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From the Editor

June is traditionally a month of moving vans, new jobs and new faces at Fort Leavenworth and posts across the world. As part of this seasonal transition, it is my privilege to begin duties as the latest editor in chief of *Military Review* (MR) with this month's issue. As have the editors before me, I too pledge to maintain the quality and service of MR as a professional journal. The challenge I have set in my pledge is to reach beyond just meeting the high standards of the past to better anticipate the Army's needs for the future. MR can serve opinion makers within and without the Army by focusing discussion on specific issues before they articulate their agendas for future action.

This role recognizes that change requires process before product. MR, after all, serves not only to explain new products such as the 1993 edition of US Army Field Manual 100-5, *Operations*, but also as a means to fuel the process of change. Intellectual change benefits from a wide discussion of emerging issues—a perennial goal of past editors and senior leaders. My vision for this magazine in this regard is to target specific audiences with emerging issues and delineate linkages to quicken and document that intellectual process. In this way MR can help the Army and other audiences make intellectual connections as they adapt with more austere resources to a new world.

A leadership theme, for example, may be synchronized to support the US Army Command and General Staff College instruction as well as provide additional sources to leadership concept and doctrine writers. As Army schools realign and divest previous functions, this targeting of issues may provide the intellectual background for certain courses, concept development and doctrine development. In addition, in a period of rapid change this same targeting of issues will also serve officers and noncommissioned officers in a variety of command and staff positions to understand the reasons for change.

This month the MR theme is operational art and the strategic level of war. The target audience is the Army, our sister services and the joint commands. As military professionals we must first appreciate that Army forces will conduct all operations as part of joint, combined and interagency efforts through a campaign design. Our lead article by Retired Colonel William Mendel and Colonel Lamar Tooke addresses the first intellectual step of applying the operational art, "Operational Logic: Selecting the Center of Gravity." The Edgar O'Ballance article, "Contingency Forces," is appropriate to every unit under the Army's force-projection role. General Robert W. RisCassi's "Doctrine for Joint Operations in a Combined Environment: A Necessity" provides a valuable discussion from the perspective of a regional, combined commander. In an age when corps and even divisions may deploy as a joint task force or Army component headquarters, being conversant in the issues of operational art and joint and combined operations is a fundamental necessity of all military professionals.

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Operational Logic: Selecting the Center of Gravity

Colonel William W. Mendel, US Army, Retired, and
Colonel Lamar Tooke, US Army

This article provides insight into the concept of center of gravity and a method of selection that links it to the strategic aims or objectives of the campaign. The authors look at how commanders from Napoleon to General H. Norman Schwarzkopf have wrestled with the concept of center of gravity. Even today, as war planners consider this problematic issue, typical notions intuitively arise: national will, alliance solidarity, air invasion force, naval forces, and the like. What is more important to planning than opinions about the center of gravity, however, is a logical methodology for selecting the focal point of the campaign.

The first task, then, in planning for war is to identify the enemy's centers of gravity, and if possible trace them back to a single one.

— Carl von Clausewitz

THE RENEWED interest in operational art, largely inspired by the 1986 version of US Army Field Manual (FM) 100-5, *Operations*, brought a resurgence of authors and philosophers on the subject. Most notable in FM 100-5 are the key concepts of operational design espoused by Clausewitz and Baron Henri Jomini. The concepts of center of gravity, culminating point and lines of operation have been studied extensively at the US Army Command and General Staff College and the US Army War College.¹ For the most part, the definition and description of these concepts are well understood by the strategic and operational-level community. However, in the application of what appear to be simple concepts, students and practitioners of operational art often find themselves guided by little more than intuition. While intuition certainly has its place, a modicum of logic should guide our thinking about the important relationships between the fundamental concepts of operational art and the application of the military element of power for strategic purposes.

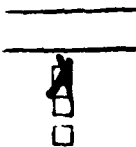
To the campaign planner, the crucial question is how, when and where to decisively engage the enemy to achieve the strategic aims for which the campaign is to be fought. While all parts of an enemy's political, economic and military strengths might be of strategic importance and should be brought under attack, some are vastly more significant than others. The most dominant of these will offer what Clausewitz referred to as "the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed."² This often quoted passage is a reference to the center of gravity concept so prevalent in present US Army and joint doctrine. Selection of the center of gravity is cen-

tral to operational design, particularly at the strategic level of planning. The strategic level is dominant in the continuum of war because it is at this level that the political, economic, military and other aims and objectives are defined, and thus the importance of planning from the top down. Military strategy sets the fundamental conditions of operations in war by setting goals, describing concepts, applying military resources to achieve

Selection of the center of gravity is central to operational design, particularly at the strategic level of planning. The strategic level is dominant in the continuum of war because it is at this level that the political, economic, military and other aims and objectives are defined, and thus the importance of planning from the top down.

policy aims and imposing constraints on the use of force. Selecting a center of gravity enjoins decisive thinking and brings clarity of purpose to the process of strategic planning in the theater.

Effective use of the fundamentals of operational art involves the skillful translation of political direction into achievable strategic military aims and the subsequent planning, positioning and maneuvering of forces to achieve a decisive advantage over the foe. The strategic center of gravity serves as the link between strategic aims and the operational employment of forces by the commander in chief (CINC). It is, therefore, fundamentally rooted in the strategic aims for which the war is to be fought, as Clausewitz suggested; "A prince or a general can best demonstrate his genius by managing a campaign exactly to suit his objectives and his resources, doing neither too much nor too little." He goes on to say that no one should initiate a campaign "without first being clear in his mind what he intends to achieve . . ."³



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Strategic and operational centers of gravity do not exist in isolation from the national and military strategic aims established for the conduct of war. While they are dynamic and may change as the conflict evolves, centers of gravity must be appropriate to the political aims and the nature of the conflict.⁴ Retaining the proper focus can be a difficult task. FM 100-5 introduces the idea that an armed combatant is a "complex organism" consisting of a number of important components. The manual also addresses the need

While enemy strengths, inherent weaknesses and eventually the center of gravity may become vulnerable in the course of a campaign, it does not follow that all of these constitute a list of centers of gravity. Indeed, the center of gravity concept is most useful in bringing focus to our planning and the synergistic use of joint combat power when we concentrate on a single aspect of our foe.

to select from among them the source of enemy strength—the center of gravity.⁵ It reveals neither a method of selection nor the potential diversions that accompany the search along the way. Chief among these are decisive points, strategic and operational strengths, vulnerabilities and weaknesses. It was the erroneous association of the center of gravity concept with vulnerabilities that prompted US Army Colonel Lawrence L. Izzo to pen his masterful article, "The Center of Gravity is Not an Achilles Heel."⁶

Enemy vulnerabilities, weaknesses and perhaps even strengths can offer indirect pathways to gain leverage over the center of gravity. Key geographical features, important operational functions such as air defense or sustainment, and special capabilities such as nuclear, biological and chemical (NBC) or communication systems may be attacked to weaken the center of gravity. Gen-

eral Dwight D. Eisenhower's use of strategic and operational fires against the French transportation system in support of the Allied landing at Normandy illustrates how the attack of an important operational function contributes to the overall campaign. In this case, the plan was designed to isolate the Normandy lodgement from German reinforcements and disrupt the mobility of the German Seventh Army, a potential operational center of gravity.⁷ Within the strategic and operational design, key features or important functions and capabilities may become the decisive points or objectives for a given phase, or tasks to subordinate components within a phase of the operations.

While enemy strengths, inherent weaknesses and eventually the center of gravity may become vulnerable in the course of a campaign, it does not follow that all of these constitute a list of centers of gravity. Indeed, the center of gravity concept is most useful in bringing focus to our planning and the synergistic use of joint combat power when we concentrate on a single aspect of our foe.

A variety of things must be considered by the warfighting CINC in an appreciation of the strategic and operational environment. Part of the commander's estimate is a demanding set of mental gymnastics to identify the proper center of gravity. However, even with the appropriate center of gravity determined, the CINC probably will not have sufficient strength to gain leverage over the enemy center of gravity in one decisive blow. He must carefully manage scarce resources to efficiently attack enemy weaknesses, sources of strength and ultimately the main source of power. Here again, Eisenhower's March 1944 demand for control of strategic air assets to support the Normandy invasion provides an example of how scarce resources must be concentrated in support of critical operational objectives. Without the concentration of air forces against the transportation system and the armored reinforcements poised to counterattack, establish-

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ment of the lodgement at Normandy may not have been successful. Eisenhower felt so strongly about this issue that he threatened "unless the matter is settled at once I will request relief from this command."⁸ Constrained resources may dictate the design of operations or require an indirect approach to the center of gravity.

Our premise is that there is a strong linkage between the strategic aims and the center of gravity, which defines a selection process useful to strategic thinkers. Understanding this relationship will lead to a logical conclusion concerning the selection of the center of gravity, regardless of the level of war. The method offered here is based on two principles concerning the relationship between the center of gravity and aims or objectives:

- Centers of gravity are derivative of the aims or objectives established at the level for which you are planning (strategic, operational or tactical).

- Aims or objectives established at the operational and tactical levels should contribute to our ability to impose our will (such as destroy, defeat or delay) over the center of gravity at the next higher level of war.

This operational logic is not designed to be a formula or prescription. It will, however,

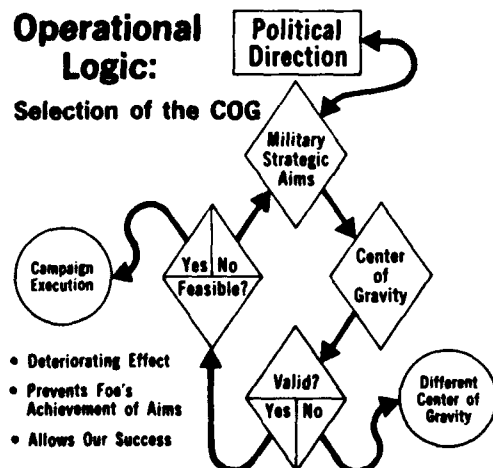
serve as a departure point in the process of selecting a center of gravity. A great deal of thinking and discussion are required before a center of gravity can be selected with any

Strategic aims elicit strategic centers of gravity that, in turn, allow for the establishment of operational goals and the associated centers of gravity. Operational centers of gravity are linked to both strategic and operational objectives. To complete the process, operational goals and centers of gravity establish the foundation for the selection of tactical objectives and the related centers of gravity.

confidence. When attempting to apply this methodology, we should submit each potential center of gravity to a validity test by asking: If I desire to impose my will upon this center of gravity, will that action create a cascading, deteriorating effect on morale, cohesion and will to fight that prevents my enemy from achieving his aims and allows the achievement of my own? Further, if I have selected a valid center of gravity, do I have a feasible ability to impose my will over it?

To further describe this process, we should start with the model below and proceed to examples from past experience. The political process establishes the acceptability of national aims and sets the conditions for the use of military power. Military strategists must then determine the appropriate strategic aims that adequately support political ends.

Based upon the strategic aims, we can consider potential centers of gravity by submitting each to the criteria we have discussed. Can imposing our will upon the selected center of gravity create the deteriorating effect that prevents our foe from achieving his aims and allows the achievement of our aims? If the answer to this question is no or not completely, consider another potential



center of gravity. If the answer is yes, a valid center of gravity has been established. It is possible at the operational and tactical levels to have more than one valid center of gravity, but to the extent that they proliferate, the less useful is the concept of center of gravity in bringing focus and unity of purpose to the

Rapidly changing strategic aims or operational objectives can cause a loss of focus on the center of gravity or "the point against which all our energies should be directed." Focus is that special ingredient added by rightly establishing strategic aims and selecting the derivative center of gravity.

campaign. It is also possible to identify multiple sources of strength that are not centers of gravity. The early US experience in Vietnam was based on a strategy that focused on none of the potentially valid North Vietnamese centers of gravity—the army, Hanoi, strategic leadership, their support base or the community of interests with their allies. Instead, the focus was on the Vietcong, an important strength and instrument of the north, but not a center of gravity. The virtual destruction of the Vietcong during the Tet offensive of 1968 did not allow our strategic success, and our foe continued the war unabated.⁹ A major pitfall, then, is in confusing other important strengths and vulnerabilities with centers of gravity. The "hub of all power and movement, on which everything depends" will not be grounded in a weakness.¹⁰ Therefore, the vulnerability aspect of this pitfall is often easier to address than other sources of strength.

The feasibility of imposing your will over a center of gravity rests with your ability to do so. Given the ability exists, campaign design and planning should proceed. Lacking the ability to impose your will over a valid center of gravity requires an adjustment of the stra-

tegic aims and consideration of centers of gravity based on the adjusted aims. This adjustment should be followed by the feasibility check regarding the ability to impose our will.

The direct and intrinsic relationship between strategic aims and center of gravity can be traced to FM 100-5, which defines operational art as "the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations. . . . Its essence is in the identification of the enemy's . . . center of gravity—his source of strength or balance."¹¹ The commander conceptualizes the military design and conditions that will ultimately achieve strategic aims. Success is only relevant if the exploitation or destruction of the center of gravity selected leads to the accomplishment of the strategic aims. Correct identification of the enemy's center of gravity will enable the CINC to seize the initiative, dictate the terms of combat and focus the synergistic effects of joint warfare against the most dominant characteristic relevant to the strategic aims. The Iraqi Republican Guard forces were hapless recipients of such a focus, one produced by the sound application of principles in Operation Desert Storm.

Strategic aims elicit strategic centers of gravity that, in turn, allow for the establishment of operational goals and the associated centers of gravity. Operational centers of gravity are linked to both strategic and operational objectives. To complete the process, operational goals and centers of gravity establish the foundation for the selection of tactical objectives and the related centers of gravity. When this inherent linkage to the strategic aims is not the dominant force in the planning process, operational and tactical considerations began to determine strategy. German General Erich Ludendorff fell victim to this error during the planning and execution of the World War I Kaiserschlacht

OPERATIONAL LOGIC

Campaign across the Western Front in March 1918. Ludendorff launched a series of major operations without a clear strategic vision of what was to be accomplished or the specific aims that would have provided the necessary operational and tactical linkages. Early tactical successes and gains in territory created an illusion that the campaign might lead to victory in World War I. Instead, the strategic incoherence, which undermined the campaign, became a major factor in culminating the German army before a strategically meaningful success could be realized.¹²

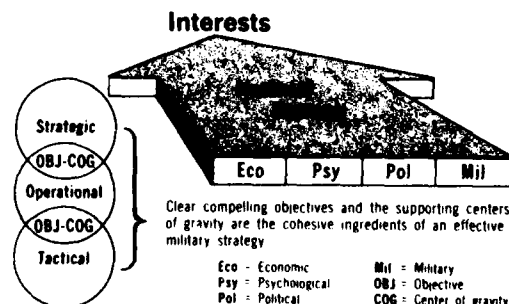
Rapidly changing strategic aims or operational objectives can cause a loss of focus on the center of gravity or "the point against which all our energies should be directed."¹³ Focus is that special ingredient added by rightly establishing strategic aims and selecting the derivative center of gravity. Our 1941 defense of the Philippines provides one example of the center of gravity in a complex and developing strategic situation where our aims were evolving and changing.

From September through November 1941, every effort was made to strengthen our forces in the Philippines in the hopes of deterring an invasion by Japan. As American and Filipino forces expanded on Luzon and elsewhere in the islands, so too did the aims of the Philippine defense planners. Recognizing the limited resources available, the fundamental strategic aim of War Plan Orange (WPO-3) was to delay the Japanese capture of Luzon for six months by conducting a withdrawal into the Bataan Peninsula to retain control of Manila Bay. A US naval force was to fight its way back to the Philippines with reinforcements during the six-month delay.¹⁴

With this strategic aim in mind, potential centers of gravity would have been the Japanese invasion force, including the ground, air and naval components, or perhaps more simply, the main landing force and, finally, the Japanese ground force once they were

The buildup of forces in the fall of 1941 led both MacArthur and planners in Washington to aspire to [expanded] aims and objectives. . . . Based on this optimistic and confident consensus . . . MacArthur was [now tasked] to defend all the Philippine Islands and the adjacent waters and cooperate with the Navy in raids against Japanese sea lines of communication, conduct air raids and assist the defense of territories belonging to the Associated Powers. These were vastly different strategic aims.

ashore in the Philippines. But which was the single center of gravity that would have served best as the focal point for General Douglas MacArthur's campaign? Given the aim of delaying the Japanese, their ground force in the Philippines constitutes a center of gravity that meets the validity and feasibility examination. Focusing his campaign on the Imperial Fourteenth Army would have allowed MacArthur to delay Lieutenant General Masaharu Homma for six months and prevent Japanese capture of Luzon in 50 days (Japan's strategic aim).¹⁵ A review of MacArthur's resources relative to WPO-3 suggests this was within his reach. While the invasion force and the landing force are potentially valid centers of gravity, MacArthur did not have the ability to impose his will on these sources of strength. Nor was it necessary to extinguish his rather



meager resources in an all-out effort against these enemy strengths to achieve the aims of WPO-3. A valorous effort against great odds

Imposing his will over the Japanese Second and Third fleets would have provided MacArthur the effect to achieve his aims and prevent the Japanese from success in theirs. Unfortunately, MacArthur did not have the ability to do so. . . . Shifting the focus away from the Imperial Fourteenth Army and the aim of delaying that force in the Philippines disrupted his entire logistic and operational planning and execution only seven weeks before the Japanese attacked in force and with the advantage of surprise.

delayed the Japanese for four months.¹⁶ Shifting strategic aims disrupted the campaign focus for the defensive efforts in the Philippines.

The buildup of forces in the fall of 1941 led both MacArthur and planners in Washington to aspire to different aims and objectives than those of WPO-3. MacArthur wrote to General George C. Marshall on 1 October 1941, asking for a more comprehensive plan. He wanted the "citadel-type defense" of WPO-3 to be abandoned in favor of an active defense of all the Philippine Islands and adjoining waters.¹⁷

Based on this optimistic and confident consensus between Washington and the command in the Philippines, Marshall dispatched a memorandum to MacArthur on 18 October, expanding his objectives. MacArthur was to defend all the Philippine Islands and the adjacent waters and cooperate with the Navy in raids against Japanese sea lines of communication, conduct air raids and assist the defense of territories belonging to the Associated Powers. These were vastly different strategic aims that would have required a shift in focus and a different campaign alto-

gether. With this reorientation, another center of gravity should have been chosen.¹⁸

Given these aims, there were several potential centers of gravity deserving strategic and operational focus: the Japanese Second and Third fleets; invasion forces for the Philippines, which included the air, naval and ground force assets; or perhaps the landing force for Luzon, wherever its location. Other sources of strength that might have intuitively arisen—such as Japanese strategic leadership, bases at Formosa or Japanese air power—do not meet our validity check because their relationship to the strategic aims is indecisive, and in a practical sense, some were not within MacArthur's grasp. While all could have been attacked in the course of such a campaign, they are not central to the aims established.

Imposing his will over the Japanese Second and Third fleets would have provided MacArthur the effect to achieve his aims and prevent the Japanese from success in theirs. Unfortunately, MacArthur did not have the ability to do so. Therefore, attacking this source of strength was not feasible. Shifting the focus away from the Imperial Fourteenth Army and the aim of delaying that force in the Philippines disrupted his entire logistic and operational planning and execution only seven weeks before the Japanese attacked in force and with the advantage of surprise.

After a number of preliminary landings, the main Japanese force landed 22 December and advanced about 10 miles into the Luzon interior toward Manila in just 24 hours. MacArthur realized that his forces could not contain the Japanese on the beaches; he reverted to the objectives of WPO-3. He intended to withdraw all forces to Bataan as originally planned. While MacArthur had deliberately discarded WPO-3 in November in favor of an active defense, his reversion to WPO-3 objectives and plans was a skillful decision given the circumstances. MacArthur revised his strategic aims, thus reorienting his campaign on the Imperial Four-

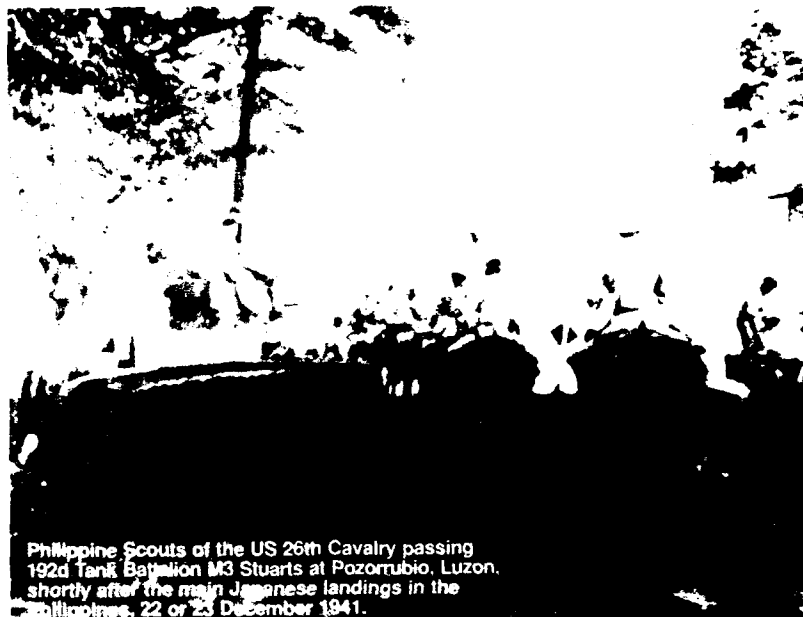
OPERATIONAL LOGIC

teenth Army. Fortunately, WPO-3 was still familiar to the forces involved, so that it could be partially carried out despite its earlier abandonment. Notwithstanding the lack of logistic support and continuity of planning, reorienting his effort on the Fourteenth Army and the aim of delaying allowed MacArthur's force to tie down large Japanese forces for four months. What might they have done given a continuous focus on achievable aims and the appropriate center of gravity?¹⁹

Some 50 years later, General H. Norman Schwarzkopf faced a similar situation in a different region. The strategic objectives given by the National Command Authorities (NCA) to the CINC of US Central Command (USCENTCOM) changed dramatically as the Persian Gulf crisis unfolded. Strategic military objectives for the region, directed by Defense Secretary Richard Cheney in August 1990, asked Schwarzkopf to deter further Iraqi aggression, improve the Saudi Arabian military capability and defend Saudi Arabia.²⁰

To accomplish these objectives, USCENTCOM intended to assist the Saudis by establishing an initial defense as a US force build-up ensued; then a solid defense would serve as the baseline from which a strong counter-offensive could develop to push the Iraqi forces out of Saudi Arabia, if that became necessary.²¹

With these strategic and operational aims as the foundation, the strategic center of gravity was seen as Iraqi command and control, variously described as the Iraqi national command authorities, Saddam Hussein and



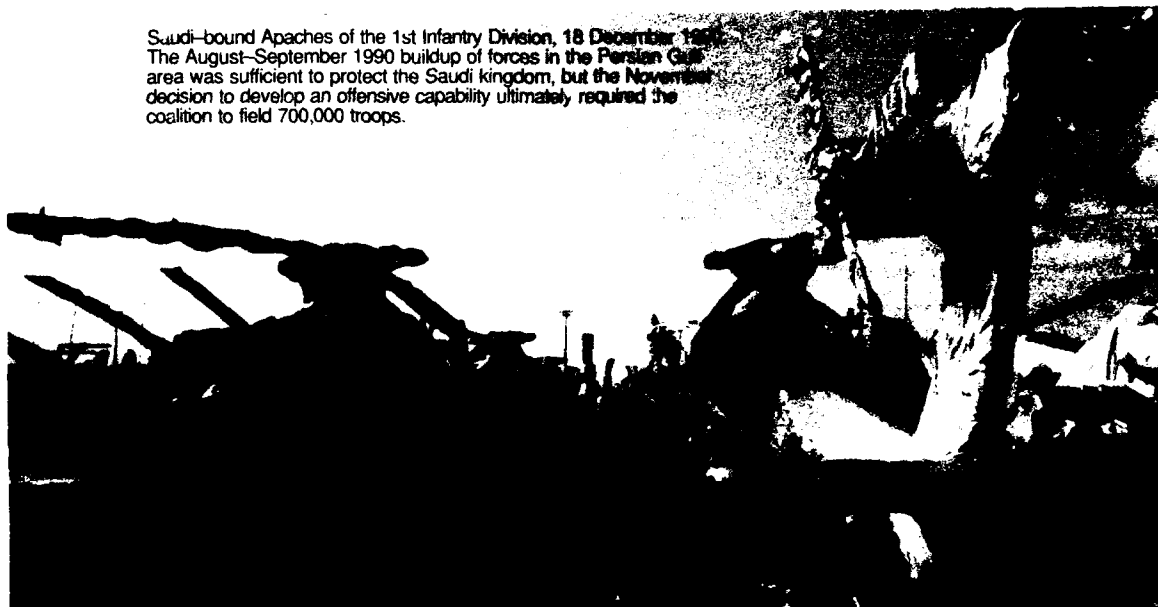
Philippine Scouts of the US 26th Cavalry passing 192d Tank Battalion M3 Stuarts at Pozorrubio, Luzon, shortly after the main Japanese landings in the Philippines, 22 or 23 December 1941.

[The] reversion to WPO-3 objectives and plans was a skillful decision. . . . MacArthur revised his strategic aims, thus reorienting his campaign on the Imperial Fourteenth Army. Fortunately, WPO-3 was still familiar to the forces involved, so that it could be partially carried out . . . [allowing] MacArthur's force to tie down large Japanese forces for four months.

Bathist leadership and communications hardware. At the operational level, the center of gravity was seen as the Republican Guard divisions that constituted a strong operational reserve force. It was the will of the Iraqi leadership and the combat power of the Republican Guard that could be employed to achieve Iraq's strategic aims and prevent US forces from success in the Kuwaiti theater. After the initial deployments, Schwarzkopf had the level of resources that would meet the feasibility check.

By November, the strategic situation had changed. As USCENTCOM strategist Colonel Douglas W. Craft explained, "When it became apparent that political and economic

Saudi-bound Apaches of the 1st Infantry Division, 18 December 1990. The August–September 1990 buildup of forces in the Persian Gulf area was sufficient to protect the Saudi kingdom, but the November decision to develop an offensive capability ultimately required the coalition to field 700,000 troops.



With these strategic and operational aims as the foundation, the strategic center of gravity was seen as Iraqi command and control, variously described as the Iraqi national command authorities, Saddam Hussein and Bathist leadership and communications hardware. At the operational level, the center of gravity was seen as the Republican Guard divisions. . . . By November, the strategic situation had changed. . . . "When it became apparent that political and economic sanctions would not produce a timely resolution of the conflict, the coalition leadership shifted military objectives to eject Iraqi troops from Kuwait."

sanctions would not produce a timely resolution of the conflict, the coalition leadership shifted military objectives to eject Iraqi troops from Kuwait using military action and secure Kuwait to permit restoration of the legitimate government."²² Indeed, on 8 November 1990, Cheney tasked Schwarzkopf to develop an offensive capability that would eventually find more than 700,000 coalition troops in pursuit of these objectives.²³

The list of strategic military objectives had grown: neutralize Iraqi command and control capability; remove Iraqi forces from Kuwait; destroy Iraqi offensive military capabilities (especially the Republican Guard); destroy Iraqi weapons of mass destruction (nuclear, chemical, biological); help restore the territorial integrity of Kuwait; and minimize coalition and civilian casualties.²⁴

The strategic nature of the campaign had changed from defense to offense. It was time to reassess the Iraqi center of gravity. Yet, the

main enemy source of strength or power that would enable Hussein to interpose his will and prevent USCENTCOM from accomplishing these objectives had remained constant. In the strategic realm it was Iraqi national command and control in the sense of Hussein's leadership authority and his means of exercising control over authoritative decisions. On the battlefield, where warfighters stood nose to nose, the center of gravity remained the Republican Guard divisions.

At both levels, imposing our will over those centers of gravity would still cause the desired effect that would allow achievement of our aims and the prevention of Iraqi success. Operational fires (mainly US Air Force and US Navy aircraft) were used to isolate the Kuwaiti theater from reinforcements and supplies, attack key Iraqi military functions related to the strategic and operational centers of gravity and cover the operational movement of coalition forces into positions

of concentration prior to the ground offensive.

Thereafter, supporting ground forces would fix the Iraqi first echelon in place on the forward edge of the battle area, while a main attack in the west would conduct a penetration and envelopment to destroy the operational center of gravity—Republican Guard forces located in reserve areas.²⁵ This also contributed directly to the imposition of our will over the Iraqi leadership.

Future battlefields may take on new dimensions in mobility, lethality and spatial relationships, but one constant will remain—the strategic aim, which is the purpose for any campaign, will continue to serve as the guidon for strategic and operational planning. Though speed of the modern battle could blur the distinction of sequential phasing, the linkage between our strategic aims and the enemy center of gravity will maintain the focus of our efforts. If strategic

Future battlefields may take on new dimensions in mobility, lethality and spatial relationships, but one constant will remain—the strategic aim, which is the purpose for any campaign, will continue to serve as the guidon for strategic and operational planning. Though speed of the modern battle could blur the distinction of sequential phasing, the linkage between our strategic aims and the enemy center of gravity will maintain the focus of our efforts.

aims provided by the NCA evolve throughout the campaign or war, then we must be prepared to reconsider the validity of the enemy center of gravity. By thoughtful planning, continuous evaluation and maintaining branches and sequels to our plan, we will set the pace on the field of battle. **MR**

NOTES

1. US Army Field Manual (FM) 100-5, Operations (Washington, DC: US Government Printing Office, May 1986), Appendix B, 179-82.
2. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret, (Princeton, NJ: Princeton University Press, 1976), 595-96.
3. *Ibid.*, 177.
4. Steven Metz and LTC Frederick M. Downey, "Centers of Gravity and Strategic Planning," *Military Review* (April 1988): 22-33.
5. FM 100-5, 179.
6. LTC Lawrence L. Izzo, "The Center of Gravity is not an Achilles Heel," *Military Review* (January 1988): 72-77.
7. David Eisenhower, *Eisenhower at War 1943-1945* (New York: Random House, 1986), 184-86.
8. *Ibid.*
9. COL Harry G. Summers, *On Strategy: The Vietnam War in Context*, Strategic Studies Institute, US Army War College, April 1981, 79-81.
10. Clausewitz, 595-96.
11. FM 100-5, 10.
12. Ted S. Racer, "Storm in the West 1918," *Command Magazine*, *Military History, Strategy, & Analysis* (May-June 1992): 16-22.
13. Clausewitz, 596.
14. Thomas M. Huber, "The American Bataan Campaign December 1941 to April 1942," *Army History* (Winter 91/92): 4-5.
15. *The West Point Atlas of American Wars, Vol II, 1900-1953*, Frederick A. Praeger Publishers, Section 2, World War II, Map 118.

16. *Ibid.*
17. Huber, 4-5.
18. *Ibid.*
19. *Ibid.*
20. Commander US Army Central Command (3d Army) briefing, "Operation Desert Shield," 15 August 1991, slide 5.
21. This was the plan for Operation Desert Shield, the defense of Saudi Arabia, which ultimately evolved into Operation Desert Storm. The campaign planning process began with deliberate planning within the Joint Operational Planning System (JOPS), further evolved during crisis action procedures initiated by the Joint Staff, and then took on a life of its own within the USCENTCOM theater. The early deliberate planning under JOPS allowed USCENTCOM time to build the critical half of the plan: theater sustainment. As planning assumptions and enemy activities changed during the initial stages of the crisis, employment concepts could be rapidly revised because of the resource foundation provided by the USCENTCOM Operation Plan.
22. COL Douglas W. Craft, *An Operational Analysis of the Persian Gulf War (Draft)*, (Strategic Studies Institute, US Army War College, 1992), 10-11.
23. Commander, USCENTCOM briefing, slide 26.
24. *Ibid.*, also slide 27.
25. GEN H. Norman Schwarzkopf, press briefing on Operation Desert Storm, as seen on Cable News Network, 27 February 1991. This TV briefing provided a description of the battlefield operations, as well as a view of the commander's thinking process in designing the campaign.

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Contingency Forces

Colonel Roger D. ... , British Army, Retired

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Many Western analysts have tried to compare the Soviet Union's involvement in Afghanistan to that of the United States in Vietnam. The author describes how the Soviets saw the situation in Afghanistan as it pertained to their national interests. He also discusses the desire of the Soviet government under Mikhail Gorbachev to withdraw the military forces and still leave a friendly communist government in control.

IT IS PERHAPS opportune to briefly consider the Limited Contingent of Soviet Forces in Afghanistan, the 40th Army, which attracted such derogatory comments in the Western media, to see how it was regarded by the Soviets themselves, the Kabul regime, the *mujahidin*, and internationally, to assess its effectiveness.

Somewhat naturally, the Soviets thought it was doing a good and necessary job in the interests of security, and domestic propaganda ignored its imperfections until Mikhail Gorbachev came to power in the Soviet Union and began his *glasnost* and *perestroika* policies. After he referred to this Soviet adventure as a "bleeding wound," the Soviet media began to slowly reveal the warts, blemishes and harsh conditions under which Soviet conscripts served in Afghanistan, causing their growing reluctance to be posted there. After his Vladivostok speech in July 1986, Gorbachev worked toward the withdrawal of Soviet troops from Afghanistan, but he was cautious. Like Leonid Brezhnev, he wanted to leave behind a friendly Communist government securely in power in Kabul.

Prior to the Gorbachev era, the Brezhnev doctrine of supporting with military force, if necessary, national Communist govern-

ments that followed the Moscow political line (in pursuance of which Soviet troops had marched into Czechoslovakia in 1968) had been operative. Brezhnev saw the Soviet military invasion of Afghanistan as a necessary repeat of his Czechoslovakian action, but President Hafizullah Amin (of Afghanistan) became an uncertain ally when he began contacting Western nations. To the Soviets, it was essential that the Kabul government should faithfully toe the Moscow line, thus they wanted a more reliable puppet president to head it.

The Brezhnev plan for Afghanistan had been a long-term one, the forerunner of which had been the visit of Nikolay Bulganin and Nikita Khrushchev in 1955, which was followed by the imposition of exclusive Soviet influence gained through economic and military aid, military training teams, the Soviet conditioning of the Afghan armed forces and the Soviet-manipulated People's Democratic Party of Afghanistan. The plan was to be based on an Afghan leadership and bureaucracy that had shed its tribal and religious shackles and would gradually convert the country into a compliant Soviet client state, perhaps one day becoming a member republic of the Soviet Union.

The first major success in Afghanistan had been the Saur Revolution in 1978, when Nur Mohammad Taraki was installed as the Soviet puppet president and set about implementing and speeding up political, economic and social reforms. Taraki acted in a ruthless, heavy-handed manner, making many enemies and causing Afghan opposition politicians to form resistance groups in exile in Pakistan. The sheer momentum of Taraki's reform programs was too much for the Afghans and caused discontent that developed into violent protest and riots. Seeing what was happening, the Soviets unsuccessfully urged Taraki to slow down the tempo of his reforms and to try to build up a popular following instead of constantly inciting aggressive opposition.

When Amin became prime minister and was put in charge of the reform programs, he proved to be even more ruthless than Taraki, filling the prisons with active protestors, who were classed as political enemies. When Amin launched his pre-emptive coup in September 1979, the Kremlin leadership was dismayed but chose to go along with him for the time being. It was obvious that Amin would soon involve his country in civil war, and when his political allegiance became questionable, it was decided he must be removed.

The speed and efficiency of the Soviet military invasion of Afghanistan surprised Western nations, and others too, although the Soviets had made lengthy, careful and obvious preparations. Surprise was occasioned by failure of intelligence analysis, not from lack of intelligence. Until that moment, Afghanistan had barely entered into the considerations of NATO and Western strategists as being a factor in the Cold War between NATO and the Warsaw Pact countries.

Afghanistan was remote, backward, undeveloped, largely unknown and well off the beaten strategic track. The few who did give some credence to the possibility that the Soviets might occupy Afghanistan were of the opinion that if this did happen the Soviets

would fare no better than the British had done, and that they would soon find it was far more trouble than it was worth. They tended to compare such a scenario with the

The Brezhnev plan for Afghanistan had been a long-term one . . . [utilizing] exclusive Soviet influence . . . and the Soviet-manipulated People's Democratic Party of Afghanistan. The plan was to be based on an Afghan leadership and bureaucracy that had shed its tribal and religious shackles and would gradually convert the country into a compliant Soviet client state, perhaps one day becoming a member republic of the Soviet Union.

US experience in Vietnam and on the whole felt it might not be such a bad thing, as Afghanistan could become a morass that would continually suck in Soviet resources and manpower, thus diverting them from the main Cold War front in Europe.

The Soviet military invasion turned Afghanistan into a Cold War pawn, initially only a small one, but one that gradually increased in importance as the Americans took up the cause of the *mujahidin* and began sending limited military aid and weapons. The Americans knew little about the *mujahidin* or their various ultimate aims but saw them simply as a Cold War ally.

In the international political atmosphere of December 1979, and on into the early 1980s, countries with communist governments supported and praised the Soviet military invasion of Afghanistan, regarding it as an ideological outpost and bulwark against creeping imperialism. On the other hand, Western nations, with democratically elected governments, attacked it in their Cold War propaganda although most, like the Americans, knew or cared little about the Afghan people or their problems.

In Afghanistan, the broad band of Soviet-trained, educated and conditioned top-level personnel welcomed the Limited Contingent of Soviet Forces with open arms, knowing that they were in imminent danger of facing

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a nationwide popular resistance uprising, which they would not be able to contain. The Afghan armed forces were in a sorry state, their officer corps riven by feuds, a high incident of desertion rate by soldiers and resistance to conscription. Formations and units were shrinking in size, leaving them with scarcely enough manpower to carry out their roles. Some major Afghan cities were partially taken over by resistance fighters.

The Soviet military settled on Bagrami, Shindand and other air bases and garrisons, and their immediate aerial presence over the country altered the military situation. Throughout the Soviet military occupation of Afghanistan, cooperation with the Kabul government and armed forces was good, friction being kept to a minimum, despite some humiliating Soviet decisions, because this strata of Afghan society firmly believed the alternative was for the country to sink back into tribal stagnation.

The *mujahidin* attitude toward the Soviet military invasion was entirely opposite, as was probably that of a majority of the people. It thwarted the Afghan political opposition in its bid to rouse the nation into a popular uprising. *Mujahidin* hatred of the Kabul regime remained, but a paramount mission to

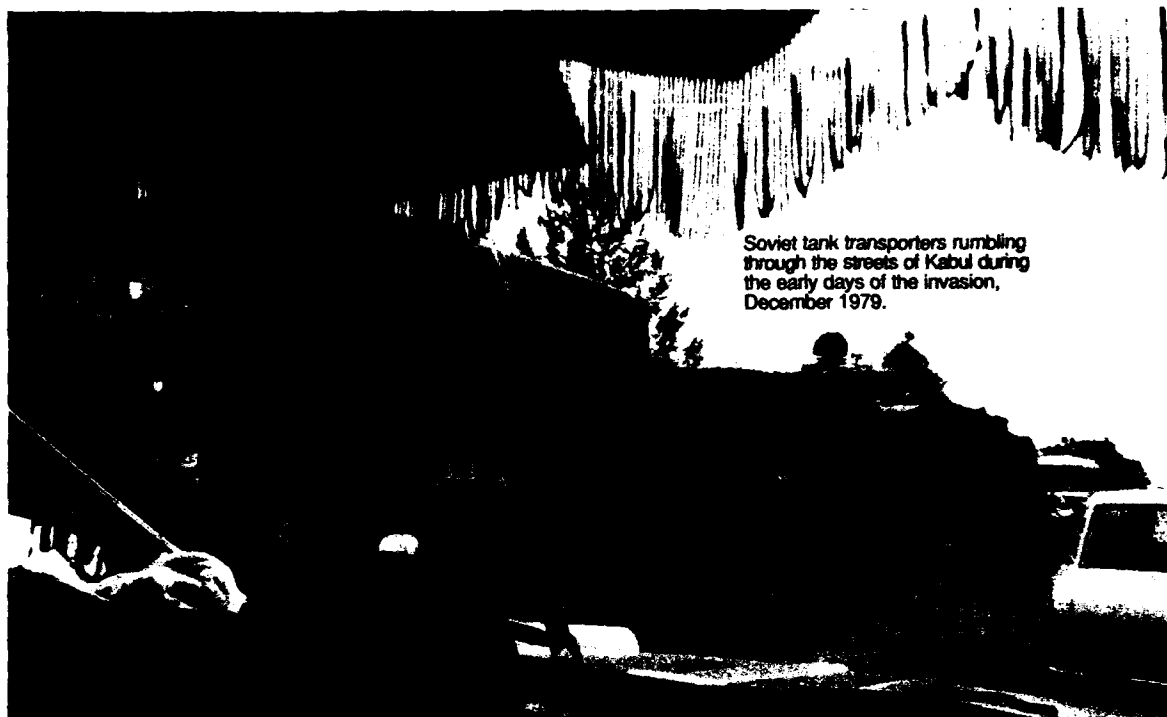
rid their country of the foreign invader was added. The Soviet military invasion lifted the conflict above the civil war level into a crusade, a jihad, giving the *mujahidin* the excuse to call for external aid to assist it in the task. Soviet armed forces became the symbol and focus of Afghan xenophobia.

China, the other nuclear superpower, reacted angrily against the Soviet military invasion of Afghanistan but, apart from joining in the vocal chorus of protestation and general condemnation, did little. China's poor showing in its war with tiny Vietnam in early 1979, when China attempted to "punish" Vietnam for sending troops into Cambodia, indicated that its military expeditionary potential was negligible, and it was also in the throes of a high-level leadership struggle. Using its newly opened Karakoram Highway land route into Pakistan, China contented itself with sending quantities of home-manufactured copies of Western and Soviet weapons to Pakistan for the *mujahidin*, in exchange for hard currency. China's backdoor route through the Wakhan Strip was soon blocked off by the Soviets.

In Pakistan, President Mohammed Zia was greatly perturbed by the Soviet military invasion of Afghanistan, as it thwarted his ultimate plan for gaining paramount influence in that country, and he not only openly and loudly condemned the Soviets for their action, but decided to back and help the *mujahidin* opposition sheltering in his country. He saw the Afghan fundamentalists as the means of establishing an Islamic state in Afghanistan, which would be friendly toward him and very cooperative.

India, a long-time friend of the Soviet Union, while being surprised by the Soviet invasion of Afghanistan, was more expectant than anxious, knowing that any destabilization of the region could lead to "Balkanization" that could fragment Pakistan and perhaps lead to India's gaining control over the Pakistan provinces of Sind and Punjab.

Brezhnev had chosen the moment for his



Soviet tank transporters rumbling through the streets of Kabul during the early days of the invasion, December 1979.

Brezhnev had chosen the moment for his military invasion shrewdly, as 1980 was a presidential election year in the United States and Jimmy Carter, seeking re-election, would be unlikely to drag his country into a Vietnam-type situation. Apart from protests, Carter contented himself with boycotting the Olympic Games being held in Moscow.

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Iran, where the Islamic government was in the throes of internal disputes with extremist organizations, and where the Soviets were hoping to retain some influence through the Iranian Tudeh (Communist) party, protested against the Soviet action, but was in no condition to march to the aid of the *mujahidin*, as its rampant, dominant fundamentalist element would have probably liked. Shorn of their top leadership and conscript element, the Iranian regular armed forces had been withdrawn to barracks. Brezhnev distrusted the Iranians and was anxious that Ayatollah Khomeini's fundamentalist revolution should not spread

eastward into Afghanistan to assert ancient Persian claims to Herat and other sections of Afghan territory, or seep through the Afghan region to touch the borders of the Soviet Muslim republics, to set subversive tinder alight. Brezhnev certainly did not want a Balkanized region on this southern doorstep; he wanted a stabilized Afghanistan under Soviet domination.

Operational Effectiveness

Considering impartially the effectiveness of the Limited Contingent of Soviet Forces in Afghanistan, it must be admitted that it was at least partly successful, although the methods used to achieve this situation should have shocked world opinion far more than they did. The Soviets in Afghanistan had a dual mission, to ensure that a friendly Soviet-oriented government remained in power in Kabul and to defeat the *mujahidin*. They were successful in the first part of their

mission, but not in the second.

Initially, the Soviets put on a huge show of force to overawe the Afghans and then settled down in a few air bases and garrisons from which they could patrol the skies and main routes. They planned to leave the ground fighting to the Afghan armed forces, supporting them with combat aircraft, armored vehicles and artillery as necessary. The depleted state of the Afghan army did not permit them to adhere to this policy. Continuing desertion from the Afghan

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armed forces, often with arms, defections and refusal in battle meant that some units had to be disarmed and their heavy weaponry impounded. Until the Afghan army could be expanded and knocked into shape, the task of ground fighting had to be undertaken by Soviet troops; so more Soviet reinforcements and different types of formations and units had to be brought in for this purpose.

Accordingly, the Limited Contingent of Soviet Forces progressively increased in strength to a probable maximum of 120,000 in all ranks, including administrators, technicians, KGB (the Soviet secret police and intelligence agency) elements and others on political or covert duties. The maximum number of Soviet combat troops probably never exceeded 90,000, of which usually up to half were continually employed on static security or guard duties. Considering the size of Afghanistan (245,000 square miles), this was not excessive, although Western

media made a continual issue of Soviet military strength (even if they did not know precisely what it was); comparing it with the American experience in South Vietnam (66,200 square miles), where nearly 500,000 US troops had been deployed. The size of the respective populations of Afghanistan (16.3 million) and Vietnam (15 million; IISS figures) were roughly comparable, while difficult terrain in both countries presented considerable handicaps to combat units.

The Limited Contingent of Soviet Forces in Afghanistan was under control of a group of about 20 Soviet generals, who commanded the air bases and major garrisons and provided the small directing general staff cell. At first, the Soviet generals were completely out of their depth, having trained for years for mobile warfare on the plains of Europe against an enemy armed with highly sophisticated weaponry. They had no experience with or knowledge of internal security problems (those were the responsibility of another Soviet department) or of low-intensity warfare or even of mountain warfare (some two-thirds of Afghanistan being mountainous).

For a while, overequipped Soviet formations blundered along narrow roads and into narrow valleys, and only after some minor, and a few major disasters was it appreciated that heavy armored fighting vehicles were a liability in Afghan terrain. Soviet columns moving out to attack *mujahidin* concentrations, or to try to bring them to battle, were vulnerable to ambush and mountain warfare tactics. As a result, Soviet vehicles were often trapped in narrow valleys.

Despite these drawbacks, Soviet generals avoided giving their troops mountain warfare training or using smaller, all-arms units on operations for as long as they could, and only reluctantly doing so when they realized it would be some considerable time before the Afghan army would be capable of taking over the ground fighting role. However, Soviet generals, apart from strongly hold-

Soviet soldiers in Afghanistan returning to their BMP-1s, circa 1986. Mechanized sweeps across valley floors proved to be an unproductive way to counter the *mujahidin*.



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ing on to their main bases, never really fell into the trap of taking towns and territory and defending them at all costs. The Afghan army, on the other hand, somewhat naturally perhaps, was prone to defend desperately every square inch of land held or gained. The Soviets carried out search-and-destroy sweeps and punitive missions, after which the troops returned to their bases, even though ousted *mujahidin* reoccupied their former positions as soon as Soviet troops departed.

Had Soviet generals been tempted into the strategy of seizing and holding ground, they would have required far more troops, probably over 500,000, to do so effectively, and they would have been in widely dispersed, besieged or invested positions, amid a sea of hostile people, thus giving the *mujahidin* freedom of movement in the countryside.

During the Soviet military occupation, the greater part of Afghanistan was off-limits to Western and international journalists, and so there was no reliable independent reporting of what was actually happening. Soviet and East European journalists were given carefully sanitized, restricted tours of cer-

tain cities and areas and told what they could reveal in their reporting, while the government-issued press handouts, both Soviet and Afghan, gave bland, comforting but nonfactual reports of Soviet and Afghan successes and *Basmachi* (bandits, a Soviet derogatory expression for the *mujahidin*) failures.

Perhaps Soviet people wondered, in view of the optimistic nature of the reporting, why Soviet generals were taking so long to defeat the *Basmachi*. They had to wait for Gorbachev's *glasnost* for enlightenment, after which Soviet faults, failures and mismanagement were revealed. *Mujahidin* communiqués were even worse, as they made impossible claims that stretched credibility to the utmost and simply expanded the information void.

It was during this "Dark Age" in Afghanistan that the Soviets carried out—with calculated, determined ruthlessness—their major efforts effectively, maintained their defensive positions and deterred *mujahidin* attacks and advances. Soviet tactics included the use of indiscriminate heavy firepower in the form of aircraft bombing and



Happy Afghans greeting Soviet soldiers

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rocket firing from helicopter gunships. Additionally, huge numbers of antipersonnel mines were dropped along *mujahidin* supply routes, and other mines were planted to defend government positions or serve as barriers. Free fire zones were created to block the mouths of valleys harboring *mujahidin* and alongside strategic roads. Heavy and continual bombing drove villagers higher into the remote parts of their valleys, into government displaced persons camps or into becoming refugees in either Pakistan or Iran. Massive use of such firepower contributed to the Soviet "starvation policy" by driving people from their fields.

It was "guesstimated" that over one million Afghans, mostly civilians, including women and children, were killed largely by this indiscriminate use of bombing and mine

laying. Even during the few months of 1987, when the Stinger factor forced Soviet bomber aircraft to fly at over 10,000 feet, civilian casualties were just as great or greater, as the Soviets took to high-level carpet bombing of whole sectors of terrain. Allegations were frequently made of Soviet soldiers provoked into committing atrocities against Afghan civilians, and instances of this type of behavior did occur. The new breed of investigative Soviet journalists that surfaced in the Gorbachev era unearthed a few allegations of such atrocities committed by Soviet soldiers. But Soviet troops, generally, seem to have been comparatively innocent of such retributive atrocities, as they were deliberately kept on a tight rein in this respect.

Brezhnev's remit to his Soviet generals was to let the Afghans do any dirty work that had to be done, and refrain from indulging in practices that would tend to alienate Afghans and fuel an anti-Soviet attitude. The paradox here was that while Soviet generals ordered atrocities on a grand scale in Afghanistan, less was made of these by the international media than the seemingly isolated incidents committed by Soviet soldiers.

The Western media continually commented on poor morale in the Limited Contingent of Soviet Forces in Afghanistan. The reports appear to have been justified to some extent, but morale did not deteriorate as much as sometimes alleged, being in general, for an army of occupation in a hostile land, as good as could be expected. However, morale varied from unit to unit, depending upon the quality of the officers and on tasks allotted to the troops.

Boredom was the main debilitating factor. The majority of Soviet soldiers were engaged on dull static security duties and remained so throughout their average two-year tour in Afghanistan, seldom rotating from one job or location. Soviet soldiers were mainly conscripts who did not want to be in the army at all, let alone stuck in primitive Afghanistan for that length of time.

CONTINGENCY FORCES

Lack of organized recreational facilities and limited freedom of movement in off-duty periods were the main causes of boredom. Drugs were plentiful in Afghanistan, almost an alternative currency, and some Soviet soldiers became prone to their use. Soviet journalists have told me that they thought the "drug factor" was a minor problem compared to that faced by US military authorities in Germany; in their opinion, the main reasons for any lowering of morale was that there was no short home leave break midway through a tour of duty and no change of venue during the two-year tour.

Soviet senior and middle-grade officers in Afghanistan were well up their promotion ladder and presumably content with their posting; in any case, they were quickly removable if any weakness was shown. An Afghanistan posting carried prestige and invariably gave them their first taste of active service. The real volunteers were the young regular officers anxious to get "a piece of the action" early in their career, in the hope it would stand them in good stead later on. Many served two or more tours of duty in Afghanistan. The other volunteers were the *Spetsnaz*, commandos and members of the air assault formations, all of whom received enhanced pay and were virtually regular soldiers on short-service engagements.

The other element within the Limited Contingent of Soviet Forces in Afghanistan, barely mentioned or identifiable, was the unknown percentage of Muslim conscripts, drafted presumably because of manpower shortages. The original all-Muslim units brought in to "win the hearts and minds" of the Afghans had to be sent back quickly as they sympathized with, and even helped, their *mujahidin* co-religionists. It seems that conscript Soviet Muslims were posted to

Afghanistan by the bureaucratic military administration to make up numbers, were widely dispersed and usually heavily outnumbered by conscripts from other Soviet

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other races; they seem to have served inconspicuously, being if anything slightly contemptuous of the Afghan Muslims. The so-called "Muslim mutiny" at Kunduz in 1986 must have been exceptional, when by some miscalculation an unusual number of Muslim troops ended up together in the same unit.

In summary, it must be said that although morale fluctuated in the Limited Contingent of Soviet Forces, it cannot be seriously faulted, considering the thankless, unenviable and often dangerous tasks carried out adequately by reluctant conscripts. Soviet nationalism was played upon heavily and emotionally to keep up spirits in difficult moments. There are no recorded instances of Soviet soldiers refusing battle; if there had been, it can be assumed that the *mujahidin* and the Western media would have made much of them. In Afghanistan, Soviet troops seem to have done an unpleasant, but to them nationally necessary, job with as little fuss as possible. **MR**

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Doctrine for Joint Operations in a Combined Environment **A Necessity**

General Robert W. RisCassi, US Army

This article is being published in the Summer 1993 issue of *Joint Forces Quarterly*.

The United States can trace its Armed Forces' participation in joint, combined and coalition operations back to the Revolutionary War. This participation can be studied in detail with the recent operations of Desert Shield, Desert Storm, Provide Comfort and Restore Hope. The author discusses how doctrine, planning, integration, command and control, training, automation and logistics are vital to any operation. He also reviews the need for an agreed-upon strategy as a key element for coalition action.

SINCE THE beginning of this century, there has been a strong common thread in the involvement of American forces in combat. Almost every time military forces have deployed from the United States it has been as a member of—most often to lead—coalition operations. Rarely have we committed, nor do we intend to commit forces unilaterally. Our remaining forward positioned forces are routinely engaged in coalition operations during peace and are committed to do so in war. The global interests and responsibilities of our nation inevitably dictate that far more often than not our forces will be engaged in alliance and coalition activities. This article addresses fundamental tenets that underpin our efforts to create a doctrine for joint operations in a combined environment.

Background

When we say we no longer intend to be the world's policeman, it does not mean we are going to disengage. It means we want more policemen to share in the responsibilities, risks and costs of settling the world's most vexing problems—intrinsically, we are artic-

ulating a condition for wider and more active participation in coalition operations. Even though we consider this a responsible proposition on its merits alone, the redistribution of global wealth and economic power makes it also essential. In 1945, the American economy produced around half of the world's Gross National Product. Today, it comprises less than a quarter. In any event, coalition operations are generally key to legitimizing the use of force. Yet, both as a function of our historical experience as a leader of coalition operations and the continuing fact that America brings the most military power to the table, we should also recognize that American military leaders will almost always be called upon to lead multilateral coalitions in which we are participants. The fundamental question becomes one of "how"?

Notwithstanding our reoccurring historical experience, we have at times been remarkably ill-prepared for coalition operations. In truth, we have not had, nor do we yet possess a commonly agreed doctrine for forming or fighting as part of military coalitions. Some may argue it is not necessary to

have such a foundation; but, under its absence we will have to address each new coalition on an ad hoc basis. Also in its absence, we have no comprehensive doctrinal base to create the means or tools to improve our ability to participate in, or lead, coalition operations. There is a clear and omnipresent reason to create such a doctrinal consensus. Five of our regional commanders in chief (CINCs) are coalition or alliance commanders, as is one of our specified CINCs.

There is no cookbook approach to coalition warfare. Every coalition will be different in purpose, character, composition and scope. But there are some basic commonalities that confront any coalition commander. Obviously, the most valid basis we have to form a doctrine is our own historical experience. Yet, for the most part, our historic perspectives tend to analyze the leaders who led victorious coalitions, as if the secrets of success lay in personalities, more than methods. A doctrinal foundation must be based on methods.

Interestingly, and as a testament to their value, we have yet to experience an incidence where a prepared military coalition in which we are engaged has been attacked. In those cases—Western Europe and South Korea—where the coalition had the will, time and resources to prepare for alliance warfare, the effects were never tested in battle. Thus, we cannot be certain their preparations were sound. It may have been that the tranquility they imposed undercut their ability to achieve essential concessions from nations whose priorities were more nationalistic than threat-oriented. Every other case we scrutinize involved ad hoc coalitions merged hurriedly in crisis or conflict. For obvious reasons, they also may not represent the model upon which we should create a doctrine. Between the two, however, there is ample experience to build a doctrine.

We know that joint operations, in and of themselves, represent significantly greater

complexity than single-service operations. The Joint Staff is trying to create the doctrinal architecture to glue joint forces together in warfare. In a coalition, the difficulties of joint operations are still prevalent, but with the added dimensions and complexity of two or more national armed forces, all

Doctrine is more than simply how we intend to fight. It is also the technical language with which we communicate commander's intent, battlefield missions, control measures, combined arms and joint procedures and command relationships. Doctrine is not contained simply at one level of war—strategic, operational or tactical—it embodies all.

of which bring their separate orientations and proclivities to the practice of warfare. Often the apparent intractability of problems has been so awesome that any attempts at achieving unity have been limited to the strategic and operational levels. Battlefield responsibilities have been divided nationally based on the capabilities each nation brings to the coalition. Each national force is given discrete sectors and missions. A single leader is appointed to unify coalition efforts and—based on the numbers of national forces involved—decentralizes operations through national chains of command, which become multi-hatted. This is a patchwork approach. Seams are recognized but stitched together by strategic and operational agreement. Sometimes the seams are tight; sometimes they are loose.

If we look back at World War I, World War II, Vietnam or even the Gulf War, we see variations on this structure and also the problems that resulted. In multiple cases, campaigns were disjointed by ruptures in timing, unity of purpose or tactical disagreement. Often commanders found themselves

in positions where mutual support was essential. Yet, procedures were nonexistent or inadequate and had to be jury-rigged on the spot. Cross use of assets—combat, combat support (CS) and combat service support (CSS)—was limited or foregone because of

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incompatibility. In some cases, vast technological differences between forces caused either multiple tiering of the battlefield or over-reliance on the most capable units continuously to perform the most difficult missions. Differences in national doctrines, languages and cultures often meant breaches in understanding, inability to communicate on the battlefield, fratricide and disorganization. In short, effective operations were hindered by multiple sources of friction.

What are the elements essential to conducting joint operations in a combined environment? In other words, what have we learned and how do we intend to apply it the next time American forces are asked to lead a multinational coalition in combat?

Doctrine

The first point is that a coalition must share a common doctrine to take advantage of commonalities. Doctrine is more than simply how we intend to fight. It is also the technical language with which we communicate commander's intent, battlefield missions, control measures, combined arms and joint procedures and command relation-

ships. Doctrine is not contained simply at one level of war—strategic, operational or tactical—it embodies all. Campaign execution demands that these levels of war become inextricably linked. To achieve the full synergistic effects of joint combat power, the warfighting doctrine must be common to all arms. In the absence of a commonly understood doctrine, it becomes extraordinarily difficult to plan or execute military operations.

Yet, approaching a commonly agreed doctrine can be politically frustrating. Past US attempts in Europe and Korea to enjoin allies to embrace AirLand Battle were met with arguments that it is a distinctly American doctrine whose execution is technology dependent—therefore suspected as a Trojan Horse for “buy American” campaigns—or that it is terrain dependent and suitable only in Europe. Notwithstanding suspicions, having a commonly understood doctrine is essential to mutual understanding in battle.

The following four tenets—agility, initiative, depth and synchronization—are the most firm basis for organizing and conducting coalition operations. They are not characteristically American attributes, nor are they limited to any single service. They are cross-national intellectual tenets which, when physically applied, cause success in modern war. Their application may be impacted by the technology available, but the tenets are essentially mental, rather than physical. They are a reflection of how technology has evolved modern battle, and may obsolesce over time as the nature of war continues to mutate. As both mental states of mind and emphasized characteristics in battle, they allow us to bridge the intellectual gap between “principles of war” and practical execution. More particularly, when closely examined, these tenets strike at the heart of the most difficult, yet crucial aspects of joint and coalition operations.

Agility is compared to that quality found in great boxers who sustain an intuitive

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grasp of their position and motion in the ring—as well as their opponent's—and maintain the balance and force to move and strike as opportunity permits. In an environment that is constantly shifting, where the unexpected is to be expected, agility is essential. Battle is a contest where vulnerabilities and opportunities open and close continuously; victory goes most often to the commander and force with the balance and insight to strike or shift within these windows. Agility derives from a keen sense of what is happening in battle, the poise to transition rapidly from one situation to the next, and a physical and mental ability to always have more options than the enemy. It was powerfully displayed by General Walker and his coalition command in the battle for the Pusan perimeter. Relying on interior lines, Republic of Korea (ROK)/US forces continuously repositioned and reconfigured reserves to parry enemy thrusts, shifted forces along the outer perimeter to reduce or accept vulnerabilities, and concentrated and counterconcentrated combat power more rapidly than North Korean commanders. It was a liquid defense that succeeded because it retained its balance to address the unexpected. Often, North Korean thrusts were repelled within a hair's breadth of a decisive breakthrough. Eliminating any seams between American and South Korean forces was vital to sustaining agility. All sources of combat power were pooled, boundaries and command relations were shifted as the situation required, and there was an absolute merging of joint and binational efforts. The agility of a multinational force proved superior to that of a homogenous enemy force.

Initiative, again, is a state of mind as well as an action-reaction cycle. At its core, it is dictating the terms of battle to an opponent, thus obviating the opponent's ability to exercise initiative. Thus, it is a highly contested quality whose balance swings on surprise, deception, speed of action, ingenuity and

asymmetric comprehension. Initiative requires flexibility in thought and action, an ability to act and react faster than an opponent and a derived priority among subordinates at all levels regarding the linkage of

The principles of war also offer a way to intellectually massage the elements of an operation to understand its risks and strengths. Almost every nation's military relies on a list of principles; for the most part they are derivatives of one another. As a whole, the principles focus commanders and staffs in their effort to decide whether a course of action is prudent and to understand its risks.

their actions to the ultimate intent, more so than the scheme of higher commanders. It has been made all the more critical by the rampant pace or tempo of modern battle. No plan, no matter how detailed, can foresee every contingency, development, vulnerability or opportunity that will arise in battle. In fact, the more detailed and inhibiting the plan, it may have the reverse effect of limiting or restraining initiative. It was the quality exuded by Admiral Chester Nimitz and his commanders at Midway as they turned the tide of Japanese offensives through tactical and operational initiative. As Nimitz's forces closed with the more powerful Japanese fleets, they continuously sought to induce vulnerabilities in their opponent, until they were able to execute a decisive thrust that caught the Japanese fleets off-balance. Tactically, the decisive air attacks that won the battle were not a preplanned operation; they were a timely response applied when the enemy fleet was located and deemed vulnerable to and within reach of an air attack. At the operational level, Nimitz exceeded his instructions to remain defensive and protect his precious carriers. But he did so because he understood the



Franklin D. Roosevelt, Winston Churchill
and Chiang Kai-shek attending the Cairo
Conference with their staffs in November 1943.

[Coalition] strategy involves the melding and coordination of nearly every element of multinational power to accomplish military objectives. It may require insights into different national industrial capabilities, mobilization processes, transportation capabilities and interagency contributions, in addition to military capabilities. It must bind all these together with precision and care. It operates on the tangent edge of international relations and diplomacy and must seek congruency with these forms.

higher intent and was able to link both the risks and benefits of his actions to the larger campaign design. The impact was a strategic turning point in the Pacific campaign. Had Nimitz adhered to the letter of his instructions, it is unlikely he would have delivered this blow and the course of the Pacific campaign would have been different.

Depth requires both mental conceptualization and physical reach. It is applied as a reference to time, space and resources. It recognizes that modern battle has eliminated linearity—and linear thought. War is a continuum of events and activities in space and time. Both the increased tempo of battle—whether through faster, more

mobile ground forces, higher sortie generation rates for aircraft or the evolution of fleets no longer tied to homeports—and the increased ranges, accuracies and lethalties of weapons systems have compressed time and space. In all dimensions of war, the current and future battles must be interrelated. Like a chess player who views the board as a single, interrelated plane of action—and each move as a prelude to a series of further moves—the modern commander must extend his hand in time and space to create future vulnerabilities and opportunities, and reduce future enemy options. Coalition commanders at Normandy applied this tenet decisively. Recognizing the vulnerability of

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allied landing forces to Field Marshal Erwin Rommel's ability to counterconcentrate heavy armor forces on the Cotentin peninsula, they forged and executed a deep interdiction campaign to slow the movement of German armored columns and prevent them from arriving at the battlefield before the coalition was able to establish defensible beachheads. Simultaneous with the initiation of the air campaign, French resistance and allied special operations units executed a daring operation, targeting the concentration apparatus of German forces and further inhibiting the flow of German reinforcements from reaching the beachhead in time. The application of airpower was a unified effort, combining air forces of several nations and the interdiction umbrella covered all of the national ground forces participating in the invasion. The invasion succeeded because coalition commanders applied nonlinear thought to their operations, striking in depth in both the air and ground dimensions with the full palette of Allied capabilities.

Synchronization is perhaps the most difficult tenet to apply in coalition operations. It is a term often related to the inner workings of a watch. In that context, it is the calibrated movement of hundreds or thousands of different pieces moving in tandem and operating cooperatively to produce the desired effect. In war, the desired effect is simply combat power at the time and place of the commander's choosing. It is key to achieving unity and efficiency in action. Yet, in a coalition there are great inhibitors to effecting synchronization. Differences in language, technology, doctrine and training act to deter efficiency and increase the potential for friction. These problems are not overcome simply through planning, although thorough planning is a key factor. Synchronization must also be fluidly applied as conditions change and the unexpected occurs. It relies on common procedures, a shared understanding of the language of

battle and smooth linkages between the disparate national entities in a coalition, at all levels. The success of General Douglas MacArthur's masterful Inchon landing and breakout of the Pusan pocket in the Korean War was an example of synchronization. He planned these two operations as coordinated hammerblows to crumble the North Korean offensive and turn what appeared to be a risky operation into one of history's most memorable routs. The full series of operations—air, sea, ground and amphibious—were carefully synchronized to achieve maximum shock and surprise. Because of the risks, the timing had to be precise, with each operation intended to create conditions for the success of the next operation. Coordination between services and national forces was exacting and thorough. Once the series of operations began, they operated in tandem to crush the North Korean offensive. The landing forces at Inchon moved deftly inland, cutting the North Korean lines of supply and operation, isolating and overextending the North Korean forces to the south and setting the conditions for an audaciously executed breakout, which then converged northward. Air operations were executed to harass and interdict the withdrawal of North Korean columns. It was a tightly synchronized series of operations, involving the forces of several nations in a series of the most difficult, yet successful, joint operations in the history of warfare.

The principles of war also offer a way to intellectually massage the elements of an operation to understand its risks and strengths. Almost every nation's military relies on a list of principles; for the most part they are derivatives of one another. As a whole, the principles focus commanders and staffs in their effort to decide whether a course of action is prudent and to understand its risks. When viewed in context with the tenets, combined commanders have a solid intellectual foundation for action. Just as important, commonly accepted military

principles serve as a point of reference when organizing the coalition and establishing command relations.

The tenets and principles are vital means to think about war, but these thoughts must be structured. The layering of military art into strategic, operational and tactical levels

Tactical operations should be designed to create a seamless battlefield where friction is minimized and the four tenets can be applied freely. This requires cooperation from all participating nations. It is at this level of war where the combined inhibitors to efficient operations could have their most degrading impact.

is valid and for the most part, universal. Although the layers are difficult to separate, they provide the intellectual linkage between campaigns, operations, battles and engagements in a manner that ensures continuity of effort, as well as to describe the contributions of various echelons to the overall effort. Moreover, as a coalition winds its way through these levels in planning, it forces the coalition's leaders to confer on every aspect of military efforts.

Campaign

Agreement on strategy is the foundation for coalition action. It is derived from policy agreements between participating nations and must be sharp enough to shape the direction of an implementing campaign, yet broad enough to capture the efforts of the various national forces. The development of an effective military strategy is difficult even when military action is unilateral; it is far more trying in a coalition. Strategy is designed to accomplish political objectives. Because of its proximity to policy, it will be the point of reference for gaining consensus

between military and political leaders. Consequently, it is also most likely to be the center of controversy in both political and military spheres. Rarely do nations enter a coalition with identical views on ends to be achieved. As a coalition increases in numbers of member nations, conflicting objectives and additional political constraints are added to the pot. The coalition commander must walk a taut line between accommodating and compromising, yet preserving the ability to achieve military decision. At the same time, it is important to remember the old dictum that in coalitions the will is strongest when the perception of threat is greatest. Over time, as conditions change, so may the will and objectives of participating nations.

Coalition strategic formulation is difficult also because of the sheer mass involved in the effort. Strategy involves the melding and coordination of nearly every element of multinational power to accomplish military objectives. It may require insights into different national industrial capabilities, mobilization processes, transportation capabilities and interagency contributions, in addition to military capabilities. It must bind all these together with precision and care. It operates on the tangent edge of international relations and diplomacy and must seek congruency with these forms. It addresses issues as weighty as the endstate to be achieved and as mundane as the rules of engagement to be applied at each stage of operations. In coalition operations, strategy is the level of war where international politics and bodies are coalesced into a unified approach.

The ability to design an effective military campaign will be a calculus of the military strategy. At the operational level, disagreements that occur generally are among military professionals. But, there are of course political ramifications and considerations. The campaign must be paced or phased by

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the availability of combat power as it is generated from multiple national sources. The campaign plan also provides the base for defining and recommending national contributions. Unless this is done and provided to the various national authorities, the combined commander will end up with a force composition that is not rationalized toward operational requirements. The campaign plan has the integrating effect of serving as the both the driver for force requirements and the timeclock for generating those assets.

The campaign plan is the tableau for synchronizing all elements of combat power. It provides combined commanders with the vital understanding to link operations, battles and engagements to the coalition's strategic objectives. It is the orchestral arrangement of these various activities in a rational path to achieve the endstate envisioned in the strategy. It must address a variety of choices concerning the approach to warfare—offensive or defensive, terrain- or force-oriented, direct or indirect approach—and in so doing, becomes the enabling process for actually applying force.

Tactical operations should be designed to create a seamless battlefield where friction is minimized and the four tenets can be applied freely. This requires cooperation from all participating nations. It is at this level of war where the combined inhibitors to efficient operations could have their most degrading impact. At higher levels of war, success is mostly a function of planning and apportioning forces and resources to various missions. At the tactical level of war, forces must actually engage together in battle and function synergistically to defeat an enemy. All of the differences in training, equipment, language and culture congeal to hinder the application of combat power. Events move rapidly and have a cascading effect. It is for these reasons that many coalitions have sought to conduct tactical operations, battles

and engagements within national boundaries. However, this approach cedes an advantage to enemy commanders who may target precarious seams. It accepts a vulnerability that could be costly and reduces collective combat power by incrementally separating the parts from the whole.

General Dwight Eisenhower's experience as European Theater of Operations commander in World War II amplified the difficulties that can arise at all three levels of war. Although the Combined Joint Chiefs of Staff met and agreed early in the war to pursue a strategy to defeat Germany first and Japan second, and to apply a direct approach against Germany through an early cross-channel invasion into Europe, this is not what occurred. By late 1943, the United States had more soldiers, ships, airplanes and landing craft in the Pacific than in the Atlantic. The British pressured for an indirect approach against Germany and convinced the American president to attempt an

A common planning process is essential. The degree to which allied commanders and staffs understand and are able to participate in planning impacts on the time required to plan and the sharing of knowledge of every component of operations.

invasion up the boot of Italy before a cross-channel invasion into France could be launched. This further delayed the eventual date of the cross-channel invasion to the summer of 1944. Once the invasion occurred, Eisenhower faced continuing disagreements between his American and British commanders over whether the campaign should be on a broad front or concentrated on a single axis. He maintained his broad front approach, but acquiesced on one occasion to Field Marshal Sir Bernard Montgomery's

insistence to concentration of resources in an attempt to achieve decision along the Flander's avenue into Germany. The result, Operation *Market Garden*, led to tactical quarrels between American commanders who viewed the operation as too ambitious for the terrain and Montgomery, who argued that temerity needed to be put aside. *Market Garden* failed, but not due to lack of support by any coalition force. When it failed, Eisenhower returned to the broad front approach and it succeeded. The cross-channel invasion was later than initially anticipated, but did occur and was decisive. Germany was defeated first and Japan second. In short, neither nation got exactly what it wanted and the agreed strategy was not executed with any sense of discipline, but the objectives were obtained.

The use of centers of gravity, phasing or sequencing, main and supporting efforts, culminating points, setting conditions and the other mental tools we use to organize and orient operations should be employed in planning and operations at every level. They are not uniquely American. They are neo-classical extrapolations drawn from military theorists worldwide. By using these tools, the commander merges the theory and practical application of the military art. Each of these mental tools is a critical point for creating broader understanding of the underpinnings of how force is to be applied, and for what purpose. When used for mental reference, they enable subordinate commands to move beyond robotic execution. They liberate subordinates to apply ingenuity, innovation or situational adaptability to each event because they understand "true north" rather than simply the compass vector provided in the scheme of maneuver.

Planning

A common planning process is essential. The degree to which allied commanders and staffs understand and are able to participate

in planning impacts on the time required to plan and the sharing of knowledge of every component of operations. We rely on the Intelligence Preparation of the Battlefield (IPB) as the underlying process to gain commonly understood perceptions of the threat and its organizations and capabilities, terrain and other environmental factors that may impact on operations and courses of action available to enemy commanders. Without this foundation, applied as a collective and trickle down process that occurs from the strategic through tactical levels, it is difficult, if not impossible to shape uniform perceptions of the threat or agree upon the coalition's courses of action.

A key distinction is that the IPB must be a joint process. It must analyze every medium of the battle—air, sea and ground—over time. In fact, every service has its own variation of the IPB process. Naval commanders look to sea lines of communications and enemy bases as the terrain or mobility routes pertinent to combat operations. They consider the enemy fleet's organization, capabilities, doctrine and objectives and then design operations to deny these objectives. Air commanders analyze enemy air capabilities, bases and courses of action before forming a vision of their own operational requirements. What has been lacking is a joint and combined IPB process that views the enemy commander's multidimensional operations as an entity. In a combined theater involving joint forces, such an intellectual template is the only holistic means to design joint operations.

There is an additional value to the IPB process. We emphasize the importance of getting inside the decision cycle of the enemy commander. Unless we do so, we cede the initiative of battle; a recipe for defeat. Instinctively, this means all our processes—planning and execution—must be swifter than the enemy's. The cycle of detect, decide, target and execute becomes all the more dif-

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difficult when multi-national forces are entered in the equation. As a general rule, the more organizations, joint and coalition, that must be integrated in an operation, the longer it takes to integrate or synchronize actions. The IPB process, which is continuous, is the best means to accomplish this. It creates a degree of predictability which is essential to get and stay ahead of enemy decision cycles.

From this point of departure, the coalition moves through the remainder of the planning process—statement of commander's intent, estimate of the situation, wargaming and formulation of the concept of maneuver and the remaining sections and annexes of the coalition operation plan (OPLAN). The American structures for the OPLAN, operations orders and fragmentary orders are the templates for order formulation and communication because they are reasonably complementary with most national systems and incorporate all the elements of the planning process itself.

Integration

Implementing a common planning process is only a small, albeit important, part of bringing unity to coalition operations. The execution of these plans involves far more complex problems. Each nation will bring its own forces and capabilities to the coalition. Integrating these forces for action depends upon many variables. There may be, and usually are, vast differences in the organizations, capabilities and cultures of military forces. As a general rule, differences are most severe in ground forces. Air and naval forces, because they must operate in international mediums, are equipped with communications gear and common protocols and procedures to provide for organized space management. All of the "vessels" that operate in the air or sea can be readily classified for their strengths and weaknesses to perform the various missions of air and naval

warfare. Ground forces come in all shapes and sizes, and their equipment may be entirely dissimilar and incompatible. Technological differentials, particularly in this

Coalitions may confront the obstacle of nations maintaining strings on various forces, or insisting upon stove-pipe management of various elements. Concessions to any nation on any of these issues create precedents that others may insist upon. It may not be possible to derail all these inhibitors, but proliferation invites unmanageability.

era of revolutionary change, can be vast. Therefore, fundamental commonalities become even more important.

At the theater level, integration results from functional design. There can be only one Air Component Commander (ACC), Ground Component Commander, Naval Component Commander, Special Operations Forces (SOF), and/or operational Marine Headquarters. Having two or more of any of these functional headquarters invites calamity. Yet, imposing functional integration requires more than creating headquarters. The interrelationships and synergies between functional commands stumble in the face of many of the same delicate issues that our own joint forces find difficult to resolve. The command relationship between ground-based air defenses and air forces, the apportionment of responsibilities and roles in deep operations and the relationship of multidimensional forces such as marines or naval air or attack helicopters to various component commanders must be addressed. But the magnitude and complexity escalate because each national force has its own convictions on these issues. Moreover, coalitions may confront the obstacle of nations maintaining strings on various

A 5th Special Forces Group trainer instructs Qatari soldiers in MOUT techniques before the ground phase of Operation Desert Storm, 26 January 1991.



The first priority in generating coalition combat power from a conglomeration of nationally separated units is to train, emphasizing the fundamental commonalities outlined earlier. Only through training will combined units master and sustain collective warfighting skills. As the coalition is brought together, staffs and commanders must rapidly adapt to the units and processes in the fighting organizations being formed.

forces, or insisting upon stovepipe management of various elements. Concessions to any nation on any of these issues create precedents that others may insist upon. It may not be possible to derail all these inhibitors, but proliferation invites unmanageability.

It is helpful to analyze and integrate joint and combined functionality using the battlefield operating systems and the dynamics of close, deep and rear operations. These provide the bases to organize efforts, find the critical nodes where multinational integration must occur and ensure balance and mutual support in battle. But, for the purposes of joint warfare, the Army's definition of these areas is too narrow. For naval power,

an additional point of analysis is surface, subsurface, special operations and air. For air power, the various abilities of national forces to perform traditional air missions must be analyzed. These include close air support (CAS), battlefield air interdiction (BAI), strategic bombing, long range interdiction, special operations and counterair. For SOF, it is the means to perform the various functions of reconnaissance, military strikes and integrating with the other combat arms.

As national force strengths and vulnerabilities across each of these functions are assessed, achieving balance will require a sharing and mixing of assets to increase synergy. Deep operations cannot be inhibited by

national boundaries. Nor should any force be left without the ability to apply the tenet of depth. Because of international differentials in the ability to see and strike deep, the coalition must arrange its capabilities and command structures to extend this capability across the entire front of operations. The ability to see and strike deep to desired effect is a function of flexibility. Fleeting targets of opportunity must be struck, however, by whoever is available to exploit the opportunity. Moreover, enemy dispositions and operations in his rear will be interchangeable across the front of operations; deep operations must always be viewed as an operational requirement because of the enemy's flexibility to shift and move forces not in contact. Just as there can be no blank spaces in linear operations, there can be none throughout the depth of the battlefield. But, deep operations beyond the control of maneuver commanders must be under control of a single coordinating headquarters. This is even more critical in coalition than unilateral operations. To do otherwise invites duplication, fratricide and incoherence.

On the other hand, close operations may be divided into national sectors. But there are risks and inefficiencies in this approach. It could critically hinder the ability to mass combat power across national boundaries. Even if this approach is applied, it must be recognized that it does not alleviate the coalition's need to instill the agility to integrate forces in the close battle. Reserve formations, air power and other sources of combat power must have the capability to be applied across the front of operations. Rear operations must be intermixed but tightly centralized. National lines of communication, main supply and mobility routes will be in a disorganized competition for priority unless strong central control is imposed. It is unwise to decentralize rear area responsibilities. To do so undermines the need for inte-

grated air defenses, organized responses to rear ground threats and the organized security of the host population and nation.

Command—and Control

The ability to integrate rests largely on one principle. Unity of command is the most fundamental principle of warfare, the single most difficult principle to gain in combined warfare. It is a dependent of many influences and considerations. Because of the severity and consequences of war, relinquishing national command and control of forces is an act of trust and confidence that is unequalled in relations between nations. It is a passing of human and material resources to another nation's citizens. In a coalition it is achieved by constructing command arrangements and task organizing forces to ensure that responsibilities match contributions and efforts. Command relationships between national commanders should be carefully considered to ensure that authority matches responsibilities. It is cardinal that compromises not be permitted to outweigh warfighting requirements. If political frictions inhibit proper assignment of authority, responsibilities and operational design must be altered to ensure unity of command.

Theater headquarters—the theater command and each of the component commands—should be both joint and combined in configuration and manning. Regardless of the nationality of the commander, the staff must represent the cross section of units under command. This practice of combining staffs must be followed to whatever depth of echelon that units are combined in formation. At the theater level, it may be essential to form combined joint targeting boards to manage the integrated targeting process for deep operations. Placing this under the ACC is often most effective, since the ACC will in all likelihood provide the majority of assets. The same form of tool

may be necessary at each cascading level where joint and combined capabilities must be merged. Rear operations—the communications zone (COMMZ)—should be delegated to a single commander. Most often, the COMMZ commander will be an officer of the host nation. In those cases where the rear crosses multiple nations, as with the United Nations Command (UNC) in Korea and UNC (rear) in Japan, it is essential to clarify the responsibilities and obligations of each nation in addressing or accomplishing the coali-

Command relationships between national commanders should be carefully considered to ensure that authority matches responsibilities. It is cardinal that compromises not be permitted to outweigh warfighting requirements. If political frictions inhibit proper assignment of authority, responsibilities and operational design must be altered to ensure unity of command.

tion's tasks, as well as the limits to the coalition's flexibility to operate within national boundaries.

Subordinate or tactical commands may be organized as the situation dictates. A naval commander who comes to the coalition with only surface assets must operate in the envelope of a three dimensional naval force and should logically be subordinate to the three dimensional commander. As a rule, the commander with the most complex, multidimensional force possesses the most total understanding of how to fight that force. Ground armies or corps will probably be multinational in configuration. In fact, tactical integration of ground forces down to the corps level is virtually essential.

Tactical integration—and therefore command and control, C2—of ground forces is arguably the most difficult to achieve; it will be attained most rapidly by early integration

of some tactical units. Fundamental considerations are the factors of mission, enemy, terrain, troops and time available on the battlefield. This will dictate the alignment and missions of variously equipped and talented forces on the battlefield. Lightly armed forces can perform in military operations on urbanized terrain, densely foliated or mountainous terrain, heavy forces in more mobile environments, airmobile or motorized forces in virtually any terrain. While this may sound like common sense to an experienced commander, its practice becomes quite difficult when vertical boundaries and C2 are dictated by the nationality of forces contained within the boundaries. As rapidly as possible, coalition ground forces must overcome any impediments to tactically integrated operations. To ignore this reality leaves vulnerable seams for enemy commanders to exploit, or it could cause placement of forces in unsuitable fighting conditions. Either could be fatal. There were a number of instances of this in the early stages of UN operations conducted during the Korean War. The virtual decimation of the Turkish brigade in the battle of Kumyangjang-Ni was a tragic instance of a tactical unit moved necessarily into a fluid battlefield that lacked the means to integrate operations with other allied ground units. The unit fought fiercely against overwhelming odds in an attempt to stem the North Korean and Chinese counteroffensive occurring in its sector. As its losses mounted and the unit reeled under unrelenting enemy attacks, it was forced to fight in isolation and remained unable to rely on allied combat power, which was available or to coordinate its activities with American units on its flanks. During the early days of this conflict, the need for UN forces to be prepared to integrate tactically in unexpected circumstances was teamed again and again. The needs to ensure unity of command and to integrate forces under this principle became a matter of survival.

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Training

The first priority in generating coalition combat power from a conglomeration of nationally separated units is to train, emphasizing the fundamental commonalities outlined earlier. Only through training will combined units master and sustain collective warfighting skills. As the coalition is brought together, staffs and commanders must rapidly adapt to the units and processes in the fighting organizations being formed. The impediments and sources of friction become clear at once. So do the solutions that must be applied. This assumes, of course, that time is available for training before introduction to conflict. The situation may dictate otherwise.

General Joseph Collins, when he commanded VII Corps at Normandy, applied the techniques that are vital to ad hoc coalition warfare. When VII Corps forces hit the beaches at Normandy, they had been trained to fight a doctrine that had been based largely on earlier World War II experience. It proved woefully inadequate for the battle conditions faced by VII Corps. It became apparent that the doctrine was ill-suited to the hedgerows, flatlands and built-up areas of France. In the midst of battle, Collins began to retrain and restructure his units as he constructed new doctrine applicable to the enemy and terrain he faced. He and his commanders analyzed every engagement, gleaning the lessons to be applied in the future; testing new techniques and keeping them if they worked, discarding them if they did not. When units were not on the front line engaged in battle operations, they were training. When air-ground coordination and the procedures for tying in with allied units on the flanks proved to be flawed, he invented new, more effective procedures on the spot. Within a few short weeks, Collins devised the doctrinal foundation that was applied by Allied forces successfully throughout the remainder of the European campaign—he did so

under the most arduous conditions.

Standing coalitions should not need to rely on inventiveness and adaptability during conflict. Peacetime training should be designed to engage coalition forces in the most difficult and demanding tasks they may be asked to perform in war and to fathom the weakpoints that will cause friction under the most trying circumstances. The point is to identify, then eliminate or narrow the seams between forces that could

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reduce synergy and synchronization. Procedures that require multinational forces to operate seamlessly should be practiced routinely. Because of the complexity of joint and combined operations, the required skills atrophy quickly. Training should be joint and should reoccur cyclically at the operational and tactical levels. This is essential both to build the basis for trust, which will be vital in war, and to identify the abilities and limitations of coalition forces. For an ad hoc coalition, the same methodology applies, but the time available may be condensed and have to occur during hostilities.

Simulations are proving to be a means to exercise these skills and techniques frequently and inexpensively. They train commanders and staffs on essential planning and execution skills and may be applied through the range of strategic, operational

and tactical levels of war. When effectiveness is analyzed through the lens of battlefield operating systems and the tasks, conditions and standards of various expected missions—attack, defend, delay, passage of lines, battle-handover, airmobile operations, CAS, amphibious assault, and so forth—a host of invaluable lessons may be accumulated. Even still, simulations cannot be a total substitute for field training. Small, yet important problems will escape visibility—national differences in air-to-ground attack procedures . . . cultural differences such as holy days or food restrictions . . . or even the absence of digital communications capability in indirect fire units of some armies may not become apparent. These point to the need for field training at the tactical, combined arms level.

Combined commanders must provide the focus and direction to organize training. They must provide subordinate commanders those mission essential tasks that must be conducted in combined operations and the tasks, conditions and standards to be maintained. Because time and resources for combined training are limited, it is all the more important that combined commanders give priorities for combined training that focus units on those missions most likely to be performed in combat.

Command, Control, Communications, Computers and Intelligence

Applying the tenets of combined doctrine relies on a Command, Control, Communications, Computers and Intelligence (C⁴I) architecture that is capable of integrating the joint forces of all the nations in the coalition. It is in the various functions embedded in C⁴I that American forces possess some of their greatest advantages on the battlefield. Indeed, as we continue to improve our capabilities for collecting, analyzing and disseminating intelligence, managing the vast

amounts of information upon which decisions are made and incorporating more and more computer aids to the battlefield decision and execution processes, we must exercise care that these systems do not evolve into exclusionary processes. Unless the architecture incorporates the ability to share with, and in turn receive from, other national forces, the battlefield will not be seamless and significant risks will be present.

The impediments to achieving integrated C⁴I are several fold. First, of course, is the language barrier. Each order that is produced, every issue that arises unexpectedly on the battlefield, and every transmission must be laboriously translated into the multiple languages included in the coalition. This steals precious time from the detect-decide target-execute cycle and is apt to be fraught with errors. Although it is common for coalition headquarters to maintain translation cells, their speed will depend on the size and complexity of information to be processed, and the accuracy of translation will vary from translator to translator. Moreover, absent a common doctrine, basic military terms differ from nation to nation. The result, generally, is a severe narrowing in the amount of information conveyed between coalition commanders. Overcoming this, as a minimum, requires multilingual software that ties back to a common operating system. Because of the need to be rapidly employable by many national forces, its software must be user friendly and easy to learn. In addition, coalition headquarters should have prepared dictionaries of common military terms and symbols, both as a translation base for information management systems and to reduce the latitude of different translators to portray differing meanings. A final sidenote is that as forces enter a coalition, their capabilities and assets must be entered immediately in C⁴I data bases to enable theater command staffs to incorpo-

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rate them into the multiple aspects of battle management and planning for the coalition. Because many nations now employ computers in managing their forces, it is also important that we share common standards within our peacetime alliances which will permit a rapid merging of information management systems.

These fixes, however, do not eliminate the problems at tactical levels where decisions and orders, generally, are not processed through multilingual systems, and teams of translators are not available. Moreover, different forces will bring non-interoperable communications devices, which block lateral and horizontal relations. Here there is no alternative but to determine where the critical nodes of multilateral contact occur and position translator liaison teams equipped with communications systems that expedite cross-communications. It is especially important to view the requirements for liaison cells from a joint perspective. Many land forces, for example, do not have ALOs or do not position them below division level.

The sharing of intelligence and sensitive technical means will depend on providing the interpreted product of battlefield intelligence to each member of the alliance. The United States brings to battle the most sophisticated and enviable capability to gain deep operations visibility of any nation in the world. If it is kept in seclusion, it will significantly reduce the combat power available for deep operations and force other alliance members to fight blindly with regard to time. Some nations have alternative means and systems, and these should also be incorporated into a workable intelligence collection plan whose products are accessible to others.

Yet few nations, including the United States, are willing to share the sensitive sources of intelligence gathering or enlighten other nations on the technical strengths and weaknesses of various collection means. Military coalitions may include

partners whose reliability is stipulated on the threat at hand and will not last beyond the resolution of the contingency—a point wryly observed by Prime Minister Winston Churchill when he noted he would sleep with the devil when survival was at stake. As well, our past history with coalition warfare has incorporated nations with whom we

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were already engaged in other alliances, such as NATO, where the protocols and limits of intelligence sharing are already embedded. Notwithstanding, allies must share intelligence at the tactical and operational levels as a minimum. As new collection means are introduced into our force, such as Joint Surveillance and Target Attack Radar System or remotely piloted vehicles, we must have means to rapidly share their products with coalition partners. Intelligence sharing arrangements must be rapidly agreed, even if sources are not shared. In fact, the more quickly allied forces become claimants and recipients of pooled assets, the variables of agility, initiative, depth and synchronization increase accordingly.

Logistics

Logistics management of coalition forces is a matter ultimately dependent on a wide field of variables. National arrangements, host nation support agreements, equipment compatibility, and cultural requirements are

but a few. Some coalition forces will enter the coalition with the intention and means to provision themselves. In these cases, coalition control may be no more than a need to coordinate; or, providing ports of entry, off-load capabilities, storage sites, and routes and means for pushing sustainment forward. Others will arrive with the need for more extensive support. This may be solvable through binational agreements from

Technology also offers means of improving the unity and effectiveness of joint operations in a coalition environment. It can be applied to bridge different languages and operating systems. It also can be applied to share and integrate national resources, whether in combat systems, logistics management, or the flow of information to every component in joint and combined warfare.

one member nation to provide support to another, or may require active coalition management. As a rule, actual execution of tactical logistics support to alliance members should be decentralized. At the coalition headquarters level, the focus should be on measuring the requirements of executing the campaign plan, providing advance estimates of these requirements to national units, and ensuring that proper controls are in place to deconflict and permit movement and processing of combat power to units.

Its practice is remarkably difficult. Simulations, again, can be a tremendously valuable tool for finding problem areas before execution. Problems which are unique to coalition warfare continually surface. Depending on the infrastructure available in theater, there may be many claimants on sparse local resources. Potable water, fuel pipelines and storage, shelter and local food production are almost all national infra-

structures built at the capacity required to sustain the local population, and nothing more. Some national forces do not have the means for bulk delivery over long distances, or even a field ration system with preservable commodities. Unless centralized management is applied, each national force is likely to contract independently to acquire these essential goods. Aside from being inefficient and unwieldy, this approach will also ensure instant inflation in the costs of local goods and services, which is harmful to operating budgets and even more disastrous for local citizens who lack the capital to outbid national military forces. In effect the coalition headquarters must enter a unique relationship with host nation authorities for contracting goods and services, to include manpower and labor, and then serve as the intermediary between national force requirements.

Just as there may be significant technological differentials in the combat capabilities of various forces, there could be large differences in the quality and magnitude of support provided. As CS and CSS are echeloned rearward, various capabilities may have to be pooled. American or European field hospitals, for example, may have to be prepared to accept allied casualties. Ammunitions stocks, if they are compatible with allied systems, may have to be shared. Each class of supply and form of support must be considered for each national force in order to identify requirements for mutual dependency. If this is not done, it could result in a loss of combat power or unexpected perturbations in the midst of operations.

The coalition headquarters is also uniquely situated to apply efficiencies that will minimize the diversion of potential combat power from the battlefield. Arrangements for cross-national support, host nation contracts to shift transportation or other functions to local firms, developing nodal points for transferring supplies and

materials, and other means should be employed to reduce independent burdens for moving goods from the ports or airfields to the forward line. Distribution and local repair systems should be pooled wherever possible to limit the numbers of personnel required to perform support functions, and reduce the confusion of controlling rear areas. Combined logisticians must always be on watch for opportunities to find efficiencies and improvements in the logistics architecture. They must step above the paradigms of their own national doctrines and structures and look for ways to combine efforts.

Conclusion

Some would define the purpose of military doctrine and leadership as to achieve order in the chaos of battle. In coalition operations we do this by accentuating the commonalities that exists: first, between our national interests; second, between how we intend to deal with threats to mutual interests; and then in how we actually apply our combined forces in battle. Where commonalities are required but lacking, we move quickly to create them. Often, a coalition's cohesion will depend on the proportionate sharing of burdens, risks and credit. All these can be most fairly and satisfactorily apportioned if the total force is able to operate as a single entity.

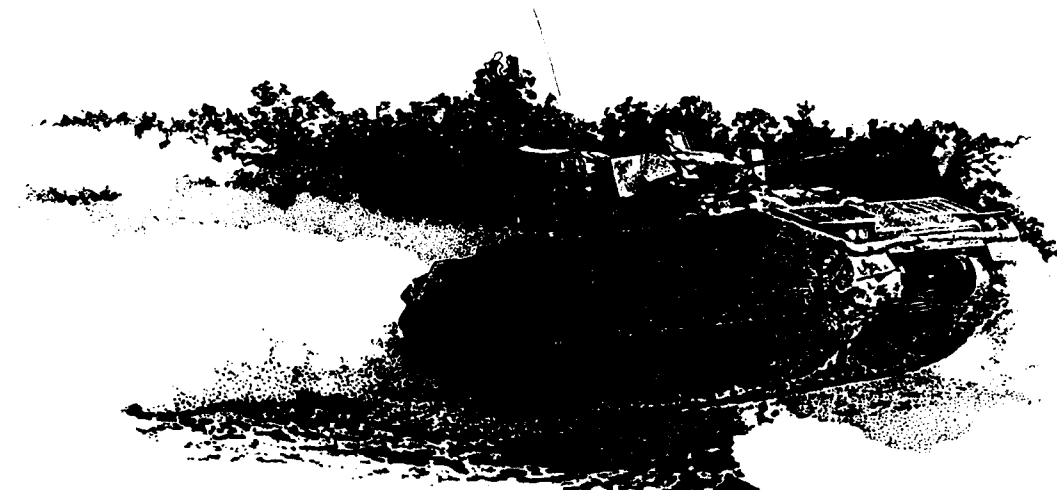
The key to achieving this unity is by promulgating a doctrine for warfighting that is commonly understood and applied. Planning systems must be collective and participatory, yet responsive and unerringly timely. Those areas where the seams are most prom-

inent, and therefore where friction is most likely to arise—through combined tactical integration, C⁴I, training and logistics—need to be rapidly analyzed and tested, then sewn tighter. Obvious differences such as language, culture or interoperability cannot be eradicated, but they can be minimized. These dictums hold true for both long-term and Ad Hoc coalitions. Indeed the tools and lessons we develop in our standing coalitions must be captured and employed in the formation of ad hoc coalitions to accelerate the cohesion of coalition forces.

Technology also offers means of improving the unity and effectiveness of joint operations in a coalition environment. It can be applied to bridge different languages and operating systems. It also can be applied to share and integrate national resources, whether in combat systems, logistics management, or the flow of information to every component in joint and combined warfare.

For the foreseeable future, American military leaders will most often be the leaders of multinational military coalitions. As the US Armed Forces continue to reshape for the challenges of the post-Cold War era, it is important that the requirements of coalition warfare remain a priority effort among all services. Every improvement in coalition operations that we bring to the battlefield will have an impact on the success of operations and reduce the human toll for our own forces, as well as every one of our allies. We have the technology and experience to improve coalition warfare. The understanding of joint and combined doctrine is the first step. *MR*

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Roundout Brigades: Ready or Not?

Lieutenant Colonel Richard L. Stouder, US Army

This article addresses problems concerning Army National Guard (ARNG) readiness. Can the ARNG ever achieve the same readiness levels of the Active Component? Does the Army ask too much of the ARNG? There is a tremendous amount of emotion surrounding these issues. The author suggests that emotions need to be stripped out of the evaluation, and the problems need to be viewed from a professional standpoint. He attempts to do that, focusing on the readiness of ARNG combat units, primarily separate and roundout brigades.

God love them, they were idealistic with a somewhat naive belief that they understood Army standards and were better than they were.

—Active Component brigade commander on Reserve Component training for Gulf deployment.

We truly felt and still feel that (Colonel Mike) Andrews' standards were artificially inflated and unreasonable and his own men could not meet them.

—Reserve Component brigade commander.¹

AMONG THE relatively few questions that have surfaced about US military performance following Operation Desert Storm, those about Army National Guard (ARNG) readiness are the most troubling and perhaps the most significant. Was ARNG training and readiness below combat

standards? If so, why? Were standards unrealistically and unnecessarily high? Were ARNG units unprepared because of systemic problems beyond their control?

These are important questions, especially critical now when the Army is downsizing. Answers to these questions are necessary before we can determine the Active Component (AC) and Reserve Component (RC) mix to best meet US national security requirements in an uncertain future.

The US Army is trying to sort through the lessons learned from the Gulf War. The future role of the RC is certainly receiving a

The views expressed in this article are those of the author and do not purport to reflect the position of the Department of the Army, the Department of Defense or any other government office or agency.—Editor

lot of attention, within both the Department of Defense and Congress. Determining how much structure is needed and what role the RC will play in our evolving security strategy is vitally important to the future of our country. But before the Army goes too far in that debate, there is a more basic issue that must be addressed: training and operational readiness of the ARNG.

What follows is not intended as an attack on the individual members of the ARNG, who are patriotic Americans striving to be good soldiers. Rather, it is an attempt to highlight systemic problems that subvert combat readiness of the ARNG.

No sane leader would ever willingly commit his soldiers to war if he knew they were not properly prepared. Considering today's high-technology weapon systems and the complex nature of combined arms warfare, are 39 days a year enough to prepare the ARNG soldiers for war? The Army's challenge is to make the best use of the annual training (AT) days available and to ensure that sufficient time is allocated for postmobilization training. Failure to deal with these issues could lead to untrained soldiers committed to battle.

The Army has launched a major effort to discover the lessons learned as a result of the largest mobilization since World War II. The mobilization of the three ARNG roundout brigades for operations *Desert Shield* and *Desert Storm* has received a lot of attention. To date, there have been three major studies published:

- Department of the Army Inspector General, *Special Assessment of the National Guard Brigades' Mobilization*, June 1991.
- General Accounting Office (GAO), *National Guard: Peacetime Training Did Not Adequately Prepare Combat Brigades for Gulf War*, September 1991.
- Congressional Research Service, *The Army's Roundout Concept After the Persian Gulf War*, 22 October 1991.

While the focus of each report was some-

As defined by FM 100-5, Operations, synchronization is "the arrangement of battlefield activities in time, space and purpose to produce maximum relative combat power at the decisive point." Easier said than done. Synchronization is a complex process that is planned and coordinated by commanders and staffs but executed by everyone in the combined arms force.

what different, all three looked at premobilization training in different levels of detail and drew similar conclusions. The studies cite systemic problems summarized as follows:

- Lack of individual, leader and crew skill proficiency.²
- Lack of maintenance training at all levels, from drivers to supervisors, from battalion maintenance section to forward support battalion.³
- Lack of realistic training, especially force-on-force, night and chemical training.⁴
- Lack of leader and staff development training.⁵
- Lack of leadership skills throughout the chain of command.⁶
- Overstated unit status reports.⁷
- Training plans that understated the number of postmobilization training days by as much as three times the number actually required.⁸

Why is combat readiness of infantry and armor units so hard to achieve and sustain? These units are charged with direct-fire combat with enemy forces. This combat is characterized by speed; violence of action, sight and sound; instantaneous decisions ranging from whether or not to pull the trigger, to lifting and shifting of fires, to commitment of reserves at the required time and place; large numbers of injuries and deaths in localized areas; and the knowledge that you must do all this again tomorrow.

AC units have an average of 120 battalion (collective) training days per year. Leaders of AC units also have the time to send their subordinate leaders to professional development schools, a much harder task for RC leaders. Modernization of the ARNG sent the right messages about the importance of the ARNG to our nation's security, but modern weapon systems vastly complicate [its] training requirements.

Additionally, the infantry and armor battalion and brigade commanders are required to synchronize all battlefield operating systems. As defined by US Army Field Manual (FM) 100-5, *Operations*, synchronization is "the arrangement of battlefield activities in time, space and purpose to produce maximum relative combat power at the decisive point."⁹ Easier said than done. Synchronization is a complex process that is planned and coordinated by commanders and staffs but executed by everyone in the combined arms force.

Infantry and armor battalion and brigade commanders who fail in the synchronization process pay the price no other military commander has to face, large numbers of soldiers killed in direct-fire engagements with the enemy.

Training Time

How can we possibly expect ARNG units to achieve the same training and evaluation standards as the AC? ARNG units have 39 days of training, while AC units have an average of 120 battalion (collective) training days per year.¹⁰ Leaders of AC units also have the time to send their subordinate leaders to professional development schools, a much harder task for RC leaders. Modernization of the ARNG sent the right messages about the importance of the ARNG to our na-

tion's security, but modern weapon systems vastly complicate the training requirements of the ARNG commander.

Of the 39 training days, over half are inactive duty training (IDT) periods, commonly called weekend drills. My opinion, formed by six successive years of training and evaluation association with the ARNG, is that the vast majority of IDT periods are unproductive.¹¹ During the five AT periods I participated in, lack of individual skill proficiency was the most glaring weakness. Most IDT periods for the previous year had been dedicated to individual skill training. The scheduled individual training either did not occur or was not conducted to standard. IDT is a tremendous challenge for the ARNG: unit armories spread across a state, poor to non-existent training areas and vehicles and equipment at a far away mobilization and training equipment site (MATES). The IDT periods are critical and must be used to the fullest extent possible, for unless IDT is productive, units will never achieve acceptable levels of collective training during AT.

Training focus needs to be shifted from battalion level to individual, crew, squad and platoon levels. Before one hour of collective training can be productive, each soldier and leader must be proficient on individual tasks associated with that collective task. In football, if the linemen cannot pass block, the team cannot execute a pass play. The same principle applies to military training.

Why should the ARNG focus collective training at the crew, squad and platoon levels? Training time. In August 1988, the US Army Infantry School (USAIS) produced a list of infantry critical tasks that were determined to be "the most important tasks that infantry units must perform to ensure victory in combat."¹² There are 57 brigade tasks, 60 battalion tasks, 40 company tasks and 60 squad and platoon tasks. Coupled with individual and leader training requirements, the ARNG faces an insurmountable problem.

The 60 squad and platoon tasks can be hal-

Soldiers are tested on their knowledge of decontamination equipment during an ARTEP at the NTC.



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anced against the specific mission essential task lists of the unit so that the 60 tasks can be further reduced to a manageable level of skills and drills. These skills and drills then become the focal point for IDT.

Skill Proficiency and Skill Decay

Lack of individual and leader skill proficiency is the core of ARNG training and operational readiness problems. If ARNG units report to AT trained at the individual level, valuable time would be available for collective training at the squad and platoon levels. Proficiency at the individual and leader levels would also reduce postmobilization training time.

Individual and leader skill decay is the biggest training challenge for battalion com-

manders. The US Army Training and Doctrine Command (TRADOC) has produced mission training plans for most type units, and they include a crosswalk between the collective tasks and the subordinate soldier and leader tasks. What is the magnitude of this challenge? For infantrymen there are 62 skill level (SL) 1 tasks, 38 SL2 tasks, 31 SL3 tasks and 26 SL4 tasks. (These 157 tasks do not include the multitude of common tasks.) All soldiers, noncommissioned officers (NCOs) and commissioned officers have been trained on these tasks at one time or another. The vast majority of weak collective task proficiency is directly attributable to weak soldier skills, leader skills or both. TRADOC and the USAIS have studied skill decay and have concluded that we must design training to sustain skill proficiency.

Maintenance training should be conducted during IDT periods. This would cause some units problems given the distance from equipment sites, but vehicles can be trucked to armories for IDT. Vehicle maintenance is an individual and leader task and must be trained more frequently than only during AT. Drivers and leaders must know how to perform preventive maintenance checks and services, which are the very foundation of the maintenance system.

ARNG units often report high Military Occupational Specialty Qualification percentages.¹³ These rates give a very deceiving picture concerning readiness. Most NCOs have, in fact, graduated from a professional NCO school, but what have they done to sustain those skills? Too many of these NCOs are not proficient to their required skill level, and the consequence is poor training for their soldiers, contributing to IDT problems—skill decay has taken its toll. Too often, first sergeants and the sergeants major are neither qualified nor inclined to be involved in training.¹⁴

Modern weapon systems multiply training challenges. The skill level of individual members of a Bradley crew, an M1 crew, tactical fire direction system section or Apache crew is significantly more challenging than that required for the previous generation of systems. These great new systems demand that sustainment training be conducted daily and weekly. AC Bradley and M1 crews fight for time in the unit conduct of fire trainers because they recognize that practice is the key to proficiency.

Because of the limited training time in the ARNG, personnel turnover takes an even bigger toll on readiness. For example, when a member of an ARNG tank crew departs, it could be up to two years before that crew has an opportunity to requalify.

Maintenance

The next area of training concerns maintenance. ARNG units often display what I call a "MATES mind-set." For the bulk of the year, the units' vehicles are maintained by civilian personnel at the MATES. Therefore, these units do not develop a sense of ownership of their vehicles—rather, they feel they are merely renting them for the training period. If a vehicle breaks, they just tow it to the MATES and draw another one. Drivers do not conduct maintenance because if their vehicle breaks, another will be provided. When drivers do order parts, they are not available because the stockages in unit Prescribed Load Lists (PLL) are not sufficient. The result is that battalions do not have a system of maintenance. I have been a mechanized infantryman for a long time, and I firmly believe that maintenance is training. The current system of ARNG maintenance does not provide the necessary maintenance training opportunities for the personnel and procedures required to meet Army standards.

Maintenance training should be conducted during IDT periods. This would cause some units problems given the distance from equipment sites, but vehicles can be trucked to armories for IDT. Vehicle maintenance is an individual and leader task and must be trained more frequently than only during AT. Drivers and leaders must know how to perform preventive maintenance checks and services (PMCS), which are the very foundation of the maintenance system. A unit cannot have effective maintenance without PMCS. Again, this is a vital individual and leader skill proficiency requirement. Leaders must continually check to ensure compliance, but they must be proficient themselves.

During AT, units should not be permitted to return to the MATES once vehicles are drawn. If battalions were required to fix in the field, as they would in war, then the maintenance system would get exercised.

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and all players in that system, from driver to mechanic to maintenance technician to forward support battalion, would get training. The link between the battalion and the support battalion requires much coordination and practice to work effectively.

Repair parts (Class IX) are another problem in the ARNG maintenance system. For example, I once checked a company PLL truck and found over 100 total lines listed with a stockage level of over 90 percent. Good news on the surface, but in checking further I determined that only eight lines were for M113s; the rest of the lines were small arms and radio parts. A check of the other companies of the battalion revealed similar problems. In fact, this same Class IX problem existed in both of my partner battalions. AC rifle companies routinely carry approximately 270 lines, of which 85 percent were vehicle-related parts. PLL is the lifeblood of a heavy unit. For the first two months in Saudi Arabia, my battalion had to subsist totally on our PLLs. We cannot assume that the supply system will magically produce required parts just because we are deployed for war. There are some funding problems associated with fixing this in ARNG units, but we are deluding ourselves if we think the problem will be solved at a postmobilization station or upon arrival in the wartime theater.

Leadership

The studies highlight two other areas that are directly related to training readiness and which confirm my observations over the last six years. These areas are leadership and NCO proficiency. The most noticeable observation of ARNG training is the lack of leaders during training. Training is certainly the most important thing that a unit does; however, too often, ARNG leaders are conspicuous by their absence. The reason is tied directly to the leaders not being tactically and technically proficient themselves. They cannot supervise what they do not know.

ARNG leaders are not held accountable for their self development and demonstrate a lack of a sense of responsibility. For the bulk of the year, unit full-time support personnel make a tremendous amount of the unit's decisions. The unit advisers and Readiness Group personnel also "help" unit leaders make decisions. All these factors contribute to the mind-set that "the job belongs to someone else."

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The social climate in the ARNG has an effect on leadership. Soldiers in an ARNG unit are generally from the same small town; some soldiers in the unit may even be related. Some employees find themselves "in charge" of their bosses. This social climate breeds perceptions of favoritism and inequity.¹⁶ Leaders are paid to make hard decisions, but in this type of environment, it takes an exceptional leader to be effective.

The Noncommissioned Officer Corps

The most endemic problem in the ARNG concerns the NCO corps. The ARNG NCO corps simply does not meet the standards of the traditional NCO corps. If the NCOs are truly the backbone of the Army, then it is little wonder that the ARNG has problems in training readiness. NCOs are the primary trainers of soldiers and other NCOs, crews,



A 2d Armored Division soldier checks the oil level in his tank during a field PMCS.

If daily PMCS is not performed on all vehicles and equipment, the maintenance system is doomed to failure. . . . During postmobilization training, roundout battalions with a 50-percent vehicle availability rate were not uncommon. In one battle at the National Training Center, a battalion had more nonmission-capable vehicles in the field trains than crossed the line of departure. Want to guess the outcome of that battle?

sections and squads. The problem lies in one word—proficiency.

This is not to say that these NCOs do not love the Army or their country. Many are fiercely patriotic. When you ask these NCOs about their ability to go to war, you get a spirited “can do.” But high hopes and esprit de corps do not win battles or wars unless coupled with knowledge, experience and leadership.

For the maintenance system in any battalion to function effectively, there must be active involvement by the NCOs. My experience and the Department of the Army Inspector General (DAIG) and Government Accounting Office (GAO) reports cited maintenance shortcomings directly attributable to poor supervision and poor technical ability by the NCO corps in general. Most NCOs do not know how to perform PMCS on their vehicles or how to properly fill out a Department of the Army (DA) Form 2404, *Equipment Inspection and Maintenance Worksheet*.¹⁷ If daily PMCS is not performed on all vehicles and equipment, the maintenance system is doomed to failure. Does this have an effect on the vehicle operational readiness rate? During postmobilization training, roundout battalions with a 50-percent vehicle availability rate were not uncommon.¹⁸ In one battle at the National Training Center, Fort Irwin, California, a battalion had more nonmission-capable vehicles in the field trains than crossed the line of departure.¹⁹ Want to guess the outcome of that battle?

A look at the ARNG NCO corps reveals a striking age difference from NCOs of the AC. Fifty-year-old platoon sergeants, 55-year-old first sergeants and sergeants major who are 58 to 60 are not unusual.²⁰ Can NCOs of this age meet the physical fitness requirements of the Army? Can they lead combat arms soldiers in combat?

Why is this NCO corps so old? For one reason, there is no central control of the promotion system. It is generally not a competitive

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system and varies greatly from state to state. The usual basis for promotion is time in the unit, attendance record and a willingness to perform the job. Some positions are filled by the state headquarters announcing vacancies and applicants submitting required forms.²¹ Why do NCOs stay until they are too old? They like being a part of the unit, they need the money and the unit needs people to fill the rolls.

As stated earlier, most NCOs do attend required RC NCO education system (NCOES) courses. The programs of instruction are approved by TRADOC to ensure the course meets Army standards. But because of the nature of ARNG training, a tremendous amount of information is taught in very compressed time periods. Retention of the material has always been a concern.²² Combine this with the lack of a sense of individual responsibility for sustainment training and you get the predictable skill decay.

All of this goes back to basic leadership. To be respected by soldiers, a leader must demonstrate proficiency as a soldier and trainer. A leader must have the trust and confidence of his soldiers in order to lead them in combat. Another critical aspect of NCO leadership is coaching and mentoring as articulated in our leadership manuals. These are concepts that appear to be foreign to the ARNG NCO corps.

Solutions

How do we address these training challenges? With only the difference of time available to train, AC battalion commanders face the same challenges. As with a lot of the problems in our Army, the solutions must start at unit level. Unit commanders begin with a critical assessment of their unit's ability to accomplish wartime missions. I will offer my solution as a battalion commander. First, I held each soldier, especially the NCOs and officers, accountable for individual skill proficiency at the required skill level. As soldiers and leaders, we have a personal

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responsibility to be proficient in the profession of arms to whatever skill level is required of our duty position.²³ This is a daunting task given today's complex battlefield. Senior leaders must first set the example and then hold their subordinates accountable for their required levels of skill proficiency. I used to ask my soldiers and leaders if they would allow themselves to be operated on by a doctor who was only 50-percent proficient. Would they want their sons or daughters going to war with a leader who was only 60-percent proficient? I used performance indicators such as skill qualification test results, common test training results and Expert Infantryman Badge results. I was the platoon evaluator during quarterly platoon tests where the focus of the evaluation was not only on collective tasks but on individual and leader tasks as well. We allocated training time each week for the NCOs to train their soldiers to sustain skills. We conducted weapons skill training such as basic rifle marksmanship before any weapon was fired. We conducted a professional development program for the leaders, using a combination of lectures on tactics and techniques, hands-on training, practical exercise and a professional reading program. We then tied skill proficiency to promotion. Demonstrated performance was rewarded with promotion. Substandard performance resulted in counseling and retraining.

As a result of these initiatives, FORSCOM has designed an action plan named **BOLD SHIFT** that will involve the Total Army and will ensure that RC readiness is improved. **BOLD SHIFT** is designed to "exploit the potential of Reserve Forces to execute their important roles in the current National Military Strategy."

Army Initiatives

The Army leadership has recognized the problems cited in this article and have initiated an ambitious program to fix the shortfalls. The following initiatives and programs have been initiated by the Army and its subordinate commands to address these shortfalls in RC training:

- Training Development Action Plan, Headquarters, Department of the Army (HQDA).
- Leader Development Action Plan, HQDA.
- Roundout Brigade Task Force, HQDA.
- AC Dedicated Support to RC, HQDA.
- **BOLD SHIFT**, US Army Forces Command (FORSCOM).
- Standard Bearer, ARNG.
- Future Army Schools 21, TRADOC.

Each of the above, and its component parts, is designed to enhance Reserve forces training. With the exception of the first two, they were initiated after rigorous analysis of the three major documents cited in this article.²⁴

The Roundout Brigade Task Force (ROBTF), formed by the Army chief of staff, has reviewed all three reports cited in this article, as well as other information. To date, the ROBTF has identified 30 issues covering all aspects of the roundout brigades mobilization and training. The task force has also recommended and obtained Army approval

for changes to the ARNG officer education system (OES) and NCOES. Figure 1 depicts the changes that are designed to tie promotion to schooling. These changes were implemented when the Army deputy chief of staff for Operations signed policy messages in October 1991 for the OES and in December 1991 for the NCOES.²⁵ The issues that the ROBTF is studying also include various training strategies, an example of which is in figure 2, and changes to unit readiness reporting and the 1-R Evaluation System.

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The plan is based on insights and lessons learned from operations *Desert Shield* and *Desert Storm*. The concept includes a series of readiness enhancement programs and calls for aggressive and positive interaction between the AC and RC. To address issues and recommend initiatives, FORSCOM has established a **BOLD SHIFT** task force composed of FORSCOM staff, ARNG, USAR, Continental US armies and representatives from the roundout brigades.

The FORSCOM pilot program will include all roundout and roundup brigades and 35 USAR and ARNG priority units. The RC readiness enhancement efforts are focused on seven training and readiness programs:

- Reorganize and realign in accordance with the plan for downsizing the Army.
- Emergency deployment and readiness exercises (EDREs) to provide readiness focus, incentive and recognition of minutemen in early deploying RC units.
- Soldier training to review and improve current soldier military occupational skill training.
- Unit training enhancements modeled after the methodology for premobilization



Unrealistic demands and broad training objectives combined with limited training time is a recipe for mediocrity. The ARNG, especially the roundouts, need a training strategy that focuses on individual, leader and crew skill proficiency and sustainment. Premobilization collective training must concentrate on drills and collective tasks up to and including platoons. Additionally, leaders and staffs need specialized training on staff estimates, course of action formulation, staff coordination, operation order drills and battle synchronization.

RC collective training in accordance with *Desert Shield* roundout brigade training.

- Leader training development to ensure leaders have better skills, knowledge and command presence.

- More involvement in RC training and readiness by the AC wartime chain of command.

- Improve readiness of priority RC units by enhancing quality and effectiveness of full-time support personnel to include study of full-time support methodology and policies.²⁷

Both the DAIG and GAO reports cite problems with readiness reporting.²⁸ The Army needs to look hard at changing how we evaluate training readiness. The unit status re-

port (USR) contains objective criteria in all areas except training, which is totally subjective. This subjectivity is the essence of the Army readiness problem, but it is more profound in the ARNG because of lack of experience.

Was this a source of problems in the mobilization and training of the three ARNG roundout brigades? The first issue is the subjectivity surrounding training readiness. The next issue concerns true objectivity by AC commanders who review ARNG readiness reports. The AC is not of one mind regarding the readiness standards for ARNG units. One division commander, who had an ARNG roundout brigade, commented on his prewar beliefs regarding postmobilization

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training, "I believed that it would have taken 120 days to get the brigade ready for combat. I had intended to infuse active component of officers into the brigade and to replace battalion and company executive officers from the active component. The brigade should not have been deployed immediately. ARNG combat maneuver brigades can deploy and fight immediately, but with enormously high risk and at the cost of many casualties."²⁹ How can this view stand in light of the roundout brigade reporting C2 for training readiness? Another division commander, who also had one of the three roundout brigades, stated that "I would take my roundout units to war tomorrow, if necessary."³⁰ The views of these two senior officers are inconsistent, but certainly reflect the magnitude of the problem.

We have tried to remove subjectivity from our training evaluations by putting more detail in the standards in the Army Training and Evaluation Program, mission training plan and drill manuals. Units have a tremendous amount of objective data on training that can be collected and entered into the Tactical Army Combat Service Support Computer System. The Army must design a system that accurately reflects the accurate picture of training and combat readiness. It will be extremely difficult to improve ARNG readiness if we do not fix readiness reporting.

The studies identified numerous shortcomings in the 1-R Evaluation System. "The postmobilization performance of all units left little doubt that most AC evaluators had generally inflated 1-R reports and that skills had seriously eroded because of elapsed time since AT. Shortfalls in crew proficiency were not clearly and unmistakably enunciated in the 1-Rs. For example, most M1 crews did not know how to boresight their tank weapons. One brigade received a 'T' (indicating a trained status) in support operations on its last 1-R. The unit's performance during training, however, revealed serious systemic breakdowns in combat support and combat service support operations."³¹ Both the DAIG and GAO reports recommend specific changes to this evaluation system, as does the ROBTF. There is an institutional resistance to changes to our evaluation system, but we cannot ignore the obvious problems any longer.

Another problem cited in the reports is that Army and FORSCOM regulations tasked the ARNG to do too much. The requirements for ARNG units in AR 11-30, *The Army CAPSTONE Program*, FORSCOM Regulation 350-4, *Training Under CAPSTONE*, FORSCOM/NGB Regulation 350-2, *Reserve Component Training*, Army Regulation 220-1, *Unit Status Reporting* and FM 25-100, *Training the Force*, are a tremendous challenge.³²

Unrealistic demands and broad training objectives combined with limited training time is a recipe for mediocrity. The ARNG, especially the roundouts, need a training strategy that focuses on individual, leader and crew skill proficiency and sustainment. Premobilization collective training must concentrate on drills and collective tasks up to and including platoons. Additionally, leaders and staffs need specialized training on staff estimates, course of action formulation, staff coordination, operation order drills and battle synchronization.

The AC commander responsible for the

ROUNDOUT BRIGADES

roundout units must be more involved in the training and evaluation process. He should approve the AT plan, be included in the rating scheme for battalion and brigade commanders and have an input in the selection of new battalion and brigade commanders.³³

The maintenance system in the ARNG must be compatible with the AC systems. Maintenance must be high on the list of training objectives for IDT and AT.

In this article, I have highlighted only some of the training problems facing the ARNG today. The ARNG has made great strides in readiness since I first was a platoon evaluator in 1972 at Fort Carson, Colorado. The ARNG became more prepared during those 20 years because the Army, as an institution, made changes. The ARNG is critical to our national military strategy. However, to continue to improve ARNG readiness, we must find ways to reduce post-mobilization training time for the ARNG combat brigades. I am convinced, as is the Department of the Army, that the way to do that is for ARNG units to arrive at the post-

mobilization site properly trained as soldiers, leaders, crews and platoons. If we fail to come to grips with these problems, we fail both our country and our soldiers, with potentially devastating results for both.

Our Army of tomorrow will be smaller, but our leadership is working hard to prevent the "hollow Army" of the 1970s. While smaller, we must be well equipped and well trained. We must be prepared to quickly respond to regional crises and be prepared to fight on arrival in the theater of operations. Contingency forces must be, for the most part, AC forces, with follow-on forces made up of late deploying AC and RC forces. Proper force mix is critical.

While the Army is trying to downsize to meet its budget limitations and maintain the proper AC and RC mix, Congress is mandating retaining more RC structure than is required. The systemic problems outlined in this article must be taken into consideration as we downsize and assign missions to the AC and RC. Our country's national security demands that the right decisions be made. *MFI*

NOTES

1. Genevieve Anton, *Colorado Springs Gazette-Telegraph*, "Fallout Over Un-readiness Dogs Guard," 12 January 1992.

2. Department of the Army Inspector General, *Special Assessment of the ARNG Brigades' Mobilization*, June 1991, 3-4, 3-5 and 3-7; 4-3. General Accounting Office, *National Guard: Peacetime Training Did Not Adequately Prepare Combat Brigades for Gulf War*, September 1991, 2-12, 2-13, 2-16 and 2-18. Congressional Research Service, *The Army's Roundout Concept After the Persian Gulf War*, Robert L. Goldich, Foreign Affairs and National Defense Division, 22 October 1991, 21 and 22.

3. DAIG Report, 3-6, 3-14 and 3-15, 4-6; GAO Report, 2-13 and 2-14.

4. DAIG Report, 3-4; GAO Report, 2-14 and 2-16.

5. DAIG Report, 3-6 and 3-7; GAO Report, 2-18.

6. DAIG Report, 3-7; GAO Report, 2-18.

7. DAIG Report, 3-7, 2-6, 3-5 and 3-12; GAO Report, Ch 3.

8. DAIG Report, 3-9 and 4-15; GAO Report, 3-24 and 3-26.

9. FM 100-5, *Operations*, May 1986, 2-17.

10. The author acknowledges that 30 days of training for RC units may be an oversimplification. The legal minimum for members of the RC are 48 4-hour drills (24 days) and 15 days of AT. Many leaders of the ARNG put in 60-80 days per year. AC units average 120 days of collective training, while ARNG units are hard pressed to keep up to 30 days of collective training per year. This is not a claim against the ARNG, just the reality of available time to train toward combat mission proficiency.

11. The author's assignments include: Aide de camp to commander, Second US Army, Fort Gillem, Georgia; battalion executive officer, 3-7 Infantry (Mechanized), Fort Stewart, Georgia (training association with the Georgia ARNG); and battalion commander, 2-16 Infantry (AB), 187 Infantry Brigade, Fort Benning, Georgia (training association with separate mechanized infantry brigades in South

Carolina and North Carolina). The author acknowledges professional bias based on his experience.

12. US Army Infantry School, *Infantry Critical Task Lists*, 1 August 1991.

13. DAIG Report, 3-6 and 3-12; GAO Report, 2-12 and 2-13.

14. Author's opinion. My experience is that the ARNG 1SGs and CSMs do not perform in the traditional roles of senior NCOs in our Army today.

15. DAIG Report, Appendix C, 2-4.

16. DAIG Report, Appendix D, 12.

17. DAIG Report, Appendix D, 4-5.

18. DAIG Report, Ch 3-14; GAO Report, Ch 2-13.

19. GAO Report, Ch 2-14.

20. DAIG Report, Appendix D, 3; CRS Report, 21.

21. DAIG Report, Appendix D, 3.

22. DAIG Report, Appendix D, 4.

23. The pillars of our professional education system are self-development,

institutional training and operational experience.

24. Source is input from DAMO-TRR, HQDA.

25. Interview with COL Jose Alvarez, DAMO-TRR.

26. Message, Cdr FORSCOM, Subject: Reserve Component Enhancement

Action Plan, BOLD SHIFT.

27. FORSCOM Map.

28. DAIG Report, 2-7, 2-8, 3-5 and 3-12; GAO Report, Ch 3.

29. CRS Report, 16.

30. CRS Report, 16.

31. DAIG Report, Ch 2; GAO Report, Ch 3.

32. DAIG Report, Ch 4.

33. DAIG Report, 4-6 to 4-12.

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Beefing Up at the Low End

Lieutenant Colonel Geoffrey B. Demarest, US Army

Army force planners are understandably challenged by the urgent demand for answers regarding the shape and role of the post-Cold War force. While it has been difficult to arrive at a consensus about the nature of the evolving strategic order, some new chunks of meat can already be identified in what will remain a dense mission stew. The author suggests one option that force planners might consider, in light of the evidence now available regarding tasks that the Army will probably be asked to perform in the coming decades.

ARMY PLANNERS make trade-offs in modern division design within the same parameters as in tank design, the central variables being firepower, mobility and armor protection. Looking at the Army's division mix and considering the most recent innovation in Army division structure, the light infantry division (LID), it is evident that our reasoning developed within that same trade-off realm. The lighter unit supposedly can meet initial firepower challenges and reach a decisive point on the battlefield in time to eliminate geographic advantages that opposing forces might otherwise have. Sustainability can perhaps be sacrificed if we assume control of air and sea lines of communication. This logic may be sound enough and has been successful as far as it goes. As long as we have the luxury of a well-identified enemy and a clear definition of military success based around the defeat of that enemy, the reasoning should serve us. The American penchant in warfare continues to be our ability to apply superior firepower at the right place quickly. However, this "tanker" logic has failed us in some environments and will probably continue to

do so in many situations subsumed under the (sometimes unfortunate) characterization "low-intensity conflict (LIC)." We may promote the LIDs in doctrinal debate over the requirement to better address the lower end of the conflict spectrum, but the division's designs simply do not respond to many mission challenges.

The LID is innovative only within the limits of the conventional mission problem. Light beer is still beer and likewise the LID, while it may be less filling, is not satisfying in mission situations where we need an entirely different organizational brew. Reasons for the mismatch of unit design and mission include the timing of the LID effort in relation to the development of Army doctrine on LIC. By the time the new division structure had been designed, redesigned and tested, the Army had labored for a decade to produce a LIC manual that is yet to receive enthusiastic acceptance. Also, strategic realities of the "new world order" are hard to see today and were harder to see before 1989. Inertia of our Fulda Gap orientation understandably guided organizational reasoning. It may be difficult now to revisit the line and

block charts so soon after struggling to prove the LID concept. On the other hand, the rapid and radical nature of world changes can free Army thinking and allow us to develop something more appropriate to some demands of the new world order. We need a basic unit structure for integrated accomplishment of the Army's most common overseas missions, but such an organization would have to be based on a new set of doctrinal criteria, and these doctrinal precepts may have to rest on a broader basic military philosophy. According to one central axiom upon which our military units are designed, everyone supports the combat soldier. All our definitions and mission statements flow from this idea. Combat support (CS) units support combat units, the combat service support (CSS) units support everybody. It is an experience-proven relationship, but given the breadth of potential Army missions, the time may have come to consider breaking away from this starting point. As a more appropriate response to many Army mission statements, the combat soldier should provide support, as the necessary exception, to noncombat efforts. Instead of thinking in terms of firepower and combat multipliers, we will have to think in terms of the need to more precisely define and fix the enemy, neutralize the enemy with the least amount of firepower and prepare populations in providing their own security. Rather than design a unit within the trade-off triangle of mobility, firepower and armor protection, a new parameter should be established in which trade-offs are made between the three traditional combat qualities put together and the ability to precisely define and fix the enemy, engage populations to participate in their security needs and use the least amount of force needed in each circumstance. When this new arrangement of design trade-offs is accepted, support to the infantryman as a basic principle will give ground.

The guiding concept is not that the division could reach an area of operations more

quickly than a more heavily armed unit; instead, the focus is on its long-term potential mission applicability. These missions would include what we now call rear area

The LID is innovative only within the limits of the conventional mission problem. Light beer is still beer and likewise the LID, while it may be less filling, is not satisfying in mission situations where we need an entirely different organizational brew. Reasons for the mismatch of unit design and mission include the timing of the LID effort in relation to the development of Army doctrine on LIC.

security, refugee relief, population control, occupation, counterinsurgency, counternarcotics, counterterrorism, humanitarian action, and so on. Creating a unit structure at the division level would provide better unity of command as it relates to single-point integration of intelligence and single-voice discipline regarding legal parameters for the use of force and intelligence collection. A common philosophical denominator for all LIC missions will be promotion and enforcement of legal orders and norms. Law enforcement will be the byword for most, if not all, deployments. We should expect political difficulties to arise over contradictions between the constant need to depict transparent legal forms and the occasional need to defeat organized, violent opposition via lethal force and covert intelligence collection. All our efforts will need the service of an intelligence engine that continually seeks not only to define and precisely fix the enemy, but to identify the potential enemy, the half enemy, the apathetic, the indifferent, and so on. This engine will also have to create usable presentations about social and economic factors unrelated to any enemy per se. Even legal ramifications will



MPs check for weapons on Panamanians suspected of belonging to one of Manuel Noriega's Dignity Battalions during Operation Just Cause, December 1989.

The unity of command provided by a division structure . . . could satisfy the demand of oversight and control by civilian agencies, especially in intelligence collection and covert law enforcement. If made part of the Special Operations Command, it would be the foremost tool with which to complete many assigned missions. These missions should, in time, lose their characterization as being "special" since they are likely to become the norm.

have to be considered a part of basic terrain intelligence.

The unity of command provided by a division structure could also aid coordination of goals and policies in geographically separate areas of operation. It could satisfy the demand of oversight and control by civilian agencies, especially in intelligence collection and covert law enforcement. If made part of the Special Operations Command, it would be the foremost tool with which to complete many assigned missions. These missions should, in time, lose their characterization as being "special" since they are likely to become the norm.

The division's major subunits would be task-organized to create intelligence and operations centers specifically focused on

each mission problem. In response to many missions, police and intelligence teams would be deployed, but these centers would be replicated electronically at the division's home. As teams are deployed or organized to address a specific situation, they would not leave behind a "brigade minus," just a smaller brigade. In other words, there is no conceptual need to see the brigade as a unit requiring any fixed number of subunits to be considered at full strength. Any percentage of the mother brigades not deployed or oriented to ongoing missions would be completely able to conduct training or preparations for other likely missions. The division command would always be in position to view the interrelationships and costs of all deployments and set priori-

ties for future preparations. National leaders could count on a single pipe for control of varied involvements, for information and input of opinions.

Another reason for the creation of a separate division structure is best explained indirectly by reference to some understated advantages enjoyed by coalition forces in the recent Gulf War. There, the enemy was very clearly defined, the terrain was essentially unpopulated, and questions related to the human rights of persons encountered in the operational area had been effectively obviated before hostilities began. The geography in most conceivable future mission zones will include large civilian populations, limiting applicability of AirLand Battle (ALB) doctrine as we employed it (or as we would like to have employed it) in the Persian Gulf. We may assert our ALB concepts by way of analogy to low-intensity situations, but we should remember why we use an analogy. Analogy is used to explain a new concept by relating the new concept to something already understood. Analogy cannot be used by a teacher as a substitute for his or her own understanding of the new concept. After all, any two things, no matter how dissimilar, can be compared by analogy, but the analogy may or may not be an efficient teaching device. In fact, much ALB doctrine is irrelevant to many Army missions, including many conflict situations. Given a tactical problem in which the use of artillery might be proscribed by legal concerns about personal property damages, tort claims, ecological impact, bad publicity, and so on, ALB-oriented education is, at best, inefficient. The existence of a basic Army unit freed from ALB doctrine would allow service schools to consider and prepare new doctrine and training against a new set of unit requirements.

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Nothing here says that the Army should dump ALB or that it should not remain the preponderant doctrinal preparation. The Army may, however, have to read off more than one sheet of music. Currently, the weight of ALB promises to keep the Army's training and education system from mastering concepts needed to respond to a considerable range of problems at the low end of what we have for years called the conflict spectrum.

than one sheet of music. Currently, the weight of ALB promises to keep the Army's training and education system from mastering concepts needed to respond to a considerable range of problems at the low end of what we have for years called the conflict spectrum. It is hard to say exactly how a utility division is to look, and it may be putting the cart before the horse to structure a unit without a clear doctrinal understanding of what is to be done. However, many aspects of Army employment at the low end of the violence range are already well understood and may be expressed by describing a unit structure capable of accomplishing missions in a low-violence context. With that in mind, I offer the following advice to force planners regarding distinctive details of the utility division's structure.

Give the utility division five brigades—military police (MP), military intelligence, engineer, aviation and combined arms combat. Make the hospital and signals capability larger than normal.

Organize the MPs to provide widespread police patrolling, add a heavy criminal investigation division (CID) capability and the ability to interrogate and house prisoners, internees or refugees on a modularly expandable scale. Give MPs the ability to provide static defense for some installations and ensure a well-developed crowd control

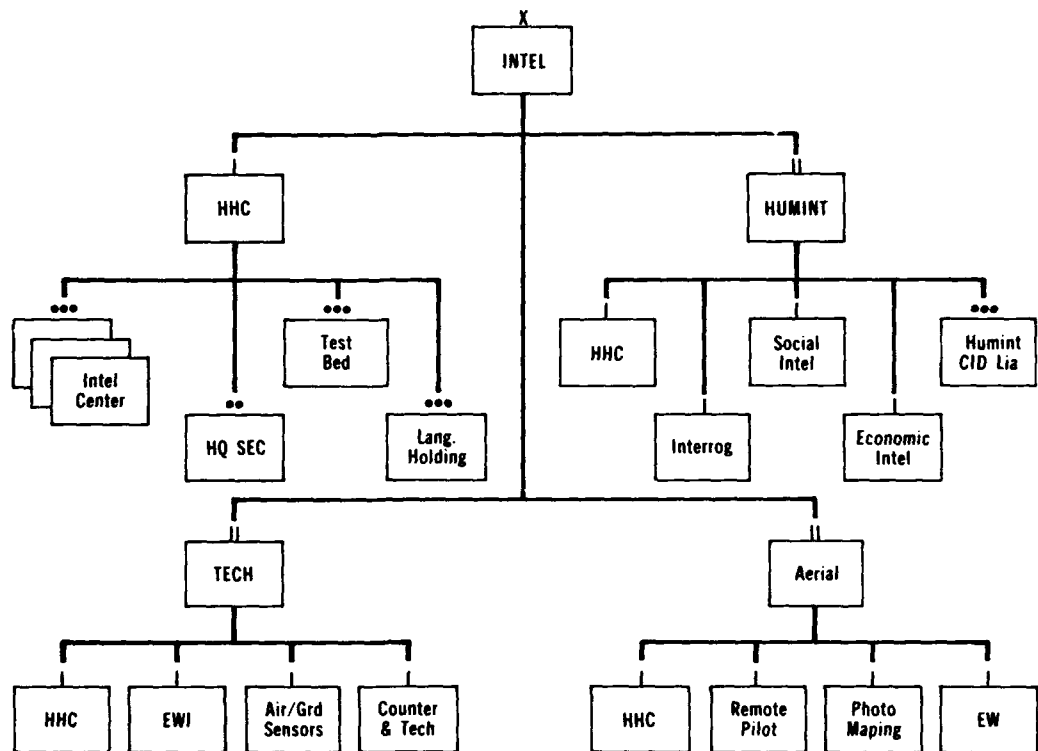


Figure 3

capability. In short, the MP brigade would be the heart of the division's capability to provide stability and security. The MPs would be a first-line countersubversive tool.

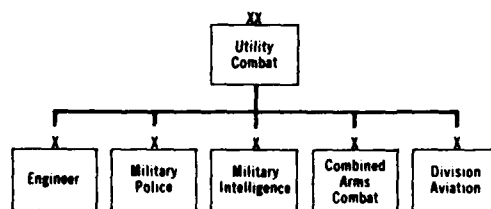


Figure 1

Weight the intelligence brigade toward human intelligence (HUMINT) capabilities with emphasis on the capability to develop overt community intelligence support. Provide the ability for heavy collection of social and economic intelligence.

The engineer brigade needs the capability to construct paved roads, improve airfields, install potable water systems and build public use structures. Roads need improvement

and public infrastructure is in poor repair almost everywhere US LIC forces might be deployed. Even with no other specified civic action or psychological operations (PSYOPs) effort, continuous construction is often sufficient to ensure public credibility and provide legitimacy to US military presence. The engineer brigade is the PSYOP and civil

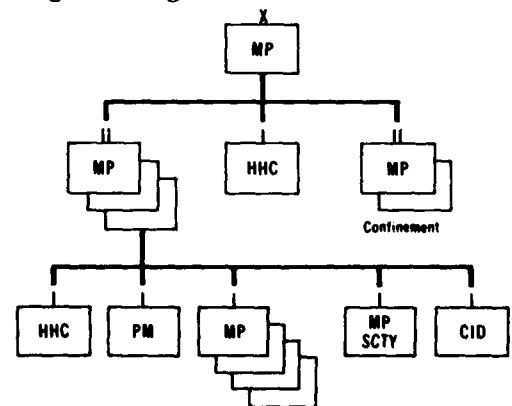


Figure 2

affairs unit of the division in that its work represents an unstated *quid pro quo* justifying foreign presence. In this respect, too, the engineer unit would have to slant its doctrine away from traditional projects and emphasize those that display a genuine concern for long-range protection and improvement of the environment. Projects such as sanitary landfills and reforestation fall within these requirements.

A full aviation brigade would provide the division one of its key operational advantages. It needs sufficient lift to support remote civic action and humanitarian projects and to support the combat brigade if necessary. It would also be profitable to maintain several fixed-wing executive craft to provide liaison to multiple, distant deployments.

The combined arms combat brigade should include a battalion of motorized infantry, a battalion of airborne and air assault infantry, a battalion of artillery and a cavalry squadron. The division would not need organic air defense artillery units or tanks. Transportation support for the infantry battalion can be located outside the brigade. The essential capability of the utility division would not be provided by its combat units, which would have about one-fourth to one-third the firepower of our LID. However, in comparison with most national armies, the division would still have considerable punch.

The commander of the division would just as likely be a general with an MP or military intelligence background as an infantry one. His staff requires an especially heavy judge

advocate general (JAG) office and a very large public affairs office (PAO). Both of these staffs should be elevated in status from special to coordinating. In other words, the coordinating staff group should consist of the usual personnel (G1), intelligence (G2), operations and plans (G3) and logistics (G4),

The guiding concept is not that the division could reach an area of operations more quickly than a more heavily armed unit; instead, the focus is on its long-term potential mission applicability.

These missions would include what we now call rear area security, refugee relief, population control, occupation, counterinsurgency, counternarcotics, counterterrorism, humanitarian action, and so on.

plus the JAG, PAO and the communications-electronics officer. The JAG would continue to be present on the commander's personal staff. Do not create PSYOP or civil affairs units or staffs, and do not designate any officers in the division as either PSYOP or civil affairs officers. This would only create the assumption that these activities were to be added to, or integrated into mission planning. Instead, these are part of the essence of mission planning and should be the understood purview of the commander and his principal staff. The G2 and G3 staffs should be 100-percent integrated, with officers and noncommissioned officers moving from one type of function to the other, regardless of branch. The G2 staff should consist of a small intelligence audit section and civilian agency liaison. That way, all briefing and intelligence center support would come directly from the intelligence brigade in coordination with other intelligence information providers, especially CID.

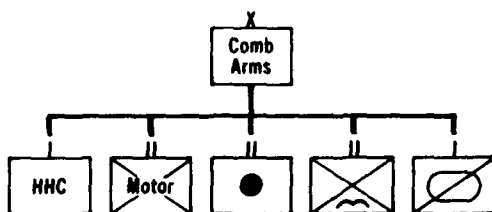


Figure 4

The division should integrate test-beds for new equipment, especially in the areas of computerization and nonlethal weaponry. The very fact of creating a new division structure based on new premises allows

Task organization should not be tied to any concept of direct or indirect support. That vocabulary should be dumped. The division can incorporate each functional element that can be used profitably based on incremental advantage of the participation. There need be no default formula for the number of engineers that would be assigned to a particular size of police force, for instance.

design experimentation that would otherwise be almost impossible, given the weight of the old ways. Tables of organization and equipment should include a radically increased requirement for language training and have sufficient manpower levels to maintain a fixed percentage of assigned personnel detached for language training.

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assigned to a particular size of police force, for instance.

All the above suggestions assume that the combat brigade would be called upon in the nature of a super SWAT team to provide muscle in exceptional situations. If an opposing force has sufficient strength to continually challenge the division's police formula of operations, then it should be assumed that the utility division units would have to be replaced, protected by a standard combat unit or withdrawn. In other words, the police approach of the utility division is not a denial of the wisdom of ALB in the face of an extensive, organized, armed enemy capable of maneuver and massed firepower. As stated earlier, however, we need to set aside part of our force to allow it to work under a different set of constraints.

As presented, the utility division may appear to be little more than a downsized and re-tailored corps support command. But this organization would be dedicated to a different mission and would work under different rules. It would exist as a starting organizational answer to questions about how we might best go about doing the Army job at the "low end." The division is not intended as a support unit, but it could be efficient as a supporting element further up the conflict spectrum. More important, a radical departure from current division structures would provide the testing vehicle for answers to possible Army problems as we face a new order. **MR**

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Ready, Aim, Automate

Colonel David G. Fitz-Enz, US Army

The author points out that the technology explosion has had an effect on the way organizations do business, and in the future, officers and noncommissioned officers are going to have to become involved in the automation arena, whether they like it or not. He discusses some of the reductions that have already occurred and how they will affect the users. He also discusses some of the technological breakthroughs that will see some antiquated forms go by the wayside, replaced by computer-generated forms.

OPERATION Desert Storm transmitted information at the speed of light over signal corps-provided steps to the Southwest Asia Theater. Today and tomorrow, lightning fast information movement is of great interest to the functional user of automation systems. There is little that takes place in the Army which is not dependent on a vital piece of automated information. The battlefield personal computers (PCs) at brigade and battalion levels are tied to the logistic base that connects to the Army standard systems around the world.

While observing camels plodding across an ancient trade route, we could watch an electronic mail (E-Mail) note appear from home as if we had rubbed a magic lamp. Who in the US Army today and tomorrow will not have to learn the nomenclature of hard disk applications, baud rate and random access memory, while maneuver control, computer-assisted technical operating centers produce operations orders? At the workplace, and on the move in the field, the electronic atmosphere of illuminated screens and digital telephones has infiltrated the job. Even the printout is being replaced by electronic screen displays that present updates

from half a world away, allowing us to manipulate data during the planning and execution phases of an operation.

From the past to the present, we have made great strides in providing service to the customer. During the Civil War, information on the battlefield was moved one letter at a time. Early in the war, President Abraham Lincoln was watching the bombardment of Norfolk, Virginia, from Fort Wool across the channel from Fort Monroe as the coast artillery batteries fired in preparation of an amphibious landing of Union troops. Distance and smoke obscured the targets, and fire effectiveness was in question. A Union major volunteered along with several lieutenants and took a boat close to the Confederate shore to adjust the inaccurate fire. Thus, Major Albert J. Myer, the chief signal officer, provided the earliest recorded forward observer service to the guns by the use of signal flags. Within the past 10 years, there has been an explosion and an evolution in the design, development, fielding and usage of automation. During operations *Desert Shield* and *Desert Storm*, the need for compatibility and interoperability reached new heights of sophistication. They highlighted the great



A soldier operating mobile subscriber equipment during a field training exercise.

We must come to grips with the reality that our Army is downsizing, and there will be fewer communications and automation officers to manage automation resources. Consequently, it is incumbent on all officers to have a working knowledge of automation, networks and the ability to transfer data. These tools will become indispensable on the future battlefield, with its immense data flow requirements.

utility and necessity for highly automated command, control, communications and intelligence systems, as well as the need for automation expertise, given the numbers of PCs used on the battlefield and in the combat operations process. However, this evolution was not without cost or the realization that automation was out of control in the 1980s. To enhance efficiency and effectiveness of automation, the deputy chief of staff for Information Management at the US Army Training and Doctrine Command (TRADOC) and the other major Army commands (MACOMs) are progressing to develop comprehensive controls and plans for future automation development and acquisition. We must come to grips with the reality

that our Army is downsizing, and there will be fewer communications and automation officers to manage automation resources. Consequently, it is incumbent on all officers to have a working knowledge of automation, networks and the ability to transfer data. These tools will become indispensable on the future battlefield, with its immense data flow requirements. With this smaller and hopefully more robust Army, automation will allow us to do more with less. Given the trends in technology and corresponding cuts in personnel, organization structures and funding, we must automate where feasible.

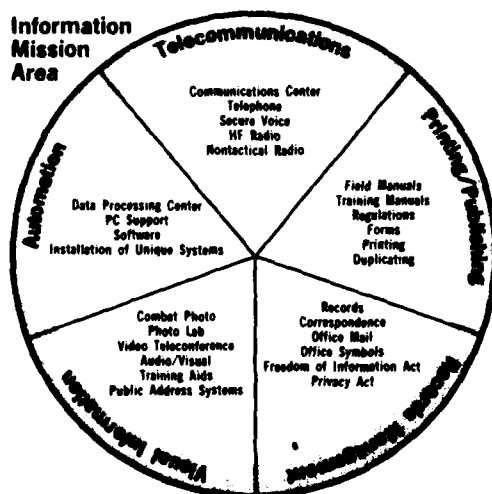
Local signal support elements, area or line battalions and the Directorate of Information Management (DOIM) are charged with providing services in five support areas. It is a combination of communication and automation, together with traditional adjutant general functions. The post editor known to most action officers is found today in the Signal Corps. Much of the photographic support that went to the Public Affairs office is now back at its traditional home, the DOIM. No longer can we look at communication and automation as a utility that we can turn on and off like a light switch. Life in garrison does not leave all this up to the local signal officer. Each installation is filled with functionally automated processors networked across post and beyond. We have been co-opted into more than just users of the automation and communication utility, we are involved, like it or not, in producing automation requirements and functional descriptions.

Now that we know about customer service and structural changes, let us address the big problem, which is the control of information mission area (IMA) funds, interoperability and where we fit. Often a source of frustration, confusion and complaint, the IMA is undergoing reductions that will affect us all (see figure). At the start of the IMA in 1984, the Information Systems Command (ISC) was created to deliver services and an

appetite suppression pill to the MACOMs, which were automating at a high rate, with little control and not a thought to interoperability. However, much of this funding remained outside of ISC, and the authority needed to manage Armywide development of automated systems was not bestowed upon it. Funding during this golden age allowed the MACOMs to buy with little control, and they spent double what was reported to Congress.

The ISC was confined to fielding standard Army systems and installation support modules but had little to do with MACOM functional applications or hardware. Only at the post DOIM operating level did ISC become involved. Here, the functional developer and user required the DOIM to operate and provide support to its ever-evolving programs. Co-opted into supporting nonstandard systems, ISC has tried to bring order to the ever-increasing unique systems and their related expenses.

Additionally, these unique systems are being transported around the Army, and ISC has taken on the task of interoperability of customers' systems that are essentially incompatible. We have gotten ourselves into a fine mess. Congress recognized the problem and said that the Army was out of control.



In 1990, automation dollars were reduced substantially, and restrictions were put on the spending of remaining OPA funds. The

In TRADOC, "ready, aim, automate" has special meaning. The TRADOC commander puts his guidance up front on the first page of the modernization plan. It simply says that not all processes should be automated; some things are done better manually. However, if we do automate, it must save time, money, be cost effective and give a return on investment within two years.

director of Information Systems for Command, Control, Communications and Computers on the Army staff began an aggressive program to gain control of automation. It called for a modernization plan at the MACOMs, servicing all their elements and detailing the architecture to establish a plan with timed implementation. That plan must be approved by the Department of the Army (DA) for inclusion in the Army architecture as portrayed by the Army Architectural Control Committee (AACC), which is made up of MACOM representation. Its charter is to establish control over the interoperability of systems and control the direction of spending for automation.

The MACOM replicates the AACC with its own council that is composed of the MACOM deputy chief of staff for Information Management and the DOIM. In addition, DA directed that each MACOM establish an Information Management Support Council (IMSC). The IMSC at the MACOMs has representation from all major staff sections and activities sitting as voting members. Armed with their commanding general's guidance and their modernization plan, they review each other's automation acquisition requirements and ensure that they fit into the MACOM's planned future. If one wants to spend

OPA and OMA automation dollars, one must present a program in such a way that the fellow members are satisfied with its worthiness. The IMSCs will also prioritize programs with the funding constraints of the MACOM budget. Therefore, not only must we be able to articulate our need, often in technical terms, but we must also judge other proposals that are going to compete for scarce dollars.

In TRADOC, "ready, aim, automate" has special meaning. The TRADOC commander puts his guidance up front on the first page

The ISC was confined to fielding standard Army systems and installation support modules but had little to do with MACOM functional applications or hardware. Only at the post DOIM operating level did ISC become involved. . . . Co-opted into supporting nonstandard systems, ISC has tried to bring order to the ever-increasing unique systems and their related expenses.

of the modernization plan. It simply says that not all processes should be automated; some things are done better manually. However, if we do automate, it must save time, money, be cost effective and give a return on investment within two years.

Like the rest of the Army, the IMA community will receive cuts. Today, more than 11,000 providers work on installations in the Continental United States (CONUS) helping the functionals with IMA services, however, over the next two years, 4,600 spaces will be cut. As a result, centers will be consolidated, equipment modernized and transmissions remotely keyed for delivery. Here is what is coming to replace those people. Changes in telephone technology have brought mobile subscriber equipment to the field, and now the digitally driven telephone can find you on the battlefield. The secure

voice revolution is called STUIII, and hardly anyone noticed it until operations *Just Cause* and *Desert Storm*. Gone are the days of "talking around" classified information on a clear instrument because the automatic secure voice communications is in the headquarters. Gone too is the operator we used to direct to "get me headquarters and call me back." STUIII works; thousands are issued and many include secure facsimile capability. STUIII is owner operated just like the digital field phone. Secure switchboards and communication centers, due to personnel reduction, are closing. The Defense Message System is being installed today, and all unclassified traffic will appear like E-Mail on your PC. No more Department of Defense Form 173 or a special typewriter and selected secretary who has a "knack" for putting information on the form correctly. The originator composes it on a PC and sends it like E-Mail to the releaser, who can change, transfer, coordinate and review it on his or her own PC. Upon completion, the releaser puts on a three-letter code generated by a hand calculator providing an electronic signature and sends it by hitting a single key. Classified traffic is forwarded to classified terminals or the local emergency operation center for notification and pickup. The installation data processing centers (DPCs) are being consolidated.

The DPCs provide service to you at your PC through the remote operation of the local DPC. There is a local information center nearby to help us out of "do loops," but no longer is there any depth to the local programmer that we have all depended upon. The functional user needs to make provision to broaden the automation knowledge base internal to his or her staff. Many common installation processes in the Army are being built into Army Standard Information Systems and others into installation provided to functional areas. A CONUS-based army ready for deployment will use the above via long-haul satellite links and operate re-

motely in the same manner as if it were still at Fort Benning, Georgia. More and more officers of all branches are learning they must be well rounded in automation and communications. In the next three years, a more compact and lethal force will evolve with fewer signal personnel to plan and execute traditional signal functions. Accordingly, young officers should think about Specialty Code 53 when choosing their functional fields.

The MACOM commanders are involved. The TRADOC commander has imbedded the new technology in this smaller Army because it cannot afford to train in the traditional way. The TDA (table of distribution and allowance) Army has taken its cuts as well, and we must find a cheaper way to field a qualified soldier. As strengths drop to less than 75 percent, it turns to distributed training and simulation to pay the bill.

Nothing could be more automation intensive than simulation. No longer does the post signal officer solely act to deliver you a neat, finished package. Functionally knowledgeable Army officers from other branches are becoming automators as well, while working with the signal provider. There is a new team being formed in this Army. Without the knowledge of the functional user coupled to the procurement process for all that new "stuff," requirements will not be fulfilled. We cannot simply "hire some go-between" because we have no translator; the functional user must learn the language if he or she is going to communicate with the native. We have tried it the other way, and the failures have been noteworthy. Resources for the future of the IMA have been severely cut and have caused the structure of the ISC

to change radically. Largely a stovepipe command, it will take on a reduced role. Still king of strategic communications, systems engineering, acquisition standards, software development and communication systems, it

DA directed that each MACOM establish an Information Management Support Council [with] representation from all major staff sections and activities sitting as voting members. Armed with their commanding general's guidance and their modernization plan, they review each other's automation acquisition requirements and ensure that they fit into the MACOM's planned future.

will no longer own or operate the local post facilities. The DOIM will be an element under the installation commander. DOIM will be vastly reduced in strength, yet ready to serve customers with new technology. When DOIM runs out of assets, added capability to do the job will be found at the MACOMs or by looking to the general support of ISC. The ISC's cuts are large as well, and it is struggling to maintain the mission while losing money and personnel.

Why go to all the trouble of getting into the morass of automation? Within areas of interest, there are going to be fewer officers and civilian helpers in this shrinking Army. One way to get more production from the remaining personnel is to automate wherever you can; automation is the way ahead. It will provide a great return on investment, but only if commanders get involved and make it happen. **MR**

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The Movable Fortress: Warfare → in the 21st Century

Major Ralph Peters, US Army

The author looks at the use of fortresses of differing types throughout history. He observes that the technology of today affords commanders a "mobile" fortress. During operations Desert Shield and Desert Storm, the coalition forces used such technology to prevent the Iraqi forces from effectively attacking the coalition and from defending their own positions once the air and ground wars were launched. Finally, he argues that despite our recent successes in the Gulf War, many unanswered questions remain.

UPON FINDING themselves threatened by a Persian invasion, the ancient Athenians turned to the oracle for advice. The oracle—one of the first defense consultants on record—responded that Athens would be saved by her "wooden walls." So, the Athenians packed their duffel bags, avoided a decisive land engagement and splashed the neophyte Persian sailors into a watery grave at Salamis. The oracle's stock went up.

The Athenian navy served as a "movable fortress." Other examples followed. Before the degeneration of the Roman legionary system, each day's march concluded with the drill of swiftly erecting a fortified camp, moving civilized defenses into the domain of the barbarian. Various militaries tried, with greater or lesser success, to carry the security of a fortified base with them wherever they went. The legacy crosses tremendous cultural and technical boundaries, from the *Wagenburg* of the Bohemian Hussites and the defensible corrals of the Zaporozhan Cossack Brotherhood, through the eternally entrenching Army of Northern Virginia in the battles of 1864, to the theoretically

impenetrable seaspace and airspace surrounding the contemporary carrier battle groups of the US Navy.

Whenever and wherever this highly specific approach to warfare has cropped up, it has been guided by one underlying principle: the exploitation of the inherent strengths of the defense to facilitate the offense by allowing the commander to dictate the terms of battle—whether he is attacked in his fortifications by a rambunctious enemy, or when he conducts his own attack from the advantageous position into which his use of the "movable fortress" concept has allowed him to maneuver. The discriminating use of field fortifications by commanders who understood the holistic nature of military operations did not and does not automatically imply defensive mindedness. Rather, it shows a judicious regard for security problems and a grasp of the importance of economy of force. The problem lies in identifying the type of fortifications appropriate to a given military-historical environment.

It has become a truism that the evolution of military art passes through alternating phases, driven by technological or organiza-

tional development, when either the defense or the offense is in the ascendant. The most noteworthy military disasters of the modern age have occurred when one belligerent's military grasped, however incompletely, the shift in the paradigm before its opponent. Inconclusive—and bloody—results occur when neither side intuits the historical shift occurring all around them. World War I saw the unplanned, almost accidental creation of immovable field fortifications on the Western Front, with each side, in turn, erupting in compulsive, ill-considered attempts to penetrate the sand-bagged, muddy walls of the enemy's defenses. The Great War—a cultural, as well as a military watershed—left a pervasive hangover, aggravated by the negative utility of the Maginot Line and Belgian fortifications in the early years of World War II. Fortified systems of any kind—fixed, field or improvised—were damned to military perdition, despite the tolls exacted by the unimaginative Siegfried Line defenses in the vicinity of the Hürtgen Forest; by the island defenses of the Japanese army; or by the tunnel and bunker systems of Vietnam. Even as *we* dug, we damned the digging, viewing foxholes and mortar-proof dugouts as regrettably necessary diversions along the path to aggressive and unfettered attacks.

It is not the purpose of this article to argue for imaginative new foxhole systems. The goal is to argue for an entirely fresh consideration of the synergies defensive components offer to offensive operations in the current historical cycle and to point out that we are already acting accordingly on a colossal scale without conscious realization.

During operations *Desert Shield* and *Desert Storm*, the US Armed Forces erected a tremendous technology-based "fortress" in the deserts of Saudi Arabia. That fortress had moving, often invisible walls synthesized from a broad yet not fully integrated range of combat and support systems. We spied on our enemy from "towers" that reached above the earth's atmosphere and

we lowered electronic "drawbridges" to send our aircraft to strike our enemy in his camp. This provides one of the most interesting insights into the Gulf War. Our enemy was

Perhaps we are entering a new age of "castle building" as well. The Strategic Defense Initiative—representing the first time that the US government has sought to fully and adequately protect our population—can trace its lineage back to China's Great Wall and the Roman limes—systems which proved successful for centuries.

consciously aware of the intrinsic value of field fortifications, but he designed them for an earlier technological age; we instinctively built the fortress of the new age in the best tradition of Roman legionaries marching against the degenerate empires of the east. Our electronic, counterballistic, fixed-wing and mobile-armored "walls" proved statistically impenetrable. Our enemy saw only what we let him see, heard only what we let him hear, and he could not penetrate our "fortress" systematically or accurately, let alone decisively. Then, when we were ready, we attacked—and we took many "ramparts" of our defenses with us as we crossed the border into Iraq. The enemy could not see through an atmosphere we electronically polluted, he could not fly against us or maneuver against us and, blinded, even his artillery proved nearly useless. He could not see over our "walls," and he found himself in the position of the tribesman desperately sending arrows over the nearest Roman breastwork in the forlorn hope of hitting something, anything.

Perhaps we are entering a new age of "castle building" as well. The Strategic Defense Initiative—representing the first time that the US government has sought to fully and adequately protect our population—

can trace its lineage back to China's Great Wall and the Roman *limes*—systems which proved successful for centuries. We, as civilization's sole-surviving parent, will not, however, be able to withdraw from our global

The US Armed Forces erected a tremendous technology-based "fortress" in the deserts of Saudi Arabia. That fortress had moving, often invisible walls synthesized from a broad yet not fully integrated range of combat and support systems. We spied on our enemy from "towers" that reached above the earth's atmosphere and we lowered electronic "drawbridges" to send our aircraft to strike our enemy in his camp.

responsibilities. This text is absolutely not in sympathy with proponents of an isolated fortress America—demagogues who have more in common with backward-looking Islamic fundamentalists than with responsible citizens of the only super or great military power left standing at the end of a suicidal century. Realistically, we must continue to prepare for future wars across the spectrum of conflict. Many technological aspects of the paradigm offered here may not, for instance, apply in low-intensity conflict. However, when we deploy conventional forces beyond the turn of the century, we will send "movable fortresses" built of the capabilities of all the services, as well as those of the intelligence community. This is the trend. We will do it whether or not we plan for it—so we are clearly better off if we begin now to work out and accustom ourselves to the emerging structures of future military operations.

What will these movable fortresses look like? Let us consider the matter, literally, from the top down. During the operations that drove a foreign oppressor from Kuwait, satellites provided critical support in three

areas: intelligence, communications and locational data for friendly forces. The vitality of each of these support measures and the importance of satellites as their material instruments will increase geometrically. Overall, the current generation of combat commanders still cannot bring itself to admit the tremendous relative importance of intelligence and communications relative to traditional combat means. In the new century, these disciplines—the "know-talk" complex—will become the keystone of all military operations. In view of our success in the desert, it could be argued that intelligence and communications are already so far along the ascendant curve that they may be the only completely indispensable battlefield disciplines. While eliminating any other single tool in the military toolbox might seriously hamper military operations, it is virtually impossible to wage a successful conventional war today if you cannot see the enemy and transfer data efficiently. What good are precision weapons without precise targets? What is the purpose of high-tech air defense missiles without the capability to provide early warning, target tracking and target assignment? The best-equipped and best-trained maneuver units could only meander about like marauding bands (and plump targets) without the support of a robust and fast command, control, communications and intelligence (C³I) system. After all, the wonderfully successful thermal sights on the M1-series tank are essentially intelligence-collection systems.

We have already built a military that is dependent on "brilliant" intelligence and unimpeded communications. Now, the sole efficient material means for further enhancing those disciplines are improved and more numerous satellites. We must also improve our intelligence and communications systems, both for reasons of military necessity and to placate generals whose expectations are always a step or two ahead of actual capabilities (note the whining complaints



A 1st Infantry Division soldier checking his position with a Small Lightweight GPS Receiver (SLGR).

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about inadequate intelligence support during our Gulf War—when commanders received the most complete, accurate and timely intelligence picture in the history of warfare). Our appetites for information have grown so enormous that we will likely always be racing, at times unsuccessfully, to keep up with the demand for data collection processing and transmission. When today's division commander declares that the answer to a communications overload is to reduce, draconically, the amount of information passed between headquarters, he means well but is thinking in terms of bygone wars. Although there will always be some inevitable wastage internal to communications systems, both human reliant and machine driven, its effect is statistically negligible. We simply have entered a new age of warfare in which various kinds of data are as critical as ammunition and fuel. Perhaps it would be easier for old soldiers to grasp the situation if we created a new class of supply—Class XI: Information.

To a baffling extent, our situation within the Army is schizophrenic. "Warriors" seek to wear the mantle of the commander, but they are loathe to admit the importance of the technical tools of command. A warrior will confess in maudlin tones that he "never could have done it without his fine soldiers" or his subordinate leaders. The more enlightened commanders may even admit that the quality of their combat vehicles gave them an advantage. But you will search long and hard to find a commander who admits (or believes) that he won an engagement or battle because his C³I system outperformed that of his enemy. Collectively, we are anxious to worship the hero, to praise the successful battlefield commander. But the thought of crediting the system that enabled him to command effectively never occurs to us.

Yet, we have already reached a critical juncture in the development of military organizations. Within our forces, the needs of firing technologies sponsor the development of

support systems—such as the C³I infrastructure. However, the ability to gather, sort, analyze and disseminate information has already become critical to battlefield success. It may be time to design the control

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system first, based on the full range of technological possibilities, then to select individual combat systems for acquisition based upon their ability to integrate most effectively into the control system. Actually, this approach is not without numerous historical precedents. Throughout military history, successful military establishments based their organization and battlefield formations on the existing technology of control. To cite just a few examples, the Romans, when they chose to rely primarily on highly disciplined infantry forces instead of uncontrollable masses of cavalry, made exactly this sort of decision. A millennium later, the unprecedentedly successful Mongols designed their cavalry formations specifically to facilitate control in battle. In a sense, it is the soldiers of the mechanized age who are out of step with history, acquiring killing machines based upon their raw mechanical capabilities, then cobbling together a control system that barely meets battlefield requirements. We let the fists lead the brain.

Satellites may eventually provide other kinds of support, as well. If the Strategic

Defense Initiative continues to receive funding, albeit reduced, satellites may, within our lifetimes, if not necessarily within our career spans, provide defensive and offensive fire support to operational and tactical commanders. But even if we should not choose, for whatever reason, to pursue the development of battle satellites, the importance of the "non-shooters" will continue to grow. Sincerely concerned officers will caution against an over-reliance on satellites due to theoretical vulnerabilities. But, unless those officers can come up with a better alternative, they will increasingly find themselves in the position of old soldiers arguing for the retention of the pike in the age of rapidly improving firearms.

Within the atmosphere, air forces—manned aircraft, drones, missiles and cruise missiles—will have the mission of protecting our fortress while besieging that of the enemy. The priority targets will be the enemy's satellites, if he possesses any; then his atmospheric collection and control platforms (Airborne Warning and Control and Joint Surveillance and Target Attack type systems and their future variants); the enemy's ground-based collectors, command and control; and the enemy's physical ability to deliver ordnance. At the same time, our defensive priorities will be to protect our own versions of those same systems we seek to strip from the enemy's arsenal. Simultaneously with the easy-to-conceptualize physical attacks, we will fight an electronic battle of scope and complexity that will confirm the electromagnetic spectrum as the new—and ascendant—dimension of warfare. The former Soviet military's appreciation of our achievements in the desert credits, above all, our victory in this invisible dimension as crucial to our general success.

Now, the Army's concept of electronic warfare is primitive in comparison to that of the Navy or Air Force. If we wish to remain a fully competitive service, we must address this lag with vigor, simultaneously seeking



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to better coordinate (and eventually seamlessly join) our electronic warfare efforts with those of our sister services. Generally speaking, the movable fortress of tomorrow's wars will be jointly built and jointly occupied. In the interests of economy, efficiency and military common sense, we must seek to do a far better job in preparing to wage a truly joint style of warfare. Even as we develop specialized service-peculiar skills, we must increasingly think in terms of one overarching unified war-making system including each of the uniformed services. Paradoxically, the Army is now probably better prepared psychologically to cooperate externally in the joint arena than it is internally. Previously preeminent branches are struggling to assert their continued dominance in an age where many traditional branch distinctions are actually detrimental to efficient contemporary warfighting.

When a soldier uses a thermal sight or a

laser range finder, or when a missile homes in on a radar emission, that is as much electronic warfare as the attempt to jam an enemy's radio transmission. In the future, we will build electronic walls in front of our own forces and electronically surround enemy formations. We will invade computer or post-computer systems and engage in environmental manipulation that renders our enemies electronically or even physically incapable. If any of this sounds farfetched, the reader should attempt to stand back for a moment and consider how much of this we have already done. More than half a century ago, Britain's "walls" consisted of a combination of radar and aircraft—and the German siege failed. Every decoy emitter is a tool for environmental manipulation—as was setting fields ablaze across the path of an advancing enemy or altering the local atmosphere with poison gas or smoke. A future enemy that we can electronically disarm will

US Air Force personnel examine the remains of an Iraqi MiG-25 destroyed in its hardened shelter by a laser-guided bomb, Jalibah Air Base, March 1991.



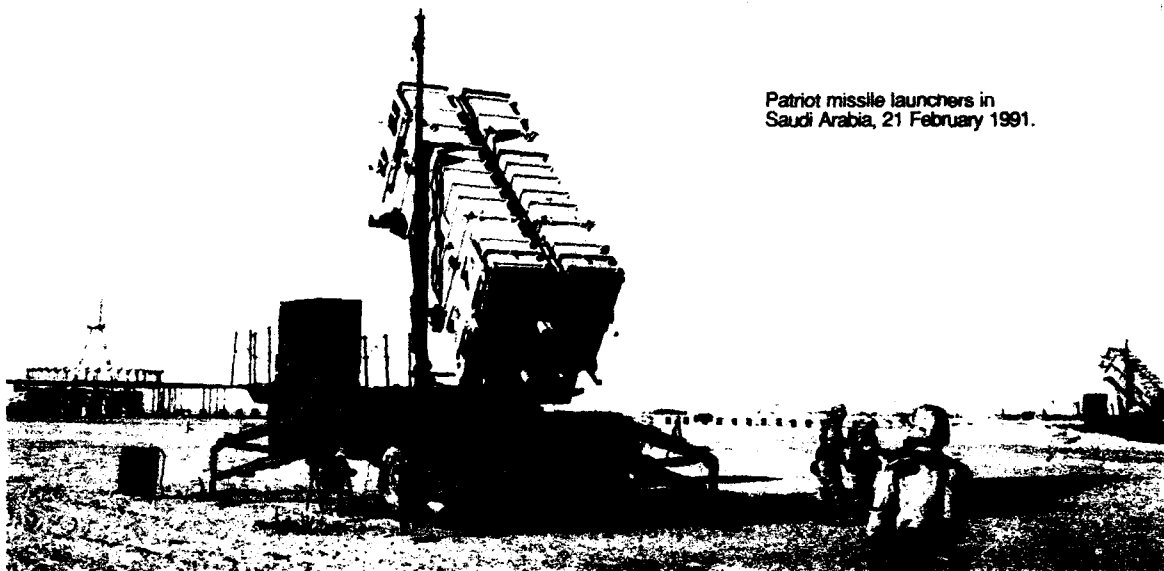
When a soldier uses a thermal sight or a laser range finder, or when a missile homes in on a radar emission, that is as much electronic warfare as the attempt to jam an enemy's radio transmission. In the future, we will build electronic walls in front of our own forces and electronically surround enemy formations. We will invade computer or post-computer systems and engage in environmental manipulation that renders our enemies electronically or even physically incapable. If any of this sounds farfetched, the reader should attempt to stand back for a moment and consider how much of this we have already done.

find himself as helpless as were the astonished Iraqi forces who found their combat vehicles exploding deep in their own country before they even knew that coalition forces had crossed the border.

One lesson of that war—one which cannot be repeated too often—is that the key to success on the contemporary battlefield is not the possession of technically competitive armaments, but the ability to effectively integrate and control those systems.

The role of air defense forces has already expanded dramatically, both in scope and in importance. Understandably, the Army historically has undervalued air defense forces. Except for a number of engagements at the very beginning of World War II, the Army Air Corps and then the Air Force have successfully kept the skies above our heads clear of

enemy aircraft. We have no idea what it is like to be pounded day after day by enemy air power. We would likely not have to worry much about it now, were it not for the belated realization by emerging powers that rockets and missiles are relatively cheaper than high-tech aircraft and far easier to support and employ, terrifying and occasionally, militarily effective. As of this writing, we are witness to a great historical drama as elements of the Islamic world struggle to acquire nuclear warheads and long-range missiles before Israel can develop or purchase an antimissile system with the capability to reliably intercept those missiles beyond Israel's borders. US expeditionary forces will require more and better air defenses for essentially the same reason. Even as we in the West enthusiastically



Patriot missile launchers in Saudi Arabia, 21 February 1991.

US expeditionary forces will require more and better air defenses for essentially the same reason. Even as we in the West enthusiastically divest ourselves of much of our nuclear capability, our potential opponents increasingly see nuclear weapons as the only potentially effective weapon against the deployment and establishment of a movable fortress of American arms that otherwise will guarantee their military destruction. The Patriot air defense system, for all its imperfections, truly did introduce a brand-new element into the complex battlefield equation.

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The traditional combat arms will each continue to play an important role in the foreseeable future. Obviously, after we have located the enemy, divined his intentions, fashioned our plan and communicated it, we still need the means to reach out beyond the walls of our fortress and destroy him. But the relative importance of each traditional arm shifts from battlefield to battlefield—especially as the world's armed forces, constrained by the soaring cost of major weapons and support systems, make self-defining acquisition choices and become more asymmetrical in relation to one

another. Furthermore, new elements and mutations will be introduced, and the established combat disciplines will need to make room for them. The contemporary attack helicopter is a powerful tactical (even operational) weapon system. But there are still armor commanders who ultimately dismiss it with the comment that "helicopters cannot hold ground." Well, tanks cannot fly either. The point is, we must regard developing technologies and innovative weapon systems not as usurpers, but as welcome augmentees.

It is, of course, human nature to insist that the branch or arm to which we have dedicated our adult lives is the king or queen of battle. Soldiers are proud by the very nature of their elective being. However, we must not let pride stand in the way of effectiveness in combat. While we cannot and should not blindly embrace every new, unproven technology, neither can we continue to insist that what was good enough for Generals George S. Patton or H. Norman Schwarzkopf is good enough for us. We have already

reached a point where the traditional branch divisions are hurting our overall capabilities—and the struggle for shares of a declining defense budget will only aggravate the situation.

Branches do not win battles. Increasingly, even entire services do not win battles by themselves. It is the coordinated total effort

It has become almost a rite of passage for every "serious" military theorist since Italian General Giulio Douhet to declare that traditional distinctions between the military and civilian populations have broken down. . . . We ponder and nod thoughtfully. Yet, despite overwhelming evidence to the contrary, we still pretend there is a great gulf of merit between those who wear infantry brass and those wearing ordnance or transportation insignia.

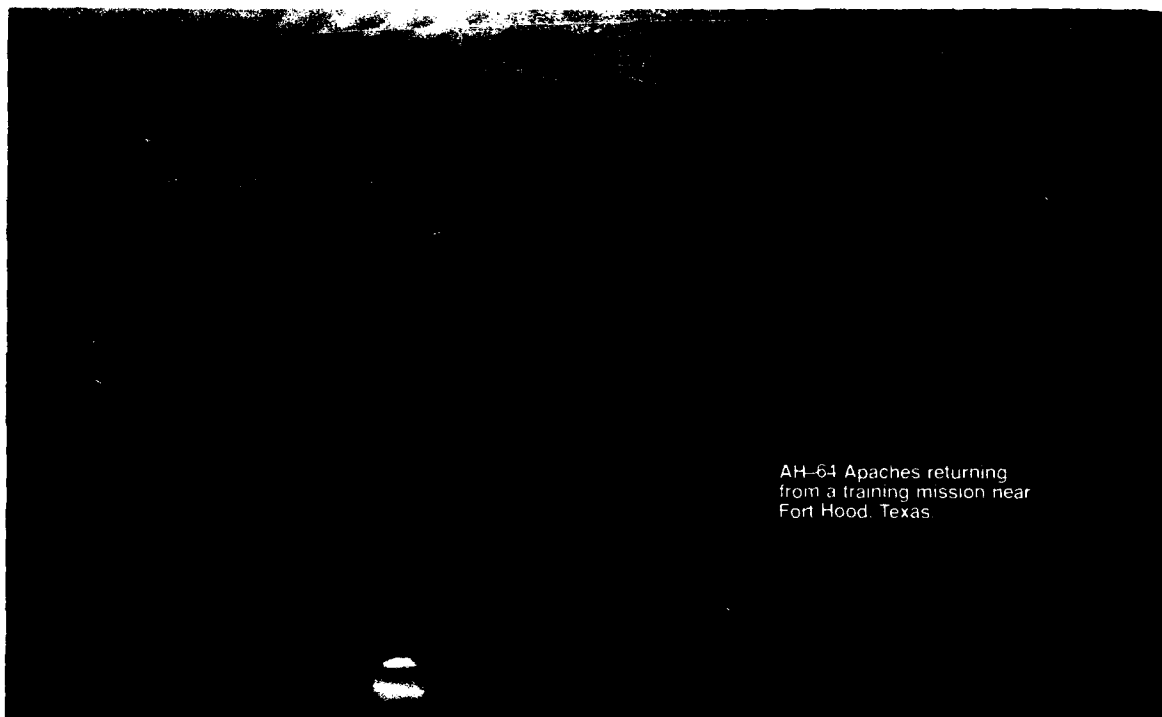
that wins. During our buildup and operations in the desert, the accomplishments of our service support troops were truly heroic, and our system of awarding medals for heroism shows how imprisoned we are by historical concepts of warfare. The magnificent military-technological fortress we built in the Gulf would have been impossible without the enormous, costly, effective support infrastructure for which the US military has so often been taken to task by military analysts who never laced on a combat boot. If the "American way of war" is material intensive, then we should stop apologizing for it and be grateful that we serve a country that has the capability and wisdom to field such effective means. Textbook calculations of tooth-to-tail ratios tell us virtually nothing today—we live in an age when conventional warfare cannot be waged effectively without a highly developed logistics system. Ultimately, what matters is not how many support personnel stand behind each infantryman, but how

well they support him. It should not trouble us much if our Army has a higher density of computer operators than the Army of the Potomac. It is a fallacy to judge a system by internal component ratios—what matters is the overall effectiveness of the system. "Tooth" arms do not have much bite if the gums are rotten.

Contemporary and future combat operations are and will be continuous in their execution, with only local pauses in direct combat activities. We will be increasingly unable to call a halt to combat while we sedately resupply and reorganize. Obviously, these round-the-clock operations—carried out for days, weeks and months on end at the operational level—require a greater support infrastructure than did yesterday's armies, which fought their battles and then caught their breath. We operate a wide range of fuel-thirsty, parts-hungry, high-strung combat systems that render many traditional support methodologies obsolete, and we cannot claim that the Apache pilot is X number of times more important than the Apache mechanic. Both soldiers are part of a greater collective system. The swaggering combat soldier, proud that he is "no stranger to danger," should consider that the single greatest casualty-producing incident of our Gulf War involved support troops. Were they less brave?

It has become almost a rite of passage for every "serious" military theorist since Italian General Giulio Douhet to declare that traditional distinctions between the military and civilian populations have broken down in the age of total war, then nuclear war. We ponder and nod thoughtfully. Yet, despite overwhelming evidence to the contrary, we still pretend there is a great gulf of merit between those who wear infantry brass and those wearing ordnance or transportation insignia. In the age of the movable fortress, there are equal risks and responsibilities for all.

So the moving walls of our expeditionary



AH-64 Apaches returning from a training mission near Fort Hood, Texas

The contemporary attack helicopter is a powerful tactical (even operational) weapon system. But there are still armor commanders who ultimately dismiss it with the comment that "helicopters cannot hold ground." Well, tanks cannot fly either. The point is, we must regard developing technologies and innovative weapon systems not as usurpers, but as welcome augmentees. . . . Branches do not win battles. Increasingly, even entire services do not win battles by themselves.

fortress will be composed of ever-more complex and mutually supporting offensive and defensive systems (with even those traditional distinctions breaking down), manned by officers and soldiers with a vast range of specialized and general expertise. This legion will construct and operate from a base that the enemy cannot decisively penetrate, either physically, visually or electronically. From that base, we can strike swiftly, accurately and decisively, expanding much of the fortress protection to cover our air and ground maneuver forces as they move. Wherever we must halt, we will build our defenses again in four dimensions—vertical, horizontal, in depth and in the electromagnetic spectrum. The range of actual defenses may reach from a fighting position prepared by a blade tank to an artificial star that watches over us from the heavens. We will not make an artificial choice between

offense and defense—we will exploit the strengths of both.

At present, there is no other power that can deploy a movable fortress on such a scale. With the exception of the military of the Commonwealth of Independent States, there is no military establishment that mirrors our capabilities, even on its home territory, to any remotely comparable extent. The world remains a dangerous place, but with the exception of renegade nuclear weapons from the old Russian Empire, the integrity of the United States is not presently threatened by foreign military powers. Thus, in an era when declining budgets force hard choices on us, we can afford to accept a previously unthinkable level of risk, and it now appears that we will take that risk in the proper areas. Thankfully, we do not need a complete new generation of combat systems immediately. We can afford to concentrate

on retaining a force structure that still allows some measure of strategic and operational flexibility while investing in research and development of the generation after

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next of military systems. At the same time, we can focus on buying lift capability in the interim so that we can deploy those very capable systems when they come on-line in the next century. We are only at the beginning of an age of technological innovation that will expand military capabilities more profoundly and swiftly than we can currently imagine. By making the proper choices now, the United States may be able to position itself to remain the world's dominant military power throughout the next century. The Pax Americana, whose obituary has so often and so prematurely appeared in print, may be extended into an era of unprecedented peace, progress and prosperity for mankind.

We must never underestimate mankind's capacity for mischief. The weight of that Pax Americana will ultimately rest on the shoul-

ders of the American soldier, sailor, airman or Marine. The quality, political morality and will to win of our men and women in uniform are our ultimate fortress.

Finally, the paradigm of the movable fortress is offered here only as a stimulus to thought. It does not matter whether this particular construct is accepted as valid; what matters is that we try to think more clearly about the future of warfare. Our operations in the desert were so remarkably successful that we are in danger of convincing ourselves that we already have achieved near perfection and need only a few slight turns of the screwdriver to set everything right for tomorrow's war. But we live in an age of such geopolitical variety and accelerating technological change that we must always seek fresher, better means to help us understand the nature of future military operations. To an extent, our lopsided success in the Gulf may have partially blinded us to the breadth and depth of the ongoing changes in the military sphere. Only an equally capable or nearly equal opponent could have revealed fully the extent to which warfare has evolved—and, thankfully, we did not face such an enemy. Looking below the veneer of civilization acquired by Iraq reveals that we really faced tribesmen with tanks. The true Iraqi deficiencies were not material, but lay in their utter inability to comprehend the synergies of modern war.

It lies within our means to build great expeditionary fortresses unlike any the world has ever seen before. But, even as we organize and train to deploy those "magic walls," we must guard against the tendency to hunker down behind intellectual barricades, convinced that we have found all the answers we need. **MR**

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MR World War II Almanac



The Combined Bomber Offensive, 1943

Christopher R. Gabel

On 10 June 1943, the British-US Combined Chiefs of Staff reached an important milestone in the history of coalition warfare: the inauguration of the Combined Bomber Offensive against Germany. Later evolving into Operation *Pointblank*, this program established common goals for the strategic air forces of the two nations.

The logic of this seems obvious. The British and US strategic air arms were operating from the same base (England), against the same objective (Germany). Their aircraft possessed comparable performance characteristics. The intelligence and communications services of the two forces were interlinked. Finally, they shared similar views on the role of airpower in warfare.

If British and US armies, navies and tactical air forces could combine their efforts, as demonstrated in the then recently concluded North African Campaign, reason suggests that strategic air forces could do the same. However, coalition warfare often develops a logic of its own. Rational in its broad concepts, the Combined Bomber Offensive floundered on the details.

Although the British and US air forces shared many characteristics, there remained significant

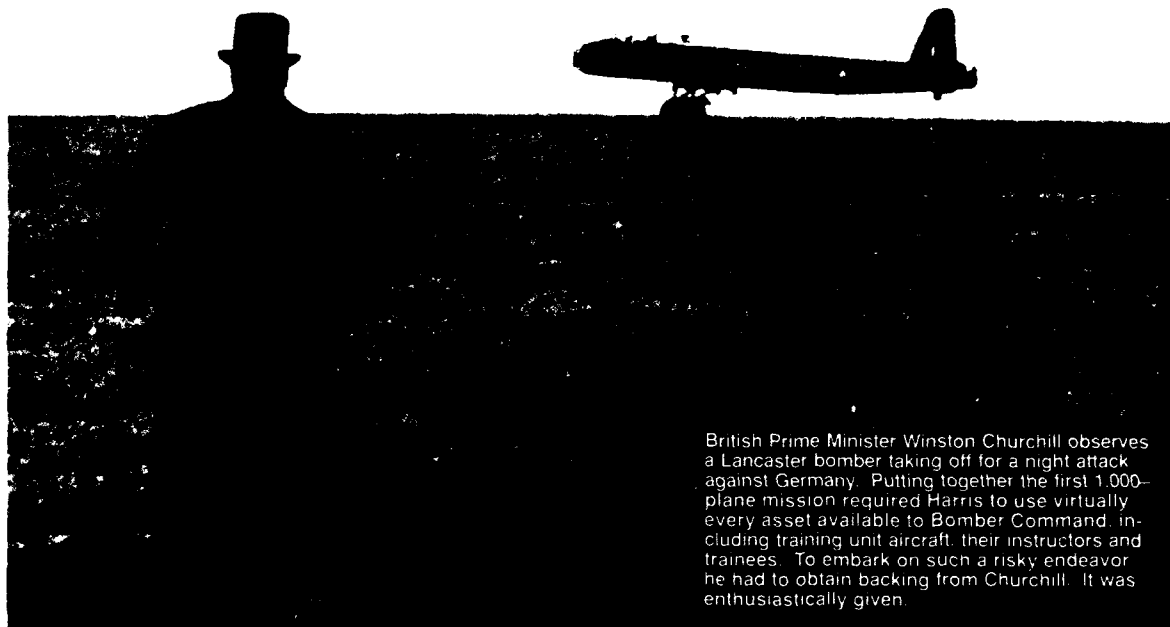
differences in organization, doctrine and technique. Since its inception in 1918, Britain's air arm, the Royal Air Force (RAF), focused on the bomber as its main instrument. Except for the period 1938-1940, when the need to defend British airspace placed increased reliance on the RAF Fighter Command, the RAF Bomber Command enjoyed pride of place. Indeed, defeats on land and sea in the early years of World War II left Bomber Command as the only element of British military power capable of carrying the war to Germany.

By contrast, neither airpower nor bombing occupied such a favored place in US military planning. Not until 1935 did the US air service possess a component designated for operations independent of the land battle. It was only in 1941 that the Army Air Forces (AAF) secured a degree of independence from the ground combat arms. Through much of the interwar period, official doctrine relegated air power to the support of ground troops.

This did not prevent the Air Corps Tactical School from creating an unofficial doctrine for strategic bombing, however, and in 1941, the War Department gave its approval to the concept. In



B-17E/Fs on a training flight from Hendricks Field, Florida, circa 1942.



British Prime Minister Winston Churchill observes a Lancaster bomber taking off for a night attack against Germany. Putting together the first 1,000-plane mission required Harris to use virtually every asset available to Bomber Command, including training unit aircraft, their instructors and trainees. To embark on such a risky endeavor he had to obtain backing from Churchill. It was enthusiastically given.

September of that year, the AAF drafted a document called AWPB-1, which indicated how airpower should be used in the imminent war against Germany.

First, the AAF would secure air superiority through the bombing of German airfields, aircraft factories and related industries. Then, the bombers would destroy selected industries vital to the German war effort: electric power plants, transportation centers and petroleum industries. Having thus deprived Germany of the ability to fight, AAF would then destroy its will through attacks on urban centers.¹ The raids against Germany would feature precision daylight bombing using mass formations of heavy bomber types, specifically, the four-engine B-17s and B-24s.

Curiously, although Bomber Command was deeply involved in a shooting war by the time the United States drafted AWPB-1, British concepts of strategic bombing were less well defined. One might almost say that Bomber Command arrived at its doctrine by a process of elimination. Heavy losses during operations early in the war persuaded Bomber Command that daylight bombing was unfeasible. Fighter Command reinforced this lesson in 1940 through its victory over German daytime raiders in the Battle of Britain.

This left night bombing, which incurred fewer casualties but raised a host of new problems. Foremost among these was a sharp decline in bombing accuracy. Bomber Command discovered in 1941 that many of its aircraft never found their targets during night raids; of those that did, only one out of three placed its bombs within 5 miles of the intended target.² The only solution available, at that time, was to assign huge targets: industrial centers (as opposed to individual factories) and the urban areas that surrounded them.

Thus was born the doctrine of "area bombing" that, British leaders hoped, would deal a fatal blow to Nazi Germany, precluding the need for a major land campaign. Under this doctrine, the destruction of German morale was at least as important as the physical damage inflicted.

The year 1942 brought a number of developments that greatly enhanced Bomber Command's ability to execute its area bombing doctrine. Foremost among these was the arrival of a new chief of Bomber Command, Air Marshal Arthur "Bomber" Harris, who believed passionately in the viability of area bombing. Harris focused Bomber Command's efforts on mass raids that sent the maximum number of aircraft possible on repeated strikes against selected targets. On the night of 30-31 May, with Cologne as the target, Bomber Command mounted the first of many "thousand-plane raids."

Technological and doctrinal developments in 1942 further enhanced the power of Harris' nocturnal hammerblows: four-engine bombers to replace the twin-engine types that had been carrying the brunt of the offensive; radio navigation aids; specialized Pathfinder units to mark targets; and an increased reliance on incendiary bombs. Thus, by the time the United States joined the air offensive over Germany, area bombing was a going proposition.

Eighth Air Force, the US component in the strategic bombing campaign, established its headquarters in England on 18 June 1942. Although the newcomers respected Bomber Command for its accomplishments, they retained their faith in the doctrine of daylight precision bombing. The US leadership was skeptical of British assertions that enemy morale would collapse under the stress of Harris' area bombing campaign. Nor



Over a third of the 107 bombers to attack the Focke-Wulf factory near Bremen can be seen spread across the expanse of this photo. Aggressive fighters and lack bursting short of the bombs in the foreground knocked down 16 of the attackers in this 17 April 1943 raid.

were US air planners as outspoken in their belief that bombing alone could defeat Germany.

For their part, the British hated to see the newcomers pin their hopes on the "discredited" practice of daylight strategic bombing. Even the Americans admitted that the B-17, which first flew in 1935, might no longer be able to protect itself against newer generations of fighter aircraft. In other words, there existed a major doctrinal gulf between Bomber Command and Eighth Air Force even before the latter had flown its first mission.

On 17 August 1942, 18 B-17s, accompanied by a strong escort of British fighters, opened the US strategic bombing offensive with a successful raid against Rouen, France. Over the next eight months, Eighth Air Force gradually gained strength, mounting efforts that appear tentative when compared to Bomber Command's thousand-plane raids.

The largest US operations in this period involved about 100 heavy bombers, with 60 being more typical. Most targets lay within or near the range of escorting fighters and included U-boat pens, railroad yards, industries and *Luftwaffe* airfields. On 27 January 1943, Eighth Air Force mounted its first raid over Germany proper (Wilhelmshaven) and, on 26 February, struck the Ruhr industrial area for the first time. Bomber losses throughout this period generally remained below the 5 percent per raid that the United States considered acceptable.³

This was the state of affairs in the spring of 1943 when the Combined Bomber Offensive was promulgated. Bomber Command, deeply involved in the "Battle of the Ruhr," possessed a proven, though somewhat controversial, doctrine. The Eighth Air Force, its strength having grown to the point where 100-plane raids were routine, stood prepared to strike major blows of its own. Major General Ira C. Eaker, commander of Eighth Air Force at this stage of the war, sensed the need for a formal plan to coordinate the activities of the two strategic air forces. It was he who drafted the plan that became the Combined Bomber Offensive.

Not surprisingly, Eaker's plan bore a strong resemblance to AWPD-1, the basic AAF planning document for World War II. Eaker proposed that both the British and US air arms should initially focus their attention on gaining air superiority through the bombing of German aviation resources. Then, the bombers should key in on six target systems, totaling 76 individual targets, the destruction of which would fatally weaken the German war effort.⁴

When the Combined Chiefs of Staff approved Eaker's plan and issued it as the Combined Bomber Offensive, it seemed as if Harris' Bomber Command and Eaker's Eighth Air Force would, in fact, embark on a common campaign that was very much American in its orientation. Bomber Command would have to forego, or at least modify, its area bombing campaign against German morale.



RAF's chief of Bomber Command, Air Marshal Arthur "Bomber" Harris (center) with US Army Air Force commander, General Henry "Hap" Arnold, (left) and Eighth Air Force commander, Major General Ira C. Eaker.

Harris, however, was not so easily diverted from his own formula for victory. He secured modifications to the Combined Bomber Offensive to the effect that Eighth Air Force would pursue air superiority while Bomber Command simply continued its current program of area bombing. According to historian John Terraine, Harris' interpretation meant that "the 'combined' bomber offensive was strangled at birth . . ." ⁵

And so, the two air forces went their separate ways in the summer of 1943. Bomber Command commenced the Battle of Hamburg in July, devastating the city and reinforcing Harris in his advocacy of area bombing. Eaker attempted to go it alone and, in so doing, led Eighth Air Force to defeat, as the US airmen tried but failed to bomb their way to air superiority.

The US raids got bigger—200 heavy bombers flew on 4 July, 300 on 28 July and 400 on 6 September—but the German interceptors were growing more effective too, especially against the raids on aircraft factories deep in Germany where fighter escorts could not accompany the bombers. On several occasions, losses to the heavy bombers exceeded 10 percent. But, at least, Eaker and his hard-pressed flyers could console themselves with the knowledge that they were delivering blows that would eventually cripple the *Luftwaffe*.

Two developments in October 1943 brought Eaker's campaign to a virtual standstill. On 1 October, Eighth Air Force's intelligence section revealed that German fighter production and front-line fighter strength were *increasing* despite the US bombing campaign. Then, on 14 October,

60 out of 230 heavy bombers sent on a raid against Schweinfurt failed to return. Eaker temporarily ceased the offensive against targets deep in Germany.

The Combined Bomber Offensive had failed—at least for the time being—because one partner tacitly refused to participate and the other was stopped by enemy action. Could it have worked? In hindsight, the obstacles that existed in 1943 seem insurmountable.

There was no combined headquarters in charge of the air offensive against Germany, except for the Combined Chiefs of Staff, which was in no position to assume operational control over the campaign. Eighth Air Force possibly might have joined Bomber Command's area bombing program, except for the fact that its equipment and training were inappropriate for night operations. Nor was it reasonable to expect the United States to abandon, without a trial, its doctrine of precision bombing.

Could Bomber Command have changed its doctrine and joined the precision bombing of key industries? Bomber Command did, on occasion, venture upon small-scale precision night attacks. However, these missions entailed specially trained crews bombing at very low altitudes and often resulted in high casualty rates. Daytime operations were out of the question in the absence of long-range escort fighters, which did not exist in 1943.

Finally, one must reckon with the figure of Bomber Harris, who ranks among the most forceful and single-minded military leaders in history. Bomber Command was, he believed, winning the

war. To Harris, any diversion from area bombing would have been criminal.

The Combined Bomber Offensive would be revived in 1944 under dramatically changed circumstances. The impending invasion of France provided a focal point for all operations—ground, sea and air—that had not existed a year earlier. Long-range fighter escorts finally allowed Eighth Air Force to operate effectively over Germany. There was also a curious convergence of doctrines as the United States conducted its own thousand-plane raids, which involved what can only be called “area bombing,” and the British found ways to bomb with a degree of precision undreamed of in 1943.

When Allied forces invaded France, landing on the coast of Normandy, 6 June 1944, they enjoyed virtually unchallenged air superiority and faced an enemy whose military machine was increasingly crippled by fuel shortages. The Combined Bomber Offensive had, at last, become reality. **MR**

NOTES

1. Wesley Frank Craven and James Lea Cate. *The Army Air Forces in World War II: Volume One, Plans and Early Operations, January 1939 to August 1942* (Chicago: University of Chicago Press, 1948), 146–47, 599.
2. John Terraine, *A Time for Courage: The Royal Air Force in the European War, 1939–1945* (New York: Macmillan Publishing Company, 1965), 292–93.
3. For an outline of US operations see Kit C. Carter and Robert Mueller, *U.S. Army Air Forces in World War II: Combat Chronology* (Washington, DC: Center for Air Force History, 1973).
4. Terraine, 543–44.
5. *Ibid.*, 545.

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June 1943

MAJ George J. Mordica II, US Army, Retired.

Wednesday 2—Pope Pius XII appeals for combatants to apply the “laws of humanity” in the air war. This is in response to air attacks on population centers in Germany, the British believe, without regard to their previous suffering.

Thursday 3—The French announce formation in Algiers, Algeria, of a provisional government for the French Empire.

Thursday 10—Combined Chiefs of Staff issue the directive beginning the Combined Bomber Offensive in Europe (Operation *Pointblank*.)

Friday 11—Forces on the island of Pantelleria, in the Mediterranean, surrender unconditionally as the British land virtually unopposed. The lack of resistance is credited to the intense naval and air campaign.

Saturday 12—The island of Lampedusa, off the coast of Italy, is surrendered as British forces land.

Sunday 13—The US Eighth Air Force loses 22 of 60 B-17s in the raid on the submarine yards at Kiel, Germany.

Friday 18—Allied planes begin heavy attacks on Messina, Sicily, in preparation for Operation *Husky*.

Sunday 20—In the China-Burma-India Theater, General Sir Claude Auchinleck succeeds Field Marshal Sir Archibald Wavell as com-

mander in chief.

In New Guinea, General Walter Krueger opens the US Sixth Army Headquarters at Milne Bay.

His Majesty George VI, King of England, visits Malta.

Monday 21—The 4th Marine Raider Battalion lands at Segi Point on the southern tip of New Georgia, in the Pacific.

Gestapo Chief Heinrich Himmler orders the Jewish ghetto inhabitants liquidated in German-occupied Soviet Union. By 27 June, 20,000 Jews are killed in the ghetto.

Tuesday 22—In hard negotiations, the Committee of National Liberation decides that General Henri Giraud will retain command of all French forces in North Africa, and General Charles de Gaulle will lead elsewhere.

Saturday 26—British Air Marshal Sir Trafford Leigh-Mallory is selected to prepare the air plan for Operation *Overlord*.

Wednesday 30—The South Pacific and South West Pacific Area forces begin Operation *Cartwheel* in the Pacific with amphibious operations against the central Solomons, the Trobriands and New Guinea. This is followed by converging drives on Rabaul.

The 1943 US Fiscal Year ends with \$71 billion (or 93 percent of all government outlays) spent on direct war expenditures.

Insights

Capturing Institutional Knowledge

Colonel Jack W. Ellertson, US Army, and
Major Robert R. Allardice, US Air Force

Two major events leave the military gasping for breath—the increased emphasis on coalition and joint operations and the rapidly decreasing defense budget. Operation *Desert Storm* and its aftermath, Operation *Provide Comfort*, have emphasized that coalition and joint operations are the wave of the future. At the same time, the free-falling US defense budget necessitates a military drawdown, which is pushing those with our institutional knowledge out the door.

The old methods of staffing and problem solving are simply not keeping pace with the increased requirements for efficiency and effectiveness these events require. The reaction to this suffocation is a silent revolution within the military, which is manifesting itself through new, bold ideas that will hopefully capitalize on the quantum leaps we have made in the information age to better manage our efforts. The search has begun. We are making progress, but we are still years away.

How to fill the gap caused by our departing pool of experts is a particularly sensitive issue. What methods can, and must, we use to capture our institutional knowledge and codify this information in a format capable of contributing to the compressed decision cycles of our time?

One significant area of improvement has been that of capturing lessons learned and producing them in usable after-action products. While the process may appear simple, what follows is based on discussions within the joint community and is the culmination of efforts begun during *Desert Storm* and continued through *Provide Comfort*. The bottom line is this: When you produce after-action reports (AARs) or lessons learned from exercises or operations, there are some ways to do it that will make the task a lot easier.

As with any project, familiarity with the process is an important step toward the end result. You can overcome the initial difficulties in the current system to produce usable products that will also satisfy the Joint Chiefs of Staff (JCS) requirements, if you know what you are looking for and are familiar with the basic steps.

Challenges. We want to produce a usable product. In other words, it must be something the next person will want to read. But it is difficult to

motivate those who will do the writing without first addressing several issues.

The first is a lack of enthusiasm. To be honest, it is extremely difficult in the operations business to get excited about producing AARs or lessons learned. We all understand their significance and benefits, but during the operation, we are much too busy to take the time to write. Afterward, we are too tired or have difficulty recalling many of the details that would be of benefit to future operations.

An additional issue is that most of us do not see any real feedback from our efforts. Thus, the incentive to put much effort into the report (unless the boss has a particular interest) is not great.

Finally, we must deal with the issue of an awkward JCS system. The current JCS requirement to produce AARs is based on multiple entries into the Joint Universal Lessons Learned System (JULLS), the software system designed to provide a data base of lessons for the entire Department of Defense.

Fulfilling the JULLS requirement is not a low-effort task for at least three reasons: In the heat of the battle, there is no time to make cumbersome entries in an unfamiliar software program; the system often asks people to task themselves by pointing out their own shortfalls; and the JCS system fails to recognize one of the major reasons any organization documents lessons—improvement of the owner's process.

This simply means that, as we ask for lessons from a particular organization, we will only get a meaningful input if that organization realizes a gain in its process as a result of the effort. (The alternative, standing over the writer with a hammer, works for about a week, after which you lose more than you gain.)

Customers. The challenge to satisfy the JCS requirement, while producing something our customers will want to use to improve future operations, requires a simplified system. There are four products, fairly easy to produce, that meet these objectives:

The *operation narrative format* is easy to read and detailed enough to provide future joint task force (JTF) commanders a grasp of what to expect

in a similar operation.

The *executive lessons learned* format deals with top-level issues that one can begin to fix immediately. They are labeled as A (action within 30 days) and B (action within 60 days) priority issues.

The *JULLS* format is for the traditional lessons learned that are to go forward in the AAR; these are C priority issues. All JULLS are written from selected lists of individual observations.

The *operational help list* format provides a helpful checklist of observations from the operation. Organized functionally, this product has received great recognition because it is very usable. It is merely a compilation of observations—things that work or do not work—that may prove helpful to the next person trying to run an operation or exercise.

These products are available on floppy disk or hard copy. In addition to providing feedback to the functional process owners, they also act as source documents for, among other things, the JTF training activities.

Resources. As trite as it sounds, the most important resource in producing quality products is quality people, first enabled, then empowered, to accomplish the task. As a minimum, you need one individual thoroughly familiar with the entire process. Normally this person is located at the unified command headquarters (provides joint expertise) and deploys to forward sites to instruct and coordinate the process.

Enabling this person requires, first, that he or she has the commander's complete support and, second, that this person is trained in: joint operations, JULLS, a word processing package and all steps in the AAR process. This qualified individual then serves as the nucleus of the next required resource—the after-action cell.

A dedicated after-action cell for all operations and major exercises is important to provide focus to the collection effort, since expertise in the methods is not common. In addition to the "joint expert," membership of the cell should include a component officer and an enlisted administration specialist. These people drive the entire collection effort and ultimately produce all products.

Finally, for the cell to perform, you need a few specific computer aids. Hardware resource needs can easily be met by a computer (DOS compatible, preferably with an internal hard drive) and a printer. Proper software resources include the latest version of JULLS and a word processor. Nice-to-have items include a program to produce slides and another for messages. All these resources are "rules of thumb" that should be tailored to the specific situation.

The Pyramid Process. There are several ways to produce an after-action product. For the record, according to JCS Publication 1-03.30,

Joint AARing System (JAARS), the minimum requirements for an AAR include a summary JULLS and "normal JULLS" addressing each Joint Mission Essential Task List item exercised (or stated objective for an operation). Normally, the report should also include other JULLS addressing lessons of significant value learned during the exercise or operation.

Notwithstanding JCS requirements, we have found a pyramid process to be an effective way to yield products. However, before building the pyramid, first *develop a main theme*. Since it is nearly impossible to gather all information during an operation, a focused process is particularly important. To develop and hold this focus, we recommend a "main theme" for the operation or exercise.

For example, during *Provide Comfort*, we used the theme "humanitarian intervention." This theme captured the essence of the operation—a humanitarian effort with a security mission—and was highly beneficial in directing thoughts. Again, our purpose was to produce quality tools of great benefit to future commanders (and staffs) of similar operations.

One important point when selecting a theme is that, while the after-action cell may recommend the theme, the commander should make the final decision. Through this theme, the commander communicates the direction he or she wants the products to take. After developing this theme to shape your approach, you are ready to start working the pyramid process.

The base of the pyramid process, upon which all else is built, consists of the requirement to *gather observations*. Remember, the data collected should be channeled toward the theme. These observations are one liners—what happened, good or bad; what work-arounds were successful, which were not; plus any other pertinent observations. These observations are important for a variety of reasons. First, they replace the effort to collect JULLS for everything. We see a ratio of at least 10 observations for every one JULLS.

The observations gathered are the basis of the help lists mentioned above. They differ from JULLS because they do not attempt to make a value judgment about issues but merely raise questions. This removes the barrier often found in the JULLS process, whereby higher headquarters suppresses the JULLS because it disagrees.

As an example, the engineers in *Provide Comfort* felt, for good and substantial reasons, that they should have been a separate component. The JTF commander decided against this, again, for good and substantial reasons. In the normal flow, a JULLS written by the engineer would be suppressed by the higher headquarters; however, the help list documents the observation by merely

raising the question: "Have you considered making the engineers a separate component based on the type of operation?"

We gather observations through the use of a simple form—asking only for name, phone number and a one-line observation. The cell then collects these regularly and scans them for level of importance, applicability and other pertinent factors. The cell also enters them, organized functionally, into the help list.

Level two of the pyramid process is to *produce the JULLS*. The observation list is screened to determine which issues require JULLS. This is best done by functional experts working with the cell. Again, this step in the process saves a great deal of wasted effort. Instead of 1,700 JULLS addressing 500 overlapping issues during *Desert Shield* and *Desert Storm*, we would expect 170 JULLS addressing 170 different issues. Keep in mind, the observations are also published, so if anyone wants to follow up an issue and request a JULLS, this is always an option.

Level three in the pyramid process, after collecting the observations and the JULLS, is to *develop executive lessons*. The after-action cell coordinates this effort by farming out all observations and JULLS to the functional experts for review. Then, the functional experts hold seminars with the clear objectives of specifying major issues, providing feedback to the commander and developing a basis for the executive JULLS and the narrative. For a large operation, there may actually be an after-action conference; for smaller operations, several 1-hour sessions will suffice.

Obviously, during this process, an additional benefit is a "scrub" of the observations and JULLS. The purpose of executive lessons is to start moving early down the path toward improvements. Therefore, we recommend that any issues that require "fixing" have a designated priority, as explained earlier.

The top of the pyramid process is the requirement to *produce a narrative or summary JULLS*. Since the purpose of this step is to provide to the future JTF commander a good description of what to expect, the narrative must receive input from the broadest perspective. Normally, the chief of staff can provide this perspective. (For *Provide Comfort*, the chief of staff actually drafted the narrative because he had the best perspective.) Naturally, data to support the narrative effort should be fairly well organized after following this pyramid process. One final comment: since the narrative will usually be read first, and it will often be the only product read—quality is critical.

Critical Feedback. After the final step in the pyramid process, the after-action cell needs to assemble the entire package, accomplish the normal staffing and forward the product to the

appropriate levels. If you have followed the process, quality will not be a problem, so staffing should be fairly easy.

At this point in the process, getting the word out is absolutely critical. We provide this feedback by ensuring products get back to the customer and into the hands of future operators. To accomplish this, we send products tailored for the appropriate level. For example, "help lists" are sent to component participants for lower-level dissemination. Additionally, we deliver the entire package to those directly participating in the refinement process.

One of the most meaningful forms of providing feedback is the use of these products in our training and exercise programs. We send an updated help list, along with an appropriate narrative summary, to key players designated for upcoming events. Because there is often a great deal of personnel overlap, we are providing direct feedback to those who made inputs and providing an opportunity to further refine their products. Incidentally, we also use these products for real-world operations to brief or prepare potential JTF members. If we were tasked to form a JTF for a humanitarian relief effort, we would make sure that the commander and his staff had a copy of the *Provide Comfort* narrative summary and help lists.

Finally, to increase our coverage, we advertise (and sell) our products. For example, we advertise our current products in the "EXPress," a Headquarters, US European Command, unofficial exercise newsletter sent to the joint exercise community. Additionally, we take our products to exercise conferences, briefing when possible and making the products available for widest possible dissemination. This aggressive approach to getting the word out pays big dividends by providing feedback to the customer.

To recap, the pyramid process provides incremental steps toward producing usable after-action products. The key to a successful program is

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applying the right resources, with people enabled to accomplish the task, through a well-defined process to produce customer-defined usable items. This process works, although it should continue to be refined as it is put into rigorous practice.

This is only the first of several incremental steps toward the broader goal of capturing institutional knowledge. We call for stiff review of this entire subject area. Headquarters, European Command, is attempting to develop ways to record observations, automatically provide recommended

solutions and, then, produce JULLS based on an automated pull system. Additionally, it is trying to link the observations and help lists with annexes to operations in an electronic format so the latest information may be readily available.

Interestingly enough, the major obstacles appear to be cultural in nature, often the hardest to penetrate. So, victories will be slow in coming; however, they will come as the resisters eventually become victims of the same major events that started the revolution.

MR Book Reviews

OSS AND THE YUGOSLAV RESISTANCE, 1943-1945 by Kirk Ford Jr. 249 pages. Texas A&M University Press. College Station, TX. 1992. \$39.50.

Bosnia, Croatia, Serbia and Yugoslavia—names appearing daily in the news—evoke images of atrocity, hatred and civil war. The struggle in these same regions during World War II is the subject for Kirk Ford Jr.'s comprehensive examination.

Referring extensively to primary source material, to include declassified *Ultra* transmissions, Ford examines the roles of the US Office of Strategic Services (OSS) and the British Special Operations Executive (SOE) in Yugoslavia. General William J. Donovan's OSS officers found themselves involved not only in a war against Germany but also in a civil war. Additionally, they were in the maelstrom of power politics between the United States and Great Britain. What the OSS and SOE both quickly learned, especially the OSS, was that they had little control over the events swirling about them.

Ford challenges the generally accepted views that Draja Mikhailovitch's Chetniks were Nazi collaborators and the partisans of Marshal Josip Tito were liberators. Ford establishes that Mikhailovitch preferred to husband his resources until the most propitious moment for initiating action against both the Germans and the growing challenge of Tito, a dedicated communist. Tito, under the banner of nationalism, preferred immediate action against the Germans following their invasion of the Soviet Union in June 1941. What ensued was the outbreak of civil war between the two resistance movements as each sought positions of strength for postwar domination.

The dilemma for the Allies was which force to support, particularly after the Germans began active operations in North Africa. Clearly, the British favored Tito and his desire to move immediately against the Germans over Mikhailo-

vitch's strategy of building adequate supplies and support before attacking.

German success against British forces in North Africa spurred Prime Minister Winston Churchill to order the SOE to speed supplies to Tito for his use against German supply lines through Yugoslavia. The problem faced by the United States was that President Franklin D. Roosevelt initially favored both the forces of Mikhailovitch and the Yugoslavian government in exile (which also favored Mikhailovitch). How the United States came to acquiesce in the decision to exclusively support Tito's forces against the Axis invaders is detailed by Ford and is fascinating reading.

Central to Ford's thesis is that both the partisans and the Chetniks considered each other, not the Germans, as the primary enemy (which should remind the reader of a similar situation now in China between the communists and the nationalists). The legacy of this World War II conflict between these two factions is that Mikhailovitch is labeled a collaborator and Tito, a patriot. Ironically, Ford provides evidence that the Germans hardly viewed Mikhailovitch as a collaborator but as one clearly hostile to them. According to Ford, by mid-1945, Churchill was questioning British support for Tito. But, by then, it was too late; British bridges to Mikhailovitch had been burned.

By 1945, Tito had positioned himself to seize power in Yugoslavia following the war. On 17 July 1946, after a show trial, Tito had Mikhailovitch executed. In 1948, the United States recognized Mikhailovitch's contributions by posthumously awarding him the Medal of Freedom and the Legion of Merit. No such awards were forthcoming for Tito.

In light of current events, Ford's work provides valuable insights into the history of the conflict raging in the former Republic of Yugoslavia.

LTC Richard L. Kiper, USA,
Combat Studies Institute, USACGSC

DOOMED AT THE START: American Pursuit Pilots in the Philippines, 1941-1942 by William H. Bartsch. 503 pages. Texas A&M University Press, College Station, TX. 1992. \$24.50.

Unfortunately, many soldiers will pass up this book because, at first glance, it is the story of a group of American pursuit pilots fighting against an overwhelming Japanese air force. However, this book crosses all services with its important lessons.

During the opening days of World War II, the 5th Interceptor Command of the 24th Pursuit Group was ordered to protect the Philippine Islands from Japanese aircraft. The command performed dismally. Not one successful interception of Japanese bombers or other aircraft was ever carried out during the five-month campaign. Yet, the Japanese successfully destroyed two-thirds of the pursuit force in only 72 hours.

By 10 December 1941, 64 of the 92 P-40 aircraft were destroyed, enabling the Japanese to gain air superiority. The Japanese destroyed not only the pursuit aircraft but also General Douglas MacArthur's observation squadron, forcing MacArthur to use his remaining P-40s for reconnaissance and a limited combat role. By March 1942, the Far East Air Force was down to only one P-40.

While the command was falling apart, MacArthur was exaggerating how well they were doing and making excuses for their mistakes. Even though the commander of the pursuit force credited his pilots with 103 enemy planes shot down, the author contends that only 30 enemy aircraft were destroyed. Two of the many excuses used for the poor performance were that they were outnumbered and that the P-40 was not as good as the "Zero." But the author dismisses these excuses because, although the Japanese force outnumbered the Far East Air Force by two-to-one, it was made up of mostly slow-moving bombers.

If the 24th Pursuit Group had reasons for failure, why did a very similar force in China, the American Volunteer Group (AVG), succeed while fighting against worse odds and using the same aircraft? Comparing the two groups, William H. Bartsch illustrates the major lessons in the book. Claire L. Chennault, the AVG's commander, emphasized an early warning system that allowed the slower P-40 adequate time to get above the Zeros and the bombers and get into an attack position. In contrast, the 24th's early warning system was inadequate, leaving planes still on the ground when the enemy attacked.

Chennault used his time prior to combat to study the enemy, develop tactics, change doctrine and drill his pilots. The 24th had two of its squadrons equipped with the P-40E only six weeks before the start of the war. However, during the six weeks, most of the pilots' time was spent on

supply problems instead of training. The 24th had detailed information on the Zero but failed to use it to decide how best to destroy the fighter.

Why was Chennault's unit successful while the 24th failed? Historian Michael Howard offers a reason when he describes the use of doctrine at the beginning of a conflict. He says, "When everybody starts wrong, the advantage goes to the side that can most quickly adjust itself to the new and unfamiliar environment and learn from its mistakes." The pilots in China learned quickly and adjusted; pilots in the Philippines did not. This lesson and many others are worth the price of the book.

LTC Bruce A. Brant, USA, 319th Airborne Field Artillery Regiment, Fort Bragg, North Carolina

RAID ON QADDAFI: The Untold Story of History's Longest Fighter Mission by Robert E. Venkus. 198 pages. St. Martin's Press, New York. 1992. \$21.95.

Raid on Qaddafi is about the US Air Force's participation in Operation *El Dorado Canyon*, the retaliatory raid against Libya, 14-15 April 1986. Colonel Robert E. Venkus, vice wing commander, 48th Tactical Fighter Wing, Royal Air Force Base, Lakenheath, England, had major planning responsibilities for the 48th's execution of the raid. At the time, the 48th flew F-111F aircraft.

This readable account of *El Dorado Canyon* is from the 48th's perspective. Although very little of the US Navy's participation is discussed, Venkus takes the reader through the planning stages and execution of what is still the longest fighter mission in history. Lasting over 12 hours, these sorties flew against the "most technologically sophisticated air defenses faced by any air force up to that time."

US Army readers, particularly those at division level and above, will find this book particularly interesting. It details the political tensions of the time and elaborates on the operational planning and execution of the mission. It also details the last-minute changes in mission orders that probably resulted in the loss of a valuable F-111 and its crew.

The two best chapters are "Attack" and "Heading Home." After flying at night for over 6 hours, the F-111s made low-altitude descents over the water when attacking. The descriptions of the attacks and the errors made in execution illustrate the "fog of war" at the tactical level. The story of the postattack rendezvous with essential tanker aircraft is particularly gripping. It will give you some feel for the similar, constant stress fighter aircrews experienced every night on the way home from Baghdad during Operation *Desert Storm*.

Another theme in *Raid on Qaddafi* is command responsibility. The realization that one part of the attack had essentially become a suicide mission and how the senior leadership handled it reads like a case study in a staff college senior leadership course.

This very readable book is filled with interesting operational details about Air Force fighter operations not normally available to a nonfighter audience. If only for this reason, I recommend *Raid on Qaddafi*.

LTC Daniel W. Jordan III, USAF, Air War College,
Maxwell Air Force Base, Montgomery, Alabama

BRAVE MEN—DARK WATERS: *The Untold Story of the Navy SEALs* by Orr Kelly. 288 pages. Presidio Press, Novato, CA. 1992. \$22.95.

For readers with an interest in special operations, special forces and unconventional warfare, this book is must reading. Important for its contribution to the history of these organizations, the book avoids that aura of romance and mythology these subjects often produce. Instead, the reader will find an interesting, readable history of one of this country's most unique units—the SEALs, which stands for Sea, Air and Land. Readers will also be left pondering the future missions and roles of these type units.

The author, Orr Kelly, is a veteran defense reporter and writer and has written for several news periodicals. He covers the entire history of the formation of the SEALs—the US Navy's version of special forces. Like all special forces, the SEALs evolved because of special needs realized during a conflict that no other conventional unit could fill. In this case, beach reconnaissance for amphibious forces in World War II led to the creation of these water-borne commandos.

As missions and the nature of conflicts evolved, so did the role of the SEALs. This book covers the changes and the challenges the units and their leaders faced, up to and through operations *Just Cause* and *Desert Storm*. Like any book on special operations, there is a lack of specific operational detail. Since many of these operations are classified and the participants rarely share experiences with outsiders, this will always be the norm.

This book is not about adventures in the jungles or firefights in the night, but rather, about the evolution of a special forces organization and the men who shaped those units. Kelly leaves the reader with questions about the future role of the SEALs. How the units will be used, what missions they should be given and how they should be organized are important issues in the special operations community. Although Kelly does not answer these questions, his book is essential reading for those who will be tasked to find the answers.

John Powell, Lawrence, Kansas

TIGER IN THE BARBED WIRE: *An American in Vietnam, 1952-1991*, by Howard R. Simpson. 343 pages. Brassey's (US), McLean, VA. 1992. \$23.00.

In 1952, the world was at war with communism. The Korean War, the British counterinsurgency war in Malaya and the French Indochina War, all played into the Asia equation of US strategy. Howard R. Simpson's memoir begins in 1952, when he was a young press officer at the US Information Agency (USIA) in Saigon, Vietnam.

After reporting to duty, the deputy director of the USIA office, John "Black Jack" Pickering, queried Simpson about his opinion of the French Indochina War. Simpson responded by quoting various articles and State Department briefings about the victories of the French forces against the Vietminh. At that point, "Black Jack" frowned as if he'd been accosted by the village idiot.

Later, working with the French and Vietnamese information services and foreign journalists, Simpson discovers the queer realities of war in Vietnam. He moves from novice to position of press adviser to Premier Ngo Dinh Diem in the late 1950s and, later, in the same role, to Prime Minister Nguyen Khanh in the 1960s. Along the way, he meets some of the legendary figures of Vietnam—the infamous Central Intelligence Agency covert action specialist Edward Lansdale; Ambassador Henry Cabot Lodge; novelist Graham Greene; Major Lucien Conein; and the notorious commander of the French Foreign Legion's 13th Demibrigade, Lieutenant Colonel Jules Gaucher.

Simpson finds himself in the field assessing French forces in combat. As one of the few Americans who ventured to Dien Bien Phu before the Vietminh capture, Simpson's ominous description of the battle for Dien Bien Phu from beginning to end, demands reflection. Simpson describes the death and heroic deeds of soldiers in the field, the inexhaustible coups in the 1960s, the hoards of journalists flocking from one battle to another and the inescapable ignorance of both French and US strategists of how to win the Vietnam War.

Years later, in 1991, Simpson returns to Vietnam to visit his former haunts and hunt down old friends and enemies. He visits Hanoi for the first time since he was there when Vietminh troops marched into the city in 1954. His return to Saigon (Ho Chi Minh City) includes a visit to the grave of Army of Vietnam Colonel Pham Ngoc Thao, who was possibly a North Vietnamese agent. Simpson concludes with an interview of the commander of the Vietminh forces at Dien Bien Phu, General Vo Nguyen Giap.

Personal and tragic, Simpson's experience in Vietnam rivals those of the best of the "Indo-China hands." The reader will gain an understanding

of the ingredients of the quagmire that became known as the Vietnam War. I recommend this book to anyone who thinks he or she really understands the mistakes made in Vietnam.

Wendell L. Minnick, *Terre Haute, Indiana*

THE KASHMIR TANGLE: Issues and Options by Rajesh Kadian. 200 pages. Asia Publishing House, Sittingbourne, England. (Distributed by Advent Books, New York.) 1992. \$13.95.

The dispute over Kashmir has complicated relations between India and Pakistan since both states gained independence in 1947. From that time, armed confrontation along the "Line of Control" and low-intensity conflict on both sides of the line have been the norm. The conflict broke into open warfare between Pakistan and India in 1965 and again in 1971. With the collapse of Soviet power in

Central Asia, the rise of India to regional military power and the alleged development of nuclear weapons by both India and Pakistan, Kashmir has the potential to become a major world crisis at any time.

Rajesh Kadian traces the roots of the dispute to the days of the British rule. During the mid- and late-19th century, the British government assisted the maharaja of Jammu to establish control over a wide area of northwestern India. Many of the annexed territories were peopled predominantly by Moslems. By 1947, the Princely State of Jammu and Kashmir was 75 percent Moslem, and its maharaja faced a serious dilemma. With the withdrawal of British control, the rulers of the Princely State had to choose between joining predominantly Moslem Pakistan or predominantly Hindu India.

The Hindu ruler of Kashmir found the decision especially difficult because his state lay on the border between the two new nations. For several

PASS IN REVIEW

FORGOTTEN WARRIORS:

Combat Art From Vietnam by Dennis Noble. 198 pages. Praeger Publishers, Westport, CT. 1992. \$29.95.

Dennis Noble has done his homework. He has compiled an extensive collection of Vietnam War art, representing each service. If you know the sacrifice of service, this book will speak to you. Although Noble does not take a stand on the Vietnam War, he skillfully blends the art with an insightful text. He uses the literature of the Vietnam era and historical events to draw the reader in. You should read this book. It will move you. It is a kaleidoscope of images—black and white snapshots—of the young people who made this war happen.—Mark T. Lisi, *Olympia, Washington*

GUARDING THE GUARD-

IANS: Civilian Control of Nuclear Weapons in the United States by Peter Douglas Feaver. 261 pages. Cornell University Press, Ithaca, NY. 1992. \$34.50.

Civilian custody of nuclear weapons was simpler when devices numbered less than 100 and response time was counted in days. Today, the devices number in the tens of thousands and response time is measured in seconds. Tracing the history of nuclear weapons custody from 1945 to the present, Peter Douglas Feaver discusses the problems and concerns of civilian control, or lack of control, of the US nuclear arsenal. Heavily documented, this book details the philosophical differences of each president and how they interacted with their respective military and civilian staffs on this issue.—Robert M. Burns, *National Simulation Center, Fort Leavenworth, Kansas*

COUNTERING PROLIFER-

ATION: New Criteria for European Security by Keith B. Payne. 74 pages. Alliance Publishers for the Institute for European Defense and Strategic Studies, London. 1992. \$9.00.

This useful primer provides an overview of the recent evolution of the Strategic Defense Initiative program to the more limited Global Protection Against Limited Strikes (GPALS) system. Weapon technology proliferation allows a growing number of nations to threaten Western nations with state "nuclear blackmail." Limited missile defenses, such as GPALS, are emerging as a strategic and regional stabilizing factor and a renewed arms control measure, especially against the Third World threat. As we search for a sound foundation to build upon, Payne's thought-provoking views deserve serious consideration.—MAJ Henry G. Franke III, *USA, 18th Airborne Corps, Fort Bragg, North Carolina*

months, the maharaja delayed, but his hand was forced when several thousand tribesmen from Pakistan invaded his domain. Faced with deposition, the maharaja hurriedly acceded to the Indian union, and Indian troops were dispatched to turn back the invaders.

Since then, Kashmir has been split between Indian and Pakistani administrations along a de facto Line of Control. Kadian describes the adverse impact of 45 years of partition, occupation and conflict on Kashmiri political, economic and cultural development. The net effect is that conditions continue to worsen with neither side willing to invest in the development of Kashmir while it remains divided.

Kadian also reviews the efforts to bring the dispute to the court of world opinion. Kashmir has proved, however, to be too remote to gain sufficient attention. Kashmir also served as a pawn in the superpower politics of the past. Both sides were willing to leave Kashmir divided if it ensured the

other side would not gain an advantage.

Kadian proposes future options for both Pakistan and India. These options include diplomatic, political, economic and military initiatives aimed at resolving or reducing the dispute. Kadian offers a more varied range of options and outcomes for India than those offered for Pakistan. This is not surprising, given that the author is a native of India and has previously written two books on India.

While the tendency to present the facts from the Indian point of view can be seen throughout the book, Kadian does present a reasonably balanced view of the past, present and possible future of Kashmir. If read with an understanding of the author's perspective, this work serves as an excellent introduction to what could well be one of the world's future hot spots.

MAJ Drake A. Kitts, USA, US Army Combined Arms Command-Training, Fort Leavenworth, Kansas

THE DECEMBER SHIP: A Story of Lt. Col. Arden R. Boellner's Capture in the Philippines, Imprisonment, and Death on a World War II Japanese Hellship by Betty B. Jones. 120 pages. McFarland & Co., Inc., Jefferson, NC. 1992. \$20.95.

This book is a daughter's tribute to her father, who died on a Japanese prisoner-of-war (POW) ship in December 1944. Included are her father's letters to his family; a few letters from Betty, age 6 at the time of his capture; and a graphic and gripping reconstruction of his imprisonment based on letters, interviews, books and journals. The volume also contains revealing photos from Japanese POW camps. One can only wonder about the urge and agony that accompanied the preparation of the book. The author not only has honored her father but all POWs who suffered his fate.—Brooks E. Yeber, *Newport News, Virginia*

NORDIC SECURITY AT THE TURN OF THE TWENTY-FIRST CENTURY. Edited by Ciro Elliott Zoppo. 247 pages. Greenwood Press, Inc., Westport, CT. 1992. \$55.00.

Professor Ciro Elliott Zoppo has edited this excellent collection of papers, analyzing the difficulties faced by Norway, Sweden, Denmark and Finland in adjusting to an interdependent European economy, the absence of East-West confrontation and the high cost and technology of modern weapons. The authors foresee continued US-Russian competition encompassing their security concerns over the transarctic air corridor leading to the Eurasian heartland. Neutrality seems an increasingly costly and elusive goal for Europe's northern rim, but then, so will the choice of allies.—COL John W. Messer, AUS, Retired, Ludington, Michigan

THE POLITICS AND STRATEGY OF NUCLEAR WEAPONS IN THE MIDDLE EAST: Opacity, Theory and Reality, 1960-1991, An Israeli Perspective by Shlomo Aronson, with Oded Brosh. 398 pages. State University of New York Press, Albany, NY. 1992. \$59.50 cloth-bound. \$19.95 paperback.

In this well-researched treatise, Shlomo Aronson, an Israeli academic, explores the activities of various Middle East powers to develop and possess nuclear (and other mass-destruction) weapons. He describes how the threat of such weapons exacerbates an already lethal environment. His term "opacity" refers to techniques adopted by the Israelis, and others, to disguise both the possible possession and the potential employment of mass-destruction weapons. This book, with its post-Gulf War "Epilogue" chapter, is an excellent reference for those interested in the Middle East.—COL Griffin N. Dodge, USA, Retired, Santa Fe, New Mexico

WAR PLAN ORANGE: The U.S. Strategy to Defeat Japan, 1897-1945, by Edward S. Miller. 509 pages. Naval Institute Press, Annapolis, MD. 1991. \$34.95.

War Plan Orange is a major contribution to the scholarship on US strategic planning in the first half of the 20th century. In this extraordinarily well-researched and documented book, Edward S. Miller traces the origins and evolution of War Plan Orange, the strategic plan that in its broadest outline was the blueprint for the defeat of Japan in World War II. It is, however, more than just a study of War Plan Orange; it is a treatise on how strategic planning was—and is—conducted in the United States.

For the first 40 years of this century, US strategic planning was limited to a series of notional plans on how to deal with potential threats. Each threat was color-coded in the files: blue for continental defense; green for Mexico; red for Great Britain; black for Germany; gold for France; orange for Japan; plus others—a total of 23 in all. Of these, orange was clearly the most likely threat and, therefore, it was the focus of attention by US Army and Navy planners until the inception of the rainbow plans on the eve of World War II.

War Plan Orange was a dynamic plan. It grew, developed and matured in response to a changing world, evolving technology and the personalities of the many hands that shaped and molded the plan's various iterations. Two schools—the thrusters (those who argued for a quick dash across the Pacific to meet and defeat the Imperial Fleet in a great climatic battle) and the cautionaries (those who proposed more deliberate preparations followed by a staged advance across the Pacific)—eagerly sought to define the strategy to defeat Japan. Out of this protracted and sometimes bitter debate, the final and successful version of War Plan Orange emerged.

The book's one limitation is Miller's focus on the naval side of the plan. He dismisses the Army's side too quickly, accepting the naval planners' assumption that the Philippines would be lost at the outset of any conflict with Japan. Only generals Leonard Wood and Douglas MacArthur persisted in believing that the Philippines could be and should be defended. Miller gives little consideration to the concerns and proposals of the Army members of the joint board and planning committees except when they dovetail with the Navy's plan. He does not even look at the Army's plans for the defense of the Philippines.

Nevertheless, this is a major work. For historians of World War II, Miller fills a longstanding void in our knowledge and corrects a number of misperceptions of War Plan Orange. Students of strategic planning will find Miller's analysis rich and his insights invaluable.

Jerold F. Brown, Combat Studies Institute, USACGSC

IT TAKES ONE TO TANGO by Edward L. Rowny. 273 pages. Brassey's (US), Inc., McLean, VA. 1992. \$22.00.

In this superb book, Ambassador Edward L. Rowny reflects on his 20 years as an arms control negotiator. His story is exceedingly well told and spiced with often biting comments about Soviet and US leaders.

Prior to his career as an arms control negotiator, Rowny followed a conventional US Army career, serving as an engineer officer and a battalion and division commander. He was later assigned, almost against his will, to the arms control arena—an exceedingly arcane discipline where months or even years are spent resolving what would appear to most as the smallest and most technical positions.

An arms control negotiator for five presidents, Rowny is not hesitant to evaluate each as a leader and a foreign policy manager. President Richard M. Nixon and his secretary of state, Henry A. Kissinger, are seen as secretive, paranoid individuals whose back channel negotiations often hampered the official negotiation team. Rowny saw President Gerald Ford, often reviled as a bumbler, as someone who was willing to take command of foreign policy and who was realistic in his goals. President Jimmy Carter, on the other hand, was an abject failure, more concerned with obtaining a deal than ensuring the best interests of the nation.

The hero of the piece is President Ronald Reagan, who Rowny saw as strong willed, goal oriented and not afraid to leave the bargaining table instead of making a poor deal. President George Bush, however, is seen as a man without a plan, who had a problem with "the vision thing." In each case, Rowny backs up his assessments with barbed stories from the negotiating table.

While basically a history of US-Soviet arms control negotiations, this book sets forth a three-part strategy to guide US negotiators in the multipolar future—negotiators should have a clearly defined objective, practice patience and maintain secrecy. To this Rowny adds the necessity to understand cultural differences and the awareness that economics will become more important in the New World Order. Fledgling negotiators, in either the domestic or international sphere, would do well to study Rowny's career.

MAJ James J. Dunphy, USAR, Fairfax, Virginia

HIDDEN ALLY: The French Resistance, Special Operations, and the Landings in Southern France, 1944 by Arthur Layton Funk. 338 pages. Greenwood Press, Westport, CT. 1992. \$49.95.

Despite the thousands of books on military operations in World War II, US scholarship concerning unconventional warfare in the European the-

ater languishes. There are few English works on the topic. Those which do exist often focus heavily on US and British special operations units such as the Special Air Service and Jedburgh teams.

In particular, the French Resistance has not received sufficient attention. Russell F. Weigley, for example, in his magisterial *Eisenhower's Lieutenants: The Campaign of France and Germany, 1944-1945*, does not even mention the role of the Resistance in supporting Allied operations in southern France.

Hidden Ally corrects this oversight by detailing the Resistance's support of US landings in southeastern France. The first half of the book deals with preparations for the Allied landings. The second half covers the collaboration of the French Forces of the Interior with the US Seventh Army. The research relies heavily on original source material including recently declassified reports, resulting in a work rich in detail.

This welcome and valuable contribution to the military history of the war offers a superior case study for those who want to examine the employment of unconventional warfare in support of heavy forces on the modern battlefield. The Army's capstone doctrinal manual, Field Manual 100-5, *Operations*, suggests that guerrilla forces may be a primary tool for executing deep operations. Army doctrine, however, offers no suggestions on how these forces might be organized and employed. As a starting point, one might consider the example of Task Force Butler, discussed in great detail in *Hidden Ally*.

General Lucian K. Truscott Jr., the VI Corps commander, organized a special task force to both cover the corps' flank and be available to exploit tactical opportunity. The French Forces of the Interior performed a myriad of reconnaissance, security, screening and deep attack missions in support of the unit's operations. Task Force Butler offers a superb study of the mix of unconventional and regular forces.

Hidden Ally has its shortcomings. Funk's writing style is as dry as dust, and his conclusions are simplistic and disappointing considering the wealth of material available to draw on. The research, however, is rock solid, and the quality of the material more than compensates for the shortfalls.

MAJ James J. Carafano, USA, USACGSC

FLYING THE HUMP: Memories of an Air War by Otha C. Spencer. Texas A&M University Press, College Station, TX. 1992. \$24.50.

In this enjoyable, highly readable book, Otha C. Spencer writes of a specialized episode of World War II—the extremely dangerous and costly logistical flights of the China-Burma-India Theater. Thorough research into military archives, in-depth anal-

ysis of the personal correspondence of the aircrews, numerous interviews and his personal recollections make this an informative and interesting work.

Flying the Hump covers the personal, tactical, strategic and political aspects of the flights over the Himalayas to supply Allied forces. Spencer does not have the typical background for writing such a book (he is a professor emeritus of journalism at East Texas State University), but his extensive research lends both credibility and substance to what could have been merely an "I was there" account of this period.

Indeed, it is the intensity and clarity with which Spencer tells of the personal courage of the aircrews and the political and military importance of these flights that make this such a good book. With 3,000 hours in "heavy" aircraft, I can attest to his graphic descriptions of flying in severe weather over dangerous terrain.

Perhaps the strength of this book is not so much in what it says as in what it asks. Spencer counters and challenges the views of many who have written about the Hump. To critics of the value of this effort to supply by air, he asks, "How many lives would have been lost if the thousands of Japanese soldiers, bottled up in China by Chiang Kai-shek, had been free to fight in the Southwest Pacific? The Hump supplied the Chinese soldiers who kept the Japanese in China." His analysis of US-China military and political intrigue is excellent, as is his explanation of the military successes and failures associated with the Hump.

It is unlikely that this book will become a major work in military history circles. However, it is an episode of World War II that has ramifications for future military conflicts. The logistics of airborne resupply are as critical today as they were during the Hump flights. One merely needs to study the Berlin Airlift and operations *Desert Shield* and *Desert Storm* to appreciate the impact that efforts such as the Hump afforded military planners. *Flying the Hump* adds to these lessons that need to be noted, studied and remembered by those responsible for prosecuting war.

MAJ Gary A. Trogdon, USAF, US Strategic Command, Offutt Air Force Base, Omaha, Nebraska

THE ADULT DEVELOPMENT OF CAREER ARMY OFFICERS by Jeffrey A. McNally. 281 pages. Praeger Publishers, New York. 1991. \$55.00.

This is an excellent and timely book on the nature of human behavior. Lieutenant Colonel Jeffrey A. McNally provides a basis for understanding people as they mature, both within their work environment and their personal lives. He extends Daniel J. Levinson's seminal work on adult development by focusing on the lives of US Army officers.

McNally reveals that Army officers experience

"alternating series of structure-building and then structure-changing developmental periods during the course of [their] adult life." This "life structure," which is the basis for adult development, depicts a pattern of an individual's life at a specific time. McNally shows through his discussion of Army officers what the pattern of relationships is among several important parts of our adult life. Such things as occupation, marriage, family and religion fluctuate during our adult development, sometimes taking center stage, other times being merely peripheral.

This book does two things: First, McNally shows that Levinson's theory transcends occupations, as it applies to both rigid bureaucracies and private-sector firms; second, McNally highlights the similarities and differences among in-

dividuals as their adult life unfolds.

We gain an understanding of how we get to and through our "midlife" and of the factors influencing our work and personal lives. As developing adults, we are continually experiencing change in our lives; McNally helps us understand how this happens and what we can do to affect it. Individuals struggling to understand both themselves, as well as others, will find this book insightful.

I recommend this book to anyone interested in understanding their own adult development and the developmental process of those individuals with whom they interact—subordinates, peers, supervisors and bosses.

LTC Roderick R. Magee II, USA, *Office of the Deputy Chief of Staff for Intelligence, Fort Shafter, Hawaii.*

Military Review Writing Contest Reminder

Entries for the 1993 *Military Review* writing contest will be accepted through 1 August 1993. This year's topic for entries is "The Military and a New World Order." Through the generosity and continued support of the 1985 Command and General Staff Officer Course Class, the cash awards will be 1st Place (\$500), 2d Place (\$200), 3d Place (\$100), and the winning manuscripts will be published in *Military Review* this winter. All manuscripts will be considered for publication.

The topic area is deliberately broad to encourage coverage of a wide range of related issues, including current and future roles and missions; doctrine; service relationships; and education and training. The common thread should be consideration of changes that will be required of the military in response to the new world order. Entries will be judged for relevance to current Army needs, research and scholarship, readability and writing style.

Manuscripts must be original and not previously offered elsewhere for publication. They should be between 2,500 and 3,000 words and typed double-spaced. Entrants must indicate clearly that the manuscript is a contest entry. A writer's guide is available upon request.

Send entries to: *Military Review*, US Army Command and General Staff College, Funston Hall, Fort Leavenworth, Kansas 66027-6910.



Time is Running Out!

Kilroy
Was
Here!



A mythical character materialized in World War II wherever there was a US serviceman, a piece of chalk and a wall – Kilroy. The GI graffiti, which also showed up on objects and in seemingly inaccessible places, has been traced to Sergeant Francis J. Kilroy of the Army Air Force Air Transport Command. According to that story, friends of the real Kilroy posted his name throughout the world as an inside joke that was picked up by others. Another version makes Kilroy a shipyard inspector who signed his work. But a parallel story is told about the origins of the term "Uncle Sam," who was said to have been a meat plant packer during the War of 1812 who put his stamp on his work. Whatever the origin, *Kilroy was here* could be found scrawled from the Aleutians to Zanzibar. The three word phrase was usually accompanied by a sketch.

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