Autobiography of General of the Army Omar N. Bradley* (New York: Simon and Shuster, 1983), especially 228-30. As Mets writes,

Spaatz argued that Leigh-Mallory's [transportation] plan was at loggerheads with his [Spaatz's] directives under the POINTBLANK plan, namely to defeat the Luftwaffe and gain air superiority before the landings. He insisted that the strategic air forces had to continue hitting vital targets in the interior of Germany to force the Luftwaffe to come up and fight so that it could be defeated before OVERLORD. Leigh-Mallory retorted that attacks on the rail yards in France would make the German fighters come aloft. Aside from the fact that such battles would not drive the Reich's surviving fighters back to their homeland and far away from the OVERLORD beaches, Spaatz asked his adversary what he thought would happen if the Luftwaffe chose *not* to come aloft. Leigh-Mallory answered that it would make no difference, for the great battle for air superiority would take place over the beaches on D day and the Allies would win it then. (Page 201)

40. Craven and Cate, vol. 3, 157.

41. *Ibid.*, 373-84. Operation Strangle (see note 29) was conducted by the fighter-bombers of Twelfth Air Force's Air Support Command and the British Desert Air Force. It did not include Fifteenth Air Force's heavy bombers. Spaatz argued that the heavies, since they must attack from higher altitudes, should not be used to attack bridges. Additionally, his experiments and those carried out by the RAF (using Typhoon fighter-bombers) showed highly promising results. Another interesting aspect of Strangle was its plan for "simultaneous interdiction" (page 374) on whole sections of the railways. Repudiating Zuckerman's concept of concentrating only on rail centers, Strangle's fighter-bombers attacked bridges, yards, tunnels, defiles, and open lines of track. Lt Gen Ira C. Eaker, commander of Mediterranean Allied Air Forces, concluded that the best means of interdiction was the destruction of bridges and viaducts. This was primarily due to the topography of Italy, where often bridges spanned deep gorges (and thus were difficult to repair and impossible to bypass), and the generally poor Italian road network.

42. General Montgomery's 21 Army Group, was given overall responsibility for planning the ground aspect of the invasion. Interestingly, 21 Army Group "had little faith in the efficacy of general attacks on rail centers." See Harrison, 228.

43. See note 31. The commander of the French forces in the United Kingdom, Gen Pierre Joseph Koenig, when consulted on this issue, reportedly brusquely dismissed these concerns "with the comment that lives are lost in wars and that would be the price the French people would have to pay to escape their bondage." See Mets, 210.

44. Craven and Cate, vol. 3, 166-72.

45. *Ibid.*, 70-71; and Harrison, 183-87. The choice of the landing sites was determined by the ground planners. US Army Chief of Staff Gen George C. Marshall thought the airborne assault plan too timid. He advocated a plan that called for a massive vertical envelopment to establish an airhead to threaten the Seine River crossings and Paris. This plan was developed by the chief of the US Army Air Force, Gen H. H. ("Hap") Arnold.

46. Craven and Cate, vol. 3, 163.

47. Maj Gen Jimmy Doolittle, commander of the Eighth Air Force, considered the decision to remove the fighters from close escort of the bombers to actively seeking out the Luftwaffe as his most important decision of the war. See McFarland and Newton, 160.

48. Since the fighters were faster than the bombers, the escorts flew in waves. When the fighters, relieved of their escort duties and still with available ammunition, started their return flight, they dropped down to low level and shot up German bases, often catching German fighters as they were taking off or returning to land. See Mets, 197.

49. Similarly, it had a demoralizing effect on the German fighter pilots. In the opinion of the Luftwaffe's General der Fleiger Adolf Galland, once the US fighters were freed from the bombers, the Luftwaffe lost the war. In one memorable engagement, Galland found himself entangled with four P-51s. Though the Mustangs were themselves already 300 miles from home, they chased him at top speed and low level some 270 miles back towards Berlin. He escaped only through a ruse. See McFarland and Newton, 162-64; and Galland's *The First and the Last* (Mesa, Ariz.: Champlin Museum Press, 1986), 276.

50. The heavies sent 60 percent of their forces into the Reich on D-3 and D-2. The remainder attacked the Pas de Calais as part of the deception plan. See Craven and Cate, vol. 3, 143.

51. The supreme commander did not dismiss the potential

effectiveness of the oil campaign. Rather, he decided that the transportation plan offered more immediate support to Overlord. See Mierzejewski, 84.

52. Eisenhower emphasized that these attacks were to test the theory that the Luftwaffe would fly to protect the oil fields. Missions flown in early May 1944 confirmed this. The Luftwaffe attacked in strength. Further, Ultra intercepts confirmed the effect on Germany. Anti-aircraft defenses were redeployed to protect the plants. Furthermore, training programs for some ground units were curtailed. See Mets, 212.

53. *Ibid.*, 205-7.

54. Craven and Cate, vol. 3, 163.

55. *Ibid.*, 162.

56. It may seem odd that the longer-range P-38s covered the fleet while the shorter-range Spitfires covered the beaches, but this was done for sound reasons. It was believed that the distinctive shape of the P-38 would identify it as "friendly" to the greenest gunner in the fleet. See Mets, 214.

57. Craven and Cate, vol. 3, 189-90.

58. McFarland and Newton, 228, 235-36.

59. Craven and Cate, vol. 3, 150.

60. Not at all to be dismissed lightly was the airborne assault carried out by the paratroopers and gliders of the IX Troop Carrier Command. Two entire US divisions—the 101st Screaming Eagles and the 82d Airborne, totaling over 17,000 troops, were delivered in the early hours of 6 June 1944. See Craven and Cate, vol. 3, 186-88.

61. See Mets, 215. Spaatz was forced to instruct the bombardiers to withhold their release a few seconds to preclude any friendly losses. This caused many bombs to drop past the beaches and to be ineffective. According to Mets, ground commanders were disappointed with the invasion bombing.

62. Craven and Cate, vol. 3, 144-45.

63. *Ibid.*, 166.

64. Mets, 214.

65. Mierzejewski claims that much of the difficulty can be

traced to bureaucratic obstructionism. Because some organizations had been opposed to the transportation plan, they deliberately withheld information from analysts that may have shown its greater impact on the German economy than was initially believed. See Mierzejewski, 162.

66. Craven and Cate, vol. 3, 155-56.

67. Mets, 215.

68. The combined control center at Uxbridge received 13 requests during the day. Five were refused due to weather, lateness of the hour, or aircraft unavailability. This does not mean, however, that the tactical forces were not employed during the day. Both the Ninth and the Eighth Air Forces flew support missions throughout D day. They struck bridges, rail centers, conducted fighter sweeps, and strafed moving traffic (aided by the fact that the Germans had prohibited civilian traffic on the roads a few days prior) and choke points. See Craven and Cate, vol. 3, 193-95.

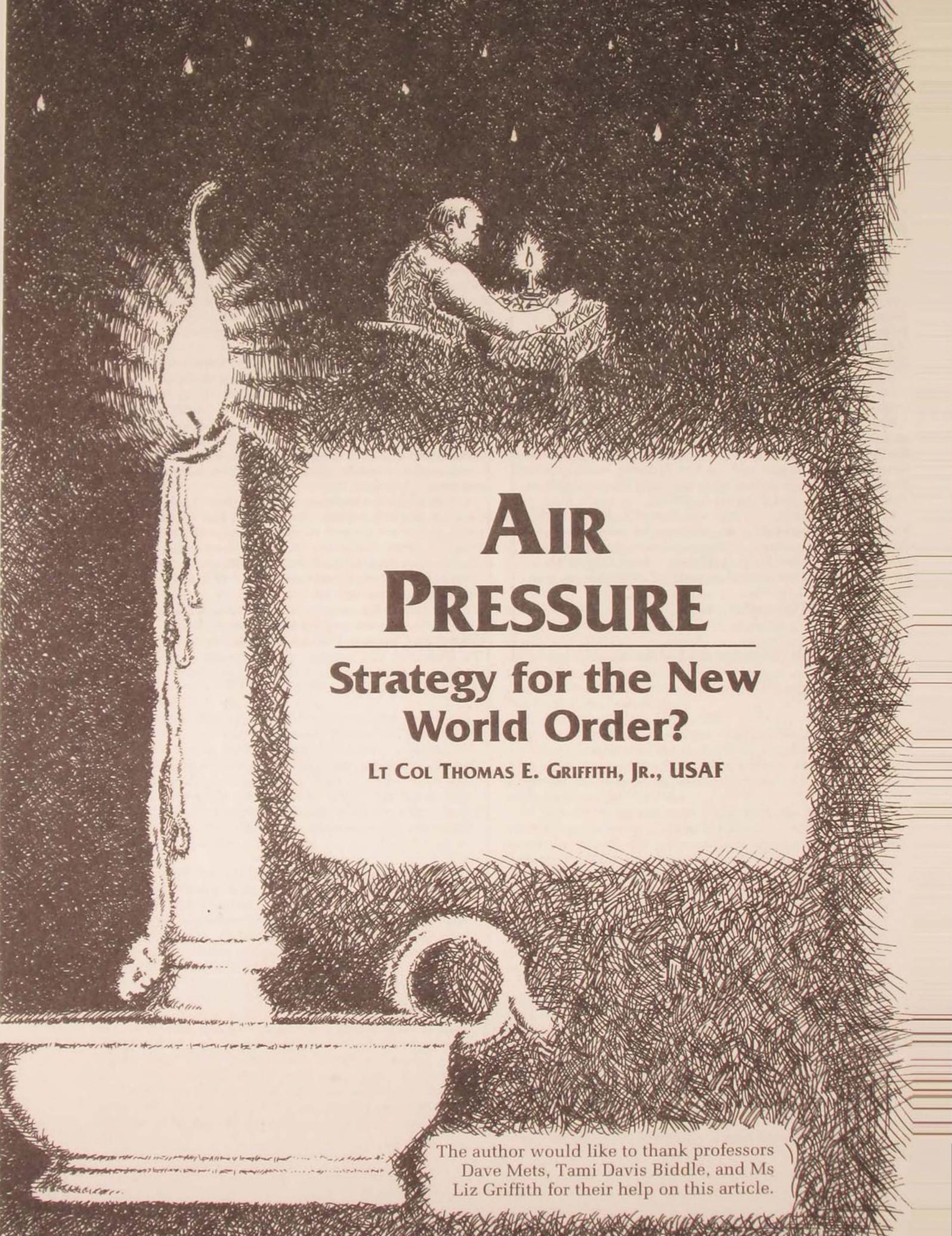
69. *Ibid.*, 192.

70. Even the few instances of support to the D day operations proved decisive. On his discussion of the actions of the US V Corps, Harrison notes, "By dominating the battlefield, planes and naval guns smashed such German reserves as could be gathered for a counterthrust and so gave the fragmented V Corps infantry a chance to recover, rebuild, and again become a ground army superior in numbers and equipment to anything that the Germans could thereafter muster to meet them." Harrison, 326.

71. Torch was the invasion of North Africa by the US and British in November 1942. For the role that US Army Air Forces personnel played in planning that operation, see Richard G. Davis, *Tempering the Blade: General Carl Spaatz and American Tactical Air Power in North Africa, November 8, 1942-May 14, 1943* (Washington, D.C.: Office of Air Force History, 1989), especially 16-23.

72. Husky was the invasion of Sicily, which took place on 10 July 1943. For the coordination between air and ground planners, see Craven and Cate, vol. 2, 442-45.

73. *Ibid.*, 185.

A dark, textured illustration of a man in a cave sitting by a candle, with a large keyhole in the foreground.

AIR PRESSURE

Strategy for the New World Order?

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The author would like to thank professors Dave Mets, Tami Davis Biddle, and Ms Liz Griffith for their help on this article.

WHILE THE demonstrated success of air power in Operation Desert Storm fulfilled many of the prophecies of air power, it has also raised expectations about its effectiveness in other situations, such as using air power to enforce American political demands without committing American ground forces.¹ As Professor Eliot A. Cohen notes, "Air power is an unusually seductive form of military strength, in part because, like modern courtship, it appears to offer gratification without commitment."²

Can air power alone be used to fulfill American political objectives? While this article does not answer that question definitively, an examination of the "air pressure strategy" developed during the Korean War in an attempt to force the North Koreans to accept a peace agreement offers some indication of the potential problems of relying on this approach in the future. Given the lack of historical experiences in which we can assess the effectiveness of influencing political behavior through air power in general and by bombing in particular, this air pressure strategy is an important case study for understanding the problems involved with such an approach.

The attempt to influence the North Korean leaders solely through air power resulted from the stalemate between the ground forces on the peninsula. In contrast to the fluid situation in the early months of the Korean War, the opposing ground forces became deadlocked near the 38th parallel after the Chinese Communists intervened in November 1950. When peace talks began in July 1951, the objective of the United Nations (UN) ground forces changed from defeating the opposing army to stopping any further territorial gains by the Communist forces while minimizing UN casualties during the negotiation process. Thus air power became the only military means available to directly influence the North Korean government.³

The initial attempt to compel the Communists to accept a cease-fire agreement was an interdiction campaign begun in September 1951 known as "Operation Strangle." This effort, aimed at both the North Korean rail and road systems, attempted to stop the flow of supplies from the rear areas to the front lines, weakening the Communist forces and making them vulnerable to a UN ground attack. Presumably, successful air attacks would force the North Koreans to withdraw towards the Yalu River to shorten their supply lines or to agree to a peace settlement.⁴ This air effort was successful in cutting off much of the Communist resupply capability, but it was unable to "strangle" the frontline troops. The Far East Air Forces (FEAF), the United States Air Force component in Korea, noted that they had destroyed 95 percent of the pre-war rail transport capability; however, the remaining five percent "was still enough to permit the slow accumulation of Communist stockpiles behind the static battle line."⁵

While the interdiction campaign may have delayed or even prevented a Communist ground offensive, it fell short of its stated goal of "strangling" the enemy and forcing an armistice.⁶ In addition, the effort was costly: from August 1951 to March of 1952, FEAF lost 236 aircraft on interdiction missions.⁷ The US Navy was also involved in this bombing effort, and a naval analysis of the interdiction campaign noted that the cost to the UN, just in terms of aircraft lost, exceeded the value of the material destroyed.⁸ The lack of success in stopping the Communist resupply effort, coupled with the costs of the operation (both in terms of aircraft lost and in the loss of prestige to the newly independent Air Force), resulted in a search for alternative methods of employing air power to bring pressure on the enemy.

The new strategy was based in large part on a study commissioned early in 1952 by Maj Gen Jacob E. Smart, the FEAF deputy

commander for operations, and was written by Col Richard L. Randolph and Lt Col Ben I. Mayo, both Korean combat veterans and members of the FEAF staff.⁹ They began their study with a review of the ongoing interdiction effort, concluding that it was ineffective in applying pressure to the Communist forces in North Korea primarily due to the inability of aircraft to completely stop the resupply effort. The most promising avenue, they felt, for pressuring the North Korean government was to use air power to "destroy or damage enemy supplies, equipment, facilities and personnel."¹⁰ They proposed three criteria for selecting targets:

- The importance and expense of the target to the enemy.
- Our capability to destroy the target.
- The cost to us.¹¹

The authors acknowledged that many of the targets in this type of "destruction" or "pressure" offensive would be similar to an interdiction campaign, but they stressed that there would be differences between the two. While interdiction was aimed at delaying supplies, the new campaign would focus on destruction that would cause "a permanent loss to the enemy and produce an accumulative drain on his strength."¹² Some interdiction targets that were already being attacked, such as locomotives, vehicles, and supplies, would also be hit under the pressure attacks, but the authors also identified another potential target, electric power, which they considered "one of the most lucrative air targets remaining in North Korea."¹³

While the primary rationale for attacking electrical power may have been the desire to pressure the North Korean leaders by increasing costs, the official explanation given for attacking the power facilities was that of curtailing war production. According to this argument, previous bombing had largely eliminated North Korean industry, forcing the dispersal of

war production to small workshops and underground facilities. These defensive measures made the destruction of manufacturing by conventional bombing difficult at best; hence, the elimination of electric power at its source was deemed the most efficient and effective method for cutting North Korean production.¹⁴

Some Air Force planners also advocated attacking electrical power to affect the morale of the North Koreans. They hoped that the destruction of the electrical power system would cause an "adverse psychological effect on [the] civilian and military population."¹⁵ How this psychological effect would translate into a peace agreement, however, was left unexplored.

The desire to stop war production and lower civilian morale merged with another factor in the air planners' decision—the Air Force's institutional perception of the value of electric power as a target. During the 1930s, faculty members at the Air Corps Tactical School had developed a theory of strategic bombardment that relied on the identification of vital targets, such as electrical power, which, if attacked through strategic bombardment, would destroy both the war-making capability and the morale of the opposition. The theoretical work of those officers at the school became a reality in the first air war plan for World War II—Air War Plans Division-1 (AWPD-1)—which identified electrical power in Germany as a high-priority target.¹⁶ Despite the value these airmen placed on electrical power, it was never systematically attacked during the war because intelligence analyses of the German and Japanese economies accomplished by other agencies minimized the potential benefits of bombing the electrical power systems. After the war, however, the United States Strategic Bombing Survey seemingly confirmed the air planners' convictions by noting, "Had electric generating plants and substations been made primary targets as soon as they could have been brought within range of Allied attacks, the evidence indicated that



The interdiction campaign "Operation Strangle" was aimed at North Korean rail systems, like this one, to stop the flow of supplies from rear areas.

their destruction would have had serious effects on Germany's war production."¹⁷ For air officers, the lesson was clear—hit electrical power at the earliest opportunity.

For the Korean air planners, the North Korean electrical system was particularly attractive because it was highly concentrated and thus vulnerable to air attack. Five hydroelectric plants (Fusen, Chosin, Kyosen, Funei, and Suiho) generated 90 percent of the power produced in North Korea. Suiho was considered the most important target both because it was the largest power plant in the Orient and because it supplied 10 percent of the power used in Manchuria.¹⁸ Destruction of these targets would inflict financial costs, both in terms of repair and lost production, and would also inflict indirect damage on Manchuria, an area that provided a sanctuary for the Communist

forces and support for the North Korean troops. Eliminating the Suiho plant would also inflict additional burdens on the Chinese leaders, who were supporting the North Korean forces.

The selection of the North Korean electrical system rested not on one factor but on many diverse and often unexamined motivations. In addition to the Air Force's institutional predisposition to attack electrical power, these motivations included the desire to inflict costs on the North Korean and Chinese leaders, to cut war production, and to lower civilian morale. While all of these provided justification for the bombing, air planners devoted little attention to the possible reactions of the Chinese or the North Koreans or to how this pressure would translate into a peace agreement.

The effects of bombing the electrical power system were easy to judge from a

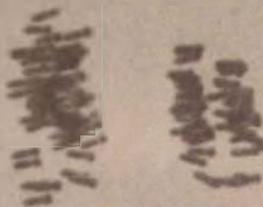
tactical or military viewpoint. United States Air Force and Navy aircraft pounded the five plants from 23 to 27 June 1952, destroying 11 of the 13 generating facilities and eliminating 90 percent of the power capacity in North Korea.¹⁹ The impact of these attacks was widespread. In North Korea there was a two-week blackout throughout the country that hindered and even stopped much of the war production going on in the small factories and shops. The outage hampered vehicle and railcar repairs because of problems with electric welders, and impeded agriculture by disabling the electric pumps used for irrigation and stopping the rice-milling machines.²⁰ In addition, the damage to the Suiho facility resulted in a 23 percent loss of the electrical power requirements of northeast China for 1952. As a result, 30 out of 51 important industries in Manchuria did not make their pro-

A review in 1952 of the interdiction effort led to the recommendation to use air power to destroy or damage enemy supplies, equipment, or facilities. A fire rages at this North Korean supply complex after an attack by US bombers.

duction quotas for the year, and four achieved only a quarter of their projected goal.²¹

Although these first attacks largely destroyed the North Korean electrical system, they did not result in the quick peace agreement that the air planners had hoped for, and bombing under the air pressure strategy continued. With the destruction of what they termed the "most lucrative air targets remaining in North Korea," air planners turned to other "decisive" targets. On 11 July, the Air Force launched a concentrated strike on Pyongyang under the name "Operation Pressure Pump." This attack involved 1,254 bombing sorties against 30 military targets such as communications sites and supply areas in the city, resulting in the complete destruction of three targets while heavily damaging all but two of the remaining ones. With no changes at the negotiating table, the air pressure attacks continued, and on 29 August, Pyongyang was hit again with 1,403 sorties.²² Despite the quantity and ferocity of these attacks, "there was little direct evidence to show that the Communists were ready to concede . . . as a result of this bombing."²³





Despite the quantity and ferocity of Far Eastern Air Forces' bomber attacks and other military efforts against Communist targets, most authors agree that a combination of military, political, and economic factors was necessary to end the war.

However successful the air pressure attacks were in crippling the supply of power or in the destruction of other targets, the real impact must be judged in light of the original objective—bringing about a peace agreement. Although the initial attacks caused a loss in electrical production, the North Koreans worked around the power interruptions by staggering shifts to take advantage of the power available and by buying small generators for mines and manufacturing plants.²⁴ The Russians and Chinese reacted by sending technicians to repair the damage to the electrical system, giving no indication that the attacks affected their willingness to continue the war.²⁵

While the attacks seemingly stiffened the opponents' resolve, they generated or exacerbated political difficulties. The British press and Labor Party vehemently protested these strikes out of fear that the attacks would cause the Communists to

discontinue the peace talks and because the British government had not been consulted before the attacks.²⁶ These complaints, along with those of other allies, weakened international political support for the United States. The bombing attacks also caused the Chinese to break off negotiations with the Indian government. These talks had made progress in resolving some of the problems involved in the stalled peace talks, but the Chinese stopped negotiating because they did not want to appear to be forced into an agreement.²⁷

The obvious paradox between the military and political results of the air pressure strategy in the Korean War highlights a major shortcoming in using this approach—the lack of any valid measure of effectiveness. How do you know if you are succeeding? While it is possible to measure how many planes attacked the target, the tonnage of bombs dropped, and even the results of the raid in terms of destruction to the physical structures, it is far more difficult to determine the actual impact of the raid on the opposing nation. For example, in the electrical attacks on North Korea, the amount of electricity eliminated and the time it was interrupted

could be determined through various intelligence sources and, by inference, extrapolation of the amount of manufacturing stopped.

Determining the physical impact of the bombing is not enough, however, to analyze the actual effectiveness of air pressure attacks. Short of the enemy's conforming to the political demands, it is difficult to determine whether the bombing was even worthwhile.²⁸ For example, if the electricity lost by the North Koreans did not significantly affect their war production effort, their social cohesion, or the leadership's political resolve, then the actual effectiveness of the electrical power attacks may have been zero (or even of negative value if you consider that those aircraft might have been used to greater effect on another target).²⁹ During the Korean War, FEAF resorted to measuring the "tempo and volume of Communist propaganda" as indicators of bombing effectiveness. An increase in propaganda was interpreted as a clear indication that the air pressure strategy was having the intended effect.³⁰ While this may have overstated the effectiveness of the bombing, it nonetheless highlights the difficulty of determining the strategic effectiveness of an air pressure campaign in reaching the political objectives of the war.

Another difficulty in applying an air pressure strategy is the demonstrated resiliency of a nation toward conventional bombing, especially a nation under totalitarian rule. This resistance to pressure through air attack has been demonstrated in both Germany and Japan during World War II, as well as in Korea and Vietnam. The North Koreans were extremely resourceful during the interdiction campaign. As Gen Otto P. Weyland, the commander of FEAF, noted after the war, "The enemy reacted quickly in an all-out effort to recuperate from the interdiction program. He developed remarkable ingenuity and perseverance in rehabilitating his railroad and bridge system and in dispersing and hiding his supplies and equipment."³¹

This adaptiveness to attack was also demonstrated in the bombing of the electrical power system by the use of staggered shifts, small generators, and increased imports that substituted for the loss of the national electrical system. Perhaps the importance of electricity to American society resulted in a tendency on the part of US air planners to impose American expectations and reliance on electricity and thus overemphasize the value other nations placed on electrical power. In any event, depriving people of lighting and heat will cause a decrease in morale, but as the Korean case demonstrates, it is unlikely to cause a change in political behavior.³²

The air pressure strategy, as applied during the Korean War, did not force the Communists to negotiate a peace agreement and thus failed to achieve its primary objective. Despite air power's failure in this particular strategy, its use probably made a contribution toward the ending of the hostilities. Without access to North Korean, Chinese, and Russian archives it may be impossible to separate the distinct role of air power; however, most authors agree that it was "a combination of military, political, and economic factors" (emphasis added) that ended the war.³³

Dwight D. Eisenhower had been elected president in November 1952 on the promise to end the war. He and his advisors discussed and made clear that they were prepared to escalate the conflict to secure a decision. These escalation plans included the use of nuclear weapons, the conventional bombing of China, and a resumption of ground operations by UN forces. Additionally, the air pressure strategy, which by May 1953 included attacks on irrigation dams in North Korea, may have contributed to the armistice because of the rising economic devastation these attacks caused in North Korea.³⁴ Some historians argue that the most significant impetus towards ending the war was the death of Joseph Stalin in the Soviet Union and its impact on the ability of the

Communist nations to reach an agreement.³⁵ Thus the bombing of the dikes earlier would not have had an impact on ending the war. Although the official Air Force history of the Korean War states that "airpower was triumphant,"³⁶ the actual record is more complicated. While air power contributed to the peace agreement, the air pressure strategy alone was not successful and its impact took much longer to be felt than the planners had originally anticipated.

Certainly there were unique political circumstances in the Korean War and our technological capabilities have changed; however, there are still some basic considerations on the use of air power in a pressure role that should be noted. Politically, the North Koreans had an advantage in being supplied by the Soviet Union and China, which obviated many of the material losses caused by bombing. While other nations may not have the same level of support, they will likely be able to substitute for the losses due to bombing and will probably be able to acquire supplies from some source.

It is true that technological advances since the Korean War enable us to better identify targets and determine the effects of bombing. Moreover, precision guided munitions available today not only lessen collateral damage but also put fewer American aircrews at risk and can poten-

tially increase the tempo of air attacks. But, unless we destroy everything—something that is not politically possible today—states can still innovate without changing their political behavior. Precise intelligence data of what we have hit only tells us where repeat attacks might be needed; it tells us little about the true effectiveness of an air pressure attack.

While contextual differences are important in determining the validity of any analysis, the circumstances that separate the Korean War in 1952 and the "New World Order" of today do not change the fundamental problems of an air pressure strategy. Whether the bombing of an electrical power plant is done with three F-117s or 300 F-84s, the result in terms of the actual attack will likely be the same; only the manner of application is different. The impact of this pressure type of bombing on a nation or its leaders—in other words, the true effectiveness of this strategy—remains exceedingly difficult to gauge. When this problem is combined with the tenacity of nations under air attack, the difficulty of using air power alone to compel a nation to accept political demands is clear. The prudent air planner will be aware of these pitfalls before advocating any future air pressure strategy designed to achieve a result on its own. □

Notes

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BRITISH AIR CONTROL

A Model for the Application of Air Power in Low-Intensity Conflict?

CAPT DAVID W. PARSONS, USAF

THE DOCTRINAL inertia resulting from 40 years of preparing for war with the Soviet Union, combined with several “lessons learned” from the air campaign in Operation Desert Storm, has led some air power advocates to overstate the role of air power in future military contests. Belief in the “primacy of air power” creates an intellectual environment in which an air doctrine similar to that employed by the British to administer its colonies during the interwar years (1918–39) might prove appealing as a means to solve future conflicts, especially those categorized as low-intensity conflict (LIC).

However similar the domestic and geostrategic positions of a post-World War I Britain and a post-cold war United States, the military objectives of British colonial rule were much different from those appropriate for the successful resolution of modern low-intensity conflicts. Employing air power in a manner similar to how it was used in British colonies and mandates, known as *air control*, is unsuitable as a means to bring about lasting solutions in today’s low-intensity environment because this method ignores the sociopolitical nature of LIC.

This article begins with a description of air control in the context of its development. It explores three examples of British application of the concept: Somaliland, Mesopotamia, and Aden. It then discusses the forces that drive current American thinking about air power, emphasizing how air control appeals to those who subscribe to traditional views of air power application. Next, the article examines the Clinton administration’s proposal for the application of air power in Bosnia in order to demonstrate how it mirrors the concept of air control. It then challenges the notion that air control, or any similar application of air power, is appropriate for the low-intensity environment.

Origins of Air Control Doctrine

After World War I, Britain set about the task of disarmament. The “war to end all wars” had just been won and the demon of militarism had been exorcised for good. It was time for British lawmakers to confront domestic economic problems: the balance



of payments, labor unrest, and unemployment.

The British Empire was seen as a large part of the solution to Britain's financial problems. Her colonies were as much a source of cheap raw materials as an outlet for much-needed foreign trade. During the war, Britain expanded the size of its empire to some 13 million square miles and 450 million "souls" on six continents.¹ Yet, the British capacity to govern colonial holdings had been ravaged by four years of war.

To maintain control, Britain would rely on a concept of domination that employed "power" rather than brute force. According to British historian Anthony Clayton:

Power, then, with the minimum actual use of force, was to be the keynote [of colonial rule]. Such power would by charisma pro-

duce the correct response from colonial peoples, who would choose to obey the orders of the system rather than be forced into so doing. As such, power was economical, since the use of raw force quickly led to its attrition. Further, force used in one place could not simultaneously be used elsewhere, while the weight of power could be felt in many places at once.²

The foundation of this concept of power lay on historical precedent as well as on the continued perception that Britain could and would deliver punishment to those who opposed its will. Clayton asserts that this doctrine was practicable only because of the great advances in military technology that occurred during World War I:

It seems certain that large areas of the Empire would have had to be abandoned had it not been for the new concepts of control "with-

out occupation," based chiefly on the use of aircraft, armoured-cars, wireless and motor vehicles.³

Thus, Britain began the interwar period with a strategy of colonial administration based on the deterrent effect of rapid worldwide force projection.

However, reliance on the threat of military might to administer the colonies was overshadowed by the desire to cut government outlays. Another significant instrument for the task of improving Britain's fiscal soundness was the reduction of defense expenditures. Not only did shrinking the armed forces reflect the current trend of rejecting militarism, it was also a means to "balance the books." A formal policy of reducing military costs, termed the *Ten-Year Rule*, was published in late 1919. It was based on the presumption that Britain would not be engaged in a major war for at least the next 10 years and therefore required no expeditionary forces.⁴

The army, navy, and air force each had very different ideas on what was the greatest threat to the empire in the new security environment. According to Clayton, "The differences arose from the very size of the Empire and its attendant commitments, and the absence of any clear foreign policy assessment of priorities in the decade."⁵ They also arose from interservice competition over shrinking resources in the environment of the *Ten-Year Rule*. Each service touted a single-service strategy, with its own assets meeting the majority of Britain's security needs. The Royal Navy viewed Japan's increasing naval capability as the most serious threat to British hegemony; the Royal Air Force (RAF) believed that a significant "continental" air force would negate Britain's traditional natural protection (the English Channel); and the army considered Britain vulnerable through its "natural frontier," the Rhine.

The RAF, the newest service, faced the toughest challenge to its organizational integrity. It did not help the RAF that its

primary strategic function, protecting Britain from an assault across the English Channel, was the vertical extension of a mission previously performed by the navy. There were many proposals to consolidate the RAF into the navy as the Royal Naval Air Service (RNAS) once the war had ended.⁶ However, the RAF maintained its status as a separate service by shifting its mission statement to address the colonial arena.

British colonial administrators asserted that to maintain a given colony, certain "political requirements of 'law and order'" were necessary:

First of all, it must be possible for a British Officer, civil or military, to travel unmolested anywhere he may wish to go. . . . Secondly, the sanctity of the trade-routes through the hinterland must be respected. . . . The third rule is that if two [groups of natives] have to fight one another then they must manage to do so without interfering with the rights of third parties.⁷

These were the primary objectives of the occupying military force in Britain's colonial holdings. The RAF argued that these goals could be obtained most efficiently through the concept of air control.

Under air control, law-breaking tribes (defined as any native element that disrupted the maintenance of these three primary rules of law and order) would first be given an ultimatum. The government would clearly spell out what the miscreants had done wrong, what was expected of them in the future, and what restitution they were expected to pay. If, after a specified period of time, the law-breakers did not satisfy the government's demands, the RAF would invoke an "inverted blockade" upon the guilty party or parties.

Shortly after the expiration of the ultimatum, RAF pilots would begin bombing the presumably empty villages of those charged with misbehavior.⁸ The intended effect of the "blockade" was to bring economic pressure to bear on the targeted



British air marshal Sir Hugh Trenchard proposed a plan to resolve the situation in Somaliland by relying on the RAF to attack the mullah's forces. Here, Lord Trenchard (center) chats with American soldiers during an inspection tour in the latter years of World War II.

individuals by disrupting the daily routine necessary to survive. The bombings, interspersed with deliveries of propaganda literature, would slowly intensify until the recipients sued for peace on terms acceptable to the government. According to RAF policy, the stated political objective of air control was "to bring about a change in the temper or intention of the person or body of persons who are disturbing the peace. . . . In other words, we want a change of heart."⁹ RAF leadership asserted that air control was less expensive in terms of money, casualties, and residual resentment than the traditional use of ground forces for punitive raids upon recalcitrant natives.

Somaliland

It was in Somaliland in 1920 that the RAF first employed the concept of air control. Since 1899, the British colonial government had experienced difficulties there from the forces of Sayyid Muhammad Ibn Abdulla Hassan, disparagingly referred to as the "Mad Mullah." Sayyid Muhammad, a popular teacher and apostle of the "fiercely ascetic" Salihipa sect, was an outspoken critic of British imperialism. His frustration peaked, and he declared a *jihad* against British rule when the colonial administration permitted the establishment of a Roman Catholic school in the capital, Berbera.¹⁰

From 1903 to 1914, a series of half-

hearted campaigns against the mullah was unsuccessful. He avoided pitched battles and drew imperial forces deep into the Somali desert.¹¹ The outbreak of World War I distracted British attention and for four years allowed the mullah and his followers a degree of the autonomy they sought. At war's end, Sir Geoffrey Archer, the governor of Somaliland, claimed that the mullah's independence was a slap in the face to Britain and set a bad precedent for the rest of its empire.

In early 1919, Britain's War Office sent Maj Gen Sir Reginald Hoskins, commander in chief, East Africa, to Somalia to plan a campaign to resolve the situation once and for all. When the British government ruled that Hoskins's plan was too expensive, Royal Air Marshal Sir Hugh Trenchard proposed a plan that relied on the RAF to attack the mullah's forces. Trenchard's plan combined aerial punishment with ground-based "mopping-up" attacks by camel-mounted levies.¹²

On 20 January 1920, the RAF delivered a payload of pamphlets, which outlined the British ultimatum, to the mullah's headquarters in Medishe.¹³ The next day the bombing began in dramatic fashion when the mullah dressed himself in new robes and seated himself under a white canopy in defiance of British demands. The initial bombing attack reportedly killed the mullah's uncle (who was standing next to him under the canopy) and singed the mullah's own clothing.¹⁴

Convinced of the seriousness of British intentions, the mullah fled, leading British air and ground forces on a wild-goose chase across the Somali outback.¹⁵ The campaign lasted three weeks and ultimately succeeded in dispersing the mullah's forces. Although immediate military objectives were not achieved—the mullah himself escaped to Ethiopia, where he died the following year—the RAF could claim that in a period of 21 days it had solved a problem that had eluded the army for 21 years.¹⁶ The concept of air control was born.



Mesopotamia

The next significant use of the RAF for colonial administration would come in Mesopotamia (Iraq). After the defeat of the Ottomans in World War I, Britain and France were awarded control of much of the territory of the collapsed empire. Included in Britain's mandate was Mesopotamia. Administered by the British India Office, Mesopotamia was garrisoned by an Anglo-Indian army of occupation that soon proved unsuitable for a task of such magnitude.

The Ottomans had relied on a system of arbitrating feuds between local tribes and granting significant autonomy to local notables in order to maintain order. Indirect rule had been the cornerstone of Ottoman policy. Among the nearly independent social groups were the "Marsh Arabs" who inhabited the southern banks of the Euphrates River. Likewise, the Kurds in northern Mesopotamia had long maintained virtual independence from central authority and did not take kindly to the British presence.¹⁷

The army of occupation was soon put to test extinguishing brush fires of resistance to British rule throughout the territory.¹⁸ By early 1920, Mesopotamia was increas-

ingly seen as unmanageable. In a report to Winston Churchill, then secretary of state for the colonies, General Staff professed itself unable to garrison Mesopotamia.¹⁹ Encouraged by the recent success of air power in Somaliland, Churchill tasked Air Marshal Trenchard to provide a plan for the RAF's administration of Iraq.

Native resentment to British encroachment was on the rise during the spring of 1920. British policies causing alarm included the proposed equal education of women and a novel form of government intrusion—property taxes. Spurred on by a perceived British reluctance to fight for Mesopotamia, nationalists began an open, widespread insurrection in May. Initially caught off guard by the revolt, the colonial government was slow to respond. All over the country the British were on the defensive. Army reinforcements were airlifted from India, and besieged outposts were kept supplied via airdrop.²⁰

The revolt and its pacification were over by February 1921 and, contrary to initial Iraqi assumptions about British staying power, the rebellion hardened the British position against withdrawal from its mandate. For those who believed that the RAF



should be given responsibility for the colony, the rebellion demonstrated the army's inability to protect Britain's interests and was evidence of the need for air control. At the Cairo Conference of March 1921, Churchill asserted that, due to the cost of maintaining a garrison, Britain had a choice between abandoning Iraq or implementing the RAF's proposal to maintain control.²¹ The Military Committee of the Cairo Conference elected to pursue a policy of air control in Mesopotamia and, in an effort to placate Arab nationalism, named Emir Feisal ruler of Iraq (under British mandate).

On 22 October 1922, the Air Ministry officially took control of the country. Eight squadrons of bombers were distributed among three airfields, each of which had its own cantonment and defense perimeter guarded by levies under British officers. RAF colonial administrators stated that their purpose was "to assist [Feisal's] government in the task of bringing order and stability to [Iraq]."²² RAF aircraft distributed propaganda leaflets among the tribes, transported political officers, and carried out blockades against the stubborn elements. Sir Percy Cox, the high commissioner in Baghdad, reported that by the end of 1922

on [at least] three occasions demonstrations by aircraft [have been sufficient to bring] tribal feuds to an end. On another occasion planes destroyed a dam illegally built by a sheik to deprive his neighbours of water, and dropped bombs on a sheik and his followers who refused to pay taxes, held up travellers and attacked a police station.²³

The primary foci of punitive operations remained the Kurds and the Marsh Arabs. Unwilling to give up hope of establishing a separate state, the Kurds, led by Sheikh Mahmud, carried out a guerrilla campaign in the North that would last throughout Britain's occupation of Iraq (a campaign which has continued, off and on, to this day).

The RAF also protected Iraqi tribesmen from raids by the rival Wahhabis across

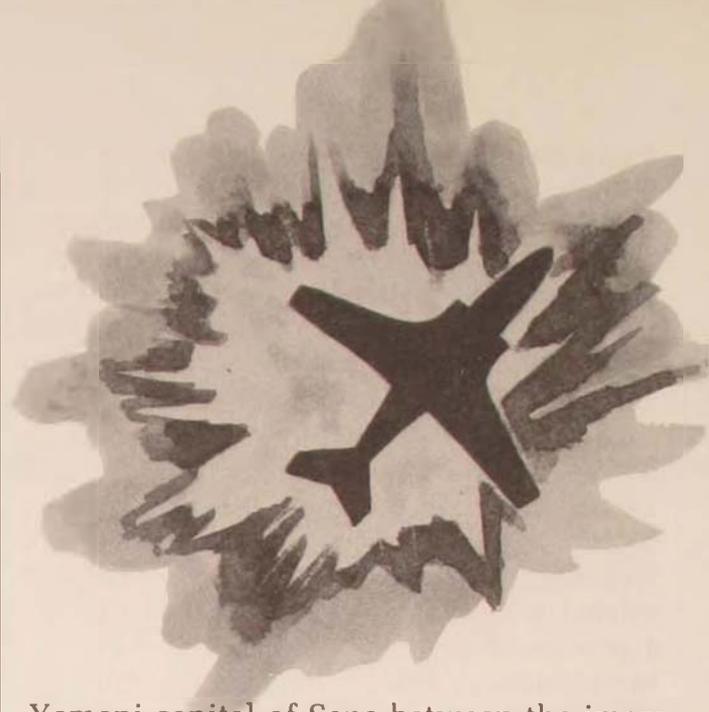
the southern frontier from what is now Saudi Arabia. The RAF implemented a successful campaign, combining air power with self-defense forces from local tribes, that kept relative peace until King Ibn Saud, the founder of Saudi Arabia, crushed the Wahhabis in 1930.

By 1932, the last imperial police forces were removed from Iraq. During its tenure, the RAF had administered the Iraqi mandate at a fraction of the cost of maintaining control with ground forces. In 10 full years of air control operations, the RAF suffered only 14 killed in action and 84 wounded.²⁴

Aden

The use of the RAF to administer the Aden Protectorate, on the southwestern corner of the Arabian Peninsula, would prove to be Britain's longest and final application of air control. The protectorate consisted of the major port city of Aden and approximately 9,000 square miles of sparsely populated, unforgiving terrain. Originally established in 1839, the British had largely kept their operations confined to Aden. Until well into the twentieth century, the British did little more than sign treaties with the various tribes in the interior to keep out other colonial powers²⁵ and to prevent the tribes from encroaching on Aden itself.

The collapse of the Ottoman Empire heightened the ambitions of Imam Muhammad ibn Yahya, the religious leader of Yemen, to seek sovereign control over the entirety of his claimed domain, which included the Aden Protectorate.²⁶ Imam Yahya's interpretation of the "bounds" of his realm was incomprehensible to the British. The colonial government conceded the imam's right to "territories recently Turkish." However, it demanded that he abide by boundaries agreed to with the Ottomans in 1904 and that he respect treaties between the British and the tribes within the protectorate. In February 1926, a meeting took place in the



Yemeni capital of Sana between the imam himself and British negotiator Sir Gilbert Clayton. Both sides agreed to a status quo in which each believed he had achieved the other's capitulation.²⁷ The Imam Yahya continued working to establish imamate authority over "al-Yemen." The stage was set for the introduction of the RAF into Aden.

Again, Britain's primary consideration in resorting to air control of a colony would be monetary. The army estimated that it would cost £1 million annually and require a division of infantry to throw the imam's forces back to the line that the British considered the frontier between Yemen and Aden.²⁸ In early 1928, the RAF stationed a squadron of bombers at Aden and took over administration of the protectorate from the army. An ultimatum was delivered to Imam Yahya. He was warned that any further intrusion into the protectorate would be cause for air raids against his cities.

On 5 April 1928, Yemeni raiders crossed the frontier and looted a village near Aden. Within two hours, RAF bombers were dispatched to bomb the southern Yemeni town of Taiz. Soon after, another bomber flew to the capital, Sana, for demonstrative purposes. The imam's morale was shaken enough for him to order all "occupied" territory evacuated.²⁹ Although Yemen ended its overt

penetrations into the protectorate, the imam (and his son Ahmed) would continue to denounce foreign domination for the rest of Britain's colonial tenure in Aden.

Having put a stop to the protectorate's external source of unrest, the RAF turned to establishing internal tranquility. In Aden, British political officers would make significant use of the airplane to move about the territory in order to negotiate cease-fires between feuding tribes and to deliver other political "goods."³⁰ In the 1930s, William Harold Ingrams managed to negotiate a series of treaties known as "Ingrams' Peace" that involved the cooperation of over 1,300 tribal leaders.³¹ In January 1954, the work done by political officers resulted in the creation of a Federation of the Western Protectorate composed of the governor of Aden and tribal rulers.³² The RAF continued to use air control to maintain order within the protectorate as Britain progressively relinquished control of the colony and granted it independence in 1966.³³

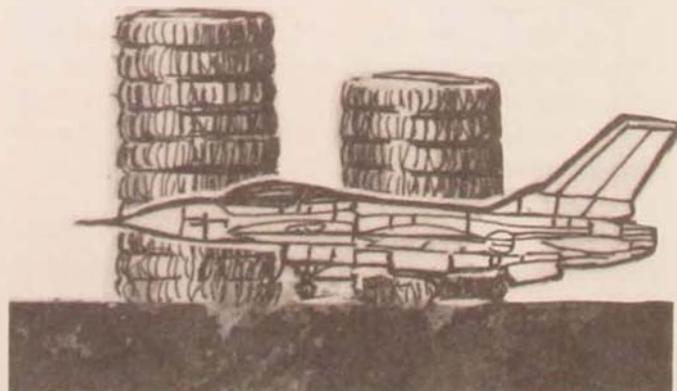
As Britain withdrew from its empire, the use of air control dwindled. However, due to its perceived success throughout the Middle East 70 years ago, air control remains a model for the application of air power in "little wars," not only for the British but for others as well.³⁴ It is significant to note that the domestic and geostrategic environment facing the United States today parallels that which Great Britain faced in the post-World War I era when the concept of air control was born.

The Posture of American Air Power

Containment of communism and deterrence of Soviet aggression are no longer the primary tenets of our national security strategy. Proliferation of nuclear, biological, and chemical weapons; drug traffick-

ing; democratization; and international political, military, and economic interdependence are the forces shaping the current US security posture.³⁵ Furthermore, increasing foreign trade imbalances and a towering domestic budget deficit are now seen as the primary threats to US national interests. For some policymakers, cutting the defense budget to produce a "peace dividend" is the primary tool to deal with current American economic woes.³⁶ As a result, the American military establishment is undergoing a painful and important reevaluation of its force structure and doctrine and the individual services are locked in battle to protect their respective roles in various Department of Defense (DOD) missions.³⁷

In response to the changes of the late 1980s, the US Air Force issued a "new" philosophy of operations termed *global reach—global power*.³⁸ This new stance entails continental US (CONUS)-based aircraft reacting to flashpoints as they occur throughout the world (global reach) with concentrated firepower (global power). Global reach—global power combines traditional views about the employment of air power with the political and economic realities of operating with less forward presence. This posture is an attempt to apply cold-war weapon systems and tactics to a new security environment where threats are more diffuse, and less tangible and must be managed with a shrinking infrastructure.



The USAF's first chance to employ global reach—global power was the deployment of American assets to the Middle East during Operation Desert Shield. Once the buildup was complete, coalition forces shifted to traditional constructs (envisioned for use against Soviet armed forces) to plan and fight the battles of Operation Desert Storm. However, in the aftermath of the Gulf War, the major "lesson learned" by air strategists was that global reach—global power was highly effective.³⁹ The American experience with air power during Operation Desert Storm not only validated the assertions of global reach—global power, it further entrenched three deep-seated beliefs that drive current air power application.

First, since the 1940s, American air power strategists have focused on the airplane's ability to avoid geographic and military obstacles and deliver ordnance onto a target. The legacy of Giulio Douhet and William ("Billy") Mitchell has led to a "tunnel vision" that focuses solely on the "shooter" aspect of the USAF's mission.⁴⁰ The stunning success of high-technology weaponry during Operation Desert Storm has without a doubt helped to further ingrain this mode of thinking.

Second, many air power advocates contend that the results of the air campaign in Operation Desert Storm established the primacy of air power in any future military conflict. Lt Col Price Bingham even went so far as to state that

perhaps the most important lesson the US military could learn from Desert Storm is that it needs to change its doctrine to recognize the reality that air power can dominate modern conventional war. . . . Surface forces are still very important, but campaign success now depends on superiority in the air more than it does on surface superiority.⁴¹

Indeed, air power played a major role during the Gulf War; however, the remarkable success of air power may have had more to do with the unique characteristics of the conflict than the "maturation" of air

power doctrine. Iraq and Kuwait are desert countries where air power is more decisive against enemy forces due to lack of adequate cover. Additionally, the static nature of Iraqi operations allowed coalition air forces to suppress any credible air defense threat and to continually pound stationary enemy targets.

Third, there exists a widespread belief that the use of air power to solve military conflicts is more "economical" than the use of ground forces, both in terms of dollars spent and casualties suffered. Desert Storm contributed to this perception for several reasons: America's media picture of the war was dominated by the air campaign; the US military suffered a remarkably low rate of casualties; and the amount of collateral damage to Iraqi civilians was kept relatively low. The notion that air power is cheaper and neater than the use of ground forces has much political utility in light of the current domestic economic situation and the traditional American aversion to acknowledging the "human cost" of military operations.

Given the current intellectual atmosphere, a doctrine similar to air control appeals to American air power advocates. Such a doctrine allows the Air Force to maintain traditional assumptions about the employment of air assets and fits into the current emphasis on accomplishing military missions at minimal cost.

Air Control for Bosnia?

In the spring of 1993, the Clinton administration first put forth a strategy for using air strikes to halt the fighting in the former Yugoslavian republics. The strategy itself, the reasons for relying on it, and its intended military goals all mirror Britain's use of air control in its colonies.

First and foremost among the administration's considerations was President Bill Clinton's insistence that US ground troops should not be introduced into the theater. The president and his advisors operated

under the assumption that limiting US involvement to the use of air power would reduce American dollars spent and lives lost. Air Force Chief of Staff Gen Merrill A. McPeak assured the Clinton administration that air operations over Bosnia posed "virtually no risk" to the aircrews involved.⁴² In Bosnia, "economy" would be a factor in the reliance on air power.

The intended military goal of the Clinton administration's proposal was to "halt Serbian aggression and freeze its military gains by a cease-fire."⁴³ This goal was stated before President Clinton articulated a formal US policy on the conflict or decided upon overall objectives for military action (both of which his administration has yet to do). The idea that air power can be relied upon to provide a "quick fix" reflects the influence of the "lessons" of the Desert Storm air campaign. Furthermore, such a limited military goal indicates a desire for immediate stability rather than a long-term solution to the problem similar to Britain's attitude about tranquility in the colonies.

The plan itself involved using Air Force and Navy fighters deployed to air bases in Italy and on aircraft carriers in the Adriatic Sea to launch sorties against Bosnian Serb forces.⁴⁴ Targets included artillery positions and storage areas as well as key bridges and rail junctions reportedly used to resupply forces in Bosnia from Serbia. Since these strikes had little chance of destroying all of the Serbian artillery positions and were not going to be coordinated with any ground operations, they would have amounted to little more than punitive attacks. *The concept of using aircraft based on the periphery of an isolated conflict to bring peace by meting out punishment when and where it is deserved is the essence of air control.*

The Clinton proposal to use air strikes in Bosnia may not mirror all the characteristics of classic air control as employed by Britain in its colonies; however, what

is important is that the underlying assumptions about the use of air power and the desired results are the same. The long-term effectiveness of air control in both situations is likely to be the same as well.

The Nature of Low-Intensity Conflict and the Effectiveness of Air Control

The resistance that an initial occupying colonial force faced and the current civil war in the former Yugoslavian republics, although very different, are both forms of LIC.⁴⁵ The most important characteristic of LIC, which is generally overlooked by policymakers and military planners, is that *the conflict cannot be resolved solely with military power*. As Sam Sarkesian asserts,

The center of gravity of such conflicts is not on the battlefield per se, but in the political-social system of the indigenous state. Thus, the main battle lines are political and psychological rather than between opposing armed units.⁴⁶

The concept of air control as conceived and employed by the British (and mirrored by the Clinton administration) ignores this basic tenet of LIC.

In each case where Britain employed air control, overwhelming firepower did nothing more than temporarily suppress the overt manifestations of some underlying sociopolitical conflict. However, since this limited goal was sufficient for Britain's colonial needs, air control was heralded as a broad success. In 1920 Somalia, the RAF did not succeed in resolving Britain's dispute with Sayyid Muhammad; it merely drove him into a neighboring country. The resentment of British intrusion into the lives of Somali natives, which Sayyid Muhammad had embodied, remained. In Iraq, the colonial

government could not comprehend that what they considered as just a matter of "law and order" involved significant political issues for native tribes. In Aden, discontent sown by the Imam Yahya and his successor-son Imam Ahmed, could be subdued by RAF bombers, but it merely lay dormant until the territory gained independence and became the source of a strong nationalist movement in the 1950s and 1960s. Peter Slugett, a British historian of Iraq, summed up the posture that air control eventuated:

The most serious long-term consequence of the ready availability of air control was that it developed into a substitute for administration. . . . *The speed and simplicity of air attack was preferred to the more time-consuming and painstaking investigation of grievances and disputes.* (Emphasis added)⁴⁷

This same posture threatens to subsume the American application of air power, especially with respect to the complex situations that are indicative of the low-intensity environment.

Air strikes in Bosnia may indeed bring the situation on the ground to a standstill, but what will this really accomplish? Like the application of air control in the British colonies, air power may bring about an immediate "peace" on *our* terms. This would allow American policymakers to declare that they had somehow contributed to stability in the area. This "solution" would also satisfy American legislators if it could be accomplished with little cost in American dollars and lives. However, past efforts to employ

offensive air operations, within the low-intensity environment, to provide a temporary cessation of the conflict so that long-term efforts could be made to win the "hearts and minds of the people" have proven counterproductive.⁴⁸ The use of military firepower to quell disturbances associated with low-intensity threats consistently generates a political backlash that does nothing but further inflame the conflict.⁴⁹

The adoption of an air control strategy in Bosnia would be a mistake because foreign military intervention aimed at changing the behavior of "unruly natives" would at best impose a short break in the fighting and would ultimately aggravate the situation by generating resentment on all sides. The nature of the conflict in Bosnia is such that it cannot be solved in a few days, weeks, or even months. It will take years to heal the sociopolitical ills that exist in the Balkans.⁵⁰ Furthermore, resolution of this conflict will prove impossible without the use of ground forces.⁵¹

The lesson to be learned from the British experience of air control is not that it is a model for the application of air power in the modern low-intensity arena, but quite the opposite—*any application of military power in LIC that ignores the underlying sociopolitical nature of the conflict is, in the long run, a waste of time, lives, and resources.* Low-intensity conflict, by its very nature, demands patience and durability, neither of which is characteristic of the concept of air control. □

Notes

1. Anthony Clayton, *The British Empire as a Superpower, 1919-1939* (Athens, Ga.: University of Georgia Press, 1986), 1.

2. *Ibid.*, 11.

3. *Ibid.*, 11-12.

4. *Ibid.*, 18.

5. *Ibid.*

6. See Malcolm Smith, *British Air Strategy between the Wars* (Oxford: Clarendon Press, 1984), 15-19, 22-28.

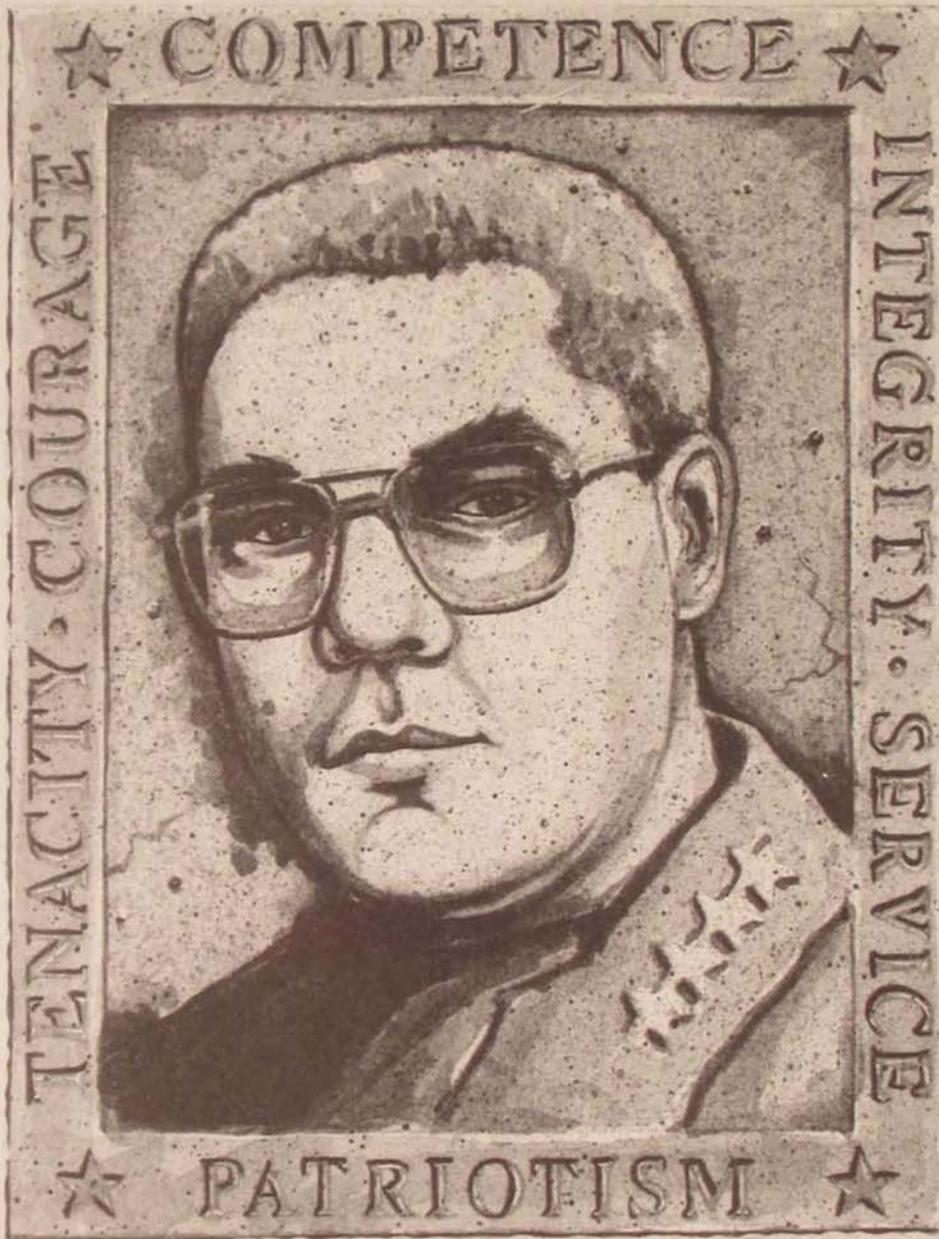
7. Air Commodore C. F. A. Portal, "Air Force Co-operation in Policing the Empire," *Journal of the Royal United Service Institution*, May 1937, 348.

8. In practice, RAF pilots avoided bombing inhabitants. Government ultimatums spelled out exactly where and when bombing would occur and encouraged evacuation. *Ibid.*, 353.

9. *Ibid.*, 350.

10. Lawrence James, *Imperial Rearguard: Wars of Empire*,

- 1919-1985 (London: Brassey's Defence Publishers, 1988), 164-65.
11. *Ibid.*, 165.
 12. Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare, 1918-1988* (London: Brassey's Defence Publishers, 1989), 12.
 13. James, 166.
 14. Randal Gray, "Bombing the Mad Mullah—1920," *RUSI: Journal of the Royal United Services Institute for Defence Studies*, 4 December 1980, 43.
 15. See Gray for a detailed account of the campaign. *Ibid.*, 41-47.
 16. Smith, 28.
 17. Indifference turned to enmity when Britain played a key role in rejecting the promise of an independent Kurdistan following World War I.
 18. See James, 71-73.
 19. Towle, 13.
 20. See James, 73-75.
 21. Towle, 15.
 22. James, 77.
 23. Towle, 17.
 24. *Ibid.*, 19.
 25. The Ottomans had colonial interests in and around Aden until their withdrawal at the end of World War I.
 26. See William Harold Ingrams, *The Yemen: Imams, Rulers, & Revolutions* (New York: Frederick A. Praeger, Publisher, 1964), 64.
 27. *Ibid.*, 65-67.
 28. Towle, 28.
 29. Ingrams, 67.
 30. Towle, 29-31.
 31. Ingrams, 80.
 32. *Ibid.*, 86.
 33. For details of various operations, see Towle, 32-34.
 34. Sources on the use of British air control as an example of the "successful" employment of air power in LIC include the following: Capt George C. Morris, "The Other Side of the COIN: Low-Technology Aircraft and Little Wars," *Airpower Journal* 5, no. 1 (Spring 1991): 60; Lt Col David J. Dean, *Air Power in Small Wars: The British Air Control Experience* (Maxwell AFB, Ala.: Air University Press, April 1985); Col Kenneth J. Alnwick, "Perspectives on Air Power at the Low End of the Conflict Spectrum," *Air University Review* 35, no. 3 (March-April 1984): 18-19; and Roger A. Beaumont, "A New Lease on Empire: Air Policing, 1919-1939," *Aerospace Historian*, June 1979, 84-90.
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 36. Rick Maze, "Even More Defense Cuts Urged," *Air Force Times*, 1 March 1993, 3.
 37. See Neff Hudson, "Air Force Would Lose 'Copters Under Plan," *Air Force Times*, 1 February 1993, 10; Julie Bird, "Air Force Would Share Air Defense Mission," *Air Force Times*, 1 March 1993, 6.
 38. Secretary of the Air Force Donald B. Rice, *The Air Force and U.S. National Security: Global Reach—Global Power*, white paper (Washington, D.C.: Department of the Air Force, June 1990).
 39. For example see Secretary of the Air Force Donald B. Rice, "Air Power in the New Security Environment," in Richard H. Schultz, Jr., and Robert L. Pfaltzgraff, Jr., eds., *The Future of Air Power in the Aftermath of the Gulf War* (Maxwell AFB, Ala.: Air University Press, July 1992), 11.
 40. See Lt Col Barry D. Watts, *The Foundations of U.S. Air Doctrine: The Problem of Friction in War* (Maxwell AFB, Ala.: Air University Press, December 1984). For an example of this type of bias, see Col John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988).
 41. Lt Col Price T. Bingham, "Air Power in Desert Storm and the Need for Doctrinal Change," *Airpower Journal* 5, no. 4 (Winter 1991): 33.
 42. Elaine Sciolino, "U.S. Military Split on Using Air Power Against the Serbs," *New York Times*, 29 April 1993, A1.
 43. White House "officials" quoted in Elaine Sciolino, "Christopher Explains Conditions for Use of U.S. Force in Bosnia," *New York Times*, 28 April 1993, A10.
 44. See William Matthews, "U.S. Plans for Peacekeeping, War in Bosnia," *Air Force Times*, 17 May 1993, 14-16.
 45. Air Force Pamphlet (AFP) 3-20 defines LIC as "Political-military confrontation between contending states or groups below conventional [forms of] war and above the routine, peaceful competition among states." See Field Manual (FM) 100-20/AFP 3-20, *Military Operations in Low Intensity Conflict*, December 1990, 1-1.
 46. Dr Sam C. Sarkesian, "Low-Intensity Conflict: Concepts, Principles, and Policy Guidelines," in *Low-Intensity Conflict and Modern Technology*, ed. Lt Col David J. Dean (Maxwell AFB, Ala.: Air University Press, 1986), 15.
 47. Peter Slugett, *Britain in Iraq, 1914-1932* (London: Ithaca Press, 1976), 269.
 48. Capt David Willard Parsons, "Toward the Proper Application of Air Power in Low-Intensity Conflict" (Master's thesis, Naval Postgraduate School, December 1993), 46-59.
 49. *Ibid.*
 50. See Misha Glenny, *The Fall of Yugoslavia: The Third Balkan War* (New York: Penguin Books, 1992).
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CORE VALUES

In a Quality Air Force

THE LEADERSHIP CHALLENGE

CHAPLAIN, LT COL ALEXANDER B. ROBERTS, USAF

The Air Force Vision

Air Force People building the world's most respected air and space force . . . global power and reach for America.

The Air Force Mission

To defend the United States through control and exploitation of air and space.

The Air Force Core Values

Integrity, Competence, Tenacity, Patriotism, Service

“**T**HE BASIC philosophy of an organization has far more to do with its achievements than do technological or economic resources, organization structure, innovation and timing.”¹ These words of Thomas Watson, Jr., of International Business Machines (IBM), bring into sharp focus the importance of certain recent events in Air Force history. In the last few months, senior leaders of the Air Force have clearly articulated, perhaps for the first time in its history,² three aspects

of Air Force basic philosophy. These are the Air Force vision, mission, and core values.

When he introduced the Air Force mission, Gen Merrill A. McPeak, the chief of staff, called upon its leadership to work to foster a renewed sense of dedication to the institutional mission of the Air Force. In calling for a “new generation of missionaries [to] spread the word” about the Air Force mission and thus “bind us together,” he also called for a “new focus” essential to the fulfilling of his call. He

said, "We need first a new focus, a focus on enduring values that can guide us in a changing, more complex, often confusing world."³

Core values represent such enduring values. They are, of course, not the only enduring values. Some would argue that the list has significant omissions. The one most often pointed out to me is faith. Perhaps that is because I am a chaplain. Omissions aside, the list is a *core* list, not a comprehensive one. It is also not an exclusive list but rather one which, in my view, allows for inclusion of other enduring values as appropriate to situations and circumstances. This article offers definitions for the core values and makes a case for their importance in a quality Air Force. It then looks at the challenge that lies ahead of Air Force leadership in raising up a "new generation of missionaries" committed to the vision, mission, and values of the Air Force. Finally, it makes recommendations on how to most effectively ensure that the Air Force of the future is made up of "missionaries" faithful to the institution, its purpose, and its values.

Core Values

The core values have been described as the "bedrock beliefs and values of the Air Force."⁴ The adjective *bedrock* connotes permanence or immutableness. The core values represent, in the eyes of Air Force leadership, the essential and very nearly unarguable foundation for organizational success.⁵ They seem to be self-evident since, as one author has stated, "The absurdity of attempting to live an effective life [or run an effective military organization] based on their opposites"⁶ is fairly obvious. They also fall in line with what has been written in other authoritative documents on the subject, including Joint Publication 1, *Joint Warfare of the US Armed Forces*.⁷ The brief discussion of the core values that follows argues for their immutable nature and substantiates

their place within the "mainstream of military thought."⁸ In this discussion, the terms *soldier* and *airman* are used interchangeably.

Integrity

Integrity can rightly be called the "mother of all core values." It has been described as the "cornerstone for building trust,"⁹ the "glue that ties us all together,"¹⁰ and "the fundamental premise of service in a free society."¹¹ Integrity implies a oneness between words and action. People of integrity conform their words to their actions. They tell the truth. They also conform their actions to their words. They practice what they preach. They also keep commitments.¹² One of the essential commitments military personnel must keep is the one at the heart of the commissioning and enlistment oaths—to support and defend the Constitution of the United States. The oath is a promise to live by the rule of law¹³ and to support the foundational principles upon which the Constitution is based. These can be summarized as "freedom, quality, individualism, and democracy."¹⁴ Without integrity it is impossible to build the culture of trust so essential to effectiveness in military organizations.¹⁵ It is also essential to the trust that must exist between the military services and the free society they serve.¹⁶

Competence

It has been said that "the nature of the military profession, and the responsibilities of the profession to the society it serves, are such as to elevate professional competence to the level of an ethical imperative."¹⁷ Mistakes in combat, given the tremendous firepower involved, can easily lead to needless tragedy. Competence, like integrity, is essential to trust in military organizations and between the military and society.¹⁸ In the military, the



When he introduced the Air Force mission, Gen Merrill A. McPeak called upon Air Force leadership to work to foster a renewed sense of dedication to that mission.

guiding principle for competence can be found in the words of Abraham Lincoln: "I do the best I know how, the very best I can."¹⁹

Courage

Identified by Carl von Clausewitz as the "soldier's first requirement,"²⁰ courage is implicit in the concept of a good soldier. It is generally understood to have both physical and moral dimensions. Physical courage implies the willingness to put one's life on the line when circumstances require it. Moral courage involves a determination to make correct choices in the face of pressure to do otherwise.²¹ This concept includes the principle upheld at Nuremberg that a soldier is duty bound to disobey unlawful orders.²² Gen W. L. Creech, former commander of Tactical Air Command, said, "Courage is essential in interpersonal relationships. The courage to tell it like it is. The courage to admit you're wrong. The courage to change your mind. The courage to discipline subordinates who need it. The courage to stick to your principles."²³

Tenacity

Von Clausewitz captured the essence of tenacity with two words: staunchness and endurance. The first represents the ability to resist "a single blow." The second alludes to the capacity to maintain "prolonged resistance."²⁴ The duties of military personnel require the ability to stand fast in the face of adversity and to maintain that resolve over time.

Patriotism

Patriotism is "love of and devotion to one's country."²⁵ For the soldier this love and devotion provide the motivation to endure strict discipline and significant sacrifice.²⁶ An important dimension of patriotism for military personnel is the

concept that the soldier's allegiance is to the country first, not to any particular political or military leaders. Again, the oath to support and defend the Constitution gives a significant depth of meaning to this allegiance.²⁷ The words of Arthur Schlesinger highlight another aspect of patriotism: "My idea of patriotism is to act so as to make one's country live up to its own highest standards."²⁸

Service

Service is the giving of self for the welfare of others.²⁹ The United States Air Force is a military *service*. Inherent in the word *service* is the concept of servanthood. Those who serve in the military are public servants. They have been given stewardship over tremendous resources for the express purpose of providing "for the common defense."³⁰ Living up to that responsibility requires much more than a "this-is-only-a-job" attitude. As alluded to earlier, the term *missionary* describes the kind of attitude we are seeking. The ideal would be for every member of the Air Force to accept "service to country as a watchword and defense of the Constitution of the United States as their call."³¹

Core Values and the Quality Air Force

"Quality people are critical to high quality forces. History has taught us that the human dimension is vital to success on the battlefield."³² This statement by Donald B. Rice, former secretary of the Air Force, lays the foundation for why the living of core values is essential to a quality Air Force. The human dimension is vital. The aspect of that dimension critical to success in battle is character—the strength of one's continuing commitment to live professed values. The words of German general Guenther Blumentritt make that point well:

Knowledge is important: efficiency even more so. But character and personality are the most important. Knowledge can easily fail and can, in fact, be the cause of failure. Not intelligence but character is the unfailing factor. Only character is reliable in tough situations, and . . . in combat.³³

In a sense, the character of the institution of the Air Force rises and falls on the commitment of each individual member to live its core values.

Von Clausewitz, in his discussion of "military genius" in *On War*, argues powerfully for the importance of character. Commenting on the "fog" of war, he points to the uncertainty of "three quarters of the factors on which action in war is based." He then makes the case that the one way out of this "relentless struggle with the unforeseen" is the capacity to retain "some glimmerings of the inner light which leads to truth; and second, the courage to follow this faint light wherever it may lead." That is character. He then goes on to flesh out the concept of character by pointing out that it is the quality of sticking to one's convictions and keeping one's balance in the face of "exceptional stress and violent emotion." Character to von Clausewitz is not just having "powerful feelings" but resides in having an understanding of and faith in "the overriding truth of tested principles."³⁴

Real faith leads to action. Faith is not just professing belief. James, in the New Testament, said that "faith without works is dead."³⁵ Although he was speaking of a different level of faith, the principle applies in this context. Faith is manifest in our actions, in living what we say we believe. When people live out their faith in those tested principles that we call core values, the trust between all team members essential to effective mission accomplishment cannot help but be positively impacted.³⁶ It is important to point out that this truth applies not only to combat but to all aspects of the operation of the Air Force. A constant theme in the Air Force today is the notion that enduring

quality will only flow out of an "institutional culture" characterized by trust. It logically follows that the promotion of continuous improvement in the character component of quality will lead to higher levels of trust and higher levels of quality. As the organization more closely aligns individual action and organizational strategy, structure, style, and systems around core values, more "latent creativity and energy" will be unleashed to create "benefits that go straight to the bottom line."³⁷

In a sense, core values represent fundamental doctrine about what works in combat.³⁸ In addition, they also represent what one author has referred to as "true north" principles.³⁹ They point to what works to bring about quality in organizations in a more general sense. The remainder of this article deals with how the Air Force can more effectively align its institutional culture with fundamental doctrine and its people with "true north" principles.

The Challenge to Air Force Leadership

Air Force leadership is committed to building a quality Air Force established on the foundation of core values. There is much evidence to indicate that many who will enter the Air Force in the coming decade will not have a strong commitment to core values. The results of a recent study indicate that two-thirds of America's citizens do not believe there is universal truth with regard to morality.⁴⁰ In fact, it has been argued that the only enduring value to a significant proportion of our society is self-interest.⁴¹ This lack of alignment between societal and core values presents a significant challenge to those who will lead the Air Force in taking up General McPeak's challenge to "raise up a new generation of missionaries."

A key to meeting the challenge lies in the concept of transformational leader-



Gen John A. Wickham, Jr., former Army chief of staff, stated that "a relationship exists among character, values, and leadership." He believed that "the better the leadership, the better grounded it is on character and values."

ship—leadership that can change hearts and minds and bring them into line with core values.⁴² Underlying it are two fundamental leadership commitments—a commitment to personal integrity and a commitment to foster organizational alignment with core values.⁴³

Transformational Leadership

Bruno Bettelheim once remarked, "If we hope to live not just from moment to moment, but in true consciousness of our existence, then our greatest need and most difficult achievement is to find meaning in our lives."⁴⁴ Transforming leadership builds on this basic human need. Trans-

forming leaders put their efforts into proclaiming, exemplifying, and teaching the real meaning of the values of the organization. They are, in a sense, leader-missionaries for the organization. They are zealous to the point of tediousness. They take every opportunity, no matter how large or small the audience, to proclaim the organization's enduring values.⁴⁵

In their book *In Search of Excellence*, Thomas J. Peters and Robert H. Waterman quote Gregor Burns, who gives this definition of transforming leadership:

[Transforming leadership] occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality. . . . [T]ransforming leadership ulti-

mately becomes *moral* in that it raises the level of human conduct and ethical aspiration of both the leader and the led, and thus has a transforming effect on them both.⁴⁶

A clearer understanding of transformational leadership can be had by comparing it with transactional leadership, a much more common style. The following chart (Table 1), adapted from Stephen Covey's book *Principle Centered Leadership* provides such a comparison.⁴⁷

Covey is quick to point out that some aspects of transactional leadership are necessary. However, without the parameters laid out by transformational leadership, there is no clear picture of ultimate goals and objectives. This lack of direction leads managers to "operate on social and political agendas and timetables."⁴⁸

Personal Integrity

The axiom "Actions speak louder than words" is one that few would dispute. Carrying that thought a step higher, we intuitively know that when actions and words are one and the same, the volume of that message drowns out either one by itself. Anyone can be a transformational leader if he or she is willing to pay the price. The price is a commitment to fight the daily battle to bring one's actions and words into alignment.⁴⁹ These words of Gen John A. Wickham, Jr., former Army chief of staff, capture the importance of such a commitment to organizational excellence:

I believe that a relationship exists among character, values, and leadership. . . . [T]he success of organizations largely depends on the quality of leadership in them, and the better the leadership, the better grounded it is on character and values. This is particularly true in military organizations.⁵⁰

The example of a great transformational leader like Mohandas K. Gandhi gives us a clear picture of the power of personal integrity. His influence and his ability to inspire the people of India, although he never held public office, was nearly absolute. This absolute power derived from his integrity—the unity of his words, actions, and values—and the relationship of trust that this created between him and the Indian people.⁵¹

It is important to reemphasize that integrity is more than telling the truth or



The great transformational leader, Mohandas K. Gandhi, provides a clear picture of the power of personal integrity.

Table 1
Leadership Styles Comparison

Transformational Leadership	Transactional Leadership
Builds on man's need for meaning.	Builds on man's need to get a job done and to make a living.
Is preoccupied with purposes and values, morals, and ethics.	Is preoccupied with power and position, politics, and perks.
Transcends daily affairs.	Is mired in daily affairs.
Is oriented toward meeting long-term goals without compromising human values and principles.	Is short-term and hard-data oriented.
Separates causes and symptoms and works at prevention.	Confuses causes and symptoms. Focuses on treatment more than prevention.
Focuses on missions and strategies for achieving them.	Focuses on tactical issues.
Is proactive, catalytic, patient, and models values.	Relies on human relations to lubricate human interactions.
Designs and redesigns jobs to make them meaningful and challenging.	Follows and fulfills role expectations by striving to work effectively within current systems.
Aligns internal structures and systems to reinforce overarching values and goals. Makes full use of human resources.	Supports structures and systems that reinforce the bottom line, maximize efficiency, and guarantee short-term results.

keeping promises. It involves a fundamental commitment to live out one's values. When a leader is perceived as not "walking his talk," credibility goes out the window and cynicism is rampant. A short personal anecdote will serve to illustrate. As a member of a professional military education seminar, I read an article on leadership by a former Air Force senior officer. The article emphasized the importance of taking care of one's people and treating them with respect. In sharing the article with some associates who had worked for this senior officer, the clear message was, "This is not the way he treated us." The described result in that organization was cynicism, fear, and lack of trust.

The direct correlation between leadership integrity and organizational excellence requires a leadership commitment to core values. That commitment begins with a sense of personal vision.⁵² These words of former president Ronald Reagan capture the vital importance of vision: "To grasp and hold a vision, to fix it in your senses—that is the very essence, I believe, of successful leadership."⁵³ The central nature of vision is having a clear idea of what you are trying to do with your life, to include what kind of person you are trying to become. It means knowing what you really value. It is expressed in proactivity, the ability to mediate one's actions based on one's values as opposed to the emotions of the moment or outside influences.⁵⁴ For the Air Force leader, if there is to be congruence in his life, this vision must include a deep commitment to core values.

Fostering Organizational Alignment

A characteristic common to many great leaders is that they continuously emphasize organizational values and principles. They continuously model them.⁵⁵ They carry it an essential step further by creat-

ing an organizational environment that fosters adherence to those values.⁵⁶ The power of an institutional environment to influence individual behavior is well documented. That the application, or misapplication, of institutional policies can lead people to behavior that is contrary to stated institutional values is evidenced by two classic examples from the Vietnam War: the My Lai Massacre⁵⁷ and the case of Gen John D. Lavelle, in which bombing records were falsified.⁵⁸ The opposite is also true. An organizational environment can be created that encourages people to live core values. In fact, such an environment is essential to that process.⁵⁹ This is, of course, pretty much common sense. The challenge is to make it common practice. Making it common practice requires that leaders attend to their personal behaviors and to organizational practices. Looking first at personal behaviors, leaders transmit and instill values by what they focus on as important and seek to measure and control; how they respond to "critical incidents and organizational crises"; and what they deliberately role model, teach, and train others to do.⁶⁰ The trickle-down effect of these leadership behaviors can have a powerful effect on organizational commitment to core values and principles.

Turning to organizational practices, the focus is on how the Air Force should carry out socialization. Socialization is the process by which an organization teaches its value system to the new member and fosters a continuing commitment to those values.⁶¹ The ability to effectively socialize members of an organization is recognized as a key to organizational quality.⁶² Effective socialization with regard to core values includes:

Careful Recruitment

Every effort must be made to select candidates whose values most closely align with core values. Air Force values must be communicated clearly to prospective candidates. The candidate must under-

stand that the Air Force is not for everyone. It requires a high level of commitment. The Air Force slogan "Aim High" emphasizes this idea.

Rigorous Entry-level Training

The object is to humble the trainee. Anyone who has experienced this type of training understands that it causes one to do some serious soul-searching. Part of the process involves looking at one's behavior, beliefs, and values. The question then is, Do they fit? This process promotes openness to the acceptance of core values.

Faithful Adherence to Core Values

If the core values are to be a transcendent guide to behavior, that message must be conveyed early, strongly, and continuously. This is the most essential part of the socialization process. This is what establishes the sense of trust between the individual and the organization. Mixed messages must be scrupulously avoided. As a graduate of both basic training and officer training school, I have had personal experience with situations where, in order to accomplish a "higher goal," I was encouraged by supervisors to be deceptive or "bend" a regulation. Although these infractions were minor, they came at a formative time and had a powerful influence on my attitudes about what the real "rules of the game" were.⁶³ I do not believe my experiences were atypical.

Core Values Training

Training in core values at all levels is essential, but the program must not become a forum for lecturing, moralizing, or preaching. It should be designed to teach the critical thinking skills needed to deal with hard issues and emphasize that proactivity based on core values is a must in the Air Force. It is best accomplished

in an environment which encourages participant interaction and discussion leader involvement. It should focus on case studies that deal with real world issues for participants.⁶⁴

Reward Results

Leaders must scrupulously ensure that those whose duty performance exemplifies core values are rewarded.⁶⁵ This approach is a proven antidote to careerism and its emphasis on doing whatever is necessary to advance one's career.⁶⁶ Reward those who really *are* good rather than those who merely *look* good.

Reinforcing "War Stories"

Stories of events and personalities in the history of the Air Force that exemplify core values validate their importance to the organization. They also serve to inspire those who hear them to follow in the footsteps of those who have gone before.

Showcase Role Models

Making others in the organization aware of the successes of those whose behavior, here and now, sets them apart as role models also serves to validate the importance of core values. It is "the most powerful ongoing 'training program' available."⁶⁷

Meeting the Challenge

Values and culture are not a sideshow—a distraction from the more "real" and "pressing" issues we face like, say, the capital gains cut and reducing the federal deficit. They are every bit as "real"—indeed they are more real, more important, and have more impact on our lives.⁶⁸

These words of William J. Bennett, former secretary of education, capture the

importance of values, and core values, to our nation and more specifically to the United States Air Force. Core values are the bedrock foundation upon which a quality Air Force will be built. They focus on virtue, living according to a standard of right.⁶⁹ Yet, in my view, the Air Force, like our society, has been reluctant in the past to give values center stage. Perhaps like the rest of our society we were caught up in the dogma of ethical relativism to the point that we were afraid to too loudly proclaim any standard.⁷⁰ These words of Irving Kristol reflect his concern over the current state of affairs in our nation.

When some foreign political scientist or politician asks what books to read so as to discover the secret of our success, I find that I can think only of books by long-dead authors, many of them unread by Americans today. . . . Nor am I thrilled to observe the sweeping popularity of American popular culture throughout the world. I wish it were a lot less popular here at home, since it seems to me to be so recklessly subversive of the traditional ethos on which this democracy was founded and for so long sustained. We all talk easily about "values" today, but who today speaks for "virtue" as our forefathers once did? Even I find myself tongue-tied before that term.⁷¹

The time has come for the Air Force to speak up loud and clear about core values and the standard of virtue they represent. It begins with a leadership commitment. Commanders and supervisors at all levels must truly lead out in the way epitomized by the concept of the transformational leader. Doing this effectively will require that they come to grips with the meaning of the core values and how they can function as the "missionary-leader" in spreading the word and "changing the hearts" of those they lead. This will require more than cursory briefings on the subject. It should be a significant topic in orientation and ongoing training for leaders and supervisors. There should also be contin-

uing emphasis on these concepts in appropriate professional military education.

Initial and ongoing training for every member of the Air Force is also indicated. This would send the message that core values are important and would also equip individual members with skills and strategies to deal with issues they will face. Every effort must be made to avoid "quick-fix" training, which only trivializes the subject matter. That approach is worse than no training at all.

In line with the principle that values are both "caught" and "taught,"⁷² a concerted effort must be made to ensure that institutional policies and practices at all levels fall in line with core values. This is especially important in training environments. There must be no mixed messages about what the standard of behavior is. Leaders must model core values and ensure that their organizational practices reflect them. Those who do not should not lead.

The importance of a coordinated approach emphasizing all three of the above recommendations cannot be understated. The synergistic effect of such an effort would far outweigh the sum total of these approaches used in isolation. In fact, the implementation of one or two recommendations alone would result in a mixed message that could be counterproductive.

Core values are "enduring values that can guide us in a changing, more complex, often confusing world."⁷³ As they are lived out with ever-increasing effectiveness in the lives of Air Force people, higher and higher levels of quality will be realized. They must be continually "shouted from the rooftops" by visionary leaders who have caught the spirit of what they mean to the Air Force. They must be exemplified in the lives and organizations of those leaders. Then we will be on the way to ensuring that the Air Force of the future is made up of "missionaries" faithful to the institution, its purposes, and values. □

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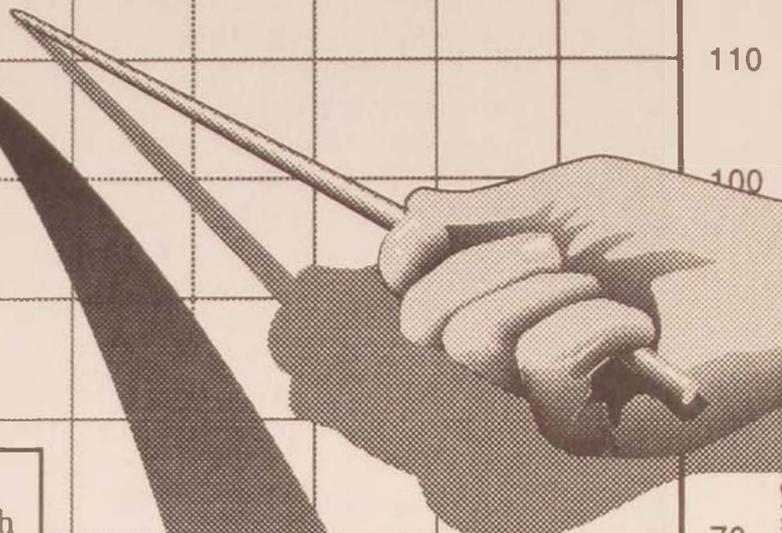
ON THE IMPORTANCE OF IMAGE

SOME LESSONS FROM THE B-52, CURTIS E. LEMAY, AND P. D. ELDRED

DR BUD BAKER

IN THE WANING days of the Bush administration, American and allied aircraft were once again sent into action against the forces of Saddam Hussein. And once again, the air strikes achieved tactical success. But despite the fact that a major portion of the American strike involved Air Force aircraft, the impression given to the American viewing audiences was that it was an all-Navy operation: Tomahawk cruise missiles devastating an Iraqi "laboratory," F-14s thundering off the USS *Kitty Hawk* in spectacular night launches, and formations of F/A-18s over the Persian Gulf.

There are certainly geopolitical reasons for this apparent bias. Arab nations generally—and the Saudis particularly—are uncomfortable with merely letting their



1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995

YEAR

bases be used by the US and its allies. Clearly, the prospect of live Cable News Network (CNN) coverage showing F-16s and F-117s streaking from Saudi bases to blast a brother Arab nation is unlikely to be an image that the Saudi monarchy would relish.¹

But regardless of the reason, this most recent military excursion—in which the Air Force would appear to have done much of the work while getting very little of the credit—highlights a trend that has been developing for at least the past decade: When it comes to getting its story across to the public, the Air Force just isn't doing a very effective job.

Why does that matter? Why is it really important which service gets the credit as long as the mission is accomplished? The answer is simple: The coming post-cold-war years will certainly see the same kind of defense cuts that have followed every conflict in our nation's history. And just as when the Navy fought against the B-36 and the Strategic Air Command in the 1948 "Revolt of the Admirals," one can reasonably expect to see all the services fight—and fight hard—for the resources needed to carry out their mission, now and in the future.

Whether or not a service actually receives those resources will depend in large measure on the extent to which it earns public support. And rightly or wrongly, that public support hinges on the degree to which a service captures the public's imagination, and that happens through two primary avenues: popular culture and media exposure.

Over the past decade, the Navy has virtually cornered the popular culture market. Tom Cruise turned on a whole young generation with *Top Gun* and repeated his success with the Oscar-nominated film *A Few Good Men*. Martial arts star Steven Seagal costars with the USS *Missouri* in *Under Siege*, while Danny Glover and Willem Dafoe took Stephen Coonts's *Flight of the Intruder* to the big screen. No less a cultural icon than Cher bared both

her bottom and her butterfly tattoos for a Music Television (MTV) video featuring, once again, that photogenic battleship *Missouri* and her crew.

It doesn't matter that these might not all be film classics or even—in the case of the MTV video—that they might even be in poor taste. What matters is that in today's fast-food, fast-service, fast-news world, image is everything. And in the battle for the public imagination, today's Air Force is losing—badly.

But it wasn't always that way. There was a time not so long ago when the Air Force actually dominated public attention. And the man who led the Air Force through this period of image building was not a Hollywood writer or a public affairs chief. Instead, his area of expertise was combat effectiveness, and his name was Curtis Emerson LeMay.

Image Is Everything—Almost

In October 1948, General LeMay took over the postwar Strategic Air Command (SAC), an organization then in tremendous disarray.² His first priority was to improve SAC's performance, reasoning that performance was a necessary condition of both mission effectiveness and public support. But as soon as he had elevated SAC's operational capability, he then turned to the next phase: showcasing that ability through a series of highly visible exhibitions. He had two audiences in mind. The first was a potential aggressor who could more readily be deterred once he saw SAC's enormous strength. And the second was the American public, which LeMay knew needed to see the strength that their tax dollars were buying.³ The demonstrations began in late 1948 with nonstop B-36 and B-50 flights from Texas to Hawaii and return. The next year, *Lucky Lady II*, a B-50 based at Carswell Air Force Base (AFB), Texas,



became the first aircraft to fly around the world nonstop. The flight of the *Lucky Lady II* won great recognition for SAC, including its first Mackay Trophy.⁴

More missions followed, demonstrating SAC's ability to the world. When the Soviets detonated a hydrogen bomb in 1953, LeMay sent B-36s on a trans-Pacific flight of 10,000 miles, more than 28 hours nonstop. If friends here and enemies abroad weren't impressed by *range*, LeMay had *speed* to offer as well, including trans-Atlantic B-47 flights in under five hours.⁵

But all these missions paled in comparison to LeMay's most important exhibition in 1957. And the stakes were never higher. The survival of the B-52, and perhaps of SAC itself, was riding on the success of one mission. It was called "Power Flite."

The faded paint may say City of El Paso, but this is the Lucky Lady III. She sat for years outside the Air Force Museum's restoration hangars but was ultimately sold for scrap in the early 1980s.

Saving the Stratofortress

Like Boeing bombers before it—most notably the B-17 and the B-29—the B-52 suffered from more than its share of growing pains. A number of crashes in 1956, including some spectacular midair explosions over California, had begun to erode public confidence in the B-52, threatening the program's very survival.

The trouble began on 16 February 1956, when a B-52 exploded in midair near Tracy, California, while on a flight from nearby Castle AFB. The crash made

national headlines, in part because of the B-52's then unprecedented cost of \$8 million.⁶ More negative headlines followed when General LeMay testified before Congress that a "serious component failure" had caused the Air Force to reject 31 of the first 78 B-52s produced. The component in question—an alternator flywheel—had been implicated in the February crash.⁷

Several months later, however, an in-flight explosion claimed a second Castle



"Power Flite" had a simple mission: Show the world the capability of the B-52. Here, Gen Curtis E. LeMay decorates the Power Flite crews after their 45-hour record-setting mission.

B-52 and the lives of five crew members.⁸ Once again, the electrical system of the Stratofortress was implicated.⁹ This time, however, the controversy about the B-52 had built to the point where the entire fleet was grounded, with an Air Force spokesman admitting that he had "no idea" as to how long the grounding would remain in effect.¹⁰

About this time, a free-lance reporter named P. D. Eldred began to interview air crews, maintenance people, and families at Castle, gathering enough information for an article highly critical of the B-52. Gen-

eral LeMay learned of Eldred's upcoming article and began planning a counteroffensive—a demonstration that would show the American people that SAC's newest bomber was a safe and effective weapon system.¹¹

The result of this was called "Operation Quick Kick," an endurance flight involving eight B-52s that—supported by a fleet of tankers—flew nonstop around the perimeter of North America. The demonstration received wide publicity, and for a very short time neutralized the efforts of Mr Eldred.¹²

But just five days after the completion of Quick Kick, yet another B-52 crashed, again in spectacular fashion, killing all 10 crew members. Located with photoflash bombs to enable nighttime photography, the bomber burned and exploded for hours, generating still more negative press and breathing new life into P. D. Eldred's article. This time, the Associated Press bought his B-52 exposé, intending to run it worldwide. Further, Congressman B. F. Sisk (D-Calif.), called for a congressional investigation to determine whether the B-52 was a "safe aircraft for our airmen to fly." Clearly, LeMay saw that another demonstration was in order, and Operation Power Flite was born.¹³

On 16 January 1957, five B-52s thundered down Castle's runway. Their mission was simple: show the world that the B-52 had the capability of becoming the first jet aircraft to circle the world nonstop. Always attuned to the need for a margin of safety, plans called for only three to make the entire trip, with the remaining two to be backups in case trouble developed.

And of course it did. One of the three primary aircraft—*La Vittoria* (named after Ferdinand Magellan's ship, the first to circumnavigate the globe)—found itself in trouble over Newfoundland, its refueling receptacle jammed with ice. It had to return to Goose Bay, Labrador, and the second spare was diverted to England shortly thereafter. But even the diversion



proved to be a public relations coup, when the Stratofortress—the first ever to visit Britain—was mobbed by both press and public.

Supported by nearly 100 KC-97 tankers flying from Canada, Morocco, Saudi Arabia, the Philippines, and Guam, the three B-52s—led by *Lucky Lady III*—finished their mission at March AFB, California, on the morning of 18 January. Their flight time—45 hours, 19 minutes—was less than half that required by the *B-50 Lucky Lady II* just eight years before.

So, did it work? Did this bold and aggressive effort to shape public perception pay off? Of course it did, and to a degree that's hard to even believe 36 years later. The crew of the *Lucky Lady III* was rushed to Washington, where they rode a float in President Dwight D. Eisenhower's inaugural parade just two days after the mission. They then went on several national TV shows, explaining the significance of their flight and publicizing the B-52's capability. Another of the crews—whose aircraft had been christened *Lone-some George* by comedian George Gobel—

A KC-97 refuels a B-52B near Castle AFB, California, circa 1956. The troubles involving the B-52Bs necessitated the aggressive public relations efforts by General LeMay to save the program.

appeared on his prime-time television show to again tell the story that LeMay wanted told.

And P. D. Eldred's article went unnoticed in all the excitement.¹⁴

And Now?

The press and the public mood are different now, and sometimes it seems that only bad-news stories or "man bites dog" stories ever capture the national interest. In a world filled with "60 Minutes," "Hard Copy," and "Inside Edition," it is inarguably true that success stories are increasingly difficult to get across.

We have to acknowledge our own responsibility here. The Air Force as an institution is losing its imagination, and as a result is losing the public's imagination

as well. Two recent examples illustrate the point.

While the new C-17 airlifter and its acquisition managers are publicly flogged by congressmen and the media, the Air Force meekly uses it to set cargo-hauling records "in the category of aircraft with gross weight between 250,000 and 300,000 kilograms."¹⁵ If that doesn't exactly grab your attention, you're not alone; in a land where the metric system is still a mystery to most, the impact of such a feat is likely to be lost. Such weight-lifting ability is no doubt a significant measure of merit for an airlifter, but it's hardly destined to make the front page of the *Washington Post*.

This of course is not the only example, or even an unusual one. If you missed the recent around-the-world flight of a pair of B-1Bs,¹⁶ again don't feel alone. The feat—however significant—was an unlikely prospect for a public relations success. The trip involved a layover at Diego Garcia, crew changes, and an elapsed time of more than two days. Despite the fact that no B-1 had completed this kind of flight before, the fact remains that it was a less dramatic achievement—and therefore less newsworthy—than Power Flite some 36 years before.

One final illustration will show how far we've regressed since the days of General LeMay.

In the summer of 1990, an Air Force program—a "low observable," or stealth platform—was in trouble, buffeted by media charges that the basic concept wasn't working and that the air vehicle would be readily identifiable to radar. At stake was nothing less than the survival of the program.

A number of alternatives were raised, including one that, in keeping with the ideas of General LeMay, was especially bold: take the platform out over the ocean and then—with selected press witnessing the event—"target" an American city, penetrate air defense identification zones, evade the dozens of radars involved, and "attack" a vital target. The plan was risky—detection would mean the end of the program—and fraught with logistics difficulties. But it might also be sufficiently dramatic to arouse public interest.

Caution won out. The bold plan never got very far. It was replaced by one in which the vehicle was moved to Washington for an "open house." But even that turned out to be watered down. For reasons of security, the "open house" was held on an Air Force base. Only selected VIPs got very close at all, with base residents being permitted to look from a distance. And the public—the people who pay the bills and whose support is so crucial—was excluded altogether.

We've come a long way since the days of Curtis LeMay in terms of both people and technology. Our Air Force people and the systems they operate have never been more capable. But our ability to get that message across to the public appears to be declining at the worst possible time. With defense budgets approaching free-fall in the coming years, boldness and imagination will be key to preserving some part of our Air Force's public and congressional support. The task is crucial. To steal a line from the sound track of the Navy recruiting film *Top Gun*—bad grammar and all—"There's no points for second best." □

Notes

1. For a discussion of the Saudis' ambivalent attitude in this area, see Gen H. Norman Schwarzkopf with Peter Petre, *General H. Norman Schwarzkopf, The Autobiography: It Doesn't Take a Hero* (New York: Bantam Books, 1992), especially 351–52.

2. Thomas M. Coffey, *Iron Eagle: The Turbulent Life of General Curtis LeMay* (New York: Crown Publishers, 1986), 270–79.

3. *Ibid.*, 325–32, 334.

4. James N. Eastman, Jr., "Flight of the *Lucky Lady II*,"

Aerospace Historian 16 (Winter 1969): 9–35. See also *Air-to-Air Refueling*, Headquarters SAC/HO Study 6 (Offutt AFB, Nebr.: Strategic Air Command Office of History, 14 July 1950). LeMay saw to it that only the successful parts of the mission found their way into the public eye. For example, *Lucky Lady II* was not the primary aircraft for the round-the-world mission. That honor belonged to another B-50, *Global Queen*, which had to divert into the Azores due to mechanical failure. And one of the mission's KB-29 tankers was lost when it crashed into a Philippine mountaintop, killing all aboard. But neither of these mishaps was ever publicly announced, and the flight of *Lucky Lady II* was heralded as an unqualified success.

5. Coffey, 325.
6. "B-52 Crashes on Coast," *New York Times*, 17 February 1956, 5.
7. "LeMay Says Flaw Has Delayed B-52; 31 of 78 Rejected," *New York Times*, 3 May 1956, 1.
8. "Flaming B-52 Crashes on Coast, Navy Plane is Ditched in the Pacific," *New York Times*, 18 September 1956, 26.
9. "B-52 Crash Studied," *New York Times*, 19 September 1956, 74.
10. "B-52s Grounded Again for Study," *New York Times*, 20 September 1956, 13.
11. History, 93d Bomb Wing, January 1957, chapter 1. See also History, Fifteenth Air Force, January–June 1957, 199–200.

12. *Development of Strategic Air Command, 1946–1976* (Offutt AFB, Nebr.: Office of the Historian, Headquarters Strategic Air Command), 53. Also History, Fifteenth Air Force, January–June 1957, 200.

13. The 30 November 1956 crash involved Castle's only RB-52B, a reconnaissance-capable version of the Stratofortress. History, 93d Bomb Wing, December 1956, 8. Also "Ten Die in B-52 Crash," *New York Times*, 1 December 1956, 42.

14. Originally, the flight was to be called "Quick Kick Alfa," and it did not involve a round-the-world attempt. The Quick Kick Alfa B-52s were to fly from Castle to England, Portugal, the Azores, Florida, and back to California. Quick Kick Alfa was canceled, though, and replaced with "Power Flite," a more ambitious—and therefore more newsworthy—effort. This entire account of Power Flite is based on several sources, including a 23-page pamphlet called "Operation Power Flite: Around the World in 45 hours, 19 minutes," published by Fifteenth Air Force shortly after the mission. See also History, 93d Bomb Wing, January 1957, 4; *Development of the Strategic Air Command, 1946–1976*, 62; History, Fifteenth Air Force, January–June 1957, 203–10. See also "B-52s Circle Globe Non-Stop in 45 Hours," *New York Times*, 19 January 1957, 1.

15. "C-17 Sets Seven Records," *Air Force Magazine* 16, no. 3 (March 1993): 16.

16. "B-1Bs Circle the Globe," *Air Force Times*, 30 August 1993, 2.

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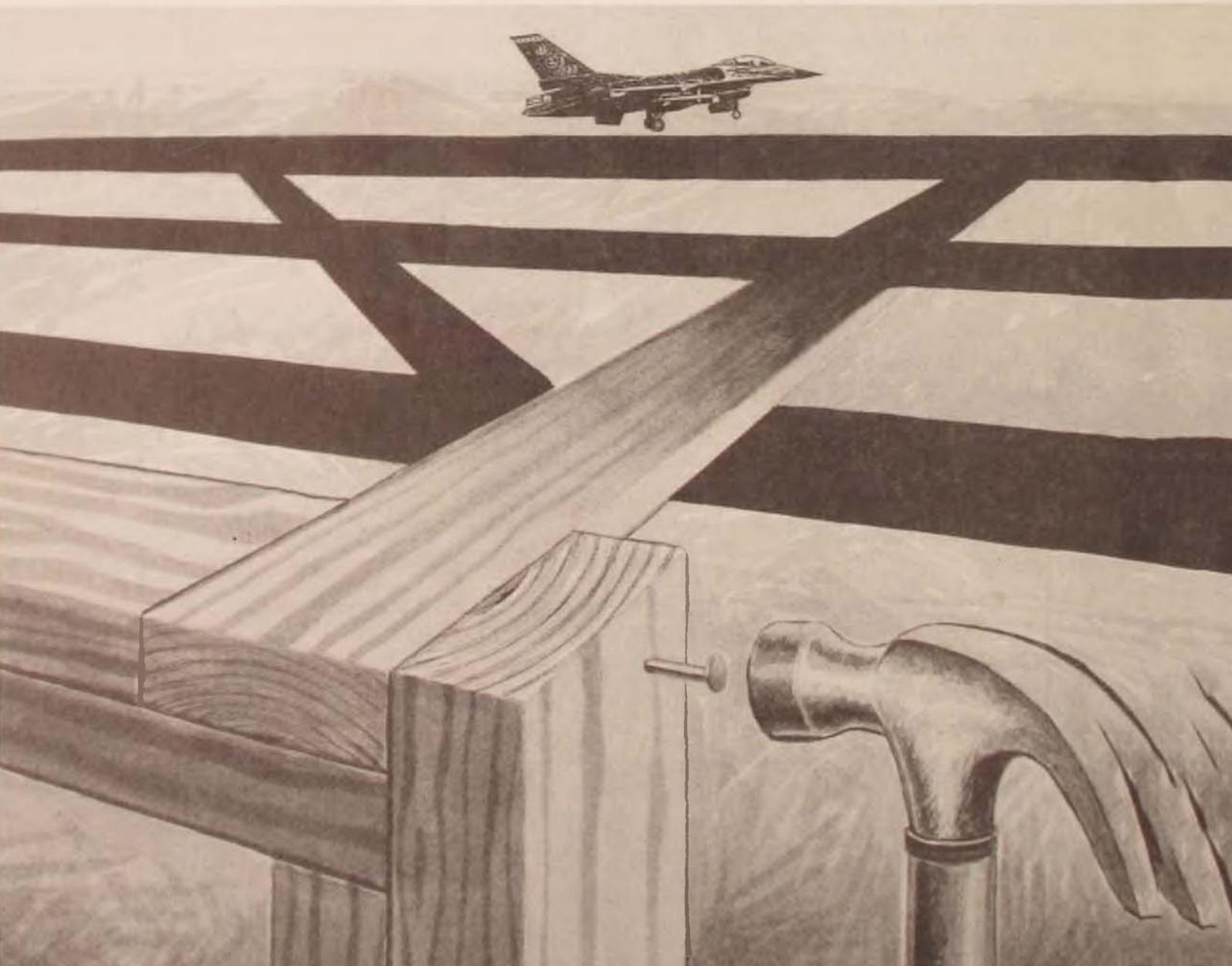
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VALIDATING AIR FORCE CIVIL ENGINEERING COMBAT SUPPORT DOCTRINE IN THE GULF WAR

DR RONALD B. HARTZER

LATE IN THE summer of 1990, two separate yet related events occurred that affected Air Force civil engineering. The more newsworthy event was Operation Desert Shield. On 7 August, hundreds of Air Force personnel, including civil engineers, began deploying to bases in

Southwest Asia (SWA). A few weeks later, the other milestone event occurred: the Air Force chief of staff's office approved Air Force Manual (AFM) 3-2, *Civil Engineering Combat Support Doctrine*. Representing the culmination of two years of rigorous research, analysis, and discussion within the civil engineer-



ing and doctrine communities, this document was the first doctrine manual written specifically for Air Force civil engineers. Even as the doctrine entered the final stages of the approval process, engineers thousands of miles away in SWA began to validate it. Although the doctrine's authors focused primarily on the Soviet threat and a conventional war in the European theater, the doctrinal precepts proved to be valid in a different setting. Yet, engineering experiences and insights from the Gulf War also revealed several shortcomings. This article assesses how well civil engineering doctrine stood up to a real-world validation and recommends areas for further study and analysis.

Aerospace Power, Air Bases, and Engineers

The engineer's mission is closely linked to the operational effectiveness of the air base. This issue proved important in formulating civil engineering doctrine because the 1984 version of AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, avoided any discussion of the air base (an oversight corrected in the 1992 version). To underscore the relationship between engineer and air base, the opening chapter of AFM 3-2 stresses the importance of the air base to aerospace power and the role of the engineer in preparing, sustaining, and recovering bases:

A commander's exercise of operational art has always involved choosing when and where to fight, creating conditions that gave his or her forces the best chance of winning, and exploiting opportunities that resulted. In all of these decisions air base availability and operability were critical considerations.¹

The availability, reliability, and capability of the network of bases to support the application of air power were keys to the successful prosecution of the air war dur-

ing Operation Desert Storm. Bases served as key logistics nodes, airlift hubs, fighter beddown sites, large-frame bomber and tanker installations, and home away from home for thousands of personnel. The number of intertheater and intratheater bases required for the war surpassed most expectations, increasing from an initially planned handful to nearly 30.

The availability of these bases during the early weeks of deployment was a major concern for Air Force planners. Permission to use some bases required negotiations with both local and national political and military leaders of the various SWA countries. For example, some princes allowed only a limited number of American forces on their bases and prohibited offensive or attack aircraft. Clearly, the Air Force benefitted from the expansive and abundant airfield facilities in the region as the size of the deployment grew. The Saudis' tendency to overbuild their air bases, the large airports used during religious pilgrimages, and the oil industry's airfields provided planners many opportunities for basing aircraft. Consequently, Lt Gen Charles A. Horner, commander of US Air Forces, Central Command (CENTAF), was able to disperse aircraft theaterwide and thus reduce the vulnerability of coalition air power to devastation from a single enemy attack.

Members of Air Force Prime base engineer emergency force (BEEF) units bedded down approximately 55,000 Air Force personnel and more than 1,500 aircraft at sites ranging from modern state-of-the-art military bases to international airports to mere runways, taxiways, parking ramps, and sand. Our engineers operated and maintained these bases to varying degrees and prepared to recover them if they were attacked.

Engineering Functions

USAF civil engineering doctrine recommends posturing a "mobile military engi-

neering capability to respond to worldwide contingencies”² so that engineers can precede aircraft to a base and prepare for follow-on forces. Having a few days to lay out and construct living and working facilities eases the arrival of aircraft and support forces (and is normally the case during exercises). However, in August 1990 our leaders decided to quickly deploy aircraft to the theater as a deterrent and a show of force. Civil engineers and other combat support and maintenance personnel generally followed the aircraft to bases in Saudi Arabia, United Arab Emirates (UAE), Bahrain, and Oman. Therefore, pilots and aircrews—who customarily find people and facilities waiting for them when they arrive—had to fend for themselves to locate living and maintenance facilities at several sites. Days afterward, the engineers arrived and began constructing tent cities and providing electrical power, water, and air-conditioning in a “catch-up” effort that lasted days—sometimes even weeks.³

Although the best procedure is to deploy engineers and other support forces first, these personnel should not expect to precede weapon systems in all contingencies. Doctrine needs to prepare engineers



Whether digging trenches for high-voltage cables (top) or constructing berms for ammunition storage areas (left), Gulf War engineers provided the mobile military engineering capability that was necessary to fight the war.

for deployment to a location where personnel, equipment, and planes are already in place and where priorities are already established. This principle may be the norm for future deployments.

Planning and Acquisition

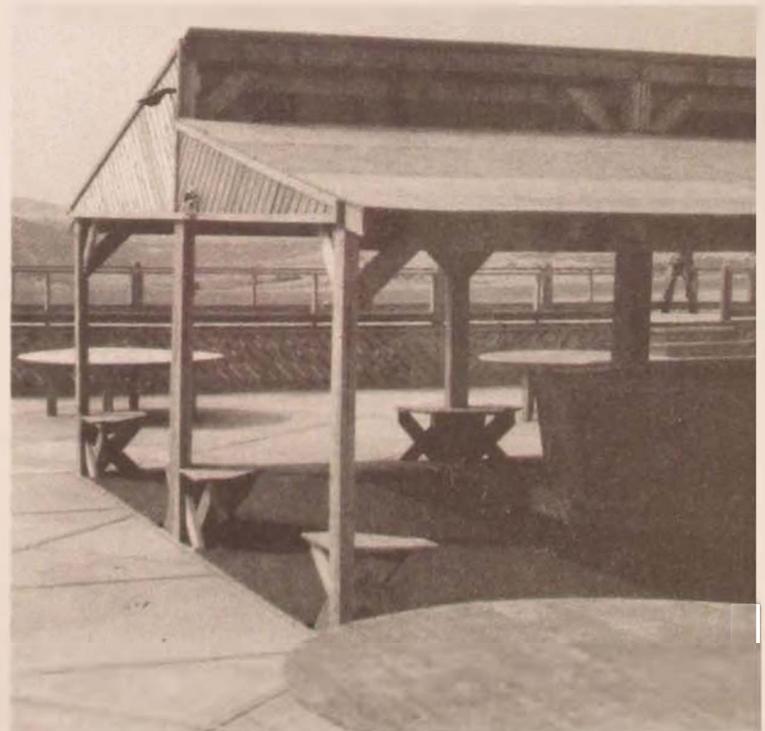
Before deploying, engineers need "the best available data describing the threat, infrastructure, climate, soil conditions, logistical support, concept of operations, and indigenous materials and labor" in-theater.⁴ The composition of engineering teams and their kits of tools and supplies often depends on accurate information about the beddown location. Without these data, Desert Shield engineers simply had to guess at what they needed, a tactic that sometimes resulted in shortages and/or overages in certain skills and equipment.

In the hectic days of August 1990, engineers lacked vital information concerning many potential SWA beddown sites. The size and speed of the complicated deployment overwhelmed the CENTAF planning process and caused many last-minute changes. The Prime BEEF team from Shaw Air Force Base (AFB), South Carolina, arrived in Riyadh, Saudi Arabia, expecting to proceed to a particular destination but was directed to Al Dhafra Air Base (AB), UAE. Although team members had participated in several training exercises in SWA and had examined CENTAF's reference materials on SWA bases prior to departing Shaw, they had no familiarity with Al Dhafra.⁵ Additionally, many basing decisions relied on data from a Defense Mapping Agency book at CENTAF dated 1985, despite the fact that much construction had occurred in the

region since then. Not until members of CENTAF's Directorate of Engineering and Services deployed to Riyadh and began conducting site surveys did accurate and current engineering information become available.⁶

Engineers played a vital part in maintaining a high state of readiness at the bases by sustaining the morale of deployed personnel in the Gulf War. Improvements such as hard-wall latrines and showers, wooden doors on tents, jogging paths, and recreational facilities helped relieve the stress of an impending conflict and made the long months of waiting tolerable. General Horner and many deployed wing commanders believed that the construction of gazebos and repairs to swimming pools were not too much to provide people who were risking their lives. Such issues involving the quality of life during war will have to be addressed in future civil engineering doctrine.

Based on the perceived threat, engineers throughout the theater applied "passive defense techniques, including hardening,



Many commanders placed a high priority on quality-of-life issues for the people risking their lives in the war. As a result, engineers constructed gazebos and recreational facilities that helped maintain morale.



Passive defense construction, such as these revetments at a Saudi base, helped protect aircraft from enemy attacks or possible terrorist actions.

dispersal, [and] protective construction . . . to increase survivability of critical basing system components.”⁷ Although all bases installed antiterrorism protective structures such as roadblocks, berms, trenches, and revetments, the most elaborate structures were found at bases closest to the Kuwaiti or Iraqi border. For example, the base with the most comprehensive defensive works and recovery preparation lay only 200 kilometers from the Kuwaiti border and boasted underground survival recovery centers and command posts, extensive bunkers, and over five linear miles of revetments. As aircraft began crowding onto bases, Air Force engineers, commanders, and safety people feared the possibility of a Bien Hoa-type incident⁸ and began to disperse those aircraft or construct revetments to protect them from an attack by enemy aircraft or missiles, a terrorist action, or an accident. This action paid dividends when a missile from a parked A-10 fired into a revetment but caused no injuries to personnel or damage to nearby aircraft. Further, during the phase-two buildup, engineers constructed

new parking ramps and hardstands at several bases to reduce potentially dangerous overcrowding.

Operations and Maintenance

After the military engineers had deployed, civilians, reservists, and remaining military engineers operated and maintained the bases in the continental United States (CONUS), where activities did not always diminish and sometimes actually increased (e.g., as was the case at Langley AFB, Virginia, despite the deployment of aircraft and people). Often, only a single flying squadron deployed, leaving the remaining planes and the wing commander, who wanted the base to continue operating at a normal pace—a requirement entailing long hours and cooperation from the civilians and military left behind. Despite budgetary and personnel constraints, home-station requirements validated doctrinal precepts urging the Air Force to “posture the civilian force for necessary continued base operations following military deployment [and to] use primarily civilians and contractors for CONUS base operations and maintenance during wartime.”⁹

Air Force engineers should realize that deployments such as Desert Shield involve more than just personnel and facilities in the theater of operations. The fact that European and CONUS bases served as throughputs for hundreds of tons of cargo and thousands of personnel on their way to and from SWA placed demands on engineers at these bases. For instance, at Rhein Main AB, Germany, engineers constructed a tent city for the transient population and redesigned the base fuel system to cut aircraft refueling time. In the United Kingdom, they reopened World War II era hospitals and then upgraded, repaired, or supplemented the facilities’ outmoded utility systems. Engineers also reopened the Royal Air Force base at Fairford, England, for conducting flying operations and for housing

deployed hospital personnel. Clearly, doctrine should also guide engineers operating outside the theater of operations.

Recovery and Restoration

The fact that engineering activities during base recovery and restoration were not required during the Gulf War does not diminish their importance. However, bare-base development and the beddown of people and weapon systems during Desert Shield were critical functions that facilitated the massive buildup of forces. Additional doctrinal precepts in these areas will provide balanced guidance for engineers.

Organization

To foster unit integrity and cohesion, AFM 3-2 encourages engineers to "estab-



TEMPER tents made living bearable for personnel. Everyone pitches in (top) to erect the tent. Later, engineers apply the air-conditioning ductwork (bottom).



lish a working relationship in peacetime with the operational units supported in wartime [and to] maintain organizational integrity and command when deploying and employing military engineers."¹⁰ Training, exercising, and deploying flying and combat support units as a single package will engender familiarity, unit cohesion, and improved capabilities. Approximately half the teams that deployed in August and early September 1990 accompanied their home-station flying units. Air Force bases such as Shaw; Langley; Seymour Johnson and Pope (N.C.); Myrtle Beach (S.C.); England (La.); Little Rock (Ark.); George (Calif.); and Hill (Utah) deployed their flying units and much of their combat support functions as a single package. The advantage of such a deployment is that commanders know the capabilities, strengths, and weaknesses of their people.

One bit of controversy that arose during the development of AFM 3-2 was the question of who had operational control of RED HORSE units during wartime.¹¹ One procedure involved implementing the regional wartime construction manager (RWCM) concept and giving control over the theater RED HORSE units to the RWCM. Based on the support received from engineers during past contingencies and wars, the Air Force decided to "keep operational control of RED HORSE units within Air Force channels in both peace and war."¹²

During the Gulf War, elements of the 823d and 820th RED HORSE Civil Engineering Squadrons (RHCES) and the 7319th RED HORSE Civil Engineering Flight deployed to SWA. These units provided heavy engineering capability for CENTAF by constructing taxiways, parking aprons, munitions areas, integrated combat turn pads, tent cities, and revetments. The shortage of engineering capability in-theater meant that RED HORSE could have easily been co-opted by other services. Prior to the August deployments, however, General Horner decided

to keep operational control of RED HORSE within Air Force channels. Thus, the 823d RHCES worked directly for General Horner and received taskings from the CENTAF director of engineering and services. US Central Command set theater construction priorities for all services, and RED HORSE supported both the Army and Marine Corps, a fact that validated another doctrinal precept: "Plan to receive engineering and construction support from and to provide it to other services."¹³

Logistics

Logistical support is the lifeblood of engineers. Because of the demands placed on airlift during the early weeks of the deployment, however, many Prime BEEF teams could deploy with only a small amount of equipment and supplies. Recognizing that heavy, bulky engineering equipment and basing assets could not compete for airlift during a contingency of war, AFM 3-2 recommends "prepositioning and stockpiling equipment and materials to rapidly support theater requirements [and] plan[ning] for and us[ing] local materials and equipment when appropriate."¹⁴ The engineering experience in the Gulf War validated both of these precepts.

Bare-base assets were the first choice of engineers for effectively bedding down forces. Indeed, Harvest Falcon basing sets proved to be one of the operation's bright spots. Air-conditioned tent extendible modular personnel (TEMPER) tents, shower/shave units, latrines, field kitchens, aircraft maintenance hangars, and hard-wall shelters made living and working in sometimes desolate locations bearable. Because many of these assets had been staged at prepositioning locations throughout the region, they could be brought quickly to the sites by intratheater airlift or overland transportation instead of being flown in from Europe or the

CONUS.¹⁵ However, engineers had too little voice in the distribution of assets. Not responsible for the basing equipment until it arrived on site, engineers were at the mercy of logisticians and transporters, who seemingly shipped bare-base equipment haphazardly and in no particular order. Oftentimes the absence of a single key item hampered the beddown process. For example, engineers scrambled to establish a water distribution system without pipe fittings and tried to construct a functional tent city without generators to power the lights and air conditioners. Such experiences suggest that the doctrinal role of engineers in the total bare-base war reserve materiel program and distribution process needs further examination.

In accordance with AFM 3-2's recommendation, engineers relied heavily on local sources for equipment and supplies. Working closely with contractors, engineers rented equipment such as dump trucks, front-end loaders, backhoes, and graders and purchased building supplies from local lumberyards and hardware stores. Because the region had a sizeable construction and oil industry, this type of equipment was usually available.¹⁶

The paucity of spare parts, however, was a vexing problem during the Gulf War. AFM 3-2 points out that such has been the case since World War II and warns the engineer to expect similar difficulties in the future: "Maintain an adequate supply of spare parts. Lack of spare parts for engineering equipment is a major problem for sustained theater operations."¹⁷ Engineering equipment and Harvest Falcon assets have war readiness spares kits (WRSK) designed to meet requirements for spare parts and maintenance. However, because funding was insufficient to complete the Harvest Falcon WRSK, deployed engineers often complained of fill rates of less than 50 percent in some WRSKs, especially for belts and filters. This deficiency proved troublesome because equipment and vehicles brought out of deep storage and operated

in the harsh SWA environment used belts and filters at a high rate. This was especially true of filters for the vital Mobile Electrical Power-12 (MEP-12) 750-kilowatt (kw) generators. The shortage of filters forced engineers to run equipment beyond the normal maintenance cycle, purchase filters locally, or use T-shirts and panty hose as makeshift filters. The lack of maintenance in the early weeks and months of the deployment led to repairs and malfunctions later on.

Personnel and Training

AFM 3-2 urges "military engineers to be multiskilled and experienced in a variety of specialties."¹⁸ These virtues were put to the test during Desert Shield/Storm. Beddown required nearly everyone to pitch in and construct billeting and kitchen tents, wire them, and install environmental control units. Because many people found themselves sleeping in hot, crowded hangars, commanders had no trouble establishing priorities or motivating the engineers—everyone wanted a hot meal and an air-conditioned place to sleep. Later on, engineers of all job classifications worked on special projects such as ammunition storage areas by driving trucks and operating heavy equipment.

AFM 3-2 also recommends that the Air Force "train military engineers as they intend to fight. Training must be realistic, stressful, evaluated, and of sufficient duration to physically and mentally prepare the military engineer for the rigors of contingencies and combat."¹⁹ Gulf War engineers validated this precept by exception because contingency training for military engineers during the 1980s concentrated on base recovery after attack. The limited beddown training time dealt primarily with Harvest Eagle tents or 30- and 60-kw generators. Consequently, few Prime BEEF personnel had any experience with MEP-12 generators, TEMPER tents, shower/shave units, or aircraft mainte-

nance hangars. The absence of technical orders for this equipment exacerbated the problem, although the engineers' skill and initiative gave them enough flexibility to complete their taskings. Again, wartime experience suggests that the training of engineers should include more doctrinal emphasis on the beddown of forces and weapon systems at bare bases.

The formulation of civil engineering doctrine also focused on the ambassadorial role of engineers, in addition to their role as warriors and professionals. As ambassadors, engineers were to be "knowledgeable and sensitive to local political and social environments to enhance Air Force mission effectiveness."²⁰ Although many reviewers questioned the relevance of such a role in a war-fighting doctrine manual, engineers often found themselves acting as ambassadors during the Gulf War. Engineers shared many bases with host-nation and coalition personnel, so respect for cultural and religious customs was vital to ensuring local support. For example, when a host nation prohibited the display of the American flag at one location, the site engineer proposed separate poles for the American, Canadian, French, and host-nation flags. After the host wing commander approved the suggestion, engineers from Nellis AFB, Nevada, and Spangdahlem AB, Germany, designed and constructed the flagpole area, which became the camp's focal point and helped

foster smoother relations between the countries' military personnel. In fact, the host wing commander requested that the area be left intact when the foreign troops departed.²¹

After the war, the ambassadorial skills of engineers from United States Air Forces in Europe (USAFE) were tested again when they returned to the region to open sites for Operation Provide Comfort in Turkey and northern Iraq. These engineers not only constructed and operated several base camps for a multiservice, multinational force, but also provided direct assistance to Kurdish refugees.

Summary

If doctrine manuals such as AFM 3-2 are to remain viable and relevant, they should be able to incorporate new sets of experiences. For that reason, doctrine analysts should prevail upon the commanders, engineers, and thousands of personnel who lived and worked at deployed bases during the Gulf War to offer their insights on how Air Force engineers should organize, train, deploy, and perform their mission. Their suggestions should be added to the wealth of information already derived from past conflicts so that *Civil Engineering Combat Support Doctrine* will continue to guide engineers on the best way to fight the next war. □

Notes

1. AFM 3-2, *Civil Engineering Combat Support Doctrine*, 26 April 1991, 5.

2. *Ibid.*, 9.

3. A Prime BEEF team of 62 people (50 engineers and 12 firefighters) from Langley AFB, Virginia, deployed to Dhahran, Saudi Arabia, to support the 1st Tactical Fighter Wing. Although this team was one of the first to deploy, the F-15s still beat them to Dhahran by about 24 hours. Capt Mario Mastrangeli, Headquarters Tactical Air Command, interview with author, 1 November 1991.

4. AFM 3-2, 9.

5. Capt Marvin N. Fisher, 363d Civil Engineering Squadron, interview with author, 12 August 1991.

6. Capt Wayland H. Patterson, Headquarters CENTAF, interview with author, 10 July 1991.

7. AFM 3-2, 10-11.

8. In May 1965, a bomb on a B-57 accidentally exploded at Bien Hoa AB, Republic of Vietnam, destroying 40 unprotected aircraft and killing or wounding over 100 personnel.

9. AFM 3-2, 9, 13.

10. *Ibid.*, 15-16.
11. As the Air Force's heavy engineering force, RED HORSE performs major force beddowns, heavy damage repairs, and heavy engineering operations during wartime.
12. AFM 3-2, 16.
13. *Ibid.* Some of RED HORSE's first projects included constructing a road to an ammunition storage area for the Army and building K-Span shelters for the Navy.
14. *Ibid.*, 19, 22.
15. These assets were soon depleted, however, so other basing sets had to be flown in from Europe and the CONUS.

16. The engineers did have to use metric-sized supplies or talk the suppliers into cutting the wood in inches. They then had to explain why a two-by-four is not a two-by-four (because it's really 1 5/8" by 3 5/8").
17. AFM 3-2, 21.
18. *Ibid.*, 23.
19. *Ibid.*
20. *Ibid.*, 25.
21. Lt Col Rodney L. Hunt, 820th RHCES, interview with author, 26 September 1991.

Ricochets

continued from page 3

buildup, this nation's industry could change from autos to aircraft since both were made with essentially the same technology (sheet metal, steel, and conventional bonding techniques). To meet performance requirements, new weapons systems use more advanced construction materials and techniques that are different from those in common use by nonaerospace industries. This means reconstitution will be much more difficult, especially without a strong depot structure.

Finally, this article was published without an author's name. Establishing this policy for the *Airpower Journal* seems to me to be flawed. In the article discussed above, the author seems to know the current buzzwords and latest trends in the acquisition world but apparently has no real experience in managing a development or production program. Without knowing the author's background (as you publish on all other articles), it is difficult for the reader to assess the fidelity of the information the article contains. I recommend not printing articles without attributing them to an author.

Col Jay Jabour, USAF
Wright-Patterson AFB, Ohio

OFFICERS AND NCOs

Majors Cantrell and Andrews did a great job of stimulating some much needed dialogue about the roles and relationships of commissioned and noncommissioned officers. The past 20 years have seen enormous changes in the levels of responsibility assigned to midlevel and senior-level NCOs. The article "Where Does the Air Force Need Officers . . . ?" (Winter 1993) mentioned a few of those, but every

AFSC has a similar story to tell. I'm grateful that the study group recognized the implications that these position conversions have on the preparation NCOs now receive and will receive to help them perform with their added authority and responsibility. *Education* is the word many of us use to describe that preparation.

The Air Force must come to grips with the fact that "education" and "enlisted" are not incompatible. The recent Clinical Lab Improvement Act will result in a legislated academic degree requirement for certain enlisted personnel serving in medical laboratories. Already, over 80 percent of the more than 4,000 instructors teaching courses for which the Community College of the Air Force awards degree credit have at least an associate-level degree. Almost 30 percent have a bachelor's or master's degree. Over two-thirds of our Air Force chiefs (E-9) have a degree. The enlisted people in today's Air Force are working hard to prepare themselves to accept the new positions of tomorrow.

Two things are true: more middle-management tasks will be assigned to NCOs, and NCOs are doing all they can to acquire the skills needed to be better middle managers. Now is the time to begin to address the issues that these changes bring about. First and most obvious is the need to consider the basis for the officer-enlisted relationship of the future. No longer can it be education level or management level. There is a new parity growing in both of these arenas that blurs the distinctions once used to form that basis. Second, as we see the expansion of this parity in our organizational structures, someone must eventually ask questions about other parity issues.

The authors noted the similarities of responsibilities shared by many captains and senior master sergeants. It was evident that one of the reasons senior master sergeants might be preferred in a particular position was the lower cost. The 25 percent pay differential is tempting as a reason to change the grade, but consider the possibilities of letting chief master sergeants perform some of those tasks now assigned to lieutenant colonels. The 30 percent pay differential is even more impressive. It's sort of like buying three and getting four; and to some of us, that focus on "converting for dollars" smacks of treating our NCOs as a commodity rather than a resource.

Hence, there are questions about parity in such areas as professional development opportunities and even compensation. How many senior NCOs are sent to AFIT-sponsored management-development workshops and seminars held at leading colleges and universities? How many chiefs paid at the over-20-year point should be content when a captain with over four years of experience earns more, especially if the jobs are similar or, more likely, if the chief's tasks are at a higher level of management than the captain's?

The story is told of the farmer who had two sheep. His neighbor had none. The country where they resided had a very totalitarian government. When the party leader in their community chose to create parity among the two farmers, he shot the two sheep. The achievement of parity using one measure may create more problems in other areas. My father used to discuss the farmer down the road who decided to cheapen the feed given to his dairy herd. He mixed a little sawdust in the daily ration and increased its proportion over time. It worked great until the cows died. My point is this: the fact that enlisted pay scales are such a bargain can lead us to two conclusions. One conclusion focuses on a disparity that offers significant short-term savings for the Air Force. A second conclusion is that the disparity has grown to unacceptable levels, and an Air Force focusing on people should lead the effort to rethink how it develops and compensates people who are performing similar tasks.

Col Paul A. Reid, USAF
Maxwell AFB, Alabama

I am the first sergeant for Headquarters, Air Mobility Command, Scott AFB, Illinois. I am a

chief master sergeant with almost 24 years of service. I read your publication religiously, cover to cover, and feel it should be *required* reading for all Air Force officers and made more available for senior NCOs.

I take exception to the article "Where Does the Air Force Need Officers . . . ?" (Winter 1993). While I fully support the idea that the Air Force is "officer heavy" and that a total review is necessary, the article is repellent to the enlisted corps. The paradigm that *only commissioned officers are professional* is an ancient idea that I thought was dead and buried (page 47 and the photo caption, page 51). Using the logic in the article, the Air Force should change the name of enlisted schools from *professional* military education to *enlisted* military education. Yes, even our E-4 senior airmen receive *professional* military education, and it's even taught by (Oh, the horror!) *enlisted* people. Similarly, the idea that an O-3 and an E-8 have duties and responsibilities that are sometimes comparable is laughable (page 46). (As an aside, what happened to military titles? These are *pay grades*, not *ranks*.) NCOs of all grades (and occasionally, *airmen*) have for years held positions and performed duties once reserved for officers. Technical fields (computer programmers, for example) have captains and senior airmen working side by side today with *no* discernible difference in their duties and responsibilities. I and all enlisted people understand the rank structure and *want* a discernible difference between officer and enlisted duties and responsibilities. But articles such as this one, and daily contact with officers, serve only to muddy the waters and create an us-versus-them attitude.

Wake up! Does ACSC still teach that enlisted people are stupid but are cunning and sly and bear considerable watching? This article leads me to believe that, while maybe not *explicitly* discussed, the old paradigm is still with us. Too bad. What a waste.

CMSgt Stephen R. Fulk, USAF
Scott AFB, Illinois

AIR POWER ANTAGONISM

As a new reader of your journal, I read with interest Lt Col Price T. Bingham's article "The United States Needs to Exploit Its Air Power Advantage" (Fall 1993). Colonel Bingham has

joined a long list of famous aviators in proclaiming victory for aviation prior to proving his case. In his opening, he makes the case that naval aviation was successful early in World War II because the sea didn't allow ships to effectively hide from the pursuing aviator in the same manner that terrain camouflaged ground forces. He then goes on to postulate that technological advances like stealth, JSTARS, and PGMs allowed the US Air Force to destroy the Iraqi army. Having claimed victory, he then declares all previous doctrine obsolete and calls for a return to the 1950s, when the Air Force dominated the defense budget.

Colonel Bingham's case does not stand up to close inspection. His use of the example of naval aviation is interesting since the deserts of Kuwait and Iraq most resemble the sea in their lack of significant terrain features or vegetation. The desert terrain of the Middle East hardly represents a challenging test for air power as the primary tool for destroying an enemy army. Nor were the Iraqis the best opponents on which to test this new doctrine. The Iraqi leadership that was interviewed after the war admitted that Iraq never thought the US would commit forces to retake Kuwait. They planned on the prospect of significant casualties freezing our political leadership into indecision and vacillation. They did not have the will and were not prepared to fight us.

Colonel Bingham's program for an overreliance on air power would leave the US unable to project decisive combat power into regions less favorable to "tank plinking" or against adversaries who really intend to fight for their objectives. How he intends to handle a Somalia, Bosnia-Herzegovina, or a second Korean War is not covered in his article. The whole notion of dealing with low-intensity types of conflict stresses the limits of air power and its reliance on technology. Low intensity, the most likely type of future conflict, is not addressed by Colonel Bingham. Hopefully, Gen John Shalikashvili will demonstrate the same professional competence and sound judgment, for which Colonel Bingham castigates Gen Colin Powell, in rejecting the frantic calls for lopsided appropriations and force structure that Colonel Bingham attempts to justify in his article. To quote from T. R. Fehrenbach's outstanding book *This Kind of War: A Study in Unpreparedness*, "You may fly over a land forever; you may bomb it, atomize it, and wipe it

clean of life—but if you desire to defend it, protect it, and keep it for civilization, you must do this on the ground, the way the Roman Legions did: by putting your soldiers in the mud." The US Army was not a "victory verification force" in the desert west and north of Kuwait City; we were the Army that met and destroyed enemy divisions still capable of significant resistance, despite the alleged pounding to which they had been subjected. "Tank plinking" from 8,000 feet is not the most effective way to deal with armored vehicles, as this quote from a captured Iraqi tank battalion commander illustrates: "When the war started, I had 39 T72s; after 38 days of air attack, I was down to 32. After 20 minutes with the 2d Armored Cavalry, I was down to zero."

Air power alone did not win the war in Southwest Asia. Victory was assured only when powerful Army and Marine forces attacked Iraqi soldiers entrenched in Kuwait, forced them from their prepared positions, and destroyed them as they attempted to flee the battlefield. Douhet, Mitchell, Spaatz, and all the other great aviators who proclaimed that air power could win wars were wrong, and they still are.

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PME PROBLEMS

I was impressed with Lt Col Richard B. Clark's editorial in the Fall 1993 issue. I'm glad to see someone begin to critique the USAF officer professional military education (PME) spectrum. I wholeheartedly agree that the USAF should have a mandatory reading list for all officers, and I suggest one for the enlisted personnel as well. To add to Colonel Clark's concerns, I think the USAF should take a very hard look at its officer PME and consider a complete restructuring. In my 13 years in the USAF, I've often wondered why we wait so long to send our people to schools when it would better benefit the service if we sent them to these schools earlier in their careers. Although the enlisted corps has recently modified its PME and could probably revise still more, it's time the officer corps did so also.

I once heard at a nonattribution lecture, "If you can't expand your mind for my proposal, stop reading or listening now." I think that statement holds true here as well. I propose a

complete overhaul of the officer PME process. I begin by asking, "Why are we sending people to the Air Command and Staff College (ACSC) and the Air War College (AWC) so late in their careers?" Wouldn't it make more sense to send captains to the "equivalent" of what is now ACSC instead of Squadron Officer School (SOS)? Also, send senior majors and junior lieutenant colonels to what is now the AWC. Continue the education process by sending colonels to a new school (short in duration) that would address the major concerns of senior leadership such as the Joint Flag Officer Warfighting Course (JFOWC) does now. In essence, this total concept would mean the cessation of SOS and the creation of a new senior service school. How much are we truly gaining when we send lieutenant colonels to the AWC when they have already reached retirement eligibility—especially when several members retire during each academic year? What's the purpose of sending them?

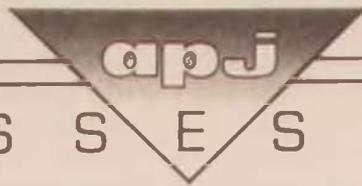
The same concept holds true for the majors attending ACSC. Couldn't we gain more by sending captains and major selectees with at least 10 years of total active federal military service (TAFMS) to ACSC? Should this be done, the majority of an ACSC class would be captains. In addition, why not send majors with 15 years of service and junior lieutenant colonels with less than 22 years of service to the AWC? (A study is currently being conducted to combine all senior service schools.) Colonels could then be sent to a new, short PME school along the lines of the JFOWC.

I'm merely proposing that the USAF take a serious look at its officer PME and forget about

the past. Many readers will initially think this change is impossible and list thousands of reasons why it cannot be done or because the board of visitors (BOV) wouldn't allow/recommend it. If we in the USAF are truly in a total quality management (TQM) mode, the BOV should accept these changes and make modifications to its policies and guidelines. The BOV and other joint accreditation concerns should not be prohibitive factors. I could reference and parallel many historical "visions" that "couldn't be done"; however, it's time to change an archaic system.

The changes that Col John Warden, the ACSC commandant, has made at ACSC should be carried further—across PME. As a minimum, I propose changing the eligibility requirement in the schools to TAFMS time instead of commissioned service time. At least we would then cease sending majors to ACSC with 25 years of TAFMS. Some majors and captains who become majors while at the school with over 20 years of TAFMS time are there because they have the required commissioned time. Changing the eligibility requirement would alleviate this situation. How much benefit are we receiving by sending this category of personnel to these schools? In relation to TQM, ask yourself, "Why are we doing it this way?" And keep asking the same question. Start your TQM journey here. To paraphrase Michael Hammer and James Champy's philosophy in *Reengineering the Corporation*, "Blow it up and start over." Let's get a bigger bang for our buck!

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N E T · A S S E S S M E N T

AIRCRAFT AND AVIATION

Air Power 2000 by Michael J. Gething. Sterling Publishing Co., Inc., 387 Park Avenue South, New York 10016-0810, 1992, 128 pages.

Air Power 2000 is one volume in a series of books that looks at the anticipated state of weaponry in the year 2000. In this particular volume, the subject is the prospective state of air power at the turn of the century. The dust jacket poses five questions:

- Which current aircraft will still be operational in A.D. 2000?
- How will they be adapted? What new weapons will they carry?
- What aircraft currently at prototype stage will be in service?
- What will move from the drawing board into production?
- What new techniques are planned for fire-power, accuracy, and survival?

Does Gething address the questions posed? Yes, he does. Although his analysis of trends is reasoned and informed, his prognostications face the same limitation faced by all military planners of the 1990s—fiscal constraints. Budgetary uncertainty and cutbacks in funding for defense and research and development worldwide hamper speculation on the future course of new weapons systems. Gething acknowledges this constraint and takes a relatively conservative approach in his speculation.

In six main chapters that average 18 pages each, the author examines fixed-wing aircraft, helicopters, stealth aircraft, technology, avionics, and armament. Although the book is short, it is packed with information. Because the intended audience is an informed, general-interest readership, the author takes pains to provide background historical information on some developments, as well as explanations of various technical aspects of the systems.

Gething is quite knowledgeable about his subject matter, having 19 years' experience as

an aviation journalist to his credit. In fact, several of the book's chapters originally appeared as feature articles in *Defence* magazine. Although he is an aviation author, he is not an unabashed promoter of air power, conceding that "while air power can win battles, it cannot—on its own—win wars."

He thoroughly understands the complex and changing role of aircraft. In his observations, the multirole fighter is the new trend in combat aircraft. Yet, another trend will be the increasing collaboration between various aircraft manufacturers, as well as between nations in building new aircraft. He identifies and explains a total of 13 separate roles required of fixed-wing aircraft, ranging from interception to maritime strike. He does not see much change coming in the near future, feeling that what you saw in Operation Desert Storm is what you will get. The airframes used during that conflict will be around for at least the next 25 years, with occasional upgrading of the systems.

In his discussion of helicopters, Gething speculates that the major roles for helicopters in the future will be naval antisubmarine warfare and heliborne attack. He identifies 11 separate roles for helicopters, ranging from defense suppression to search and rescue. His discussion presents a fair balance of both US-made and foreign-made helicopters. As was the case with fixed-wing aircraft, he feels that helicopters in use today will also be used at the turn of the century.

As a professional journalist, Gething has mastered the ability to provide the reader with just enough background information to bring novices up to speed on various aircraft systems without overwhelming them with technical jargon. Although the discussions of new technologies in stealth, avionics, propulsion, and all the other systems are quite interesting and informative, the matter of funding once again prevents any substantive speculation on what the future holds for the application of any of these new systems.

I do have a complaint with the book's graphics. Although I have 20/20 vision, I found the

parts labels on the sketch drawings too small to read. Indeed, the drawings themselves were too small to be of much value. Of course, this is not so much the author's fault as it is the publisher's. Hopefully, the graphics could be made more legible in future editions.

For the short term, *Air Power 2000* is a good, quick review of air warfare systems and principles. Remember, however, that the shortcoming of these types of "forecast books" is that the material becomes outdated all too quickly.

Ron Callahan
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AUTOBIOGRAPHY, BIOGRAPHY, AND MEMOIRS

General H. Norman Schwarzkopf, the Autobiography: *It Doesn't Take a Hero* by H. Norman Schwarzkopf with Peter Petre. Bantam Books, 666 Fifth Avenue, New York 10103, 1992. 530 pages, \$25.00.

The subtitle of General Schwarzkopf's autobiography is intended to serve as a short, succinct statement of the book's theme. The general attempts to establish early on that he is a product of an environment in which the principle of Duty, Honor, Country not only guided his development but dominated the course of his life. Extraordinary things, he suggests, are often accomplished by ordinary individuals placed by fate or choice at critical junctions. However, by most standards, General Schwarzkopf was not ordinary. Perhaps a more accurate theme is that a male from a military family in which the father is a general officer can—with a strong military education and an admirable work ethic—take maximum advantage of the opportunities that befall him.

It is absolutely essential to all of us in the military that we be exposed to the thoughts, motivations, decision-making rationale, and values of the distinguished leaders of our profession. Even General Schwarzkopf talks of this necessity when he describes the positive effect of reading the memoirs of Gen Ulysses S. Grant. However misleading the subtitle of his book, General Schwarzkopf makes enough judgments about personalities, decisions, situations, and so forth to provide the reader with insight into and understanding of military lives

and events. The significance of *It Doesn't Take a Hero* and its theme is amplified by historical events that directly preceded its publication. In times of crisis, we look for heroes, whether national or local, and certainly the press portrayed the general as one. Heroism is significant in itself. Historically, one of the nation's biggest signals of having discovered a hero is to reward that person with a ticker-tape parade. The image of the desert camouflage battle-dress uniforms amid the downpour of paper along Wall Street is not easily forgotten. We do need heroes to emulate and learn from. We need measuring sticks for evaluating ourselves. The importance of setting good examples cannot be overstated.

Since General Schwarzkopf does not believe his title of hero, he cannot expect his readers to either. Many incidents indicate that he always chose the best option. Nonheroes do not do that. So from a literal point of view, General Schwarzkopf convinces his reader time and again that he really was a hero—often a reluctant one, at times an accidental one, but a hero nevertheless. However, by focusing on himself to the nearly total exclusion of the contributions of other people who supported or competed with him, General Schwarzkopf misses a great opportunity to teach us. Perhaps the fact that his book is an autobiography gives him the license to make such an omission, but he loses an opportunity nevertheless. What we really gain from this book is an insight into how one individual conducted his life—not analysis or insight into how we might better conduct our own lives. Some readers may even feel misled and somewhat incensed at what must be called the false modesty of the subtitle. It, in fact, does (and did) take a hero to accomplish what this book portrays.

It Doesn't Take a Hero provides more entertainment than stimulating thought. We find an incredible series of anecdotal events that illustrate the author's ability to overcome what appear to him to be unique and personal obstacles. Whether he writes of his mother's alcoholism, his sister's antiviolence and antimilitary reactionism, or the lack of common sense and integrity of his Vietnam experiences, General Schwarzkopf spins an interesting tale. However, by focusing on his own reactions to such situations, the general gives us the impression that he is more like a nine-lived cat than a powerful person who can and does alter the course of history. Certainly, General

Schwarzkopf always landed on his feet, but I think all of us were looking for more.

This book is interesting but will become less so as history moves beyond Operation Desert Storm. It is not captivating, but it does offer insights into the perceptions of the commander in chief of US Central Command as Desert Shield/Storm unfolded. The chronology of events throughout the general's life is easy to follow, but the bias of his descriptions is so obvious and powerful that it raises doubt about the book's historical accuracy. Although this autobiography documents that General Schwarzkopf led a military life filled with experiences that many of us can relate to, he falls short of convincing his readers that heroes aren't required.

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Rogue Warrior by Richard Marcinko with John Weisman. Pocket Books, 1230 Avenue of the Americas, New York 10020, 1992, 336 pages, \$22.00.

Operation Eagle Claw, the failed Iranian hostage rescue (more commonly known by the code name of the disastrous landing site, Desert One), brought the shortfall of US Special Operations Forces' (SOF) capabilities to the fore in 1980. In response, the Department of Defense sought new capabilities to respond to such a circumstance and called upon Richard Marcinko to form the naval arm of a new force designed for missions like Eagle Claw. This force would become known as Sea Air Land (SEAL) Team Six.

This team developed unique abilities beyond those of existing SOF units. Col David H. Hackworth, a combat veteran and author of *About Face: The Odyssey of an American Warrior*, is correct in saying that Marcinko's book "explodes like a hand grenade." *Rogue Warrior* is a quick and exciting read filled with anecdotal accounts of Commander Marcinko's combat experiences. However, as interesting as the reader may find Marcinko's colorful career, there is little substantive material regarding SOF issues or tactical employment. Rather, the bulk of this work is consumed with descriptions that are presented to convince the reader that Marcinko acted properly in an untenable situation. In other words, he deliberately vio-

lated regulations and, by his own claim, was insubordinate. He believed that this behavior was necessary to properly prepare the unconventional warriors of SEAL Team Six, who operated within the institutional and doctrinal constraints of a Navy fully prepared for conventional war.

This book does indeed explode, but this metaphor is appropriate for reasons other than the one Hackworth intends. The violence done by this proverbial grenade is aimed directly at the military profession. The author is forceful in the articulation of a leadership philosophy that includes a hierarchy of loyalty: first, to squad; second, to platoon; and last, to SEAL Team Two (Marcinko's assigned unit in Vietnam). Interestingly, he expresses no other commitments or loyalties, stating that "outsiders were on their own." He also believes that unit cohesion is critical to the development of these loyalties and is best built by bar brawling and excessive consumption of alcohol.

He refers to Carl von Clausewitz's famous quotation regarding friction but ignores his comments concerning the use of force as a diplomatic tool. Marcinko envisions a different set of rules that values only unit loyalty, technical proficiency, physical strength, promiscuity, and compulsive overindulgence. Most importantly, he believes that means are subordinate to ends. However capable Marcinko's SEALs might have been, they serve no purpose to any sovereign nation if they are not focusable as a political instrument.

The demands of SOF missions do not nullify the precepts of professional officership but validate them. Nothing in this book obviates the United States's predominantly successful military experience—one that prescribes a professional military corps and loyalty to country, oath, service, and superiors.

Rogue Warrior suffers from a variety of shortcomings. It is riddled with criticisms fired at the Navy and sister services, all without sufficient substantiation. It is written in what may be called a SEAL vernacular that translates to a seemingly constant and unnecessary flow of lurid profanity which adds nothing to this work. It is also filled with racial slurs and inappropriate comments regarding the women with whom he served (certainly so in the post-Tailhook Navy). He may have avoided retribution during his period of service for expressing such attitudes, but—by any measure—these

comments were wrong then and are wrong now.

Because Marcinko's point of view is completely skewed from that of US military professionals, one must strain to glean any value in his writing. Nonetheless, the value of this book lies in its challenge to the professional ethos of the national security community. Marcinko's actions and attitude have the potential to prove theatrically lucrative; however, they challenge the professional values held in high regard by this country's national security community—values that serve as the bedrock of the trust upon which formidable responsibilities are laid. Richard Marcinko does not embrace these values and, consequently, violates that trust. This must be properly addressed. Moreover, Marcinko's attitudes challenge the rational application of force as a political instrument. Despite all that may be found wanting or even offensive in this book, it is, in fact, accurately titled. But it is critical that this country's military professionals recognize Richard Marcinko as more rogue than warrior and as more outlaw than officer—an outlaw with a hand grenade.

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GULF WAR

The First Information War edited by Alan D. Campen. AFCEA International Press, 4400 Fair Lakes Court, Fairfax, Virginia 22033-3899, 1992, 195 pages, \$14.95.

Contributing editor Alan D. Campen admits to "fervent biases as to what brought about victory in the Persian Gulf." In this vein, he argues that "this war differed fundamentally from any previous conflict" and that "the outcome turned as much on superior management of knowledge as it did upon performances of people or weapons."

Campen holds true to these assertions as he helps document Operation Desert Storm as *The First Information War*. "If soundly grasped and properly assimilated," he contends, "the principles of information warfare will lead to US military forces that are not only much leaner and cheaper to field, but still capable of effective support to the nation's goals and objectives." In the current environment of defense

cutbacks, a key concern for the future is whether the US will ever have the equipment and expertise needed to duplicate, much less improve upon, the capabilities it developed for Desert Storm.

For this book, Campen addresses a half-dozen key issues ranging from "Information Systems and Air Warfare" to the information differential in Iraqi command and control. In the process, he covers such varied topics as communications support to intelligence, battle-field templates, media relations, and the impact of satellite communications on coalition warfare. In addition, he brings together 23 other contributors from various parts of the command, control, communications, computers, and intelligence (C⁴I) field. Topping the list are three familiar names from the intelligence community. Two former directors of the Defense Intelligence Agency—Lt Gen Harry E. Soyster (USA) and Maj Gen James R. Clapper, Jr. (USAF)—highlight the crucial linkage between effective communications and intelligence support to operational commanders. In much the same vein, Maj Gen Paul E. Moneher, Jr. (USA)—commanding general for the US Army Intelligence Center and commandant of the US Army Intelligence School—cites responsive communications as the key to Army intelligence.

Other coverage suggests the diversity of effort that made Desert Storm a military success, with discussions ranging from space warfare to spectrum management and from media relations to Marine Corps data systems. More than 30 charts and tables provide concise vignettes of related systems. High points of the book detail success in supporting maneuver elements of the 1st Cavalry Division and 1st Armored Division in combat, in rushing the joint surveillance target attack radar system (JSTARS) to the theater, and in developing joint communications-electronics operations instructions (JCEOI), under which diverse C⁴I efforts could be integrated for combat.

In the face of coalition strengths and weaknesses in Desert Storm, the book's oft-repeated theme of "just enough, and just in time" serves well as an admonition for potential future conflicts. The book reveals the overall fragility of coalition C⁴I in Desert Storm. Despite its extensive coverage, the book begs four important questions. How close did US and coalition forces approach not having adequate C⁴I resources? To what extent did available C⁴I

support serve as a constraint, as well as an asset, for commanders in the field? How much more effectively might coalition forces have executed Desert Shield and Desert Storm with better C+I capability? Conversely, how might coalition forces fare in future conflicts in which potential foes might not forgo targeting C+I assets at the onset of hostilities? To ignore these conjectures with respect to potential future conflicts could be tantamount to disaster.

For Desert Storm, though, *The First Information War* adopts a positive approach to a campaign that was patently a military success. The book reflects the justifiable pride of professionals who worked a near miracle: building a theater C+I architecture virtually from scratch, in the space of a few short months, to support the most substantive deployment of US military forces since the Second World War.

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Desert Storm: The Gulf War and What We Learned by Michael J. Mazarr, Don M. Snider, and James A. Blackwell, Jr. Westview Press, 5500 Central Avenue, Boulder, Colorado 80301-2877, 1993, 207 pages, \$33.00.

Undoubtedly, *Desert Storm* is the best available analysis of lessons learned from the Gulf War. The authors, all associated with the Center for Strategic and International Studies in Washington, D.C., do a credible job of presenting their views of the lessons the United States should keep in mind following the war.

Although television featured the crisis nightly and provided instant, on-the-spot interpretations of strategy and the implications of what we saw on screen, Mazarr, Snider, and Blackwell challenge the conventional wisdom that has begun to emerge in the aftermath of this remarkable televised war. They challenge us to ask what we learned from this crisis. For example, did the United States completely drop the ball in its attempts to deter Saddam from pursuing his aggressive intentions, or is deterrence no longer an effective tool of foreign policy unless accompanied by the constant threat of nuclear annihilation? Is the war a good model for the types of crises that may

arise in the future, or was it an aberration? Are chemical and/or biological weapons the "poor man's" nuclear bombs? How well did the all-volunteer force perform? Were complaints about the Guard and Reserve justified? The authors ask these and many other provocative questions and, through the use of detailed examples, open the door for informed debate on the consequences and lessons of the conflict.

Desert Storm is well worth reading for anyone who is seriously interested in the use of military power in the pursuit of national objectives. The authors contend that "the distinctiveness of the Gulf War obviously circumscribes our ability to draw from it broadly applicable lessons." They pursue this thesis through a chronological study that begins with the failures of deterrence, diplomacy, and compellence and that includes a review of the air campaign. The book also includes succinct discussions of the impact of technology; the development of the campaign plan; problems with bomb-damage assessment; improvisations caused by unforeseen circumstances (e.g., Scud hunts); the contribution of the US Navy and the need to increase "its capability to conduct sustained, precision strike operations over land"; and the ability of the coalition air force to accomplish its objectives. Various aspects of the 100-hour ground war include a look at US and Iraqi ground forces, preparations for the ground battle, building the coalition, nonlinear warfare, and ground-war strategy.

The final chapter examines the implications of the Gulf War for US military strategy. Devoted to stimulating our thinking, the chapter considers post-cold-war defense planning, increasing emphasis on regional contingencies, ways of maintaining our residual forces, limited versus total war, deterrence, arms control, and some guiding principles for future US defense policy.

The authors succeed admirably in their goal of analyzing Gulf War lessons from a high-level, strategic defense perspective. Although they avoid specific policy recommendations, they do identify several policy prescriptions for current discussions on defense policy and defense investments.

Although *Desert Storm* is short and easily readable, it is nevertheless a careful, considered, serious treatment of its subject. Overall, it is the best of the "lessons-learned" books now available. I strongly recommend *Desert*

Storm, not as a history of the war, but as a stimulus for serious discussion of the lessons of the war from a national security perspective.

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Martyr's Day: Chronicle of a Small War by Michael Kelly. Random House, 201 East 50th Street, New York 10022. 1993. 354 pages, \$23.00.

Michael Kelly wrote *Martyr's Day* to provide "an impressionistic account [of the Gulf War] that might, through detailed reporting, give a feeling for the oddities and terrors of even a modest war." The book recounts observations from his travels in the Middle East between November 1990 and November 1991. The author focuses on how the Gulf War and its aftermath affected the daily lives of the civilians of Baghdad, Kuwait City, Tel Aviv, and Amman, as well as those of the Kurdish populations in northern Iraq.

Kelly begins by relating his experiences in Baghdad during the weeks leading up to the start of the air campaign on 17 January 1990, followed by his departure across the border to Jordan the next day. The account of his trip to Amman and then Tel Aviv provides intriguing firsthand impressions of how the Jordanians and Israelis reacted to the Scud attacks on Israel. Kelly then went to Saudi Arabia, where he and another journalist procured a Nissan Safari and struck off on their own—unfettered by restrictions placed on the media—to report on the ground campaign from its inception. Kelly not only stumbled his way through the ground war in Kuwait, keeping up with (and at one time passing) the coalition's frontline units, he also probably earned the distinction of being the first reporter to enter Kuwait City upon its liberation. The narrative ends with his return to Iraq via Iran after the war and his observations of the effects of Saddam's war on the Iraqi Kurdish population.

All of this provides fertile ground for a narrative rich in color and texture. Kelly's vignettes of the lives of the people who were caught up in the war zone offer fascinating glimpses into the local cultures and the way these cultures adapted to the rhetoric and realities of the war. Kelly's style is smooth, descriptive, and witty. He places the human drama he sees unfolding before him in perspective by contrasting humor with tragedy and pettiness with courage. He

realizes that it is unnecessary to add any embellishment to make his work provocative and entertaining; the subject itself is sufficiently thought-provoking and gripping to do that.

To the seasoned traveler in the Middle East, the author's powers of perception and description will refresh old memories and test previous conclusions. To the uninitiated, his book will flesh out many of the cultural perspectives that dominate this seemingly chaotic region. Put in the context of the Gulf War, the work graphically portrays the often-overlooked human dimension of war. Kelly's account punctures several of the myths of this conflict, showing the reality behind many of the carefully constructed sound bites and superficial impressions that were created. We tend to think that wars conclude with formal cease-fires and armistices, forgetting that for the inhabitants of the war zone, the consequences seldom cease with such well-ordered timeliness. But more than anything else, this book puts a human face on all of the people who were caught up in the conflict. It blurs previously assumed clean lines of distinction between the heroes and the villains, portraying many of the combatants and civilians as common people with common vices and virtues, simply caught up in something much bigger and more powerful than they could handle.

The lesson of the book is valuable for every planner and policymaker involved with the use of military power. If military force is intended to bring about a desired response in the enemy, we must understand the target cultures and their dynamics and fully anticipate how our actions will relate to those attendant perspectives. We must also understand that conflict on any scale will never be tidy. There will always be unintended victims, as well as all of the repercussions of violence that never seem to be put to rest. *Martyr's Day* brings all of this home to the reader with clarity, making it a worthwhile addition to the study of the art and nature of war.

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Crusade: The Untold Story of the Persian Gulf War by Rick Atkinson. Houghton Mifflin Company, 222 Berkeley Street, Boston, Massachusetts 02116. 1993. 575 pages, \$24.95.

Rick Atkinson—winner of the 1982 Pulitzer Prize, author of *The Long Gray Line* (1989), and correspondent for the *Washington Post* during the Gulf War—has written a superlative account of that war. Singular for its exhaustive, balanced, in-depth portrayal of the multitudinous facets of the conflict, *Crusade* reigns supreme as the best single-volume account to date.

Although the book focuses mainly on the military aspects of the conflict, it does not slight the diplomatic and political perspectives. For example, the author gives a readable, detailed account of the diplomatic and political course of events between Washington, Tel Aviv, and Riyadh after Scud attacks on Israel prompted the US to persuade the Israelis to first delay and then abstain from retaliatory strikes against Iraq. However, Atkinson does sharply criticize Gen H. Norman Schwarzkopf for his seeming lack of understanding of what the Scud threat meant.

Crusade is an engrossing chronological account of the US-led coalition's liberation of Kuwait. The narrative propels the reader through the events of the 42-day Gulf War and reflects the author's broad range of understanding and knowledge of the intricacies of modern warfare. Principally the result of interviews, the book incorporates a treasure trove of corroborative detail, providing us narrative history at its finest. For instance, Atkinson's vivid description of the events relating to the shoot-down of Corvette 3 during Scud hunting in the Western Desert brings that incident to life. Between these "human interest" stories, he neatly splices contemporary historical snapshots of such matters as the development of the F-117 or information about how laser guided bombs work. These details add tremendously to the value of the volume. Atkinson shows the war to be neither a high-toned moral crusade nor a fruitless exercise in imperial diplomacy. Rather, it was something between those extremes—a limited war fought for limited objectives.

Military readers will find the press's fascination with the "revisionist" view of General Schwarzkopf to be in actuality a well-balanced examination of a man who, all faults aside, did succeed in keeping a fragile coalition together and building it into a war-winning weapon. Atkinson obviously understands the society he is writing about: the men at the top are the "bulls of the woods," who have achieved their

positions not only through their ability but also through their absolute certainty that they could do the job. Thus, we see the commanders of the Gulf War exactly as they are—extremely skilled people who are nevertheless subject to human foibles.

The US services come in for their share of criticism—not for the able employment of the military machine built up in the years following the Vietnam War but for their seemingly unrelenting distrust of each other. As Atkinson observes, "With Khafji recaptured and the Iraqis repulsed, the American military services could return to battling their more implacable foes: each other" (page 216). As usual, the services argued about the control and targeting of the aircraft assigned to the operation. Atkinson presents a balanced examination of this argument and allows his readers to draw their own conclusions.

In addition to all the basics, the author examines such varied issues as the degree to which the Army's AirLand Battle doctrine succeeded, the effectiveness of Col John A. Warden's air campaign against Iraq, and the effect of the Vietnam experience not only on the commanding generals but also on the troops. Certainly, *Crusade* sets the standard against which any other military history will have to be measured.

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INTELLIGENCE

The Ultra-Magic Deals and the Most Secret Special Relationship, 1940–1946 by Bradley F. Smith. Presidio Press, 505 San Marin Drive, Suite 300B, Novato, California 94945-1309, 1993, 276 pages, \$24.95.

Good international relationships are hard to establish, simply because of the natural suspicion that people have of each other. Relationships become even more difficult when they involve the sharing of intelligence. Information on analytical methods and the secret collection of intelligence is always tightly controlled by every nation-state. The party who shares intelligence is always anxious about the security arrangements made by the recipient. *The Ultra-Magic Deals* provides an in-depth look at the struggles, trials, and final successes

in the sharing of intelligence between the United States and Great Britain during World War II.

Because a proper understanding of US and British relationships in that era is essential to the entire story, the author—Bradley F. Smith—spends the first two chapters setting the stage. He provides a behind-the-scenes analysis of why certain events occurred and what influence they brought to the international arena. A few pages quickly give the reader a grasp of the difficulty (in the late 1930s) of collecting intelligence and of sifting out friend and foe, as well as some insight into how senior leaders applied their personal opinions to operations. If we are to understand the remainder of the book, we must have a grasp of American opinions of Britain, British opinions of America, and the degree of cooperation between the US Army and Navy. Blend into this mixture a degree of anxiety about the sharing of secrets and you have the ingredients for an international fiasco.

The Lend Lease Act of March 1941 initiated the sharing of intelligence between the US and Britain. The environment created by this act allowed the establishment of numerous British missions across Washington, D.C., each one shifting between the role of beggar and advisor. Separately, the visit in August 1941 by Comdr Alistair Denniston, director of Bletchley (the British code-breaking organization), to Dr William Friedman, America's foremost code-and-cipher man, established the personality of intelligence cooperation. The gradually warming relations between Bletchley and the US Army Secret Intelligence Service and Navy Op-20-G built respect and—with each successful exchange of data—the foundation on which our present-day cooperation still rests.

Unfortunately, the road to success was not smooth. While both nations skeptically viewed one another, the US Navy and Army quarreled over intelligence sharing. Each was more willing to trust its secrets to the British than to the other! The actions of Gen George C. Marshall and Adm Ernest J. King finally overcame some of this difficulty, resulting in a more consolidated American intelligence effort. Beginning with the sharing of information on German U-boat operations in 1943, both countries slowly approached what became known as the Britain–United States of America (BRUSA) Agreement. BRUSA addressed the sharing of finished intelligence

rather than raw intelligence from Britain's Ultra operation, which broke the German Enigma code. In turn, the Americans began sharing Magic—intelligence obtained from the Army's breaking of Japanese codes and ciphers. This Ultra-Magic deal sped the wrap-up efforts of combat in both theaters by affording Allied forces critical insight into enemy plans and actions.

With the Japanese surrender and cessation of combat operations, General Marshall and Admiral King finally agreed that our country would be better served by combining the cryptanalytic efforts of the individual services. While they studied this merger, two other parties—Great Britain and the Soviet Union—entered the affair. Quickly grasping the threat represented by the Soviet Union, President Truman not only merged the Army and Navy efforts but also formalized cryptanalytic cooperation with Britain. This arrangement was worked out after two years of secret agreements and is still in effect.

The Ultra-Magic Deals is well researched and well written—in spite of the obstacles imposed by the British Official Secrets Act and by US national security regulations. The book offers a fascinating look at the “real” negotiations and maneuvers that brought about one of the most useful tools for the successful resolution of combat.

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LEADERSHIP, MANAGEMENT, TOTAL QUALITY, PERSONAL AFFAIRS

The Paradox of Success: When Winning at Work Means Losing at Life: A Book of Renewal for Leaders by John R. O'Neil. G. P. Putnam's Sons, 200 Madison Avenue, New York 10016, 1993, 270 pages, \$19.95.

“Have the trappings and symbols of power become crucial to your self-definition?” If so, *The Paradox of Success* argues that you may be on the verge of “facing the cost of success.” This is only one of the warning signs cited by John R. O'Neil as evidence that successful people may soon be paying a price which far

exceeds the rewards of their accomplishments.

The author, whose diverse background includes experience in business and education, is well acquainted with life in corporate America. Currently, he serves as president of the California School of Professional Psychology. And it is with psychological issues that his text is primarily concerned.

Although the book is subtitled *A Book of Renewal for Leaders*, a more accurate label might be *A Jungian Psychological Primer for Professionals*. This is not to belittle the book's message, which is very thought-provoking and contains a number of valuable insights and suggestions. Nevertheless, a large portion of the volume is occupied with a discussion of *shadow* and the destructive work of *hubris* in both the individual and the organization. Briefly, *shadow* refers to "the dark aspects of the personality," which are unconsciously suppressed since people refuse to acknowledge them as dimensions of their own character. *Hubris* is defined as "the ego becoming swollen with success, a sort of psychological blindness." Together, these concepts constitute the key to understanding the author's prescription for health and sustained "long-distance success."

Countless examples and brief case studies illustrate the principles under discussion. The direction recommended throughout is toward "a harmonious, synergistic fit between the tangible, measurable aspects of work and achievement and the intangibles of health, family, community, friendship, creativity, and altruistic service." One accomplishes this goal, according to the author, by facing one's shadow and dispelling its potential for destructive power. Yet, not all material in the shadow is negative. In fact, the "mining" of some suppressed qualities can enhance personality: "Brought into the light and encouraged to grow, our hidden selves can balance the dominant side of our personality and re-energize our working lives by lighting new directions." An example is the nurturing of ignored introspective qualities in the life of a successful extrovert.

Redefining "success in terms we can better live with" is one of the primary goals of *The Paradox of Success*. This modification of the concept of success essentially consists of making it more humane and holistically beneficial. Looking beyond purely competitive perspectives (a "masculine style" with language

"largely derived from warfare and sports"), today's leaders must promote an environment which intentionally affirms "its employees' more creative and nurturing instincts." The author accurately diagnoses the typical focus of the corporate culture on a production model that ignores the deeper needs of the person. The outcome is that

younger people, beginning their own climb toward mastery in their fields, observe their older superiors with dismay: are burnout or boredom all they can look forward to after a lifetime of devotion to a demanding career?

The degree to which these discussions are pertinent to the military setting is surely debatable. Few people could read this volume, however, without noting a number of parallels. For example, many Air Force members could relate to that "cost of success" in which they "find less and less time for family and friends." Indeed, "busy people often have a hard time getting away for a vacation, and even when they do, can't seem to free themselves from their intricate web of responsibilities."

The text notes, but does not belabor, concepts familiar to many readers (e.g., mission statements, Maslow's hierarchy of needs, learning curves, and organizational downsizing). The vast bulk of the material, however, will sound new to anyone without a background in psychology or counseling.

Some readers may be distracted by the author's writing style, which tends toward florid phrases. From the acknowledgments on, we encounter unusual images such as "I am deeply grateful to the team that magically spliced the DNA strands together that have become a book." Elsewhere, O'Neil commends the "best writers" who "with a deft metaphor . . . help us to feel, taste, see, and intuit what they experience."

More significantly, some readers (particularly those from traditional Judeo-Christian backgrounds) may find portions of the book troubling. Stating that "most of us today have moved away from the religious structures that once supplied answers to [spiritual] questions" about life's meaning, the author emphasizes an essentially Eastern worldview. He does not promote a specific faith, since "living a spiritual life could be defined as living so that our most deeply held values and convictions are congruent with our actions." The meditation techniques espoused by O'Neil are taught in a variety of forms, and he suggests that "T.M.

[transcendental meditation] teachers can show you how to use a mantra."

In this vein, he acknowledges that "prayer is a form of meditation for those of you who follow a religious path" and suggests that prayer may even be beneficial to others, since "you can pray without reference to an almighty being" (i.e., to yourself). Readers untroubled by such concerns may find the book's section on renewal and retreat quite beneficial. Even people who are wary of the theological underpinnings will find some helpful insights.

The best portion of the volume may well be the final chapter, which discusses lasting personal success and the "self-renewing organization" from a more practical—and less theoretical—angle. It offers specific guidelines for a number of situations. In dealing with errors or mistakes, the first suggestion is to "reward the messenger," following which the "long-distance leader" is encouraged to actively "publicize errors for the general good," so that knowledge of past mistakes can benefit the entire organization.

Aside from the reservations noted above, *The Paradox of Success* does contain a number of helpful insights. Although written primarily for a business or educational setting, many of its principles are directly applicable to a military milieu. Early in the book, O'Neil notes that

you may not instantly recognize yourself in these thumbnail descriptions of the symptoms of faltering success, though there's a good chance you share at least some of them. Most people are reluctant to own up to the price they are paying for a slice of mythic success.

By the time we reach the final page, most of us will possess an increased awareness of our full personality, including those dimensions which we may be tempted to deny. With this liberating knowledge, we will be better equipped to enjoy life itself and whatever successes may come our way.

Chaplain, Capt Robert C. Stroud, USAF
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LITERATURE AND THE ARTS

Kriegspiel: A Novel of Tomorrow's Europe by
Todd Stone. Lyford Books (Presidio Press).

505B San Marin Drive, Suite 300, Novato,
California 94945-1340, 1993, 290 pages,
\$19.95.

It was never a question of *whether* but only *when* the first of many novels on post-cold-war Europe would be written. Todd Stone has jumped on what will surely be a fast-moving bandwagon with *Kriegspiel*, his first book. Loosely translated, the title means "war game," and that's precisely what the author gives the reader. The subtitle also says a lot, its main point being that tomorrow could be no later than today.

Stone, a former US Army officer with a solid background in mechanized and light-infantry operations, had real-world training alongside *Bundeswehr* forces in West Germany. He uses his years in the military to good advantage in building a techno-thriller that blends modern warfare with old-fashioned fighting. The story pits good against evil, with a host of innocent and not-so-innocent people in between. The premise is simple. As the United States—in the wake of a collapsed Warsaw Pact and a reunited Germany—moves to withdraw the few American forces still in Germany, serious questions remain about the future of the Federal Republic. Somebody must do something. The question is what?

The answer is not long in coming. A renegade German army leader, Gen Karl Blacksturm (loosely, "black storm"—i.e., bad guy), decides to seize government control and restore Germany's destiny as head of a new European world order. Central to his plan is the seizure of the American stockpile of nuclear and chemical weapons at Kriegspiel Munitions Depot. The only things that stand in the way of the general and his cohorts are Kriegspiel's small garrison and the soldiers of the US Army's nearby 195th Infantry Brigade (Mechanized), who are preparing to redeploy home as part of the "peace dividend."

The good guys are led by two reluctant US Army partners—Col Alex Stern, a veteran mechanized infantryman, and Lt Col Mark Griffin, a maverick Green Beret. The book's romantic connection is Griffin's friend and fellow soldier, Maj Maggie O'Hara, who just happens to be Kriegspiel's commander. Speaking of coincidences, the book is full of them. For example, the good-then-bad-then-good guy caught in the middle of the struggle is German army colonel Joel Guterman (loosely, "good guy").

who knew Stern and Griffin well from former exercise days at the National Training Center in California.

The action is almost nonstop over a four-week period in March. As expected, fighting that uses high-tech weaponry is swift, brutal, and intense. For readers who like a military story that never lets up, no matter how unrealistic or contrived, Stone's work should hold their attention.

Unfortunately, the book does have its shortcomings. The plot line is built around a good idea, but much of the story involves some unrealistic scenarios, excessive coincidences, and numerous stereotypes. (Besides the main characters, there's even the equivalent of World War II's GI Willie and Joe in the persons of tough-talking and hard-fighting sergeants Baldwin and Macintosh.) Further, readers could use a detailed map of the immediate German region where the action occurs.

Finally, if you're looking for air-oriented action, you won't find it in *Kriegspiel*. For readers more interested in ground warfare, the novel does have some exciting moments. Besides, *Kriegspiel* is the first of many new books to deal with a still-dangerous Europe that is no longer threatened by the East-West confrontation which thrilled us for so long. This new subject alone will please many readers.

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SISTER SERVICES

Carrier Wars: Naval Aviation from World War II to the Persian Gulf by Edwin P. Hoyt. Paragon House, 90 Fifth Avenue, New York 10010, 1992, 274 pages, \$14.95.

A first glance at the full title of *Carrier Wars* seems to suggest that the book would be a perfect study for the Air Force professional: a one-volume presentation of air warfare as practiced by the world's navies in the modern era. Instead, it is little more than an abbreviated popular history of the Pacific war, told almost exclusively from the Allied side.

Hoyt is an experienced popularizer of American military history and has numerous books to

his credit, most of them dealing with modern naval subjects. In writing this one, he drew deeply from this well of experience. Indeed, the book's slim bibliography lists no fewer than 24 of his own books as references. The style of presentation tends to be more anecdotal than introspective and is long on action (but short on maps). Little is new in his interpretations of events and personalities; however, nothing is terribly wrong with them either. Eighteen of the book's 21 chapters are devoted to a breezy and often chatty recapitulation of the war in the Pacific, virtually neglecting both the Atlantic and the Mediterranean theaters.

The coverage given to the recent period is even more disappointing, particularly in view of the subtitle's promise. The Vietnam War and the Falklands War are dismissed after a scant five pages; the Gulf of Sidra operation is barely mentioned; and the book never reaches the Persian Gulf at all. Worst of all, the critically important formulations of US naval air doctrine are ignored throughout. The postwar distinction between the US Navy's heavy attack (CVA), antisubmarine (CVS), and contemporary mixed air group (CV) carriers is never explained. Even their designations never appear. The Soviet Union's blue-water flattops are blithely described as "supercarriers," and the Royal Navy's contributions are dismissed. In addition, the narrative is peppered with numerous silly mistakes, particularly in aircraft identification: the "F4D Demon fighter," "F8U Crusade," "Focke-Wulff bombers," and others.

In spite of these faults, the book is reasonable enough for its intended audience of casual military buffs and high school readers. The military professional, however, will find a much better discussion of naval air history and doctrine in Wilbur H. Morrison's *Above and Beyond* (Saint Martin's Press, 1983).

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SPECIALIZED INTEREST

The Complete Wargames Handbook: How to Play, Design, & Find Them, revised edition, by James F. Dunnigan. Quill, William Morrow, 1350 Avenue of the Americas, New York 10019, 1992, 333 pages, \$12.00.

A leading designer and publisher of commercial war games, Dunnigan offers not only insights into his personal efforts but also some interesting historical tidbits on commercial war-game development.

Taking a broad view of what constitutes a war game, he includes conventional manual and computerized interactive combat simulations. Included under this umbrella are role-playing games and adventure games, as well as vehicle simulations such as computer-based flight simulators. In spite of this broad definition, the emphasis of the book is on interactive combat simulation games.

The book includes chapters on how to play war games including tips on winning, an explicit step-by-step guide on how to design war games, and a history of commercial war gaming. The final chapter discusses military applications of war gaming, including a short history of the waxing and waning of the use of war gaming in the US military in the past 45 years.

I particularly liked the author's description of historical war gaming as "analytic history." By this he means that the use of war games offers a proactive approach to the study of military history that provides advantages over linear textbook presentations of the same material. War gaming of historical battles offers an intensive study mechanism with an opportunity to experience some of the limitations affecting the commander's decisions.

The author gives advice on how to approach the play of war games, which also may be of interest to those who are not novices. The reader is taken through a move-by-move exploration of the war game developed in the book in order to illustrate the analytical thought behind decisions to be made.

The author has conducted extensive surveys of commercial war gamers and cites a number of interesting trends. While war games are predominantly two-sided, the majority of war gaming is conducted solo. In addition to not requiring coordination with one or more people, this type of war game allows for more detailed study of the military situation without the distraction of inputs from other players.

One of the themes repeated throughout this book is the failure of the military to make use of commercial games. Dunnigan goes so far as admitting that commercial war games are predominately historical in nature, while most of the models of interest to the military are

focused on future combat. He does not, however, let that prevent him from critiquing the expense to which the military has gone to develop models and war games. To his credit he does admit that military war-game applications involve details that commercial games either ignore or treat in greatly simplified fashion. I agree that our modern warriors would benefit from a knowledge of military history and that they could learn by using commercial games for historical study. This is different, however, from agreeing that all military analytical requirements could be satisfied with commercial war-gaming products rather than some of the specialized tools that have been developed.

The author is not consistent in his use of terminology. For example, while initially taking a very inclusive definition of war games (as cited above), he later takes a more restrictive stance when differentiating between war games, models, and simulations. These inconsistencies are annoying rather than serious. The reviewer's confidence in the adequacy of some of the research was shaken by some simple errors such as placing the Naval War College in Newport News, Virginia, and the Air War College in Mississippi.

Finally, the author is not above using hype, presumably to boost interest in commercial war gaming. Perhaps the most blatant example of this is citing the Persian Gulf War game that he codesigned as being "right on target" without ever telling us what that means. I certainly expect someone of Dunnigan's reputation to know better than to suggest that war games predict outcomes of combat.

Avid players of commercial war games would be interested in the tips on playing and winning war games included in this book. Students of military history who use commercial games to enhance their studies may be intrigued by the book. I fully support the author's assertion that future military leaders would be well served by including either competitive or solo play of commercial war games as part of their study of military history. Anyone searching for specific types of games will appreciate the appendix that lists nearly 500 commercial games by publisher.

For anyone who plays commercial war games, the book provides a history lesson on the evolution from board games to computerized games. Those interested in breaking into the market with either manual or computerized

commercial products of their own design could benefit from the detailed suggestions on game design.

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The Mind of the Political Terrorist by Richard M. Pearlstein. SR Books, 104 Greenhill Avenue, Wilmington, Delaware 19805-1897, 1991, 237 pages, \$40.00.

Three events in early 1993 captured America's attention: the bombing of the World Trade Center, the Mount Carmel standoff in Waco, Texas, and the prison uprising in Ohio. Such events show us how critical it is for us to understand the mind of a terrorist. *The Mind of the Political Terrorist* provides valuable insight as to what motivates people to perform such heinous acts. The main focus of Pearlstein's study is the attempt to relate significant childhood psychological events as factors that cause a person to become a political terrorist. The book's purpose is to examine the individual psychological determinants of political terrorism. He does this via in-depth analyses of several people from various nations and socioeconomic settings who became famous political terrorists. In addition to examining autobiographies and conducting personal interviews with these people, he rightfully discusses how liberal democratic societies and those with great concern for civil liberties facilitate the tolerance of terrorism.

He devotes the first several chapters to discussing and defining terms such as narcissistic "disappointment, injury, rage, and equilibrium," to name a few. His discussions are well versed—overly so. The usage of bibliographical citations is numerous to the point that the reader can easily lose focus of whose thoughts are being espoused. His overuse of Latin phrases also requires the reader to keep a dictionary nearby (unless you are well versed in Latin). However, he does finally draw a conclusion. He states, "The individual who commits terrorist acts takes such action to compensate himself for the psychic damages of narcissistic injury or narcissistic disappointment" (page 36). He believes terrorists seek compensation through "object manipulation."

He defines narcissistic object manipulation as the "unmitigated abuse or exploitation of objects whereby any possible conflict between ego satisfaction, reinforcement, or compensa-

tion and the real needs, values, and identities of objects is wholly or overwhelmingly resolved in favor of the self" (page 19). Therefore, political terrorists are not necessarily looking to advance a cause, but rather are seeking ways to gratify self.

Pearlstein successfully uses several case studies of "noted" terrorists to demonstrate his theories. In concise form, he historically discusses Susan Stern and Diana Oughton, who were members of the Weatherman group in the late sixties. The group was infamous for its attacks and bombings of an Air Force Reserve Officer Training Corps Center, a Marine Corps recruiting office, and several bombings in New York City. The other Americans used by Pearlstein to illustrate his points are Donald DeFreeze and Patricia Soltysik of the Symbionese Liberation Army (Patricia Hearst fame).

His discussion then goes global by focusing on the case studies of certain terrorists, including Victor Gerena (Puerto Rico), Ilich Ramírez Sanchez (Venezuela), Ulrike Meinhof (West Germany), and Renato Curcio (Italy). By doing so, he demonstrates that a person's geographical and socioeconomic setting is not necessarily the cause of molding a political terrorist; rather, the cause is the person's narcissistic aggression. The book also includes a brief discussion of the importance of a hostage negotiator and the news media understanding this psychological aspect (narcissistic aggression).

It is important to note that Pearlstein does not declare that "narcissistic shortcomings" in themselves create a terrorist; they are instead an "important psychological determinant" (page 169). He also readily admits that much research needs to be done concerning this area in order to gain a better understanding of the motivational force of many terrorists.

Overall, Pearlstein does an excellent job delving into this possible causative factor of a terrorist. His is an in-depth, yet concise, discussion. He does what many educators fail to do—he provides several "answers." But he also provokes questions that make the reader curious enough to do further research. I applaud him for that. This book will benefit any reader. However, it could be used as an excellent tool for an educator or as required reading for *anyone* in *any* line of police work—especially a hostage negotiator.

2dLt Walter E. Klose, Jr., USAF
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Women and the Use of Military Force by Ruth H. Howes and Michael R. Stevenson. Lynne Rienner Publishers, 1800 30th Street, Boulder, Colorado 80301, 1993, 247 pages, \$38.00.

Both the landmark decision by former secretary of defense Les Aspin to open US combat roles to women and Canada's recent election of Prime Minister Kim Campbell have already dated *Women and the Use of Military Force*, illustrating the fact that gender issues are continuously evolving. Nonetheless, this book provides a useful overview of women and military force. No doubt, a future edition will have data on two main areas for which little information existed regarding American women: combat roles and military leadership roles. Moreover, future data may authenticate the important and perhaps prophetic conclusion the authors draw from two premises based on their data. Their first premise is that women tend to use force for three main reasons: (1) protecting homes, (2) defending their means of earning a living, and (3) protecting the innocent. The second premise is that the "world has changed so that the reasons for applying military force are those promulgated by women." Howes and Stevenson conclude, therefore, that "increasing the number of women in power positions within the military and the policy elite may actually assist the United States in adapting to the more female approach to foreign policy required by the new world order."

For now, however, the authors provide quite a comprehensive review of women and their roles as they apply to force. They preface the meatier chapters with a discussion of theories, concepts, and attitudes that set a backdrop for discussing women's roles in using force. Their "obligatory" chapter on feminism provides no real insights into the subject of the book and concludes that feminism no longer has a "clear" definition. Howes and Stevenson then analyze differences in how men and women perceive the use of military force, how women interact in groups, and how society views women in law enforcement and women who own guns. Though they caution against relying on information gathered from polls, one of the conclusions drawn from their analyses is that men and women differ little in their goals. However, they assert that there is a difference in the means of achieving goals, with women

favoring less violent means. They call this difference a "gender gap in popular attitudes toward the use of force," but the obvious question they don't—or can't—answer is, What are the implications of such a gender gap? Two other findings are worth noting. From the data on women in law enforcement, they conclude that policewomen perform differently from—but as effectively as—men. Their findings from the survey of attitudes and concepts suggest that general attitudes of the public may be stereotyped, but once women assume a previously exclusively male role, they are accepted as soon as they show they can perform—exactly what we've discovered in the Department of Defense.

Most of the book provides a look at women's current roles. The authors include information about the military roles of women in the United States, Latin America, and South America; three female heads of state (Margaret Thatcher, Indira Gandhi, and Golda Meir); women who worked on the first nuclear weapon; women leaders in peace movements; and women involved in formulating national security policy.

Aside from the most recent developments (mentioned earlier), the authors provide a current summary of women's roles in the armed services. Although their case studies of women military leaders describe strong women who use military force effectively, their information allows readers to draw their own conclusions. Refreshingly, the authors have no particular agenda. They do conclude that women's roles in direct use of military force and decisions to employ it mirror the changing impact of women on society (a safe enough assumption because it is too broad to completely dispute or to research exhaustively).

Taken in toto, the book is thought-provoking, especially when one considers the magnitude of the female population versus its slow but steady climb into the arena of applying military force. While many countries have long-standing barriers to women, those countries are having to deal more frequently with women in relatively new positions, from military officers to ambassadors to heads of state. The outcome of such interactions could eventually—in perhaps another generation from now or maybe sooner—have a positive effect on our world.

Women and the Use of Military Force is a timely book, providing a "one-stop" overview of women's roles relating to military force (it

also contains 19 pages of pertinent references). Although the book will become dated as we move forward under current initiatives, it is well worth reading now for an up-to-date look at the role of women in applying force, for the background to our changing military role in responding to world events, and for the thoughts that emerge from the topics discussed.

Maj Teresa D. Daniell and
Lt Col Duane W. Deal, USAF
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STRATEGY, POLICY, INTERNATIONAL AFFAIRS

Soviet Military Reform in the Twentieth Century: Three Case Studies by Raymond J. Swider, Jr. Greenwood Press, 88 Post Rd. West, Box 5007, Westport, Connecticut 06881, 1992, 177 pages, \$42.95.

Emulating a Russian penchant for thinking in threes, Raymond Swider addresses Soviet military reform as a *troika of troikas*: three key reforms, three major factors inducing reform, and the impact of related change in three key fields.

The three reforms in question are those styled by Mikhail Frunze in the twenties, the post-World War II reductions and reorganizations, and the Khrushchev-era "revolution in military affairs." In this trio of case studies, Swider successfully melds analytical models developed by Professor John Erickson at the University of Edinburgh (where Swider served as a research fellow from August 1989 to June 1990) and at the US Army Russian Institute. Swider first examines the impetus for military reform in terms of the former Soviet Union's economy, international relations, and domestic political dynamics. He then gauges the impact of each reform in the fields of military doctrine, force structure and technology, and command and control. His resulting analytical model highlights the close linkage among these three fields in Soviet and Russian military reform. For the future, Swider contends his model remains applicable to military reform processes in Russia and other former Soviet republics.

Whatever the predictive value of Swider's model, his three case studies are backed with a

wealth of good documentation. As a point of interest for military historians, he skillfully juxtaposes Soviet open source materials against formerly classified estimates from the US Central Intelligence Agency and Joint Chiefs of Staff.

As good as Swider's documentation and analysis appear, his book falls short on two counts. First, some significant editorial gaffes detract from an otherwise top-notch text. For example, Swider incorporates a definitive summary into just one of his three case studies. Other distractions range from typographical errors (i.e., induction training that ran "twelve years per week for eight weeks") to inconsistent sectional headings (i.e., "Internal Politics" for the Frunze reforms versus "Domestic Politics" in the other two case studies, and "International Relations" in the final study versus "International Affairs" in the first two).

Most visibly, Swider's terminology does not remain faithful to his own "Doctrine-Force Structure/Technology-Command and Control" model, especially as regards his centerpiece coverage of force structure and technology. For the "Revolution in Military Affairs," he discusses the influence of nuclear warheads, guided missiles, and automation under the rubric of "Force Structure and Equipment." For the Frunze reforms, he limits his discussion to "Force Structure" and virtually ignores the impact of new technology (mechanized armor, air power, and automatic weapons) in the two decades after World War I. This gap in coverage, needless to say, neatly sidesteps discussion of Soviet military-industrial collaboration with Germany in the interwar years.

At an equally crucial but less concrete level, Swider makes no explicit attempt to compensate for ideological bias in former Soviet publications; and this bias seems to have flavored his analysis in two ways. To begin with, we should recall that Marxism-Leninism was first and foremost an economic theory, with a fundamental postulate that economic relations are the basis for all social phenomena. For this reason, its adherents couched their analysis of all problems and all potential solutions in economic terms, whereas Western analysts might perceive the variables in a radically different light. Swider evidently chose not to question the veracity of his Soviet sources on this score.

Moreover, Swider's frequent references to "paradoxes" in the reform process fail to recognize the dialectical logic that came hand in

glove with Marxist-Leninist ideology. Analysts-cum-ideologues in the former Soviet Union "naturally" perceived in all social phenomena two countervailing tendencies—the *thesis* and *antithesis* of the Hegelian dialectic, or a seeming "paradox" for Western analysts schooled in the sequential logic of simple cause and effect.

Bias of this type permeates primary Soviet sources of the periods in question, and it can easily clutter an otherwise objective analysis of causative factors. This is especially evident in Soviet publications of the sixties and seventies, from which the bulk of Swider's sources are drawn. As one example of how such bias may have influenced Swider's analysis, we find him asserting at first—from an economic standpoint—that Frunze's reforms "were necessitated by the growth and development of the new Soviet state" on the cusp between War Communism and the New Economic Program. Later, though, Swider concludes that "the reform debate was really a political struggle" between Joseph Stalin and Leon Trotsky in the wake of Vladimir Lenin's death.

In this lies a key lesson for the future, because one point strikes home in each of Swider's case studies: military reform in the former Soviet Union was as much a contest for political influence as anything else, a function of close-order combat at the highest levels of authority. As we view contemporary developments in former Soviet republics, especially as these developments impact our own nation's security, we must recognize the importance of relative political power and the interplay of key personalities there. In both Russia and the former Soviet Union, the military leadership has always been more than a simple pawn in the high-stakes game of political chess.

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Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991 by James A. Winnefeld and Dana J. Johnson. Naval Institute Press, Annapolis, Maryland 21402, 1993, 219 pages, \$29.95.

The well-publicized air operations conducted during the Gulf War were critical to success in that conflict, but the lesser-known story of the command and control (C²) of those operations was even more crucial. Based on a

Rand study published in 1991, *Joint Air Operations* has been expanded and revised to include not only Operation Desert Storm but also Operation El Dorado Canyon (the raid on Libya). Winnefeld and Johnson carefully examine six major air campaigns—Midway, Solomon Islands, Korea, Vietnam, Libya, and Iraq—for lessons they might hold for planners of future joint air operations. Their focus is on the differences—sometimes extremely bitter—between the Navy, Marine Corps, and Air Force over the C² and employment of theater air forces. Up front, the authors warn that this book will not please parochial-minded people who feel that their particular service is blameless for the frequent failure of the services to achieve unity of effort in joint air operations. In fact, Winnefeld and Johnson are convinced—and their research corroborates—that there is no single service view that will "solve" joint C² problems. Instead, they focus on one question: "What can we say to today's planners and commanders about the historical lessons of joint air operations?"

Joint Air Operations begins with a review of the services' air campaign doctrine and then proceeds to look at C² of the air forces (or the lack of it) during the battle of Midway in 1942, in the Solomons from 1942 to 1944, in Korea from 1950 to 1953, in Vietnam from 1965 to 1968, in Libya in 1986, and in Iraq in 1991. The book then provides an overall evaluation of how fully unity of effort was achieved under the revealing glare of the unity of command, the quality of joint planning, the use of the services' special capabilities, and the degree to which each service was prepared and capable of integration in its doctrine, equipment, training, and organization. The authors are particularly interested in how a theater campaign's air operations were organized, commanded, and executed in the theater commanders' pursuit of the objectives needed to realize a common strategic goal. The study concludes with a chapter devoted to the lessons learned, relearned, and unlearned over the years.

Joint Air Operations is both an excellent study of the joint air campaigns mentioned above and an outstanding examination of what a lack of unity of C² in joint air operations could mean for the increasingly joint operations we face today and will face in the future. This evenhanded study, calculated to invite discussion and contemplation, shows how each service has succeeded or failed to achieve

unity of effort. It convincingly demonstrates how the services' doctrinal parochialism has historically dominated air operations to the detriment of a successful air campaign. However, the authors note that this tendency markedly diminishes when the incentive of survival becomes part of the equation—witness the Guadalcanal campaign and the Cactus Air Force's successful air campaign, the likes of which would not be seen again until Desert Storm. Before starting their long chapter on Desert Storm, Winnefeld and Johnson remind readers that the old adage "you learn more from defeat than from success" may very well be applicable to Desert Storm. They clearly show, at least to this reader, that our victory may have obscured some major C² issues.

Joint Air Operations should be required reading at every level of professional military education for all the services. The authors do not pretend to have found "the answer" but have succeeded in producing a work that will inspire thought and discussion, regardless of who reads it. But it seems a pity that the authors had to turn to the Naval Institute Press because there is no similar organization dedicated to publishing air power subjects. Hooray for the Naval Institute's foresight to publish this contribution to the literature of air power.

Although *Joint Air Operations* is certainly not the last word on the subject of the theater air campaign, it is a welcome addition.

Maj Michael J. Petersen, USAF
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The Commanders by Bob Woodward. Simon & Schuster, 1230 Avenue of the Americas, New York 10020, 1991, 398 pages, \$24.95.

Bob Woodward began *The Commanders* with the intention of focusing on the military and civilian leadership within the Pentagon. But the occurrence of Operations Just Cause and Desert Shield changed that focus to an in-depth, chronological examination of military—and to some extent civilian—decision making. Woodward's purpose is to illuminate the decision-making process for the interested reader. He very carefully attempts to remove "smoke and mirrors" to expose the complexities involved in determining courses of action amid competing agendas. Often, one cannot label decisions as purely military or political. At the national level, distinctions between political

and military are blurred—both in decision making and individual responsibility.

It is entirely relevant that all citizens understand the intensity of effort undertaken by people who—through election or selection—make critical decisions at the national level. Further, it is imperative that aspiring senior leaders in the military understand thoroughly the arena for which they are preparing. Neither they nor the nation can afford to believe that there is an abundance of simplistic solutions to the myriad complex issues and challenges—now or in the future. It is equally important to understand that there *are* solutions—perhaps not always universally popular ones—that will best serve the United States and its people. That knowledge is important, for it allows aspiring military leaders to develop the confidence to succeed. Radical problems may demand radical solutions, but—as Woodward so skillfully illustrates—one can arrive at those solutions through a structured, rational process conducted by trained, well-prepared professionals.

Woodward need not have written 336 pages to make his point. Events, circumstances, and players all come together—almost serendipitously—to provide example after example. We are taken from the most secret sanctums of the Pentagon to the command center at Quarry Heights, Panama. We listen in on conversations on secure phones and aboard executive airplanes. We are even in and out of the Oval Office repeatedly. In every case, Woodward candidly shows that people examined all sides of an issue as they sought solutions. Illuminating, though—I assert—not surprising, was the reluctance of military leaders to advocate the use of force. Equally comforting was the very careful manner in which decision makers solicited input from each key player at every level. No one can read *The Commanders* without gaining both insight into the decision-making process and a sense of satisfaction that the military now knows how to demand a political definition of success *up front*.

Many times during the debate about what to do, first about Manuel Noriega and subsequently Saddam Hussein, key advisors questioned—in open forum—the purposes of actions considered and their relevance. Although total agreement did not always occur, the willingness to listen and consider counterarguments contributed to the legitimacy of the process. Additionally, the quest

for viable alternatives brought both a consensus and a commitment to the decision selected. Woodward stops short of a blow-by-blow description of the actual hostilities. Rather, he merely points to the process and the strongly supported decisions and implies that both Just Cause and Desert Shield enjoyed at least a measure of success as a result of the process itself.

Chronologically organized and timely, *The Commanders* presents key subjects and events familiar to all of us. Though the book is not written strictly for a military audience, its terminology, locations, and personalities are of particular military interest. Obviously, Woodward had access to the thoughts and activities of many people. He spins a good story, appears very factual, and illustrates accurately how our leaders make high-level decisions. *The Commanders* is illuminating, interesting, and exceptionally relevant today, tomorrow, and—I submit—well into the future.

Col Dan M. Vannatter, USA
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Birth of a New World Order: An Open Moment for International Leadership by Harlan Cleveland. Jossey-Bass, 35 Sansone Street, San Francisco, California 94104, 1993. 260 pages, \$25.95.

The term *new world order* is tossed about with such abandon that we have become numb to its implications. Books explaining the growth of the new world order on a purely empirical level are easy enough to find, but normative, prescriptive, detailed treatments of the subject are a rarity. Harlan Cleveland's *Birth of a New World Order* is one of those rarities—a well-written, clearly outlined prescription about what the infrastructure of the new world order should look like. Only occasionally does it lapse into muddleheadedness.

Based on discussions by "The Group" (an organization of 31 prestigious academicians and leaders from 24 countries), the book includes 11 largely unconnected chapters with titles such as "The False Analogy: Failure of the Nation-States" and "World Economy: Managing with Nobody in Charge." Cleveland is at his best when he tells us what the transnational organizations of the future *should* look like; at his worst, his descriptions of what *has* happened are unenlightening summaries of ideas

better explained by other authors. For example, chapter 1 ("A Hinge of History: The Explosion of Choice") deals largely with the information revolution and is essentially a summary of ideas put forward by futurists such as Alvin Toffler and Francis Fukuyama. By chapter 4 ("The International System: What Works and Why"), however, Cleveland begins to hit his stride, taking advantage of his extensive experience in the international arena to outline what constitutes a successful transnational program. Even so, some of his observations seem less than objective. For example, he states that UN programs to combat the eradication of infectious diseases, globalize information flows, and make and keep the peace are "clear cases of successful worldwide cooperation" (page 49). I would hate to see what he considers a problematic program. Another problem is that his list of "Ten Reasons Why These Programs Work" is never linked to any of his examples. A test example would have helped connect theory to fact.

This shortcoming highlights another perhaps unsolvable problem with the book. Cleveland's astounding breadth of knowledge allows him to cover so much ground that the reader is often left wondering about the substance behind the generalizations. The author would have better served his purpose by deleting chapter 10, a disingenuous list of global environmental problems, and expanding such penetrating and insightful chapters as 6 ("World Security: The Role of Activist Neutrals") and 8 ("World Economy: Managing with Nobody in Charge"). The breadth of the book also prevents Cleveland from backing up some questionable factual assertions with documentation. For example, his statement in chapter 11 that biotechnology is helping rich nations become richer and poor nations become poorer flies in the face of the fact that that industry has recently suffered dramatic losses.

Paradoxically, however, this weakness is also one of the book's greatest strengths because Cleveland is not afraid to make some insightful generalizations about what the new world order will have to look like for it to succeed. In a discussion tinged with the appropriate idealism, Cleveland defines eight actions the UN must take to promote economic growth with fairness, ranging from "defining basic human needs" to "serv[ing] as a catalytic agent in arranging debt swaps." His thoughts

on the new economic world order are particularly well honed, especially in chapters 10 and 11, where he offers his insight into what needs to be done to world currencies to promote growth. These chapters present a lucid and readable account of how the third world got into a debt quandary and what it should do to get out.

Birth of a New World Order is valuable not for its description of how the new world order came about, but for its insight as to what it should look like. Cleveland, always the optimist, is confident that the United States must assume the mantle of leader among equals if it is to take advantage of this "open moment for international leadership." One should read Cleveland's book for its fancy instead of its fact; gaining familiarity with his normative statements is well worth the time.

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VIETNAM WAR

After Tet: The Bloodiest Year in Vietnam by Ronald H. Spector. Free Press, 866 Third Avenue, New York 10022, 1992, 390 pages, \$24.95.

Ronald Spector, a professor of history and international affairs at George Washington University, has written a book that will receive the same acclaim as his previous work, *Eagle against the Sun*. *After Tet* has the same traits as its predecessor: readability, superb analysis, in-depth research, and interesting interpretations of events. Although the latter have been covered by other authors, this excellent book puts them in clearer focus.

Touted as a study of events after the Tet offensive of January–February 1968, *After Tet* reaches back to earlier occurrences to set the stage for the year and for the entire war. Spector's analysis puts into context people, places, and events that transcend the year 1968. Indeed, some of his observations and conclusions are clearly pertinent to the recent war in the Gulf and to future conflicts that may present themselves in areas throughout the Balkans, the Middle East, and elsewhere.

After Tet asks—and answers—some basic questions about the Vietnam War. Spector looks deeply into this war to find underlying causes and events in a conflict that was fought

for different reasons by each participant. He explains why each side viewed defeat for the other side as inevitable, a belief that motivated each side to continue the fighting long after the ends justified the means. Finally, he reveals why this war was extended five more years after the massive, bloody, inconclusive battles of 1968.

After Tet begins with Spector's arrival in Vietnam around the time President Johnson declared a cessation of bombing in an effort to terminate the war. With over 500,000 American forces already in-country and with renewed efforts by the Communists to engage in conventional battles, peace was obviously not on the agenda. Spector takes us through the individual battles of 1968, through the political battles being fought in the United States during an election year, and through the political shortcomings of a corrupt and doomed South Vietnamese government.

With discussions on deteriorating race relations, the increasing use of drugs, and an entertaining chapter entitled "In the Rear with the Gear, the Sergeant Major, and the Beer," Spector takes us to perhaps the strongest section of his book—the epilogue. After defining underlying assumptions throughout the book, Spector uses the epilogue to reinforce his analysis and conclusions.

After Tet is a strong study of the entire war in Vietnam, with particular emphasis on the events of 1968. For a new generation not familiar with the turmoil both overseas and at home during this period, the book provides a critical look at a war America has still not accepted on its own terms.

Maj Gary A. Trogdon, USAF
Offutt AFB, Nebraska

WORLD WAR II

Liberators: Fighting on Two Fronts in World War II by Lou Potter. Harcourt Brace Jovanovich, Orlando, Florida 32887, 1992, 303 pages, \$29.95.

Reading Lou Potter's *Liberators* turned out to be a rewarding experience. I couldn't put the book down until my eyes failed me in the wee hours of the morning. I was captivated; I was educated.

This documentary highlights the contribution of black Americans to US military success

through World War II, as well as the official and unofficial bigotry they encountered in the process. The book grew out of a television documentary by the same name presented by the Public Broadcasting System on Veterans Day, 1992.

A major portion of the book examines the World War II successes of the 761st Tank Battalion, the "Black Panthers." The all-black unit was inserted into Europe in time to help overcome the Maginot Line and Siegfried line, to contribute heroically to the Battle of the Bulge, and to fight at the very tip of Patton's charge across Germany—an incredible six months of almost continuous maneuver and battle. The book suggests how frequently the unit spearheaded attacks on enemy positions, neutralized any significant resistance the enemy could offer, and then moved on to the next battle while all-white infantry units (with accompanying white reporters) conducted mop-up operations and claimed all the publicity and glory. It is little known, for example, that a black unit pushed further east than any other unit, meeting the Soviets at Steyr, Austria, on the Enns River; no photographs document the historic event. The book contends that the concentration camps at Buchenwald and Dachau were initially liberated by Black Panther platoons. Because they soon moved on to their next objective, their role was largely overlooked by the time white reporters arrived to photograph and publicize this monstrous human calamity. Because of bigotry against the all-black unit and because it was spread out all over the European front, fighting in dozens of places with virtually no publicity or documentation, the 761st did not receive the Distinguished Unit Citation until 1978.

The reader comes away from *Liberators* rejoicing at the successes and heroism of black servicemen in combat. But that joy is tempered because the book also documents the terrible bigotry that our black servicemen encountered from their own countrymen. Somehow I found

official bigotry, spelled out in military regulations and aimed at our fellow professionals, more appalling than the more well known variant in the civilian community. It shouldn't matter, I suppose; bigotry is bigotry. But having to go to the back of a military bus and having one's own commander glory in his explicitly stated prejudice strike me as worse than bigotry.

Readers who want a complete, objective, well-documented, academic account satisfying every rigor of sound historical practice will not find *Liberators* to their liking. There are two problems. First there is the matter of factual errors. For example, it might not have been Buchenwald and Dachau that the 761st liberated (compare the *New York Times* of 12 February 1993, page B3). Second, *Liberators* is like a written, expanded version of television's "Sixty Minutes" or "20-20" news shows. That is, it comes with a preconceived message, and it picks and chooses materials that get that message across. Further, many quotations are not documented, and the full texts of interviews are not provided, even though the book relies heavily on oral history. (One also gets the uncomfortable feeling that contemporary standards of oral history are largely ignored.) The book also ignores material that contradicts its message. The basic problem is that this book is a product of television journalism and never escapes the shortcomings of the genre.

Nonetheless, the genre also has strengths, and *Liberators* is successful in what it does. For that reason, I wholeheartedly recommend it. Historical bigotry is in the background as military leaders deal with issues of race, gender, and even sexual orientation. If cohesiveness continues to be important in winning wars, then the commanders of tomorrow need to be aware of the historical barriers to cohesiveness. Reading *Liberators* is a good step in that direction.

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Lt Col Maris ("Buster") McCrabb (BA, Bowling Green State University; MS and MPA, Troy State University) is chief of the Warfare Studies Division at Air Command and Staff College, Maxwell AFB, Alabama. Immediately preceding this assignment, he was department chairman of the Joint Doctrine Air Campaign Course of the Combat Employment Institute, Center for Aerospace Doctrine, Research, and Education (CADRE), Maxwell AFB. Colonel McCrabb is a command pilot with more than 3,200 flying hours in the F-4 and F-16 aircraft. During Operation Desert Storm, he was a member of the Combat Plans Division, Joint Task Force Proven Force, Incirlik, Turkey. Colonel McCrabb is a graduate of Squadron Officer School, Air Command and Staff College, Air War College, and the US Army Command and General Staff College.



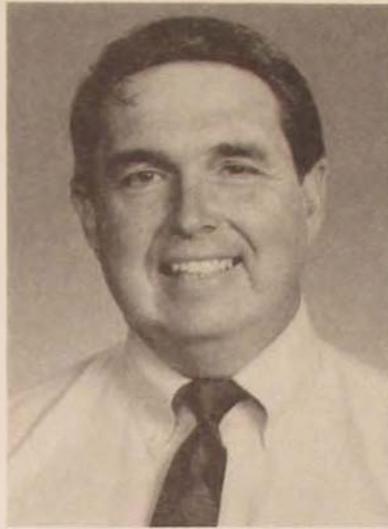
Lt Col Thomas E. Griffith, Jr. (USFA; MA, University of Alabama), is currently studying for his doctoral degree in military history at the University of North Carolina. He has flown the F-4 at Osan AB, Korea; Ramstein AB, Germany; and Seymour Johnson AFB, North Carolina. While at Seymour Johnson, he was selected as part of the initial cadre for the conversion to the F-15E. He deployed for Operation Desert Shield and was shot down on his third combat mission during Desert Storm. Colonel Griffith is a graduate of the School of Advanced Airpower Studies and a distinguished graduate of Air Command and Staff College.



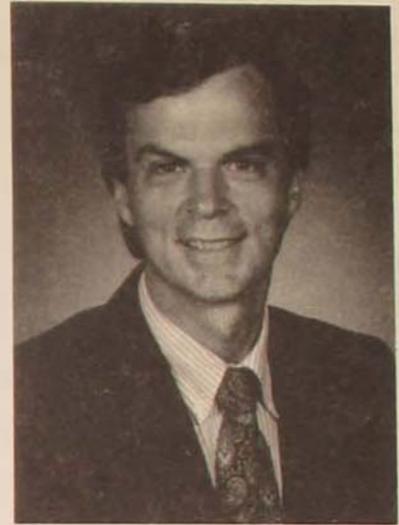
Capt David Willard ("Dave") Parsons (BA, Washington University; MA, Naval Postgraduate School) recently graduated from the Naval Postgraduate School, Monterey, California, where he majored in national security affairs, specializing in special operations/low-intensity conflict and Latin American area studies. He is currently attending C-130 qualification training at Little Rock AFB, Arkansas. Captain Parsons's end assignment is to the 2d ALS, Pope AFB, North Carolina, as a C-130 pilot. His previous assignments include B-52G instructor navigator at Andersen AFB, Guam, and ATC instructor navigator at Mather AFB, California. He is a graduate of Squadron Officer School.



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Dr Ronald B. Hartzler (BA, Oral Roberts University; MA, PhD, Indiana University) is the historian at the Air Force Civil Engineering Support Agency, Tyndall AFB, Florida. Previously, he was historian at Lowry Technical Training Center, Lowry AFB, Colorado. He has also done historical work for the US Army Corps of Engineers and the US Forest Service. He directed the Lessons Learned study for Air Force Engineering and Services in Operations Desert Shield/Desert Storm/Proven Force/Provide Comfort. Dr Hartzler has written numerous articles on engineering history and coauthored AFM 3-2, *Civil Engineering Combat Support Doctrine*, 26 April 1991.

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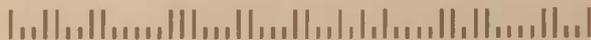


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