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VII Corps in the Gulf War

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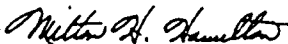
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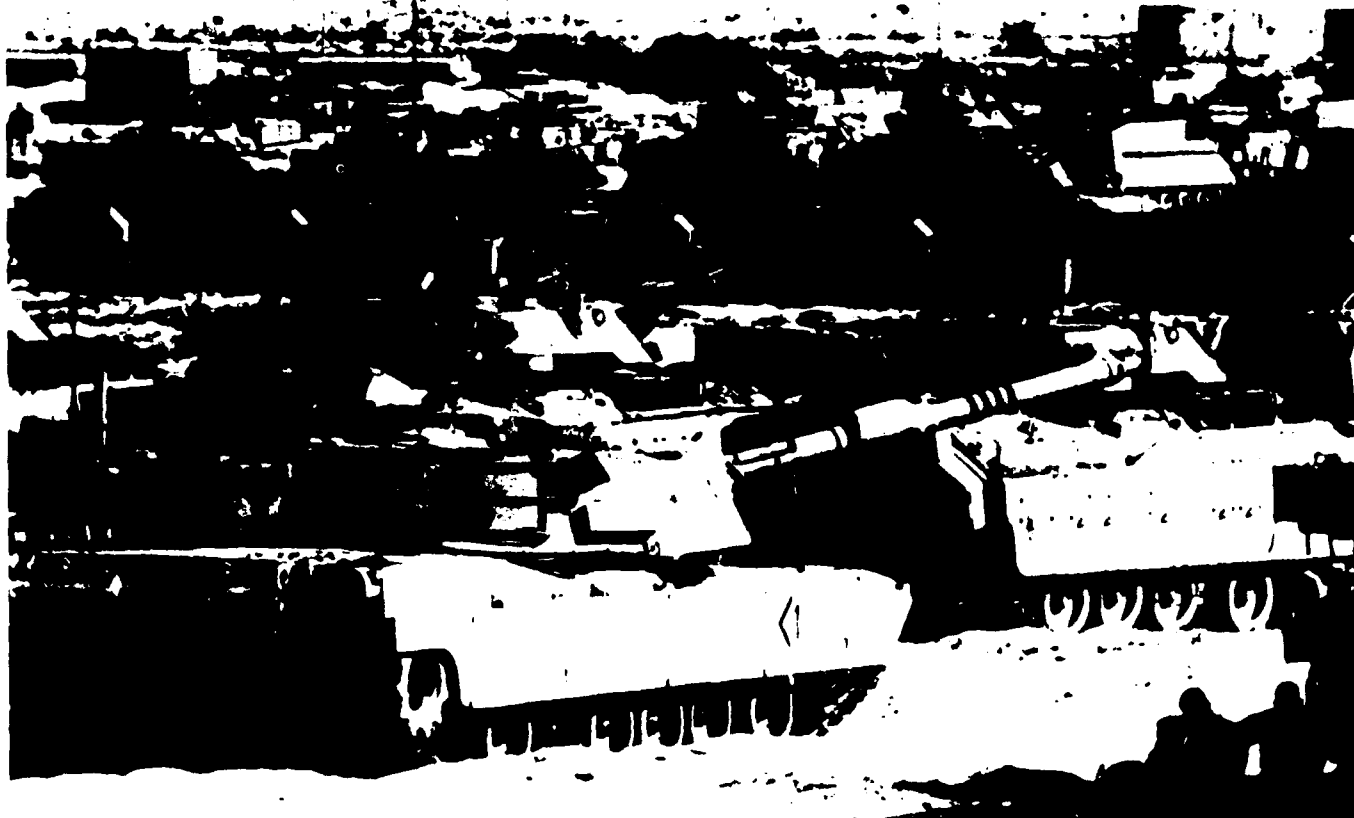
90 Book Reviews *contemporary reading for the professional*

VII Corps in the Gulf War

Deployment and Preparation for Desert Storm

Lieutenant Colonel Peter S. Kindsvatter, US Army

President George Bush directed the deployment of VII US Corps from Europe to the gulf to provide the offensive punch needed for victory. General H. Norman Schwarzkopf gave VII Corps the main attack mission and made it the key element in his "Hail Mary" envelopment. Nearly every aspect of VII Corps' deployment from Europe, preparations in the desert, move to the western attack positions and final assaults against the Iraqi Republican Guard took on previously undreamed of proportions—in terms of numbers and sizes of forces moved, timelines and schedules, distances, logistics requirements, and speed and lethality of engagements. It will all be the subject of intense study and analysis for years to come.



The New Doctrine: Achieving Clarity and Understanding

At the Senior Leaders' Warfighter Conference, conducted 19-21 November 1991 at Fort Leavenworth, a reprint of the 1941 edition of the US Department of the Army Field Manual (FM) 100-5, *Field Service Regulations, Operations*, was provided to all conferees. Published seven months before the United States' entry into World War II, it includes curious passages on horse cavalry employment but some surprisingly timeless glimpses of military thinking. If nothing else, the edition is remarkable for its clarity and simplicity of language and because it does not depend upon a glossary or list of acronyms to provide understanding. Its straightforward prose is not embellished or obscured with second-generation terminology and "weasel" words that often dilute military speech and writing.

The 1941 FM 100-5 is not big—about 310 pages including the index—the size of a small paperback novel. It fits neatly into the side pocket of a field jacket. Without too much trouble, you can imagine a World War II company commander fishing the FM from the side pocket of his rucksack while writing his operations order. *Hmmm. Let's see. Attack of an Organized Position, page 116. Artillery? Check. Security? Check. OK. Let's go.* A modern reader could also imagine that it is "the book" of so many World War II-vintage war movies. As in, "We do things by the book around here, Murphy. Just remember that." In true Hollywood tradition, after that footlocker counseling, Murphy invariably goes against "the book" and saves the platoon from certain disaster.

To characterize recent editions of FM 100-5 as "the book" in this manner loses sight of two facts that surfaced many times during Senior Leaders' Warfighter Conference discussions: The doctrine needs to be refocused; and doctrine is the Army's very foundation, a concise statement of how it provides for the common defense. The letter and intent of the published doctrine gives a look into the brain, if not the heart, of the Army. Thus, the disillusionment of the Vietnam era is reflected in the Army's active defense doctrine. The resurrection of the offensive spirit in subsequent editions of FM 100-5 and a rush to break out of the post-Vietnam War doldrums brought the intense doctrinal renaissance we now know as AirLand Battle. Today, in the absence of a tangible monolithic threat, articulating our future doctrine takes on even greater importance as the Army's anchor to reality and its road map to the future.

Herein lies the challenge. In an uncertain world environment, the challenge will be to bring as much clarity and precision as possible to the new doctrine. In the perfect world, as in the 1941 edition of FM 100-5, words, phrases and sentences are free of innuendo and indirect verbiage. As useful as the indirect approach is in war, it can be deadly in preparing for war. Thus, in this imperfect world, commonly used phrases—"maneuver warfare" is one such phrase—achieve the status of terminology, taking on lives of their own well beyond the base meaning. No doubt the FM 100-5 writing team has a gallery of terms that have achieved such status, and a key task will be to assemble the Army's ideas in a way that minimizes such stereotypical language.

The Senior Leaders' Warfighter Conference was a giant step toward opening the debate to all parts of the Army while charting a common plane of understanding. When the conference adjourned, the chief of staff and the TRADOC commander challenged the attendees to promote and to immerse themselves in the discussion, to talk to each other, to write, to communicate ideas and opinions. The charge that "disagreement is not disrespect" is a healthy sign that the process has opened to all corners. Clearly, the discussion needs to be shaped in the tradition of the 1941 edition of FM 100-5—clearly, directly and positively and with the realization that war may loom in the not too distant future.

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The following article is the first in a series of three that will chronicle the actions of VII Corps, from its planning and deployment, its training in the desert, through the 100-hour ground offensive and, finally, the corps' actions after the cease-fire. The author relates firsthand observations and information gathered in numerous interviews to provide a telling description of VII Corps' efforts. This article begins with the early planning in Europe and takes us to the eve of the ground offensive.

FOR SIX men seated in front of the television in the basement of VII Corps headquarters in Stuttgart, Germany, the 8 November Cable News Network (CNN) announcement that VII Corps would deploy to Southwest Asia came as no surprise. A week earlier, General Crosbie E. Saint, commander in chief of United States Army, Europe (USAREUR), had told the VII Corps commander, Lieutenant General Frederick M. Franks Jr., to form a small, close-hold cell to begin deployment planning.¹ The members of this cell were the only corps soldiers with advance knowledge of the deployment, and even they did not know about the public announcement until Saint called Franks on 8 November and said that a decision might be made that day in Washington.²

While the announcement of the deployment was certainly news to most of the Jayhawk Corps' soldiers, the possibility of deploying all or part of the corps to Southwest Asia was something that the corps' leadership and staff had been secretly examining. The corps commander directed his planners, shortly after the first US troops deployed to Saudi Arabia in August, to begin closely monitoring the situation in Southwest Asia. In late September, VII Corps was directed to begin planning to deploy the 1st Armored Division (AD) to Southwest Asia and, in October, to plan for the deployment of the entire corps. The corps was then told, late in October, to put this planning effort on hold. This initial planning, which involved the corps and its major subordinate commands, served as the foundation for executing the deployment that was announced on 8 November.

In all, 49,008 Continental United States (CONUS)-based soldiers and some 73,369 USAREUR-based soldiers would deploy to Saudi Arabia, with 48,600 vehicles, in 97 days.³ Deployment began on 12 November, four days

Prior to deployment, a BCTP team from Fort Leavenworth, Kansas, conducted a seminar for the corps at Kelley Barracks, Stuttgart, Germany. A BCTP team then accompanied the corps to Saudi Arabia and conducted a three-day map exercise for the corps and its MSCs at King Khalid Military City, 6 to 9 January 1991. Subordinate commands conducted similar leader and staff training sessions.

after the public announcement, when 2d Squadron, 2d Armored Cavalry Regiment (ACR), began rail loading from its home station at Bamberg, Germany, to move to the ports.

In Germany, 465 trains, 119 convoys and 312 barges moved the soldiers and their equipment to aerial and seaports of embarkation, where 435 aircraft and 109 ships took them to Saudi Arabia. An additional 143 aircraft and 31 ships brought the CONUS-based forces to the desert.⁴

Given the need for immediate deployment, force structure decisions had to be made very early. Even before the deployment announcement, Franks met with Saint at USAREUR headquarters on 4 November to discuss tailoring the VII Corps force. Based on anticipated offensive operations, they decided to deploy tank-heavy armored divisions—1st Armored from VII Corps and 3d Armored from V Corps. Picking a division from the US corps stationed in Germany allowed cross-leveling and support from within each corps for its division's deployment.

The two leaders further discussed the internal composition of these divisions. Because of ongoing force reductions, several battalion-size units from the 8th Infantry Division (ID) would

deploy to fill out the 3d AD.⁵ In the 1st AD, where two mechanized infantry battalions had not yet upgraded from M113 personnel carriers

In a sense, the corps had begun focusing its training for the war in Southwest Asia even before Iraq invaded Kuwait. With the end of the Cold War and the dismantling of the inter-German border, VII Corps had begun to get away from lock step, general defense plan-oriented scenarios in its training exercises, emphasizing instead more mobile, offensively oriented scenarios.

to Bradley fighting vehicles, they decided to deploy the 3d Brigade of the 3d ID in lieu of the division's 1st Brigade.⁶

Finally, 2d AD (Forward) would deploy from Germany to round out the two-brigade 1st ID, which, with its armor-heavy brigades (two tank battalions and one mechanized infantry battalion in each) and its longstanding REFORGER association with VII Corps, was a logical addition to the force package.

Force structuring decisions in the combat support and combat service support area would prove even more difficult. As Franks noted, the challenge was "to make a contingency corps out of an already forward deployed corps, and that meant adding communications and combat service support units. . . We were playing catchup ball in making us a contingency corps almost to the time we crossed the line of departure." VII Corps, long reliant upon host nation support in a theater with a well-developed infrastructure, now needed substantial additions in signal, medical, transportation and engineer support. The 2d Corps Support Command (COSCOM), for example, grew from about 8,000 personnel in Germany to 24,000 in Southwest Asia.

In expanding from two maneuver divisions and an ACR in Germany to, at times, five maneuver divisions and an ACR in Southwest Asia and in tripling the size of its COSCOM, VII

Corps exhibited an ability to be expansible. As former Chief of Staff of the Army General Carl E. Vuono said, the smaller US Army of the future must be "expansible, able to regenerate forces to sustain and reinforce extended contingency operations." Vuono envisioned that the Army will continue to "rely extensively on the Reserve Components" for any such expansion, as was the case for VII Corps.⁷ The Jayhawk Corps included 19,908 personnel from 166 Army National Guard and Army Reserve units. Most of these were combat service support units and constituted a large part of the increase in size of 2d COSCOM.⁸

While many specific decisions concerning tailoring the force would, indeed, continue right up to line-of-departure time, most of the major subordinate units deploying with the corps were thus identified prior to the 8 November public announcement (see task organization chart), allowing Franks to immediately convene a commanders' meeting the morning of 9 November. He set the tone for the operation at this meeting, specifically that "we were proud to join our fellow soldiers operating in Southwest Asia and to join the team to defeat aggression, and we would go do what we were asked to do, and we would talk about it later."

The corps commander also laid out a training focus at his 9 November meeting. Units would emphasize gunnery and weapons skills, NBC (nuclear, biological and chemical) training, command and control (C²) of large formations, desert survival and host country customs. From this guidance, the corps' major subordinate commands (MSCs) developed mission essential task lists upon which to base their training.

In a sense, the corps had begun focusing its training for the war in Southwest Asia even before Iraq invaded Kuwait. With the end of the Cold War and the dismantling of the inter-German border, VII Corps had begun to get away from lock step, general defense plan (GDP)-oriented scenarios in its training exercises, emphasizing instead more mobile, offensively oriented scenarios. The corps provided a higher headquarters cell to 1st ID's Battle Com-



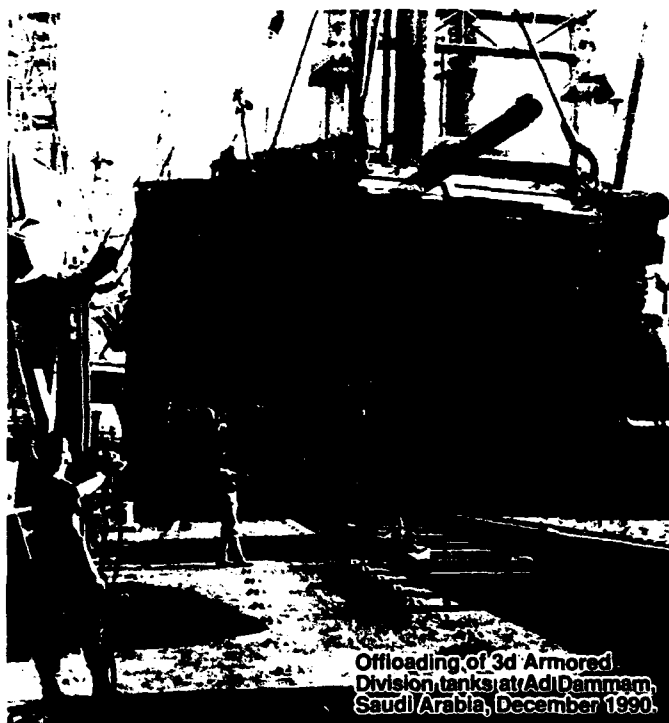
[During the reconnaissance] Schwarzkopf outlined his strategic campaign plan at the meeting and told VII Corps that it would conduct the attack's main effort during the ground campaign. Its mission would be to attack and destroy the Iraqi Republican Guard. . . . the reconnaissance allowed the VII Corps commanders to see firsthand the harsh desert conditions, the lack of supporting facilities and to gain valuable insights from their fellow commanders already in theater.

mand Training Program (BCTP) at Fort Riley, Kansas, in February–March 1990, and then to a 3d ID BCTP in Germany. These BCTPs emphasized long approach marches and attacks from the march. Hence, the corps was well on the way toward a new emphasis on agility and flexibility in planning and operations that would serve it well during the 100-hour war.

Franks also decided upon an immediate leaders' reconnaissance to Southwest Asia. On 11 November, he departed for Saudi Arabia with his 2d COSCOM commander (Brigadier General Robert P. McFarlin), his G3 (operations and plans officer, Colonel Stanley E. Cherrie), his 93d Signal Brigade commander (Colonel Richard M. Walsh), his deputy chief of staff (Colonel Edwin W. Simpson), and his aide (Major Toby Martinez). This party linked up with the corps' MSC commanders in country: Major General Ronald H. Griffith, 1st AD; Major General Paul E. Funk, 3d AD; Major General Thomas G. Rhame, 1st ID; and Colonel Don Holder, 2d ACR.

This reconnaissance was very productive for several reasons. First, Franks and his commanders received firsthand mission guidance from General H. Norman Schwarzkopf, the Central Command (CENTCOM) commander, at a commanders' meeting held on 13 November. Schwarzkopf outlined his strategic campaign plan at the meeting and told VII Corps that it would conduct the attack's main effort during the ground campaign. Its mission would be to attack and destroy the Iraqi Republican Guard Forces Command (RGFC). This basic guidance did not change from that point on, thus allowing VII Corps to focus its planning and training efforts.

Second, the reconnaissance allowed face-to-face coordination with Lieutenant General John J. Yeosock, commander of the Army component to CENTCOM (ARCENT [Army Forces Command]) and his staff. Initial assembly areas and ports of debarkation were selected, and an initial time-phased force deployment list for VII Corps was adopted, with an emphasis on getting



Offloading of 3d Armored Division tanks at Ad Dammam, Saudi Arabia, December 1990.

VII Corps, long reliant upon host nation support in a theater with a well-developed infrastructure, now needed substantial additions in signal, medical, transportation and engineer support. The 2d COSCOM, for example, grew from about 8,000 personnel in Germany to 24,000 in Southwest Asia.

combat service support units into the troop flow early.

Finally, the reconnaissance allowed the VII Corps commanders to see firsthand the harsh desert conditions, the lack of supporting facilities and to gain valuable insights from their fellow commanders already in theater (XVIII Airborne Corps, 24th ID and 1st Cavalry Division) on deployment and desert operations.

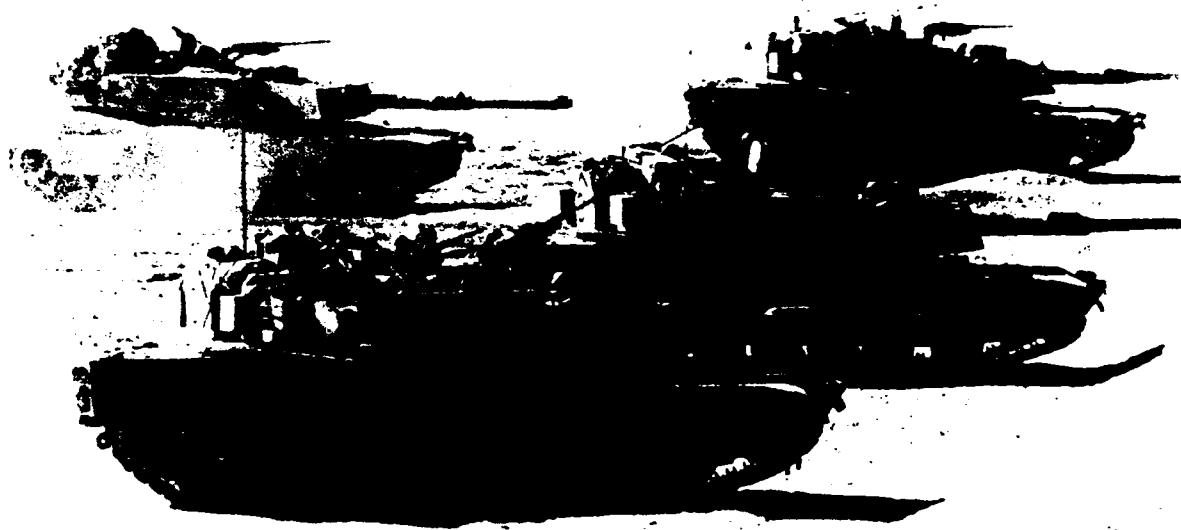
Upon returning to their home stations, the commanders and their staffs threw themselves into simultaneously conducting individual and unit training, deploying personnel and equipment and developing tactical plans. In the area of training, units placed a great deal of emphasis on gunnery skills, knowing that long-range gunnery skills would be critical. The 3d AD had just completed a gunnery and tactical training period at Grafenwöhr and Hohenfels and, thus, was at the peak of its training cycle. The 3d ID was in

a gunnery cycle at Grafenwöhr at the time of the deployment and it hosted deploying tanks and Bradley fighting vehicles on the gunnery ranges, using its own vehicles for any gunner-vehicle commander pairs from 2d ACR, 1st AD or 2d AD (Forward) who had not previously fired together. Unit conduct of fire trainer (UCOFT) training was included.

Live-fire gunnery training continued after units deployed to Saudi Arabia. The corps obtained permission to fire on Saudi training ranges at King Khalid Military City. In addition, the 2d ACR, 1st AD and 3d AD built their own firing ranges in the desert. Engineers constructed a full-scale replica of the enemy defenses for 1st ID to practice deliberate breaching of a fortified area. The 1st ID practiced with its newly acquired mine plows and mine rollers in this practice breach area. These in-theater ranges were not of the quality found at the training areas in Germany, but they afforded each crew the opportunity to fire service ammunition—something many of them had not done before. These ranges also had enough space to allow a large impact area, permitting long-range gunnery. During day and night, crews fired TOW (tube-launched, optically tracked, wire-guided) and Hellfire missiles, 120mm tank service SABOT rounds, the Multiple Launch Rocket System (MLRS), mine clearing line charges (MICLICs), 155mm dual-purpose improved conventional munitions and 25mm Bradley fighting vehicle service ammunition.

Another key element of the in-theater training was maneuver training. Units practiced formations and navigation at all levels, learning to navigate by compass and odometer in the featureless desert. The acquisition of about 3,000 Global Positioning Systems proved immensely valuable to navigation and accuracy of artillery fires. Units learned to build fire support and field trains into their formations, both to keep them readily at hand and to protect them. For many commanders, particularly those above battalion level, the size of their formations was something of a revelation, as was the speed with which they could move over the flat desert. Limited maneu-

M1A1s at a hastily built firing range in the Saudi desert.



The 2d ACR, 1st AD and 3d AD built their own firing ranges in the desert. Engineers constructed a full-scale replica of the enemy defenses for 1st ID to practice deliberate breaching of a fortified area. . . . These in-theater ranges were not of the quality found at the training areas in Germany, but they afforded each crew the opportunity to fire service ammunition—something many of them had not done before. These ranges also had enough space to allow a large impact area.

ver space had precluded such formations at home station.

The corps also emphasized leader and staff training and rehearsals, both at home station and in Saudi Arabia. Prior to deployment, a BCTP team from Fort Leavenworth, Kansas, conducted a seminar for the corps at Kelley Barracks, Stuttgart, Germany. A BCTP team then accompanied the corps to Saudi Arabia and conducted a three-day map exercise for the corps and its MSCs at King Khalid Military City, 6 to 9 January 1991. Subordinate commands conducted similar leader and staff training sessions.

Both the corps commander and the corps chief of staff, Brigadier General John R. Landry, held frequent map rehearsals for commanders and staff, using a 1:100,000 scale flat map with unit counters. These sessions were invaluable in identifying problems and ensuring synchronization.⁹

The three to four weeks of in-theater training the corps' units were able to conduct (some units more than four weeks) was a critical confidence builder. At first, units were concerned with sim-

ply establishing themselves in their assembly areas and getting used to desert life. After about three or four weeks, however, as Franks put it: "Our soldiers were desert smart and desert tough. Our soldiers were magnificent at being able to adapt to the desert—much to the surprise of the Iraqis."

In addition to executing an ambitious training plan, the corps' units underwent various force modernization actions once in theater. Mine rollers, plows and rakes were issued to the corps, with priority to the 1st ID. The 2d ACR turned in its "basic" cavalry fighting vehicles for improved and more heavily armored M2A2 Bradleys, which the 2d ACR used as cavalry fighting vehicles. The four tank battalions of the 1st ID arrived from Fort Riley with M1 tanks. Two of these battalions drew M1A1 tanks, with the 120mm main gun. By the time the ground war started, all of the corps' tank battalions had the M1A1 tank except 3-37AR (Armor) and 4-37AR of 1st ID's 2d Brigade, which would be quite successful with the basic M1 and its 105mm main gun.

VII Corps armor stretching across the Saudi desert to the southern horizon, late February 1991.



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Numerous other force improvement efforts took place. Several tank battalions in the 1st AD received add-on armor plating for their M1A1s. The corps also received single and multi-channel tactical satellite (TACSAT) equipment, which proved extremely valuable for communications over great distances in a rapidly moving battle. The corps received intelligence input down-linked from JSTARS (Joint Surveillance and Target Attack Radar System). MICLICs were mounted on armored vehicle launched bridge chassis to make AVLMs (armored vehicle launcher MICLICs). Hundreds of CUCVs (commercial utility cargo vehicles) were swapped out for the far more versatile and mobile HMMWV (high mobility multipurpose wheeled vehicle). Hundreds of additional HEMTT (heavy expanded mobility tactical truck) fuel trucks augmented the less mobile 5,000-gallon fuel tractor trailers.

Finally, much of the corps' equipment arriving in theater was green in color. A massive effort to

paint it desert sand color started at the ports and continued up until line-of-departure time, with soldiers at the corps tactical command post (TAC) slapping tan paint on their vehicles with brushes as late as 22 February.

Such in-theater force modernization and improvement efforts, coupled with the latest equipment brought by units from home stations—the Apache attack helicopter, the MLRS, the armored combat earthmover, the German-built Fuchs NBC reconnaissance vehicle, the Army Tactical Missile System and the Patriot air defense missile system, to name just a few—ensured that VII Corps crossed the line of departure with the most modern equipment possible. The corps' equipment superiority over the Iraqis would be one of the keys to success.

This significant training and force modernization effort had to be built around the requirements for executing a massive deployment. The corps quickly developed and published, on 11 November, Operation Order (OPORD)

1990-1 for the deployment.¹⁰

The corps established a deployment cell, under the control of the corps deputy commander, Brigadier General Eugene L. Daniel. USA-REUR and United States European Command (USEUCOM) collocated their representatives with the corps' cell. The sequencing of units out of Germany was 2d ACR, corps C² assets, 2d COSCOM, 1st AD, 3d AD, then 2d AD (Forward). The nondeploying 3d ID ran the port support activities in Europe, providing loading teams at seaports of embarkation at Antwerp, Belgium, Bremerhaven, Germany and Rotterdam, Holland.

Establishing a separate deployment cell under Daniel proved to be a wise division of the corps' C² in that it allowed the corps commander and his subordinate commanders to focus on training and war planning while the deployment cell executed the deployment plan. Also, the external support provided by a wide variety of headquarters outside VII Corps such as USAREUR, USEUCOM and various CONUS-based agencies was equally invaluable to the successful deployment.

The corps intended to deploy as it was expecting to fight, in a tactical configuration, with unit integrity maintained, thus facilitating being able to go to war immediately upon arrival in Saudi Arabia. There was a great deal of pressure, however, to complete the deployment by the 15 January deadline given to Iraq to withdraw from Kuwait. This led to an increasing tendency

Corps units underwent various force modernization actions once in theater. Mine rollers, plows and rakes were issued to the corps, with priority to the 1st ID. The 2d ACR turned in its "basic" cavalry fighting vehicles for improved and more heavily armored M2A2 Bradleys. . . . All of the corps' tank battalions [received] the M1A1 tank except [the] 1st ID's 2d Brigade, which would be quite successful with the basic M1.

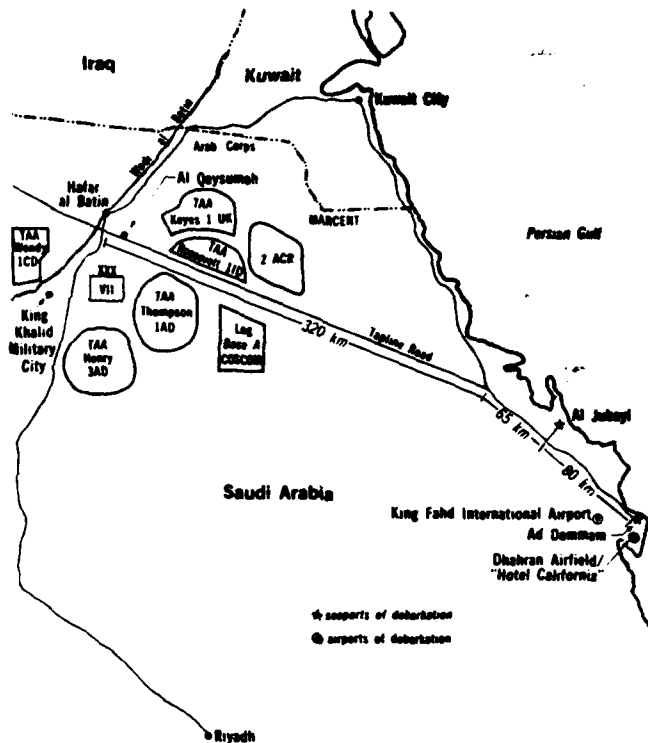


Figure 1. VII Corps Deployment

to administratively load ships to get as much equipment on board as possible, to the detriment of unit integrity. A shortage of MILVANs (military-owned demountable containers) and CONEX (container express) containers aggravated the problem.

The in-theater merging of soldiers with their equipment also proved to be a problem. The corps established an ad hoc port support activities headquarters, known as "Hotel California," at the King Abdul Aziz Air Base in Dhahran, Saudi Arabia. This headquarters was responsible for monitoring the arrival of passengers at the King Abdul Aziz Air Base and at King Fahd International Airport, the arrival of equipment and supplies at the ports of Ad Dammam and Al Jubayl, and the linkup and forward movement of troops and equipment to tactical assembly areas (TAAs) (see fig. 1).

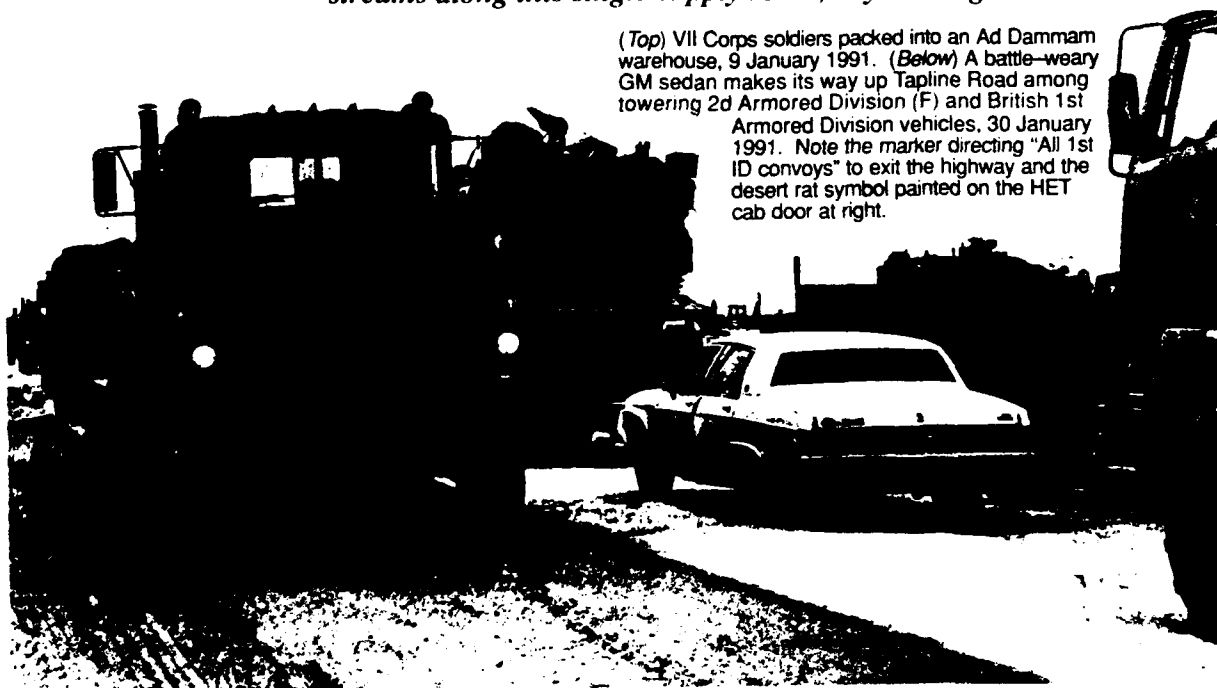
The goal was to have the soldiers wait in temporary quarters in the port area no more than two or three days before linking up with their equipment. However, a very efficient airflow of soldiers, coupled with ship breakdowns and delays, led to a growing time gap between the arrival of personnel and equipment. The waiting time stretched to more than two weeks and caused a



A very efficient airflow of soldiers, coupled with ship breakdowns and delays, led to a growing time gap between the arrival of personnel and equipment. The [expected two- or three-day] waiting time stretched to more than two weeks and caused a buildup of about 30,000 soldiers in the port waiting areas.

A further complication was the lack of lines of communication. The single LOC for the theater was a two-lane, hard-surface road known as Tapline (Trans-Arabian Pipeline) Road. Military and civilian traffic rolled in steady streams along this single supply route, day and night.

(Top) VII Corps soldiers packed into an Ad Damam warehouse, 9 January 1991. (Below) A battle-weary GM sedan makes its way up Tapline Road among towering 2d Armored Division (F) and British 1st Armored Division vehicles, 30 January 1991. Note the marker directing "All 1st ID convoys" to exit the highway and the desert rat symbol painted on the HET cab door at right.



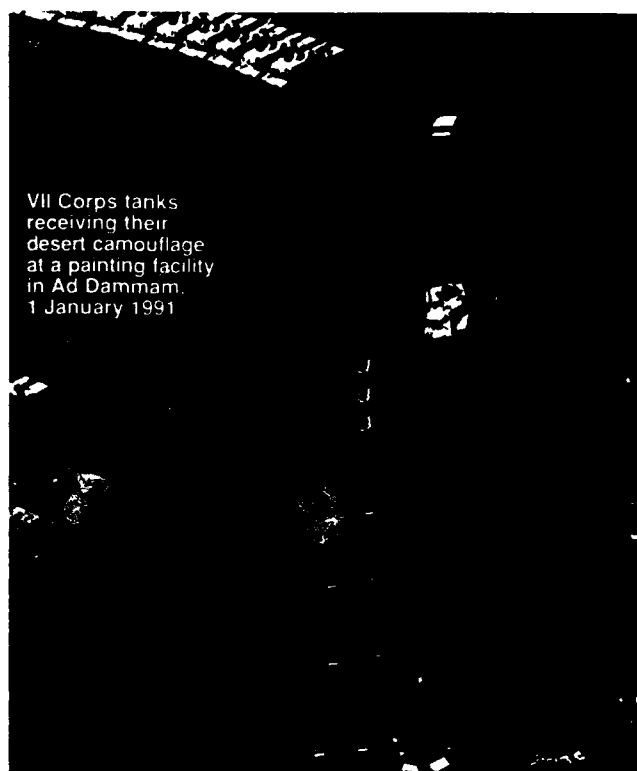
buildup of about 30,000 soldiers in the port waiting areas, far in excess of the planned 12,000 to 15,000, greatly straining accommodations, security measures and transportation.

The ad hoc port support activities headquarters was inadequately staffed and structured to handle this dilemma, so Brigadier General William J. Mullen III, commander of 1st ID (Forward) in Germany, was tasked to bring his chain of command and necessary equipment to Saudi Arabia to assume the port support activities mission. About 800 soldiers from 1st ID (Forward) assumed this mission just after Christmas, with an immediate improvement in the reception and onward movement process. This superb effort allowed the corps and its MSCs to deploy to the desert and prepare for combat operations.

The next problem in the deployment process proved to be the lack of adequate heavy equipment transporters (HETs) to move equipment from the port area to TAAs in the desert. The number of available HETs was limited, and the reliability of the civilian drivers left something to be desired. Consequently, equipment backed up at the ports. Of course in Saudi Arabia, unlike a mature theater of operations such as Europe, there were no alternate means of transportation such as river barges or railroads to move heavy equipment.

A further complication was the lack of lines of communication (LOC). The single LOC for the theater was a two-lane, hard-surface road known as Tapline (Trans-Arabian Pipeline) Road. Military and civilian traffic rolled in steady streams along this single supply route, day and night (see fig. 1). Hence, despite everyone's best efforts, by 17 January, the equivalent of eight tank companies, 16 Bradley companies and 22 howitzer batteries were awaiting transport. On 22 January, 1st AD and 3d AD began road marching selected units to their TAAs rather than waiting for HET transport.¹¹

While there were many snags in the deployment process, these problems, as Franks was quick to point out, "were certainly not caused by anybody's lack of motivation or unwillingness to

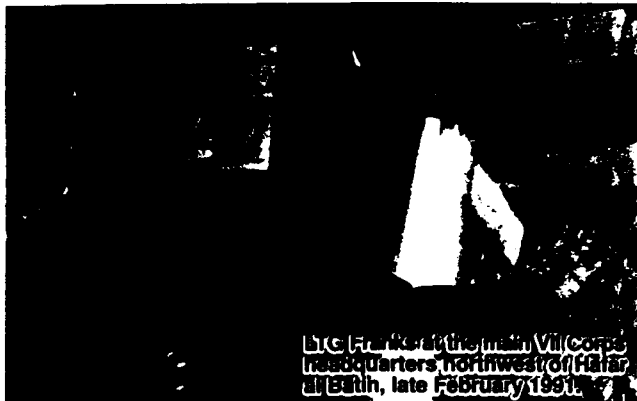


VII Corps tanks receiving their desert camouflage at a painting facility in Ad Dammam, 1 January 1991

Much of the corps' equipment arriving in theater was green in color. A massive effort to paint it desert sand color started at the ports and continued up until line-of-departure time, with soldiers at the corps tactical command post slapping tan paint on their vehicles with brushes as late as 22 February.

do what was required. It was just the enormity—the size—of the operation," deploying a heavy corps through two ports (Ad Dammam and Al Jubayl) while normal theater logistics had to flow through those same ports. Corps and the theater support command would overcome these problems, and the units would close in their TAAs in time to train and prepare for combat.¹²

In addition to training and deployment, the corps had to translate Schwarzkopf's mission of attacking to destroy the RGFC into a concrete tactical plan. The corps commander gave this mission considerable thought upon his return to Germany following the 13 November meeting with Schwarzkopf. On 26 November, a planning cell was convened at Kelley Barracks. Because of the sensitivity of the information, the cell was limited to 10 people.¹³ The planning



[LTG Franks was] on the lookout for a chance to call an "audible"... on the "line of scrimmage" to take advantage of an enemy weakness. The specific move in mind was a shifting of forces westward to envelop the open western flank of the Iraqi defenses, rather than pass the entire attacking force through the breach made by 1st ID.

cell was to develop options to rapidly move to the enemy's rear to attack and destroy the RGFC, which was positioned in depth behind the forward defenses. Depending upon the extent to which the Iraqis continued to improve their defenses and extend them westward, the corps would have to conduct a penetration of the enemy's defensive belt before advancing against the RGFC. The corps commander did not want to rule out an envelopment around the western edge of the enemy's defenses, however, as he much preferred this over what could be a bloody, deliberate breach of a fortified zone.

The planning cell then developed an outline plan that Franks briefed to the ARCENT commander on 7 December in Riyadh. The plan at that point envisioned a strong Iraqi first-echelon defense. The 1st ID would attack and secure a breach area in these defenses west of the Wadi al Batin, and the other corps forces (2d ACR, 1st AD and 3d AD) would pass through the breach and attack to the northeast. The employment of the 1st (United Kingdom [UK]) AD and the

1st Cavalry Division (CD) were discussed at that briefing, but no decisions were made concerning their employment. (Neither unit was, at that point, designated to be part of VII Corps, but the corps commander expected one or both of those units to be given to the corps, since VII Corps' attack was to be ARCENT's main effort.)

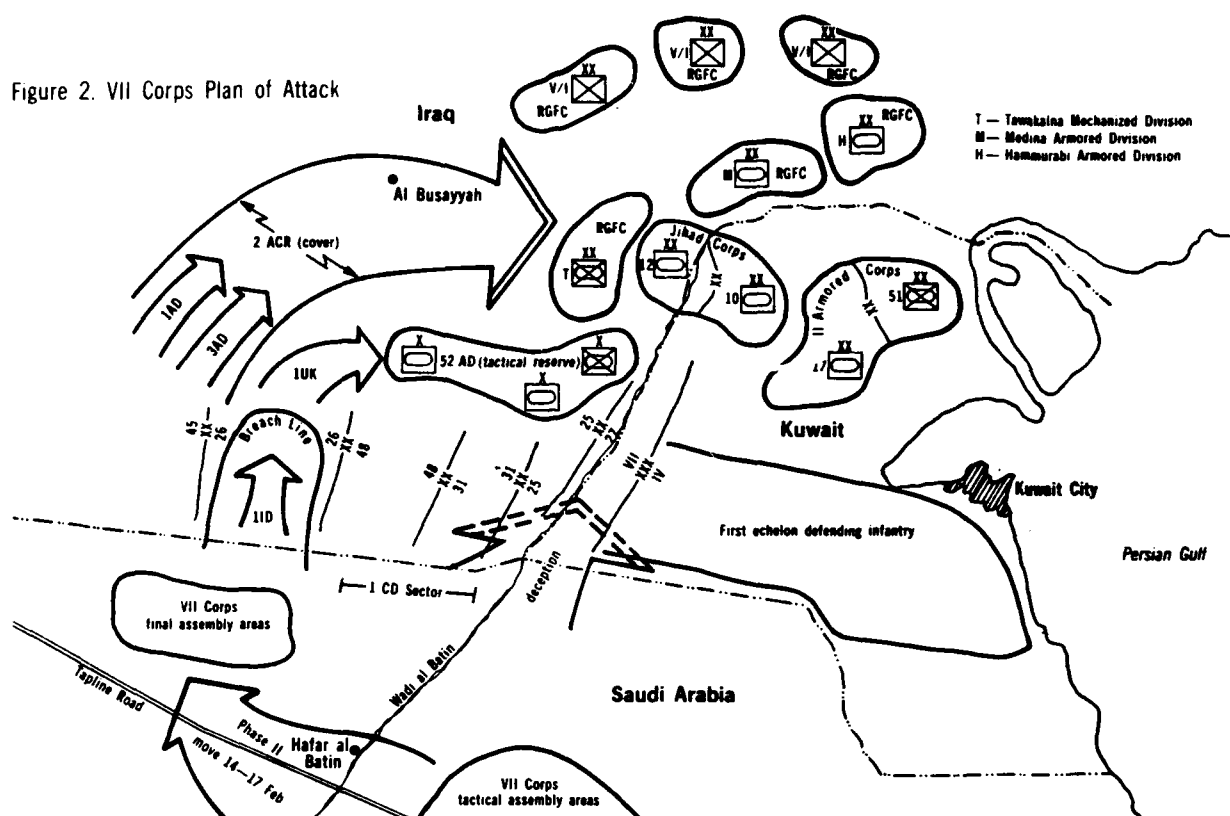
The corps was informed at the 7 December briefing that the secretary of defense, Richard B. Cheney, and the chairman of the Joint Chiefs of Staff, General Colin L. Powell, were to be briefed in Riyadh on 20-21 December, to include briefings by the VII and XVIII corps commanders. It was now evident that the corps' focus was rapidly shifting to Saudi Arabia, even though most of the corps had not yet arrived. Thus, on 13 December, the corps commander and staff deployed to Saudi Arabia for the duration of the campaign, arriving in theater on 14 December.

A week later, the corps commander briefed the secretary of defense and the chairman of the Joint Chiefs of Staff on essentially the same plan he had briefed on 7 December. The 1st ID would breach the Iraqi defenses, and the rest of the corps would pass through the breach to attack the RGFC. Franks explained the three aspects of his tactical plan—penetrating the first-echelon defenses, blocking the reaction by the enemy's tactical reserve and moving rapidly to destroy the RGFC. The plan required three divisions and an ACR for the RGFC fight, a division to penetrate the defenses and a division to block the tactical reserves. This was two more divisions than the corps controlled.

Franks briefed the corps' concept for conducting the breach and passing the follow-on units through, pointing out that this would take considerable time. He explained that he would be on the lookout for a chance to call an "audible," meaning a last-minute shifting of the corps' forces on the "line of scrimmage" to take advantage of an enemy weakness. The specific move in mind was a shifting of forces westward to envelop the open western flank of the Iraqi defenses, rather than pass the entire attacking force through the breach made by 1st ID.

During the BCTP-led corps map exercise

Figure 2. VII Corps Plan of Attack



held in early January at King Khalid Military City, the corps practiced this "audible." The 1st and 3d ADs, with the 2d ACR covering, would shift to the western side of the corps' zone and attack around the western end of the enemy's fortified positions. The 1st ID would still conduct a breaching operation and would be the corps' main effort until the breach was completed. The 1st (UK) AD, though not yet attached to VII Corps, was expected to join the corps before the ground campaign began.¹⁴ Its mission was to pass through the 1st ID breach and attack to defeat the enemy's tactical reserves. This would protect the flank of the enveloping force driving to the northeast to attack the RGFC (see fig.2).

The corps was now short only one division to execute this plan—a third division to join 2d ACR, 1st AD and 3d AD in the destruction of the RGFC. The corps published OPLAN 1990-2, Operation Desert Saber, on 13 January 1991, reflecting this concept of operation.

Prior to the start of the ground campaign, a series of fragmentary plans ("FRAGPLANS") were developed off of OPLAN 1990-2. One of these, FRAGPLAN 7, would be significant to the ex-

ecution of the campaign. The corps used FRAGPLANS as a means of providing some options to the subordinate commanders concerning future operations based on various friendly or enemy situations. FRAGPLAN 7 was developed at the request of the corps commander, to whom "it became apparent that, if the RGFC stood and fought, we needed a coordinated effort between us and XVIIIth Airborne Corps to finish the fight, so I asked our planners to look at a variety of options, basically continuing the left hook (enveloping force)."

FRAGPLAN 7 essentially extended the corps' zone of attack eastward to the Persian Gulf, and proposed a similar extension of XVIII Airborne Corps' zone to the east, on VII Corps' northern flank. ARCENT accepted this FRAGPLAN on 19 February, adopting it as "ARCENT Course of Action 6 for the Destruction of RGFC: Positional Defense in Place." The corps published FRAGPLAN 7 on 24 February.¹⁵

Deception was an inherent part of the plan at all levels, and the initial positioning of the corps' forces in theater was in large measure to support the deception story, specifically that the corps

would attack to the northeast—up, or east of, the Wadi al Batin. For this reason, all unit TAAs were located east of the wadi.

The 2d ACR was positioned north of Tapline Road, well east of the wadi, with a Hawk air defense battery radiating electronically behind it, to portray to Iraqi signal and human intelligence sources a cavalry regiment preparing for its doctrinal role as a covering force for a corps attack east of the wadi. No unit could move west of the Wadi al Batin without the personal approval of the corps commander. Once the air campaign began on 17 January, heavy bombing of targets near and east of the Wadi al Batin reinforced the deception.

On 13 January, the 1st CD, which had been attached to the XVIII Airborne Corps, was attached to VII Corps for the specific mission of protecting the theater's main supply route, Tapline Road, against a possible Iraqi spoiling attack south along the Wadi al Batin to the town of Hafar al Batin. At that time, the 1st CD occupied TAA Wendy just west of King Khalid Military City. The corps also received the 2d Brigade of the 101st Airborne Division (Air Assault) from the XVIII Airborne Corps for this same mission. The 2d Brigade of the 101st flew into Al Qaysumah, a town and airfield on Tapline Road about 30 kilometers east of Ha-

far al Batin, and began digging in around the airfield.

On a cold, rainy 13 January, the 2d Brigade of the 101st was trying to dig in and set up a defense with only what they had carried in with them. The corps, seeing that the 2d Brigade needed help, arranged for engineer and logistics support. Franks also ordered the 1st CD out of TAA Wendy north to positions along Tapline Road that placed the 2d Brigade of the 101st within range of the 1st CD's artillery. The 1st CD moved quickly, starting at 1520 in adverse weather, and covered about 100 kilometers in 16 hours to get into position. The 2d Brigade of the 101st was put under the tactical control of 1st CD.

The enemy did not attack, but this "defense of Hafar al Batin" proved to be a valuable C² exercise in synchronizing combat power. The corps also started, as a result of this exercise, to issue daily operational fragmentary orders to get units accustomed to receiving them and to help get everyone on a tactical footing.

Later in the month, the 2d Brigade of the 101st reverted to XVIII Airborne Corps' control, and the 1st CD moved further north until it occupied a sector along the Saudi-Iraqi border just west of the Wadi al Batin. It remained there through the start of the ground campaign, although it would revert to ARCENT control on 23 February as the theater's ground reserve force. During the month of February, the 1st CD actively supported the deception story of an attack in the vicinity of the Wadi by conducting a series of feints, artillery raids and Apache helicopter strikes against Iraqi forces defending north of the Saudi-Iraqi border.¹⁶

There came a time, however, when the corps had to risk tipping its hand concerning its true intentions. That time came when the corps had to leave its TAAs and shift westward to assigned sectors and final assembly areas in preparation for the ground offensive. The corps executed this move, which was Phase II of *Desert Saber*, from 14 to 17 February. (Phase I was deployment and preparation for combat.) Corps units traveled as far as 160 kilometers to the west and north to position themselves for the attack

VII Corps Task Organization on G-Day

1st Armored Division	207th Military Intelligence Brigade
3d Armored Division	
1st Infantry Division (w/2 AD [Forward] attached)	354th Civil Affairs Brigade
1st (UK) Armored Division*	TF 8-43d Air Defense Artillery
1st Cavalry Division**	7th Finance Group
2d Cavalry Regiment	2d Corps Support Command
Corps Artillery	7-159th Aviation Regiment
42d Field Artillery Brigade	332d Medical Brigade
75th Field Artillery Brigade	229th Movement Control Center
142d Field Artillery Brigade	800th Corps Movement Control Center
210th Field Artillery Brigade	7th Support Group
7th Engineer Brigade	159th Support Group
11th Aviation Brigade	30th Support Group
14th Military Police Brigade	16th Support Group
93d Signal Brigade	43d Support Group

* Tactical control (TACON) to VII Corps 260001Z Jan 1991

** Attached to VII Corps 13 Jan —23 Feb., and again effective 260930C Feb 1991

across the Saudi-Iraqi border.

The corps was concerned that this move would alert the Iraqis to its intentions, but there was no way to completely conceal the move, as two major roads carrying civilian traffic had to be crossed and numerous Bedouin herdsmen and a few small villages were along the path of movement. The corps commander felt that, given the air campaign's success in damaging the Iraqis' intelligence collection and C² apparatus, the only viable intelligence collection method the Iraqis had left was human, "and by the time [anyone] called Baghdad, on their broken down communication system that the Air Force had destroyed, and got that to the field and they reacted to it, we'd be on them." The lack of Iraqi reaction to the corps' movement would bear this out. Indeed it seems probable that the Iraqis were not even aware of the presence of the VII Corps enveloping force until the attack commenced.¹⁷

Prior to executing the Phase II move, the corps commander noticed, from a map analysis, that he could move the corps to its final assembly areas using the same alignments and formations it would use when crossing the line of departure. The Phase II movement was therefore used as a full-up rehearsal for the attack. The 1st ID moved on 15 February from TAA Roosevelt to its assigned sector along the Saudi-Iraqi border. The 1st (UK) AD followed on 16 February, moving into a final assembly area just south of the 1st ID. Along the way, the 1st (UK) AD practiced the formations it would use when it attacked to the east out of 1st ID breach. The 1st ID and 1st (UK) AD did not rehearse the latter's forward passage at this time, but a full dress rehearsal had been conducted on 30 January using 1st ID's breach training area. (At the rehearsal, passage lanes were marked and controlled as they would be during the breach, and the 7,000 vehicles of the 1st (UK) AD passed through these lanes.)¹⁸

On 16 February, after some initial repositioning on 14 and 15 February, the western enveloping force (2d ACR, 1st AD and 3d AD) moved west and then north to its final assembly areas along the Saudi-Iraqi border. The 2d ACR moved in the same covering force formation it

An MLRS attacking Iraqi positions during one of the many artillery "raids" conducted before G-day.



Deception was an inherent part of the plan at all levels, and the initial positioning of the corps' forces in theater was in large measure to support the deception story, specifically that the corps would attack to the northeast—up, or east of, the Wadi al Batin. For this reason, all unit tactical assembly areas were located east of the wadi.

would use to attack into Iraq. The 1st AD, in wedge formation, and the 3d AD, in a column of brigades, moved behind the 2d ACR as they would during the attack.

The corps also took this opportunity to rehearse corps-level C². Franks moved in his M113A3 personnel carrier, along with the G3's and air liaison officer's M113A3s (these three M113s constituted the command group), not far behind the 1st AD TAC headquarters, as he planned to do during the ground campaign. During the move, conducted in a brisk sandstorm, Franks found FM radio communications spotty at best, and he knew that FM radio would be the key to C² during what he expected to be a swift-moving offensive campaign. Franks, therefore,

decided that, unless his physical presence at a particular point on the battlefield became critical, he would travel about the battlefield in his UH-60 Black Hawk helicopter, taking his portable TACSAT radio and an operator with him. In between helicopter trips, he would base himself at whatever forward corps tactical command post was stationary and operating.

The corps' units also learned valuable lessons from the Phase II movement concerning C², time-distance factors, fuel consumption and refueling operations. The corps conducted a formal after-action review on 18 February at the corps' main headquarters, where commanders shared these lessons learned.

The stage was now set for the corps' offensive. The Iraqis had not extended their fortifications farther westward, nor had they repositioned any additional units westward. The chances of a

The Phase II movement [became] a full-up rehearsal for the attack. The 1st ID moved . . . to its assigned sector along the Saudi-Iraqi border [and] the 1st (UK) AD followed . . . into a final assembly area just south of the 1st ID. Along the way, the 1st (UK) AD practiced the formations it would use when it attacked to the east out of 1st ID breach.

successful envelopment of the Iraqi western flank appeared good. The corps prepared for the assault and awaited the announcement of G-day, a date called into question by the last-minute Soviet effort to arrange a peaceful withdrawal of Iraqi forces from Kuwait. The corps was scheduled and ready to attack on G+1. **MR**

NOTES

1. Except as noted otherwise in the footnotes, this article is based upon information and quotations from a series of interviews with LTG Frederick M. Franks Jr. conducted by the author from 2 April to 26 June 1991. The author served as the VII Corps historian during *Desert Storm* from 21 January to 29 June 1991.

2. The six men were the corps commander, the deputy corps commander (BG Eugene L. Daniel), the 2d Corps Support Command (COSCOM) commander (BG Robert P. McFarlin), the corps G3 (COL Stanley F. Cherne), the G3 plans chief (LTC Thomas R. Goedkoop) and the deputy G4 (LTC Michael R. Stafford). The corps chief of staff (BG John R. Landry), a G4 planner (LTC Robert W. Browne) and a G1 planner (MAJ Paul G. Liebeck) were also members of the planning cell, but were not present at the headquarters when the CNN announcement was made.

3. Tab D (Contingency and Fragmentary Plans (FRAGPLANS)) to VII Corps *Desert Shield/Desert Storm* After-Action Report. These numbers do not include the 23,917 British soldiers that deployed from the United Kingdom and the British Army of the Rhine who would later join VII Corps. Nor is the 1st Cavalry Division, which would also join VII Corps during the 100-hour war, counted in these numbers.

4. Ibid.

5. The 4th Battalion, 34th Armor and 5th Battalion, 3d Air Defense Artillery from 8th Infantry Division (ID) deployed with 3d Armored Division (AD).

6. The 3d Brigade of 3d ID, with 1st Battalion, 7th Infantry, 4th Battalion, 7th Infantry, 4th Battalion, 66th Armor and the 26th Forward Support Battalion, deployed with 1st AD.

7. Quote from GEN Carl E. Vuono's Statement Before the Committee on Armed Services, United States House of Representatives, on 20 February 1991.

8. Statistics on Reserve Component participation, provided by VII Corps G1 to the VII Corps historian, are as of 26 April 1991.

9. Such sessions included, for example, a commander's war-gaming session on 7 February, and chief of staff war-gaming sessions on 12, 17 and 21 February. Subjects war-gamed included the breach operation to be conducted by 1st ID, the first few days of combat operations, and the artillery and logistics support plans. This is by no means a comprehensive list; corps historian's notes.

10. A total of seven changes to the plan were published between 11 and 23 November, mostly reflecting additional information available concerning the reception and onward movement process in Southwest Asia and changes to the deployment sequence. The entire operating order, with changes, is in part

(Chronology and Documentation) of the VII Corps *Desert Shield/Desert Storm* After-Action Report.

11. Appendix 3 (Significant Activities), Tab A (Mission) to VII Corps *Desert Shield/Desert Storm* After-Action Report.

12. The 2d Armored Cavalry Regiment was closed in country on 20 December. It then occupied a sector east of the Wadi al Batin, and later closed into TAA Richardson on 23 January. 1st AD and 1st ID closed in TAAs Thompson and Roosevelt, respectively, on 28 January. The 3d AD closed into TAA Henry approximately 5 February, and 1st (United Kingdom [UK]) AD closed into TAA Keyes on about 31 January after moving westward from the Marine Forces Command (MARCENT) sector. Appendix 3, Tab A to VII Corps *Desert Shield/Desert Storm* After-Action Report.

13. This planning cell was initially limited to the commander, the deputy commander, the chief of staff, the commander of 2d COSCOM, the G3, the G4 (COL Wilson R. Rutherford III), the deputy fire support coordinator (COL Thurman R. Smith), the G3 plans chief, the G2 planner (LTC James P. Mault), and the G3 war plans chief (MAJ Patrick J. Becker). Others were soon added, however.

14. As early as mid-December, the corps received "unofficial" notification of 1st (UK) AD's eventual attachment to VII Corps. From that point on, the 1st (UK) AD maintained close ties with VII Corps, even though the "official" word did not occur until Army Forces Command (ARCENT) fragmentary order (FRAGO) 16 was issued, directing tactical control of 1st (UK) AD effective 260001Z January 1991. Tab D to VII Corps *Desert Shield/Desert Storm* After-Action Report.

15. FRAGPLAN 7 was initially published 20 February and modified and republished on 24 February. The graphics, if not the exact disposition of forces, would be executed during the ground campaign. FRAGPLANS 1 through 6, incidentally, were not executed—only FRAGPLAN 7. Tab D to VII Corps *Desert Shield/Desert Storm* After-Action Report.

16. Executive Summary and Narrative Summary, 1st CD After-Action Report, 10 April 1991.

17. VII Corps G2's *Battlefield Reconstruction Study*, "The 100-Hour Ground War: How the Iraqi Plan Failed," 20 April 1991, pages 31-37, provided details on the failure of the Iraqi intelligence system and the extent to which the Iraqi forces were in ignorance of the VII Corps' dispositions in particular, and of Coalition Forces in general.

18. 1st ID Executive Summary, *Desert Shield/Desert Storm* After-Action Report, 3.

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THE LIMITS OF POWER

America's 20 Years in the Gulf

Major Jeffrey Schloesser, US Army

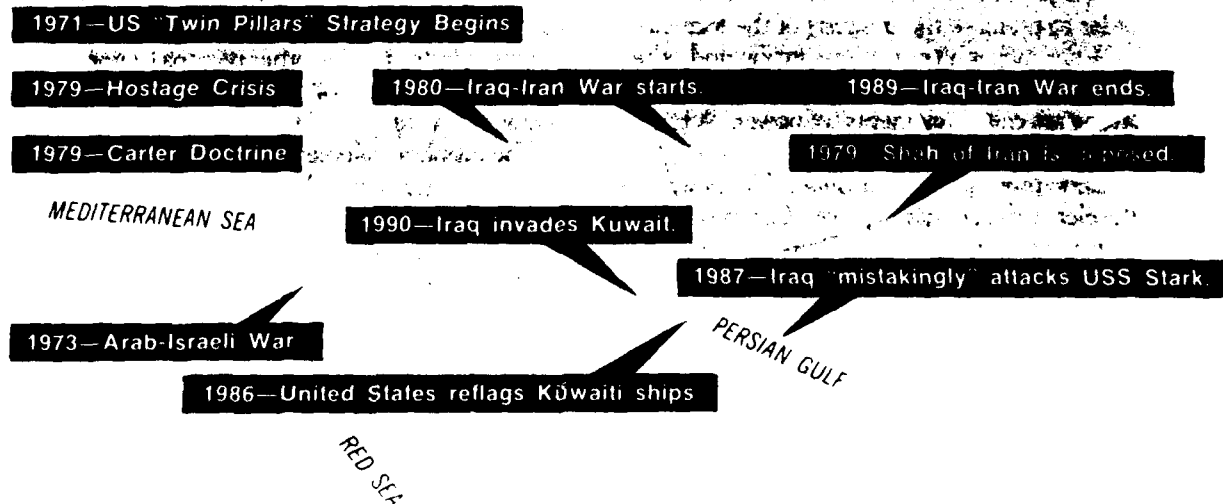
The Gulf War is over, and the forces are still returning home. This article examines the elements of national power and how each element is mutually supportive of the others. The author reviews the strategies that have guided the United States in the region over the past 20 years. Finally, he looks at the actions that ultimately led to Operation Desert Storm.

WITH a formal cease-fire in place in the gulf and the return home of the international coalition's forces, world affairs are again settling down into a "normal" pattern. Minor wars and diplomatic skirmishes abound, but nothing nearly as riveting as the Gulf War is in the wind. At this time of relative tranquility, it is appropriate to begin the initial analysis of the Gulf War and events leading up to it, searching for preliminary lessons.

As the world's "true" superpower, the United States committed an immense amount of resources and effort to the reversal of the Iraqi invasion of Kuwait. As a nation, the United States put the lives of its young men and women on the

line against Iraqi aggression. Also at risk was its prestige and reputation as a superpower. In a larger strategic sense, both the stakes and the commitment were higher. At stake was an international vision—a "new world order," and a new American national strategy to implement it. Pursuing this vision, the United States devoted all of its prodigious resources—its *national power*.

How did the United States come to this war? What conclusions can be drawn from this experience—America's 20 years in the gulf—concerning US national power, interests and strategy? Based on initial "lessons learned" from America's effort in the gulf, **what are the limits of US national power?**



The political element is the "guiding light" of national power that serves to focus the other elements of power. It is based on political culture and organization, stability and alignments with other nations. Political power is exercised through diplomacy, the media, alliances and alignments.

National Power— A Pragmatic Approach

Why are some nations strong and others weak? The study of national power and its elements begins with this simple question.

Harold and Margaret Sprout defined national power as "the total capabilities of a state to gain desired ends vis-à-vis other states."¹ Twenty-five years later, Ray S. Cline gave a similar but more detailed definition:

"Power in the international arena can thus be defined simply as the ability of the government of one state to cause the government of another state to do something which the latter otherwise would not choose to do—whether by persuasion, coercion or outright military force."²

Jeffrey Hart emphasized the idea of national power as a form of international control: control over resources; control over actors; or control over events and outcomes.³

Capabilities, coercion and control—national power is all of these. During the remainder of this analysis, I will use national power to mean the employment of persuasion or coercion by one nation to control other nations or situations in order to promote the interests of the former.

What makes some nations strong and others weak? The capabilities that make a nation strong are called "elements" of power. What are they and what do they do?

Cline proposed a "quantifiable" framework of the elements of national power. Calling national power "a mix of strategic, military, economic and political strengths and weaknesses," Cline proposed that power is:

"... determined in part by the military forces and the military establishment of a country but even more by the size and location of territory, the nature of frontiers, the populations, the raw-material resources, the economic structure, the technological development, the financial strength, the ethnic mix, the social cohesiveness, the stability of political processes and decision-making, and finally, the intangible quantity usually described as national spirit."⁴

Cline introduces "national spirit" as an element of power. Sam C. Sarkesian calls this "psychological sustenance": It is the will to use the national power and the subsequent perceived power from both within and without the nation. It is that quality which separates the strong nation from the "paper tiger".⁵

A recent trend has been to deemphasize formulas and emphasize a holistic approach to power. Gregory D. Foster suggests that a nation's power falls into one of several categories—military, political, economic, technological, psychological, moral and diplomatic.⁶ More important, he cautions against the "common tendency to erect artificial barriers" between the various elements.⁷

I believe US national power today can best be understood as a synthesis of seven major elements: geographic power, military power, economic power, technological power, political power, national will and international vision.⁸

The geographic element comprises the human and physical resources of a nation. It is normally considered the basis for all other forms of national power.

The military element is the "last resort" component of power, but is not limited only to coercion. Military force is a deterrent force—a power to persuade or dissuade other nations. Thus, the external perception of military power is as important as reality.

The economic element of power is a relationship between a nation's economic base and its standing within the international economy, based on multilateral trade and its financial influence. As a form of persuasion, nations use economic power to grant trading rights, most fa-



Troops of the 3d Infantry Division's largely Puerto Rican 65th Regiment fight their way down a Chinese trench line east of Yench'ow, 1 June 1951. Note the fragmentation grenade lying ready for use to the left of the trench.

The US interventions into Korea, Vietnam and the gulf were based less on fears that those crises would ever directly affect the security of America, but rather on a vision of world order and a sense that the United States had a responsibility to maintain this vision.

vored nation status, loans, grants and aid. As a form of coercion, nations impose economic sanctions and embargoes to limit or curtail another nation's participation in international trade or finance.

Technological power is the ability to develop, fund and integrate modern innovations of all types in order to dramatically augment other forms of power. It also consists of its converse—the ability to withhold technology from others to control or limit their actions.

The political element is the "guiding light" of national power that serves to focus the other elements of power. It is based on political culture and organization, stability and alignments with other nations. Political power is exercised through diplomacy, the media, alliances and alignments.

These elements mean little without national will. This is the determination or consensus of leaders and populace to use power. It is not di-

rectly a function of the other elements of power, but is based upon internal and external perceptions of that power. When lacking, a nation may have vast military forces and economic assets, yet still be "weak."

The final component of power is vision. At this level, vision is a concept of national direction, of goals and futures. Nations with cohesive and comprehensive visions are able to refine political power and focus the national will toward the "justified" exercise of power; those without vision find it difficult to integrate the other elements of power.

In the lofty environment of "superpower," vision will be international in scope. President George Bush's "new world order" comes to mind. In recent memory, world communism served as a strong international vision that focused the national power of the Soviet Union.

The seven elements of power are mutually reinforcing and denigrating. Any change in one

The military element is the "last resort" component of power, but is not limited only to coercion. Military force is a deterrent force—a power to persuade or dissuade other nations. Thus, the external perception of military power is as important as reality.

element dynamically affects the other elements, often in unforeseen ways. For example, a political decision to limit a nation's area of military interest normally would allow this nation to concentrate its forces, increasing its tangible military power. However, the very act of circumscribing its interests may actually be perceived internationally as a strategic withdrawal, a lack of national will and an act of weakness.

National power is never constant. David A. Baldwin noted, "Power resources are situationally specific."⁹ In this sense, national power is dynamically dependent on external situations, as well as the specific mode of use. Examples of this are the difficulties both the United States and Soviet Union encountered when attempting to wield their very substantive power in Vietnam and Afghanistan, respectively.

Nations wield power to protect national interests—such as freedoms, allies and systems—that uphold and strengthen national values, and which the nation is prepared to defend. In the United States, national interests are expressions of American values projected into the international arena.¹⁰

Not all interests are equal. Sarkesian divides US national interests three ways: vital interests, critical interests and serious interests. Vital interests deal directly with the protection of the homeland and are so important that a nation will go to war to protect them. Critical interests do not directly affect the nation's survival in the short term, but may affect it over the long term such as the maintenance of open political and economic systems. Finally, serious interests set a favorable climate for the protection of

the vital and critical interests such as worldwide freedom of navigation and aid to other nations.¹¹

Are interests "vital" only when they protect the national homeland? Bernard Brodie defines vital interests as "those interests against the infringement of which we are prepared to take some kind of military action." Brodie added:

"Great nations, however, and especially what we now call superpowers, will often be concerned with what they deem to be threats to the national security which are much more distant in space, time, and even in conception than the kind of direct attack on home territories described above."¹²

I believe superpowers consciously invoke something larger than national responsibility when judging national interests—vision. A vision entails responsibility, and a vision international in scope brings international concerns and responsibilities. In my view, the US interventions into Korea, Vietnam and the gulf were based less on fears that those crises would ever directly affect the security of America, but rather on a vision of world order and a sense that the United States had a responsibility to maintain this vision.

National Strategy— Force or Statecraft?

What is national strategy? One way to understand strategy is as the use of force to achieve an end. The most recent version of this approach is presented by Robert Art. In "A Defensible Defense: America's Grand Strategy After the Cold War," he writes:

"Nonmilitary instruments are as important to statecraft as the military one, but I do not treat them as part of grand strategy, because I wish to preserve the useful distinction between grand strategy and foreign policy, which includes all of the goals and all of the instruments of statecraft."¹³

This approach is at odds with the holistic approach to national power—as a grouping of various elements that are mutually dependent and seldom used alone.

Crew members of the captured Iranian minelayer *Ajr* being escorted to waiting helicopters on the USS *Guadalcanal* during the prolonged "tanker war" in the Persian Gulf, 22 September 1987.



The free flow of energy resources and regional security—these interests have long been of vital importance to the United States in the gulf. Often however, they have been subsumed under an even more "vital" interest—containment of Soviet inroads into the area.

For my purposes, a more useful concept of strategy is provided by Bruce Palmer Jr. He notes that "since the mid-twentieth century, 'national strategy' has attained wide usage, meaning the coordinated employment of the total resources of a nation to achieve its national objectives."¹⁴ National strategy is statecraft, combining the use of all elements of power for reasons—normally called policy.¹⁵ Strategy is distinct from policy and includes using any or all elements of power.

US Interests and Strategy in the Gulf

Annually, the US administration publishes its national interests and national security strategy. Additional statements and speeches by key policy makers refine and focus how the current administration sees these national interests and how it plans on wielding national power, especially when confronted with crises. Located within these same documents and speeches—often almost hidden from view—lies the vision

of the current administration.

In 1990, the US administration listed its long-term interests in the Middle East:

"The free world's reliance on energy supplies from this pivotal region and our strong ties with many of the region's countries continue to constitute important interests of the United States."¹⁶ The free flow of energy resources and regional security—these interests have long been of vital importance to the United States in the gulf. Often however, they have been subsumed under an even more "vital" interest—containment of Soviet inroads into the area.

The US role in the gulf began in the 1930s, when US business interests initially established the Arabian American Oil Company in Saudi Arabia. During World War II, the US military shared British airfields in the area, and in 1949, the US Middle East force, a naval task force in the gulf, was established at Bahrain. However, it was not until the British withdrawal from the gulf in 1971 that US interests, policy and

The twin pillars strategy began in 1971 as an offshoot of the Nixon Doctrine. The core of this doctrine was that the United States would provide military and economic assistance to nations of vital interest, but that the United States "shall look to the nation directly threatened to assume the primary responsibility of providing manpower for its defense."

strategy became decisively engaged.¹⁷

Since 1971, US strategy in the gulf has been dynamic and changing. At least four separate periods are discernible today: the 1971-1979 "twin pillars" strategy; the Carter Doctrine from 1979 to 1987; the Reagan administration's "active" intervention in the gulf from 1987 until 1990; and the gulf-*Desert Shield-Desert Storm* strategy currently in effect.

"Twin Pillars." The twin pillars strategy began in 1971 as an offshoot of the Nixon Doctrine. The core of this doctrine was that the United States would provide military and economic assistance to nations of vital interest, but that the United States "shall look to the nation directly threatened to assume the primary responsibility of providing manpower for its defense."¹⁸

US interests in the gulf were defined at this time as "orderly development, regional cooperation," and the continued modernization of the Iranian and Saudi Arabian military to enable them to "provide effectively for their own security and to foster the security of the region as a whole."¹⁹ The United States assisted in the military expansion of Iran and Saudi Arabia, its two closest friends in the area, in an effort to promote regional security.

During this period, the United States employed its economic, military and technological power in a sustained effort to bolster Iranian and Saudi Arabian military capabilities. Politically, however, this effort may have sown the seeds of its own destruction, by extremely rapid

modernization and westernization of its target countries. It was a time of relatively weak US power in the region. Caught in the legacy of Vietnam, the United States appeared to be a hobbled giant.

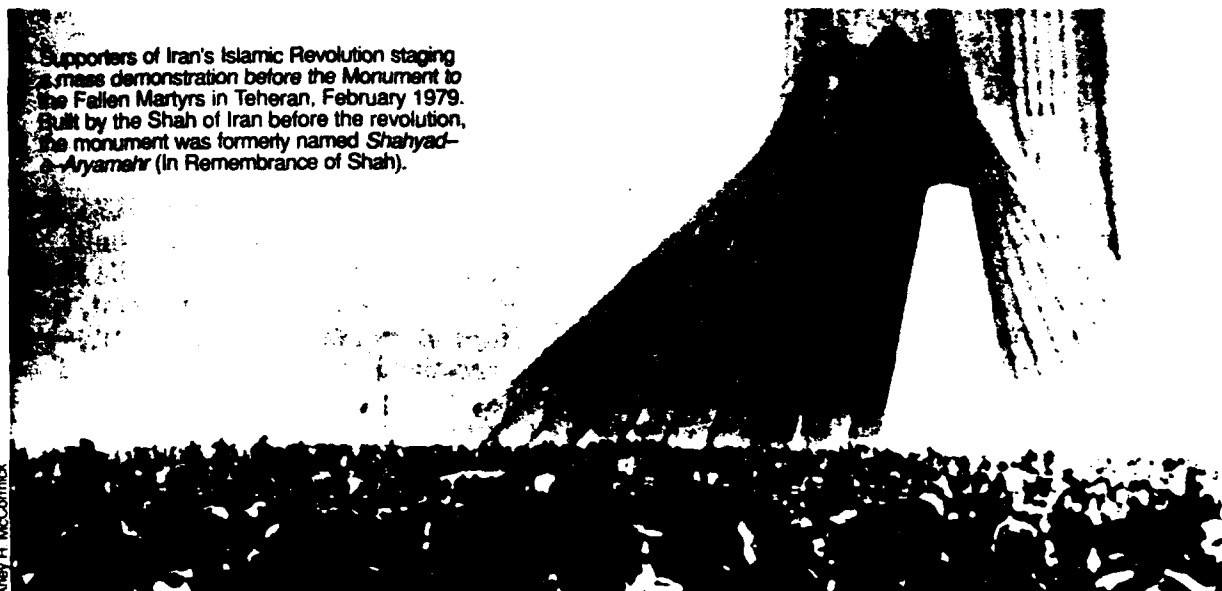
The Carter Doctrine. In 1979, one pillar of the US strategy fell. The replacement of the Shah of Iran with a radical and anti-Western government was exacerbated by the Soviet invasion of Afghanistan and other Soviet inroads on the periphery of the gulf. A strategy reevaluation resulted in the Carter Doctrine, signalling "US resolve to defend Western interests in the gulf, unilaterally if necessary."²⁰ President Jimmy Carter's 1980 State of the Union Address clearly added containment as a US interest:

"Any attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America and such assault will be repelled by any means necessary, including military force."²¹

The Reagan administration built on the Carter Doctrine during its first term. US interests—containment, free flow of oil and regional security—remained the same. US national strategy in the region remained preoccupied with stopping Soviet expansion through regional cooperation, security assistance and rapidly building US capability to project forces into the area.

US elements of power were directly engaged. The military element focused on arms sales to bolster friendly forces and regional confidence, and the political element wasted much of its power in a fruitless search for a "strategic consensus."²² In 1983, the United States began Operation *Staunch*, using its economic power and political influence to restrict arms deliveries to Iran. In 1985, the covert arms transfers to the Ruhollah Khomeini regime hurt the embargo's effectiveness.²³ Nevertheless, the gap between US strategy and actual power was considerably narrowed.

Active Intervention. In 1986 and 1987, several developments caused the Reagan administration to alter its strategy. Iran deployed the Chinese antiship Silkworm missile and



Supporters of Iran's Islamic Revolution staging a mass demonstration before the Monument to the Fallen Martyrs in Teheran, February 1979. Built by the Shah of Iran before the revolution, the monument was formerly named *Shahyad-e-Aryamehr* (In Remembrance of Shah).

Arley H. McCormick

In 1979, one pillar of the US strategy fell. The replacement of the Shah of Iran with a radical and anti-Western government was exacerbated by the Soviet invasion of Afghanistan and other Soviet inroads on the periphery of the gulf. A strategy reevaluation resulted in the Carter Doctrine, signalling "US resolve to defend Western interests in the gulf, unilaterally if necessary."

threatened gulf shipping. Iran directly threatened Kuwait, which responded by asking for US and Soviet assistance in reflagging its tankers.²⁴ The Iranian navy detained a Soviet arms carrier in the gulf, and the Soviets responded by stationing combat vessels in the Persian Gulf and the Gulf of Oman.

The Reagan administration viewed these developments as a twofold risk. First, there was the Soviet threat. Not only had the Soviets increased their naval combatant presence in the gulf, but they were positioned to gain diplomatically from any Soviet participation in the reflagging of Kuwaiti ships—especially if the United States chose not to participate in its own right.²⁵

The administration also clearly identified the risk of Iranian hegemony in the gulf and opted to "tilt" toward Iraq and its supporters, especially Kuwait.²⁶

During this phase of "active" engagement, US interests and their priority remained the same as during the previous period.²⁷ However, the use of overt US national power greatly expanded to reflect a new "two-track" strategy: active military engagement in the region to "protect our interests and help protect the security of moderate, friendly Arab states in the gulf"; also, diplomatic attempts to "galvanize greater international

pressure to persuade the belligerents to negotiate an end" to the Iran-Iraq War.²⁸

To carry out the new policy, the United States deployed military forces to the gulf. The US naval presence in the gulf and surrounding waters expanded to over 35 ships, including a carrier battle group and a battleship.²⁹ These forces engaged in combat against Iranian forces throughout 1987, destroying most of the Iranian navy in the process. Finally, an apparent accidental attack on a US Navy ship, the USS *Stark*, resulted in a major congressional and public outcry.

Economic power formed another component of the effort to prevent Iranian hegemony. The United States sought to engage the major arms-exporters in an embargo against Iran in a reinvigorated Operation *Staunch* and unilaterally embargoed all Iranian imports, as well as most militarily useful US exports.³⁰ Tilting toward Iraq, the United States authorized nearly \$1 billion in food purchase credits to Iraq for 1987, making that country the largest recipient of such aid.³¹

The new US strategy employed political power to "internationalize" the expanding conflict in the gulf, as well as to engage the United Nations (UN) in efforts to stop the Iran-Iraq War. The former was a painful, but largely successful, effort that eventually culminated with over 35

additional ships from five Western nations supporting operations in the gulf.³² The latter was an equally laborious diplomatic effort to secure passage and implementation of UN Resolution 598, demanding a cease-fire and negotiations between Iran and Iraq. This multifaceted policy of military, economic and political coercion provided an "out" for both belligerents. However, the ultimate cease-fire that occurred on 20 August 1988, owed as much to military exhaustion as to US national power.

In 1989, the US strategy in the gulf appeared to be a success. The Iran-Iraq War was over, and the Soviets departed Afghanistan. As the United States looked to the next decade, there was a perception of relief—Iran was drained and would not be strong enough to pose a threat for some years. The Soviets were out of Afghanistan and, obviously, had enough problems at home. All three national interests seemed secure—containment, regional security and free flow of oil. National hubris did not last long, and the 2 August invasion of Kuwait by Iraq cast the US strategic success in a new light.

The Setting for Invasion

The Iraqi invasion of Kuwait caught the United States, its Western allies and its Arab friends by surprise. Regional experts predicted nothing of the like, and when Iraqi troop concentrations were too massive to ignore, they were dismissed as a bluff. Anthony H. Cordesman and Abraham R. Wagner wrote in early 1990 that "the most likely near-term prospect is that Iraq will seek to form a potential block with the southern gulf states, not threaten them."³³ A US Army War College study said, "Iraq's military policies will be restrained. Baghdad should not be expected to deliberately provoke military confrontations with anyone."³⁴

Administration officials were equally surprised. Returning from a trip to Iraq and the gulf in February 1990, Assistant Secretary of State John H. Kelly told the House Sub committee for Near Eastern and South Asian Affairs that "Iraq has emerged strengthened after the Gulf War cease-fire, with increased military power and

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prestige in the Arab world," but that "it is clear that Iraq seeks improved relations with the United States."³⁵

Iraq was quick to prove the administration wrong—in February, Saddam Hussein condemned the US naval presence in the gulf and expelled a US diplomat from Baghdad; in March, US and British customs thwarted an Iraqi attempt to smuggle nuclear weapons components, and the United States discovered that Iraq had moved Scud missile launchers within range of Israel; finally in April, Hussein threatened to "burn up half of Israel" in response to any Israeli attack.³⁶ Nevertheless, the administration successfully opposed trade sanctions against Iraq and held out hope that, given a more responsible Iraqi effort to control proliferation of nonconventional weapons and improve its human rights record, "the US-Iraq relationship will improve, with benefits for both countries."³⁷

However, the economic basis for potential conflict was readily apparent to the same experts. Stephen C. Pelletiere, Douglas V. Johnson II and Leif R. Rosenberger noted in their study:

"Iraq's problem appears to be its current financial position, which blocks the transition from a war to a peacetime economy. In order to mount its end-of-the-war blitzkrieg Iraq had virtually to restructure its society . . . The failure so far to find a solution to this problem has put Iraq into a classic bind. It cannot easily bear the burden of so many men under arms, but neither is it able to return them to civilian life as long as there are so few jobs awaiting them."³⁸

Certainly, economics played an important role in the Iraqi strategic calculus. Writing after the invasion, Pelleriere and Johnson confirmed that "Iraq invaded its neighbor because it was desperate . . . At the same time, Kuwait was fabulously wealthy, and Iraq—by seizing it—could hope to exploit its wealth to resolve its economic problems."³⁹

It may be years before the conclusive rationale for the Iraqi invasion is uncovered. The historical boundary difficulties, a long-held belief that Kuwait was cheating Iraq over shared oil fields, a suspicion that Kuwait was politically vulnerable—all could have played an important part in Hussein's decision. Clearly, however, the United States failed to understand the Iraqi leader's national vision in 1990, just as Hussein failed to understand Bush's international vision—one that would unite most of the world against Iraq.

Another important change in the international situation set the stage for the US counter to the Iraqi invasion. The lauded success of containment, fall of the Iron Curtain and the rapprochement of the Soviet Union with the international system formed the basis for Bush's vision of a new international framework—"a new world order." Speaking of the vision he shared with Soviet President Mikhail Gorbachev at Helsinki, Bush said:

"A hundred generations have searched for this elusive path to peace, while a thousand wars raged across the span of human endeavor. Today, the new world is struggling to be born . . . a world where the rule of law supplants the rule of the jungle, a world in which nations recognize the shared responsibility for freedom and justice, a world where the strong respect the rights of the weak."⁴⁰

The United States had won the Cold War and was discarding containment. As the president noted in his 1990 *National Security Strategy*, "Our goal is to move beyond containment, to seek the integration of the Soviet Union into the international systems as a constructive partner."⁴¹

The first test for the Soviet Union and the new vision came early in the morning of 2 Au-



Robert McDonald/Asia-Pacific Defense Reporter

⁴²Afghan Mujahidin with captured RPG-7 rocket launcher, 1987

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gust 1990, when Iraqi troops flowed across the border into Kuwait.

Countering the Invasion

Within three days of the initial invasion, Iraq had more than 120,000 troops and 850 tanks in Kuwait. Many were formed along the Kuwait-Saudi border, posing a potential threat of invasion into Saudi Arabia.⁴² On 8 August, Bush addressed the nation, telling the American people that US ground forces had been sent to defend the Saudi Arabia homeland. In his address, the president spoke of the interests at stake:

"First, we seek the immediate, unconditional, and complete withdrawal of all Iraqi forces from

The Bush administration moved quickly to claim the moral "high ground." . . . It was not "the United States against Iraq. It is Iraq against the world." The administration swiftly and masterfully formed international, diplomatic and military coalitions . . . one working within the confines of the UN, the other actually on the ground in the gulf.

Kuwait. Second, Kuwait's legitimate government must be restored to replace the puppet regime. Third, my administration, as has been the case with every president from President Franklin D. Roosevelt to President Ronald Reagan, is committed to the security and stability of the Persian Gulf. Fourth, I am determined to protect the lives of the American citizens abroad."⁴³

In a statement before the House Foreign Affairs Committee, Secretary of State James A. Baker also spoke of the stakes. Calling the Iraqi invasion a "political test of how the post-Cold War world will work," he said that the United States "must show that intimidation and force are not successful ways of doing business in the volatile Middle East—or anywhere else." Finally, Baker noted the "dependence of the world on access to the energy resources of the Persian Gulf," saying that Hussein "could strangle the global economic order."⁴⁴

US interests were defined in familiar terms—regional security and stability, also the free flow of oil. Clearly missing was the normal focus on containing Soviet inroads in the gulf: in fact, the administration soon invited Soviet assistance in the gulf, especially in diplomatic efforts within the UN Security Council (UNSC).

The Bush administration moved quickly to claim the moral "high ground." As Bush framed the confrontation, it was not "the United States against Iraq. It is Iraq against the world."⁴⁵ The administration swiftly and masterfully formed international, diplomatic and military coalitions against Iraq, one working within the confines of the United Nations in New York, the other ac-

tually on the ground in the gulf. The result was foretold years prior by Bernard Brodie:

"We have also learned the wisdom of the late President Dwight D. Eisenhower's extreme reluctance to consider undertaking an intervention alone. Even though we might be carrying a disproportionate burden, the cooperative participation of other powers, as in Korea, places the entire operation in a different moral light, both in our own country and in the world."⁴⁶

These coalitions formed the foundation of a revised US strategy. In place of unilateralism was a clear desire for multilateral political, economic and military efforts to end the crisis.

The United States used every element of its national power to achieve its four stated goals in the gulf in 1990–1991. Geographic, military, economic, technological, political, national will and vision all played a role in the isolation of Iraq, a sound military victory over Iraqi forces and the unintentional dislocation of Iraqi society.

The geographic element of power formed the basis for US intervention. Without it, there could have been no massive projection of military power from two continents, no incredible display of integrated technology and political objectives. Without the human and physical resources of a superpower, the intervention could not have occurred.

The military element of power played a key role, especially once the diplomatic die was cast and negotiations between the United Nations and Iraq died. While the Air Force and Army will argue for years about who *really* won the war, the greater lesson is found in what military power failed to do. In spite of two years of active engagement—naval and air combat in the gulf—the potential of US military intervention did not deter Hussein from invading Kuwait. Once this power was massed in the gulf with other military coalition members, it still failed to cause Iraq to withdraw, short of war. Why?

Earlier in this study, I discussed the "specificity" of *perceived* power. It is very likely that Hussein never believed the United States had the national will to physically stop or reverse his invasion, despite any rhetoric to the contrary. The

intrigue over US Ambassador April C. Glaspie's purported remarks that the United States had no opinion about inter-Arab disputes is misplaced attention. More appropriately, Americans should ask themselves—why, after years of underlining that the gulf was of vital interest, and then demonstrating military resolve in the region from 1987–1988, was US commitment and power disregarded? Clearly, Hussein miscalculated both US military power and its national will. While the military and the administration are responsible for the former, they, along with the Congress and the public, are accountable for portraying the national will. In this case, it did not convince or deter Hussein.

After the war began, US military power outclassed the Iraqis at every level. The role of high-tech weapons, air power and armored maneuver forces was pervasive. US military strength was augmented by the desert terrain and an opponent who, despite coalition fears, fought conventionally. The impact of this rapid and clear-cut military victory should visibly increase perceptions of national will and US deterrence in the gulf, helping prevent another miscalculation.

The economic element of power both strengthened and weakened the overall cumulative effect of national power. The United States successfully pursued economic sanctions against Iraq, including a total trade and financial embargo against Iraq (UNSC Resolution 661), the naval enforcement of the embargo (UNSC Resolution 665), and the expansion of the embargo to all air cargo (UNSC Resolution 670).⁴⁷ No one will ever know for certain if these sanctions could have restored Kuwaiti independence, because the administration decided early on they would take too long and could be circumvented.

While economic sanctions historically have had limited political success, at least one group of noted economists thought that in this specific case they would work. In a revised edition of *Economic Sanctions Reconsidered*, Gary Hufbauer and others predicted that Iraq's gross national product would decline by 48 percent, noting that the average decline for other successful sanctions has only been 2.4 percent.⁴⁸ Regardless, it is like-



Deck crew aboard the USS John F. Kennedy loading a variety of high-technology weapons onto an A-6 during Operation Desert Storm, January 1991.

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ly the sanctions caused significant supply problems for the Iraqis, but it remains unknown just how effective they could have been without military intervention.

On the other hand, the United States used economic incentives of its own to persuade its friends and allies to participate in its diplomatic and military coalitions. One clearly successful case was the forgiveness of Egypt's \$6.7 billion foreign military sales debt. This elimination of debt was reimbursement for lost revenues due to the invasion and *Desert Shield*; more significantly, it was both incentive and reward for the positive diplomatic and military stance Egypt took.⁴⁹

On the negative side, the United States was

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required to go "begging" for financial assistance—burden sharing it was called—to pay for the military deployment and employment of its forces. This is certain to reduce the perception of overall US national power, both in its allies' as well as its present and future adversaries' view.

The technological aspect of US power was on televised display nightly during the air and ground campaigns. While informed debate about its effectiveness awaits declassification of results, it is obvious that high-tech equipment can dramatically multiply applied forces, *if operators are well trained*. Iraq learned much the same lesson, with opposite results. However, after weeks of watching Scud interceptions and smart bombs on television, the public expected too much from high technology. When the inevitable system and human errors occurred—such as the bombing of the Iraqi bomb shelter and the Scud strike on the US Army Reserve barracks—they became world media events.

While high-tech garnered the media's attention, "medium-tech" set the stage for victory. The US airlift and sealift of massive amounts of equipment and 550,000 troops as well as their support for several months, could not have been accomplished by any other nation in the world.

Political power, national will and a nation's vision—these elements were integrated better than at any time in recent memory. The administration "sold" its vision—a new world order—to both the American people and the international community. This allowed the coalition to claim a morality to its own military intervention that Hussein's rhetoric could not match. This vision was backed by months of intensive negoti-

ations and coalition building, both from the White House and the United Nations. The result was a mixed bag of military forces and overall international approval for forcibly removing Iraq from Kuwait, based directly on Bush's lead. However, this same multilateral integration demanded that military and political objectives be fixed at the most common denominator—the return to the status quo. Without this political "handicap," it is unclear if the United States would have stopped its forces where it did, or if Hussein would have remained in power.

The Limits of Power

The 20 years of US involvement in the gulf have been difficult, disorienting years. America has maintained its interest through a variety of strategies and employed every type of power imaginable—all the way from diplomatic niceties to massed armor formations. Along the way, US administrations learned a few strategic lessons.

Perceptions of power are more important than reality when it comes to deterrence. It is difficult in a democracy to build a perception of power in an area of indirect confrontation—it takes years of applying constant pressure and coherent policy. It takes just one incident to gain a reputation for indecisiveness and weakness.

The role of the national will is difficult for an outsider to gauge. In an open, media-oriented society such as America's, opinions and political power are dynamic. They can change with the nightly news. The United States should expect adversaries to miscalculate the national will, for most cannot comprehend its essence. For the astute politician, the multilateral approach limits objectives but provides the moral "high ground."

Economic power is rarely sufficient. In a crisis, no one has the time to wait for sanctions and embargoes to work. However, sanctions are almost always a milepost on the way to confrontation—if they have the votes to pass in the US Congress, the national will is not far behind.

Technological power is most important when the threat is conventional. Massed tanks and infantry respond to air superiority, battleships and armor divisions. Low-tech floating mines,

car bombs and revolutionaries do not.

Finally, all elements of power are subject to being miscalculated due to the specificity of perceived power—all, that is, except military forces on the ground. If an interest is truly vital, and the situation remotely critical, only deployed troops will signal that a nation's power is on the line.

During these 20 years of US interests, strategy and power in the gulf, it is a safe bet that few other regions of the world have caused as much US hand-wringing or strategic false starts. It is also safe to say that the United States will seek to stay engaged in this vital area for at least another 20 years, probably more. If so, policy makers should understand the national power

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they wield. Just as important, they must clearly understand the limits of power, for that is much more difficult to accept. **MR**

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Operation Desert Storm A JUST WAR?

Captain Yuval Joseph Zacks, US Army

Operation Desert Storm has been viewed as a swift, effective and surgical military action that restored the sovereignty of Kuwait. The author examines whether this was a just war and if justice was served in its execution. He also looks at the issue of appeasement and finally, he examines the air campaign and its impact on Iraq's civilian infrastructure.

FOLLOWING Iraq's 2 August occupation and subsequent annexation of Kuwait, the United States was at the forefront of an international coalition aimed at reversing the Iraqi aggression. In the months leading to Operation Desert Storm, our government offered a plethora of reasons for our involvement in the conflict. Domestic economic and oil interests were often mentioned. So was the creation of a "new world order." Also mentioned, repeatedly, was the need to send a signal that wanton aggression, the subjugation of small and weak nations by large and aggressive ones, would not be tolerated. In this latter context, we proclaimed that our cause was just. Liberating Kuwait from Iraqi bondage, even at the point of armed conflict, was a morally sanctioned act.

I will examine whether *Desert Storm* was, in fact, a just war and whether, in the execution of this war, there was justice. These two concepts, *jus ad bellum* (the justice of war) and *jus in bello* (the justice in war), are both central and inseparable in moral philosophy. The justice-in-war question is perhaps especially relevant in light of the advent of "precision" weapons.

The argument of *jus ad bellum* is age-old. Michael Walzer of the Institute for Advanced Study at Princeton and author of the masterpiece, *Just and Unjust Wars*, clearly articulates in his book the legalist paradigm that serves as

Kuwait, an independent state with internationally recognized [borders], was clearly the victim of Iraqi aggression. This aggression constituted a criminal act. . . . Ill-equipped to either defend itself or regain its independence through unilateral action, [Kuwait] was necessarily dependent on the international community for its rescue.

a baseline for the theory of aggression. There are six important clauses to this theory:

- "There exists an international society of independent states."¹ These states, through their governments, are solely charged with the protection and the interests of their citizenry. Most important, states cannot be "challenged in the name of life and liberty by any other states."²

- "This international society has a law that establishes the rights of its members—above all, the rights of territorial integrity and political sovereignty."³ This precept implies that one can differentiate between the territory belonging to one or another group of people and gives weight to the idea of sovereignty.

- "Any use of force or imminent threat of force by one state against the political sovereignty or territorial integrity of another consti-

tutes aggression and is a criminal act."⁴ This principle lays the groundwork for a state's right of self-defense.

- "Aggression justifies two kinds of violent response: a war of self-defense by the victim and a war of law enforcement by the victim and any other member of international society."⁵ Hence, this tenet sanctions the role of an international "police force."

- "Nothing but aggression can justify war."⁶ This theory aims at limiting the "occasions for war . . . there must actually have been a wrong, and it must actually have been received."⁷

- "Once the aggressor state has been militarily repulsed, it can also be punished."⁸ This implies that just wars may include a deterrent role, "punish[ing] aggression to prevent war."⁹

Implicit objectives perhaps not all withstanding, virtually all of the stated goals of *Desert Storm* met the legalist paradigm outlined by Walzer. *Desert Storm* was the effort of an international coalition (largely composed of American forces), operating under the auspices of the United Nations (UN) to liberate Kuwait from Iraq. *Desert Storm* was a just war in that Kuwait, an independent state with internationally recognized (by virtue of the UN) rights of territorial integrity and political sovereignty, was clearly the victim of Iraqi aggression. This aggression constituted a criminal act. Kuwait, ill-equipped to either defend itself or regain its independence through unilateral action, was necessarily dependent on the international community for its rescue. Furthermore, in countering this blatant aggression, not only the repulsion but also the punishment of Iraq by the international community was warranted. This final notion was, in part, conceptualized by President George Bush in his talk of a "new world order." The punishment of Iraq would ultimately serve as a deterrent to aggression by expansionist-minded states.

Although the United States and other nations may well have had additional goals in mind while formulating the international response to the Iraqi aggression, these other political issues in no way diminish the "justness" of *Desert Storm*. Richard Harries, the Bishop of Oxford

The very nature of Nazi rule was violence. . . . One can argue that Saddam Hussein's rule is (and has always been) violent. Thus, as with the Nazis, the appeasement of Hussein would ultimately prove an impossible and unconscionable solution.

and author of *Christianity and War in a Nuclear Age*, states that "the presence of self-interest does not by itself rule out the possibility of a war being just. It is in the interest of all nations to prevent any country thinking that it can simply march across the borders of a neighbor and take it over".¹⁰ This conflict was truly a just war in the classical sense.

The Problem With Appeasement

In the months prior to *Desert Storm*, there were many critics of the UN (and largely US) policy. It was often argued that in order to avoid an expanded conflict, political and military concessions should have been granted to Iraq. Bush, and ultimately his coalition partners, dismissed these arguments as smacking of appeasement.

Appeasement is a theory largely explained in utilitarian terms. It "suggests that giving in to aggressors is the only way of avoiding war."¹¹ Gerald Vann, in writing on appeasement as characterized by the "Munich principle" (a reference to the appeasement of the Nazis in 1938), has stated that "if a nation finds itself called upon to defend another nation which is unjustly attacked . . . it may . . . be its . . . duty, to try to persuade the victim of aggression to avoid the ultimate evil of a general conflict by agreeing to terms less favorable than those which it can claim in justice . . . provided always that such a surrender of rights [would not be] a surrender once and for all to the rule of violence."¹² It is this last clause, however, that appears inherently contradictory and is perhaps the core of the very argument against appeasement. Vann's argument seems weak when related to the Nazis—for the very nature of Nazi rule was violence. In much the same manner, one can argue that Saddam Hussein's



Having repeatedly called for the Iraqis to overthrow [Hussein], we were nevertheless unwilling to aid in a domestic uprising against this tyrant. It was argued that our failure to militarily assist the Kurds and Shiites in their fight . . . resulted in a campaign of brutal reprisals against these Iraqi groups.

rule is (and has always been) violent. Thus, as with the Nazis, the appeasement of Hussein (effectively Iraq) would ultimately prove an impossible and unconscionable solution.

Justice in War

Accepting that *Desert Storm* was a just war and recognizing the seemingly lopsided victory of the coalition forces, it is imperative to examine the *ius in bello*. Walzer, who will soon incorporate his thoughts on *Desert Storm* into an updated preface to his book, is quoted in the *New York Times* as theorizing that "modern technology makes it more possible to exercise discrimination, and therefore we should be more critical of any non-discrimination."¹³

Two key premises when referring to justice in war are that there are, in fact, rules of war and that noncombatants must be immune from attack. Details of these principles are provided in law of war treaties that are binding upon Iraq, the United States and its coalition partners.

I will dismiss the ground phase of *Desert Storm* from consideration in my discussion of justice in

war. The ground war was in essence the culmination of a protracted coalition air campaign.

The ground campaign did not affect noncombatants per se, was very short in duration and in the last analysis, probably resulted in the capturing of more enemy prisoners than in the infliction of deaths. Of the Iraqis captured, there were no reported incidents of atrocities; many Iraqi prisoners surrendered in desperation and in order to receive the food and medical treatment they were denied by their own government. The air campaign, on the other hand, was long in duration, extended into civilian strongholds and incorporated much of the new technology to which Walzer referred. It is on this phase of *Desert Storm* that I will concentrate.

The philosopher Henry Sidgwick deals with utility and proportionality in war. He claims that "it is not permissible to do any 'mischief' which does not tend materially to the end [of victory], nor any mischief of which the conduciveness to the end is slight in comparison with the amount of the mischief."¹⁴ Proportionality, however, is a difficult measure to apply. There are no easy



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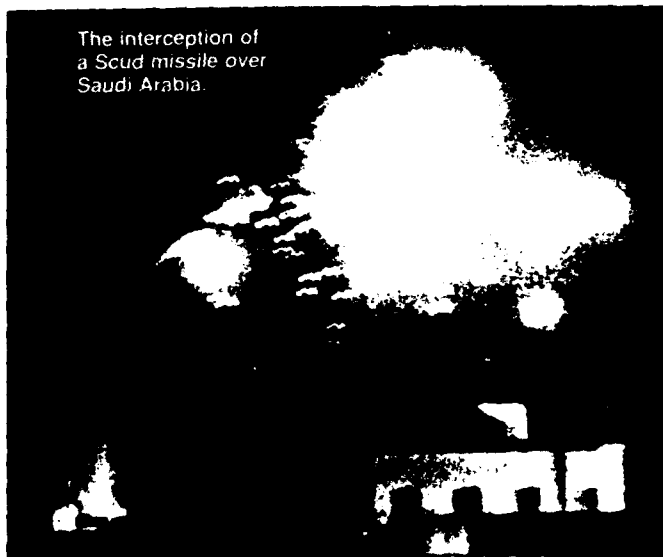
ways to "establish an independent or stable view of the values against which the destruction of war is to be measured. Our moral judgments wait upon purely military considerations and will rarely be sustained in the face of an analysis of battle conditions or campaign strategy by a qualified professional."¹⁵ Thus, when the coalition air forces destroyed Iraq's infrastructure, largely affecting its civilian populace, how are we to dispute the efficacy of this military strategy? Doctor David Little of the US Institute for Peace clearly states that "the proportionality criterion is not awfully scientific. There isn't any calculus you can use. . . . You have to use circumstantial judgment about how important [Kuwait's freedom] is, and what costs this is worth."¹⁶

Sidgwick proposes an "economy of force" approach to warfare—the very same strategy professed by any trained military strategist.¹⁷ The problem is that the moral philosopher's computation of economy of force may not even begin to approximate that of the military strategist. The latter traditionally receives the benefit of the doubt. Destruction of an opponent's infra-

structure is problematic in moralistic terms. With respect to military necessity, defined as the force "necessary to compel the submission of the enemy with the least possible expenditure of time, life, and money," a strong argument can be made for the destruction of an infrastructure.¹⁸

Today's military technology relies heavily on the components of most nations' infrastructures. It is no longer simple to differentiate between that which serves an exclusively military, as opposed to civilian, purpose. Communication systems are relied on heavily by both segments of society. Likewise, television, radio, electricity and road networks have both civilian and military uses. In a society such as Iraq's where the military merits top priority in the allocation of goods and services, the elimination of a large segment of its infrastructure may arguably be a military necessity. The destruction of a nation's infrastructure exacts a heavy toll on the civilian populace. Unsanitary conditions and disease proliferate. Famine may erupt, and medical care may be discontinued. Thus, when we talk about the most economical way of forcing the submission of

The interception of
a Scud missile over
Saudi Arabia.



The coalition policy of not targeting civilians was in clear contrast to the Iraqi policy that manifested itself in the rape of Kuwait and Scud attacks against the civilian populaces of Israel and Saudi Arabia. Adherence to . . . proportionality is harder to judge given the inherent dilemma between the military practitioner and the moral philosopher.

the enemy, we must wonder on what basis we are making our calculations. Perhaps had the coalition forces been willing to spend more time and money in concentrating their air attacks strictly on visible military targets, there would have been less loss of Iraqi life. On the other hand, such a strategy may have proved wholly ineffective, needlessly prolonging the war and resulting in not only a greater loss of Iraqi civilians but also of Kuwaitis and coalition forces. Thus, according to George Weigel, president of the Ethics and Public Policy Center in Washington D.C., "proportionality bangs up against the reality that the overwhelming application of force works and shortens wars. Incrementalism causes all sorts of problems—such as, Vietnam."¹⁹

The destruction of Iraq's infrastructure was not the only source of death for Iraqi civilians. Under the law of war, the Iraqi leadership was obligated to separate military objectives from its civilian population. It failed to do this, choosing instead to use its own civilians as a human shield. Although the stated policy of the allied forces was to refrain from bombing or targeting civilian

objects, accomplished through the maximum use of precision munitions, Iraqi commingling of legitimate targets with the civilian population and the friction of combat resulted in the injury and death of some Iraqi civilians. Such collateral civilian casualties and damage to civilian objects are accepted by moral philosophers, however, and are explained by the theory of double effect. This theory "is a way of reconciling the absolute prohibition against attacking noncombatants with the legitimate conduct of military activity."²⁰ The key elements of the double effect theory are that "the intention of the actor is good, that is, he aims only at the acceptable effect; the evil effect [killing of noncombatants] is not one of his ends, nor is it a means to his ends," and "the good effect is sufficiently good to compensate for allowing the evil effect; it must be justifiable under Sidgwick's proportionality rule."²¹

Clearly, the first criterion applies if one believes the stated policies of the coalition forces. The coalition policy of not targeting civilians was in clear contrast to the Iraqi policy that manifested itself in the rape of Kuwait and Scud attacks against the civilian populaces of Israel and Saudi Arabia. Adherence to the second criterion, that of proportionality, is harder to judge given the inherent dilemma between the military practitioner and the moral philosopher.

Despite the undoubtedly heavy civilian and military losses suffered by Iraq and the minimal casualties of the coalition forces, justice in *Desert Storm* prevailed. Civilians were not targeted per se, cities were not razed and massacres did not occur. Technology was used by the coalition forces to compensate for the perceived imbalance in force sizes (1 million Iraqi troops against a half million coalition troops). The poor performance of the Iraqi military should not be used to claim that the coalition used disproportional force. Besides, the Iraqi military was billed as a top-notch fighting force—a claim the Iraqis themselves asserted and intelligence data predicted. Prior to the onset of hostilities, Iraq never called a time-out because of an imbalance in the forces. Instead, the coalition was promised that it would swim in its own blood and that the war would be

the "mother of all battles." The coalition forces repeatedly warned the Iraqis of the pending destruction. The capabilities of our technology and even most of our fighting strategy was well advertised prior to the onset of hostilities. Iraq's failure to heed the coalition's warnings, and its subsequent defeat in battle, does not entitle it to claim that the war was unjustly prosecuted.

For critics of *Desert Storm*, the US failure to intervene militarily in support of the post-cease-fire uprising of the Iraqi Kurds and Shiites proved a sure sign of the injustice of the war. Having proclaimed our war against Hussein as morally just and having repeatedly called for the Iraqis to overthrow their despotic leader, we were nevertheless unwilling to aid in a domestic uprising against this tyrant. It was argued that our failure to militarily assist the Kurds and Shiites in their fight against Hussein's forces resulted in a campaign of brutal reprisals against these Iraqi groups. This criticism ignores the legal obligation of the United States and its coalition partners to seek resolution of such crises through the UN rather than acting unilaterally. Just war theory, though, traditionally asserts that "the outcome of civil wars should reflect not the relative strength of the intervening states, but the local alignment of forces."²² An exception to this rule, however, is when "the dominant forces within a state are engaged in massive violations of human rights . . . [for] when a government turns savagely upon its own people, we must doubt the very existence of a political community to which the idea of self-determination might

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apply."²³ In this case, humanitarian intervention by a third party or parties is justified.

Once Hussein revealed both his ability to withstand the Kurdish and Shiite uprising and his intention to punish these two groups for their disloyalty, the US intervened through *Provide Comfort*. Employing both coalition forces and humanitarian relief organizations, the US established safe havens for these oppressed groups and entered into negotiations with Iraq for the guaranteed future safety of the Kurds and Shiites. Whether the forces of Hussein respect their pledges to provide safety for the Kurds and Shiites, as the US and coalition forces continue to withdraw from their strongholds in northern Iraq, is difficult to predict. There should, however, be no doubt about the resolve of the coalition forces to reintervene for humanitarian purposes in the event that Hussein's words prove once again insincere. **MR**

NOTES

1. Michael Walzer, *Just and Unjust Wars* (New York: Basic Books, Inc., Publishers, 1977), 61.
2. *Ibid.*
3. *Ibid.*
4. *Ibid.*, 62
5. *Ibid.*
6. *Ibid.*
7. *Ibid.*
8. *Ibid.*
9. *Ibid.*, 63.
10. Richard Harnes, *The Independent*, 31 October 1990, 19
11. Walzer, 67.

12. *Ibid.*, 68.
13. Michael Walzer, *New York Times*, 17 March 1991, E-4.
14. Walzer, *Just and Unjust Wars*, 129.
15. *Ibid.*
16. David Little, *The Christian Science Monitor*, 19 February 1991, 6.
17. Walzer, *Just and Unjust Wars*, 130.
18. *Ibid.*, 144.
19. George Weigel, *The Washington Post*, 23 September 1990, A-1.
20. Walzer, *Just and Unjust Wars*, 153.
21. *Ibid.*
22. *Ibid.*, 101.
23. *Ibid.*

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During operations Desert Shield and Desert Storm, the Army learned that in order to move heavy forces long distances, heavy equipment transporters (HETs) were required. The authors look at the effort put forth in the desert to execute the assigned mission. They address developing concepts and organization structures to relocate heavy combat forces. Finally, they offer a comparison in the cost of using HETs in peacetime.

THE Transportation Corps has long known that trucks can easily and efficiently carry tracked combat vehicles over long distances.¹ To do so, however, is truck-intensive as many of the combat vehicles will only fit one to a truck. The truck the Army uses to carry heavy tracked vehicles is called a heavy equipment transporter (HET). A modern HET can carry a combat-loaded M1 Abrams tank; it can also carry other tracked vehicles such as M113 armored personnel carriers (APCs), two at a time.

Traditional HET Employment

For many years, the Army's doctrine for moving combat vehicles by truck has been to individually evacuate and replace damaged combat vehicles.² The heavy lift truck capability in the Army has, therefore, been relatively limited.

There are about 1,500 tracked combat vehicles in a heavy division.³ Yet, divisions have only a small quantity of organic heavy lift capability. An infantry division has only six organic HETs.⁴ A heavy division has only 24.⁵ The nondivisional transportation heavy truck company, assigned to corps or theater army in a general support role, has only 36 HETs.⁶ They, too, are used almost entirely to evacuate severely damaged combat vehicles to major maintenance facilities and to replace them individually.

The limited use of HETs to transport tracked vehicles reflects the Army's long-term preoccupation with the NATO Theater. This theater has well-developed and well-maintained rail and highway networks. The rail network in western Germany is so extensive and so capable

that US heavy divisions use it for almost all their moves to and from training centers. Most armor units in Germany plan only one road march per year in their training schedules.⁷

There is also significant Wartime Host Nation Support (WHNS) highway capability in Germany. There are current requirements for 14 transportation heavy truck companies in the NATO force structure; WHNS units meet eight of them. This is sufficient HET capability to meet the evacuation and replacement mission, but not to provide all the armor and mechanized units with routine training in truck loadout and unit movement. If more heavy lift trucks were available, they would be used (for long-haul unit movement), but the NATO rail capability is so pervasive that it overshadows both Army and host nation truck capabilities.⁸

Desert Shield and *Desert Storm* were conducted in an environment that, compared to NATO, has a very austere transportation infrastructure. They, accordingly, forced the Army to reevaluate HET operations, focusing upon the use of HETs for operational and tactical relocation of heavy maneuver units on the battlefield, with the traditional role of evacuation and replacement becoming a secondary mission.⁹ Carrying armored units to war is not a new idea.

"The significant role HETs can play in wartime was demonstrated by the Israeli army in their 6-day war of 1967. Every Israeli tank had a transporter to move it to the frontline deployment area, while the Arab opposition had no transporters. Israeli tank brigades arrived battle-ready; Arab tanks arrived with dust-clogged engines, debris-filled tracks, and tired and overheated crews. They arrived on the battlefield at only one-half to two-thirds of their strength because of mechanical breakdowns along the way. Israeli tanks were transported overnight from one sector of the battlefield to another; Arab tanks lumbering along the roads made easy targets for Israeli fighter-bombers."¹⁰

During *Desert Shield* and *Desert Storm*, virtually every Army combat unit that deployed used truck transportation to an unprecedented extent to preserve the combat readiness of its vehicles.

The desert is a harsh environment; media reports during the operations were replete with references to the maintenance and transportation difficulties it presented, particularly the wear due to the powdery sand and the lack of roads and

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rails. Though the existing roads were quite good, there simply were not enough of them, and the only rail line in Saudi Arabia did not go where the deploying forces needed to go.¹¹

A complicating factor associated with transporting heavy forces in the early stages of *Desert Shield* and *Desert Storm* was the early deployment of combat forces with little transportation support. In the earliest stages of *Desert Shield*, simply clearing the combat vehicles out of the port of debarkation in Ad Dammam, Saudi Arabia, was a serious problem.¹² The executive officer of the 93d Transportation Battalion (Provisional) (Movement Control) reported in late August 1990 that "the most important thing we've accomplished . . . [is] to arrange for 90 HETs and 100 lowboys to clear the port of tracked vehicles."¹³ A short time later, he reported that "we're moving 100 truckloads a day and still can't make a dent. Lowboys and HETs [are] in big demand. [The] 82d [Division], 101st [Division] and 24th [Division] want to move all their tracks by truck. Unbelievable burden."¹⁴

As the deployment continued and the number of US forces in Saudi Arabia increased, the requirements for heavy truck transportation also increased. There were 17 transportation heavy truck companies in the Army at the onset of *Des-*

ert Shield; all of them deployed to support *Desert Shield* and *Desert Storm*. One, the 660th Heavy Truck Company, a US Army Reserve unit in Cadiz, Ohio, was scheduled to inactivate about

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the same time that *Desert Shield* started. Its inactivation was delayed indefinitely, and it deployed also.

All the heavy truck companies in the Army, however, were not enough to clear the heavy forces' vehicles out of the ports and carry them upcountry. Both allied army and host nation support were required.

"Even with all [the US heavy truck companies] we did not have enough. We used everybody else's after they were in place. We had HETs and lowboys from Germany, Italy, Saudi, Egypt and Czechoslovakia. [Early on we] moved all of 18th Corps by HETs. Also the 82d [Division] but [we were] not carrying tanks, just engineer and DIVARTY [division artillery] equipment."¹⁵

The use of Egyptian HETs is particularly significant. The Egyptian army did not have HETs in the Arab-Israeli War in 1967; it does now.

As the deployment of forces into Saudi Arabia and their movement into pre-ground war positions progressed, the requirements for trucks to transport tracked vehicles continued and increased. For example, the 3d Armored Division deployed from Germany, using rail and barges to the ports of Rotterdam, the Netherlands and Antwerp, Belgium. Then it traveled by ship to Ad Dammam, debarked and moved into tactical

assembly areas "out in the desert about four hundred miles north and west of Ad Dammam."¹⁶ Though the wheeled vehicles mostly road marched under their own power, it required "hundreds of HET loads to move the tracks to the assembly areas. [We used] US HETs, allied HETs and even commercial design lowboys [to make the move]. If we hadn't had HETs, our maintenance readiness would have been seriously degraded."¹⁷

It is noteworthy that the concept of WHNS proved just as viable in *Desert Storm* as it has been in NATO over the years. The significant difference is that WHNS in NATO has always been an in-place asset whose use could be planned. In *Desert Storm*, WHNS and the additional support provided by allied armies was completely ad hoc and was generally provided on an on-demand basis. Despite the provisional arrangements, WHNS in *Desert Shield* and *Desert Storm* was critical to the success of the deployment. "We leased over 800 flatbed [tractors and semitrailers], [and] over 370 HETs . . . we could not have survived without Host Nation Support."¹⁸

The ad hoc WHNS arrangements were not without complications. The transportation officer at Ad Dammam observed that it was "very difficult to determine the carrying capacity of civilian lowboys and HETs. A 4-axle truck may or may not be able to pull 70 tons. Then again, a 2-axle truck may pull 70 tons. [It is] very frustrating and embarrassing when we put an M1 tank on a 4-axle trailer and it squashes the trailer to the ground, blowing out its tires."¹⁹

Gallows humor manifested itself when that same officer observed that such events were "kind of funny, actually!"²⁰

Another challenge posed by the peculiar characteristics of the Saudi Arabian Theater was the distances involved when deploying forces. From the port at Ad Dammam to King Khalid Military City, Saudi Arabia, is a round trip of over 1,000 miles. The few available roads were always crowded; en route speeds were slow, and the commercial HETs and lowboys had virtually no off-road capability that would have per-



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mitted more flexible routing and bypassing bottlenecks.²¹ These factors compounded the difficulty of clearing the ports and delivering vehicles to the combat units. "[There] just aren't enough assets to move everyone. [The] biggest problem is turnaround time. Distances are so big that when a HET/Lowboy goes out, it is gone for 3-4 days."²²

The distances involved and the resultant turnaround times had more insidious effects. Once a vehicle was committed to a mission, it was difficult, if not impossible, to recall it in response to changing priorities. The transportation officer in Ad Dammam noted:

"It has been an absolute madhouse. Priorities were changed about four times [today] and now that it's 2230 hours, they've just changed another time. [The] problem is that we're now dealing with 2 ports, ammo, a corps move, M1A1 and Bradley transport, extended distances for convoys and normal sustainment."²³

Changing priorities for movement of units,

personnel and materiel in response to changing operational or tactical situations is a reality. Shortages and a lack of control over the cargo-hauling vehicles exacerbates the complexity and can, in extreme circumstances, preclude appropriate response.

Another predictable, though unavoidable, problem with the movement of heavy vehicles using the ad hoc mix of vehicles was the ever-increasing number of maintenance failures. By early January 1991, the transportation activity was intense. "Every tracked vehicle there is, is being sent forwards as fast as possible."²⁴ The nonstop activity began to tell.

"Trying to get everyone pushed up is starting to take a toll on our US HETs. They're not built for these M1A1s and now our maintenance is taking a toll. I just hope we can get [the combat forces] all up north before they completely fall apart. Problems include no spare tires (they're popping like crazy), broken rims, and blown gaskets."²⁵

FM 100-5, Operations, the Army's keystone warfighting doctrinal manual, defines agility as "the ability of friendly forces to act faster than the enemy—[it] is the first prerequisite for seizing and holding the initiative." The capability to move heavy forces rapidly provides the division commander with that agility.

The commercial HETs and lowboys fared no better. "The commercially leased HETs . . . are beat to death from overuse and undermaintenance."²⁶

Despite the difficulties and ad hoc support arrangements, *Desert Shield* and *Desert Storm* clearly validated the concept of moving heavy combat forces over long distances by truck.

"The combat forces . . . recognized their requirements for truck transportation. Even [light forces such as] the 82d Airborne [used] contracted lowboys to move their engineer equipment. We carried tracks on HETs all the way to the Kuwaiti border. [We carried] 7th Corps well to the west of Kuwait [before the ground war started]."²⁷

Heavy Truck Company Design

US Army Field Manual 100-5, *Operations*, the Army's keystone warfighting doctrinal manual, defines agility as "the ability of friendly forces to act faster than the enemy—[it] is the first prerequisite for seizing and holding the initiative."²⁸ The capability to move heavy forces rapidly provides the division commander with that agility. *Desert Shield* and *Desert Storm* focused the Army's attention upon, and amply demonstrated, the viability of using trucks to move heavy forces to the battlefield quickly. They reaffirmed the lessons learned in the Arab-Israeli War of 1967—that the use of truck transportation to move heavy forces helps the commander attain the agility that is so vital to the conduct of the AirLand Battle.

The remainder of this article addresses developing concepts and organization structures

to operationally and tactically relocate heavy combat forces.

Operational relocation, or operational mobility, is the movement of heavy combat forces on HETs from the debarkation ports to the forward areas of the communications zone (COMMZ) or to the corps assembly areas. Tactical relocation, or tactical mobility, is the movement of heavy forces on HETs from the COMMZ/corps assembly area to tactical assembly areas. In either case, the emphasis is carrying the heavy forces as close to the battle as the availability of main supply routes and the factors of mission, enemy, terrain, troops and time available (METT-T) permit. When heavy forces are carried on trucks, rather than road marching vehicles under their own power, they arrive at the battlefield prepared to fight with fuel, fully operable weapon systems, better unit integrity and rested crews. Neither the crews nor weapon systems have been stressed just getting to the battle.²⁹

In January 1991, *Desert Shield* was well underway. The commander, US Army Training and Doctrine Command (TRADOC), having previously observed the Israeli army's use of HETs and closely watching the *Desert Shield* deployments, directed the commandant, US Army Transportation School (USATSCH) to develop a concept and an organization design for a HET company capable of moving a tank battalion in a single lift. He estimated that a company with approximately 100 HETs could make the lift.³⁰ A very quick analysis determined that a company of 96 HETs could meet the requirement.

In late January 1991, USATSCH was host to a joint working group to refine the HET requirement for operational and tactical relocation of heavy combat forces in AirLand Battle (ALB) and AirLand Battle-Future (ALBF), now AirLand Operations.

Representatives from TRADOC, the Combined Arms Center, the Combined Arms Support Command, and the Armor, Ordnance, Engineer and Transportation schools attended. Because of the contributions of the combat arms representatives, the concept of moving a battalion in a single lift changed to one of operational-



From the port at Ad Dammam to King Khalid Military City, Saudi Arabia, is a round trip of over 1,000 miles. The few available roads were always crowded; en route speeds were slow, and the commercial HETs and lowboys had virtually no off-road capability that would have permitted more flexible routing and bypassing bottlenecks. These factors compounded the difficulty of clearing the ports and delivering vehicles to the combat units.

ly or tactically relocating a "heavy maneuver force with division slice" in a single lift.³¹

The joint working group conference defined the heavy maneuver force with division slice, a brigade-size unit. It became the baseline for analyzing HET requirements for ALB and AirLand Operations.³²

Once the objective was defined, the following assumptions evolved to focus the analysis:

- The HETs, now organic to divisions, separate brigades and armored cavalry regiments to evacuate and replace damaged combat vehicles, remain there.
- Maneuver force relocation will be the priority for the HET company, with weapon systems evacuation/replacement secondary.

- The analysis considers only the new 70-ton HET system (the M1070 tractor and M1000 semitrailer). This system will be the one used in the new design HET company.

- Combat vehicles will be loaded two per HET wherever possible.

The heavy force has over 500 tracked combat vehicles. These vehicles fall into weight/size groups as follows:³³

- Vehicles that, because of their weight or length, can fit only one to a HET. This includes the M1 tank, the armored vehicle launched bridge (AVLB), the M88 recovery vehicle and the combat engineer vehicle (CEV).
- Vehicles that cannot be loaded two per HET but can be loaded one per HET along with

When heavy forces are carried on trucks, rather than road marching vehicles under their own power, they arrive at the battlefield prepared to fight with fuel, fully operable weapon systems, better unit integrity and rested crews. Neither the crews nor weapon systems have been stressed just getting to the battle.

another, smaller vehicle from the group below. This includes the M2 and M3 Bradley vehicles, M578, the armored combat earthmover (ACE) and the M109.

- Vehicles that can be loaded two per HET. This includes all the vehicles based upon the M113 chassis—M106, M577, M901, M548 and FISTV (fire integration support team vehicle).

- Certain vehicles in groups two and three above are mutually exclusive. For example, the M2, M3, and M109 cannot be loaded with a FISTV.

Loading these vehicles on HETs while observing the restrictions noted above requires a total of 340 HETs. The Transportation Corps plans for 90 percent vehicle availability, so 378 HETs are required to have the 340 available to move the heavy maneuver force with slice.

Transportation HET Company

96 HETs 2 Drivers per HET
Round-the-Clock Operations

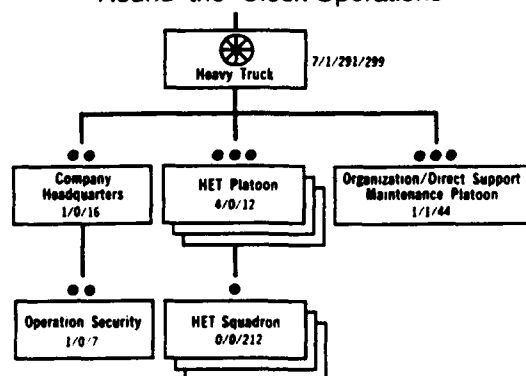


Figure 1.

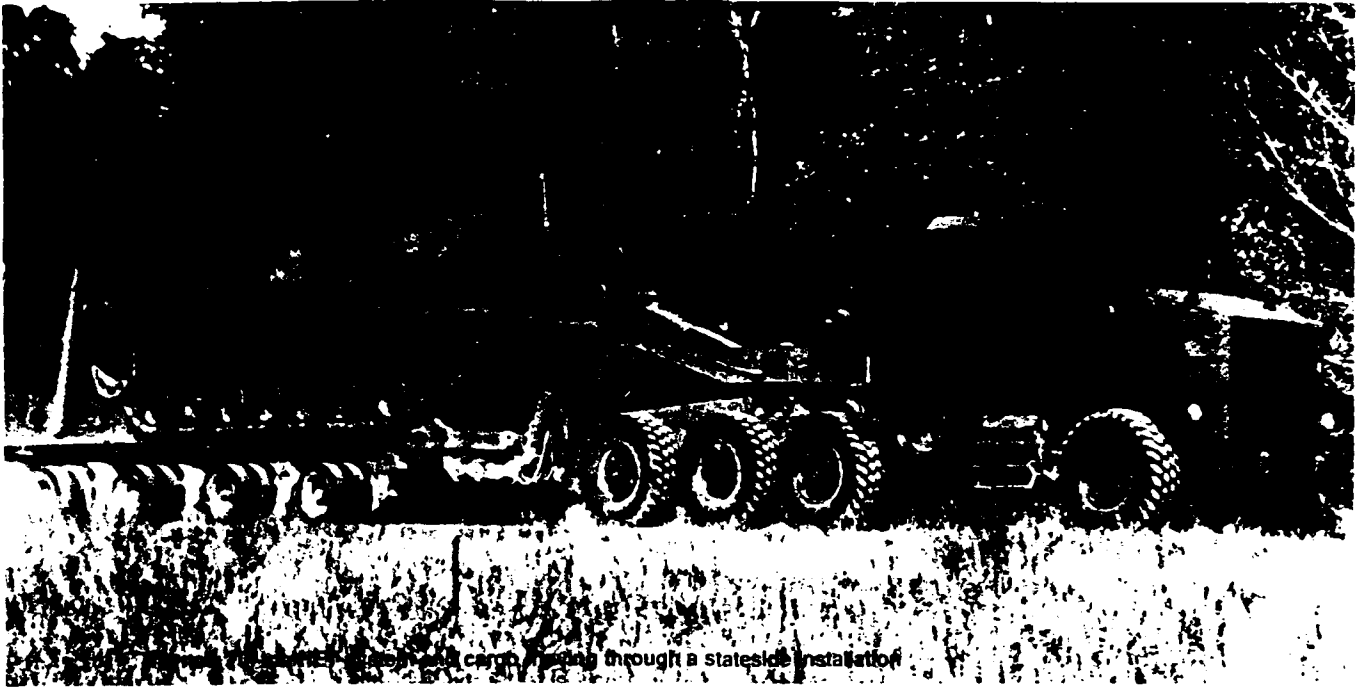
The first requirement for designing a new HET company is to determine the number of HETs; this subsumes all other factors for building the unit. The original estimate of 96 HETs to move an armor battalion in a single lift was evaluated against the requirement to single lift the heavy maneuver force with slice. Four such companies, totaling 384 HETs, can make the lift so the 96-HET design was retained.

The organization of the proposed 96-HET company is shown in figure 1. It is a large company with nearly 300 personnel. It is unusual among combat service support companies in that it has organic direct support (DS) maintenance capability. To do its mission of operationally and tactically transporting heavy forces, particularly during rapid deployments, this HET company must deploy very early. Maintenance units capable of performing DS maintenance generally deploy later, hence, the organic DS capability.³⁴

Cost Avoidance, Peacetime Operations and Readiness for War

Moving heavy combat forces on HETs offers significant cost advantages besides the tactical and operational ones already addressed. Tracked vehicles are very expensive to operate. The Army Tank-Automotive Command (TA-COM) provided data on the operating costs of selected tracked combat vehicles (fig. 2).³⁵ These costs are the life cycle, per mile operating cost for each vehicle, not including procurement costs.³⁶ For those vehicles for which no cost was readily available, that of the closest type vehicle available was used. All these cost data have been conservatively rounded.

When the total per mile operating cost of all the vehicles in the heavy maneuver force with slice is computed, the cost to move the force becomes staggering—over \$180,000 to move the tracked combat vehicles in this brigade-size force 1 mile under their own power. It costs \$15,000 to move them 1 mile on HETs—a cost avoidance of over \$165,000 per mile.



Cost is not usually a primary factor in determining warfighting requirements. However, all Army units spend most of their lives at peace. Operating costs are a major factor affecting their peacetime existence, the quality of their training and their capability to perform their wartime missions when called to do so.

A table of organization and equipment (TOE) defines the minimum requirements of personnel and equipment for a type unit to go to war and to execute its doctrinal warfighting mission. Cost is not usually a primary factor in

determining warfighting requirements. However, all Army units spend most of their lives at peace. Operating costs are a major factor affecting their peacetime existence, the quality of their training and their capability to perform their wartime missions when called to do so. Little imagination is required to envision the opportunities available to an installation that hosts a heavy brigade or division if HETs are used for nothing except cycling the brigade or division's tracked combat vehicles to and from firing ranges.

The cost information noted above is significant even when the cost of fielding a transportation heavy truck company with 96 HETs is considered. What would be the wartime cost of not having enough heavy transportation capability? In NATO, the Army has managed to avoid an

Vehicle Operating Costs

Representative Examples

M1	—	\$550
M88	—	\$400
M2	—	\$350
M3	—	\$350
AVLB	—	\$550
M113	—	\$100
HET	—	\$50

*Per
Mile*

Figure 2

Subjecting this mix of vehicles to the same loading protocol as discussed previously generates a requirement for 357 HETs to tactically or operationally relocate the [brigade] force in a single lift. Four HET companies with 96 HETs each can easily accomplish this mission.

The total per mile operating cost of all the vehicles in the heavy maneuver force with slice is . . . staggering—over \$180,000 to move the tracked combat vehicles in this brigade-size force 1 mile under their own power. It costs \$15,000 to move them 1 mile on HETs—a cost avoidance of over \$165,000 per mile.

swering that question by using WHNS capability to offset Army force structure requirements. Also, *Desert Shield* and *Desert Storm* made extensive use of WHNS and allied army assets, thereby maintaining agility and initiative but still avoiding the question at issue here. Suppose *Desert Shield* and *Desert Storm* had not been in Saudi Arabia; suppose the Army never has to fight in NATO.

"There are very few Third World countries with the infrastructure Saudi has. Their welfare state is based on construction so they have large numbers of heavy haulers [available]. What if we had been in Chad? Or Somalia? Or Central America?"³⁷

The most viable answer to this question is to ensure the Army has an inherent capability to operationally and tactically relocate its heavy forces in any likely warfighting scenario. The 96-HET heavy truck company design, in appropriate numbers, provides that capability.

AirLand Operations

AirLand Operations, previously known as ALBF, is the newly approved concept for the

Army's future warfighting doctrine. Although AirLand Operations changes much of the way the Army will conduct its warfighting business, the heavy maneuver force with slice remains the focal point for operational and tactical relocation. The AirLand Operations heavy maneuver force with division slice will not differ significantly from the baseline force used in the ALB analysis above; the types and mixes of vehicles, however, will change. The AirLand Operations heavy force with slice will have fewer M1 tanks and more M2 and M3 Bradley fighting vehicles. Figure 3 shows a reasonable list of vehicles in this force.³⁸

ALB-F Heavy Maneuver Force

With Slice Vehicle Distribution

M113	— 69	M1	— 88
M577	— 41	AVLB	— 12
M548	— 6	CEV	— 6
M88	— 15	ACE	— 21
Bradley chassis vehicles	— 174	M578	— 3
		TOTAL: 435 Vehicles	

Figure 3.

Subjecting this mix of vehicles to the same loading protocol as discussed previously generates a requirement for 357 HETs to tactically or operationally relocate the force in a single lift. Four HET companies with 96 HETs each can easily accomplish this mission. A major change in the structure of the AirLand Operations heavy force will not affect the capability of the 96-HET company to relocate the force; it may, depending on the size of the change, alter the number of HET companies required.

The lessons the Army has already learned from *Desert Shield* and *Desert Storm* portend significant changes in the movement of heavy combat forces by truck. The focus is changing from the individual vehicle to the heavy maneuver unit. Operational and tactical relocation of heavy forces by truck is, in the Army, still conceptual and not yet published doctrine. The

concept is still subject to further analysis and refinement. Nothing, however, in the future will obviate two of the most basic tenets—agility and initiative—of the Army's warfighting doctrine. This concept addresses a fundamental method of attaining agility and initiative of heavy maneuver forces. That it provides significant peacetime cost avoidance opportunities while doing so is serendipitous. It is virtually certain that the operational and cost advantages of

carrying combat vehicles to the battlefield, also to peacetime training sites, will make this concept a part of the transportation doctrine of the future. **MR**

The TOE for the transportation combat HET company has been written, staffed and passed by the TRADOC TOE review board. The TOE has been approved by the commander of TRADOC and forwarded to Headquarters, Department of the Army for final approval. The TOE is currently scheduled for publication in April 1992.

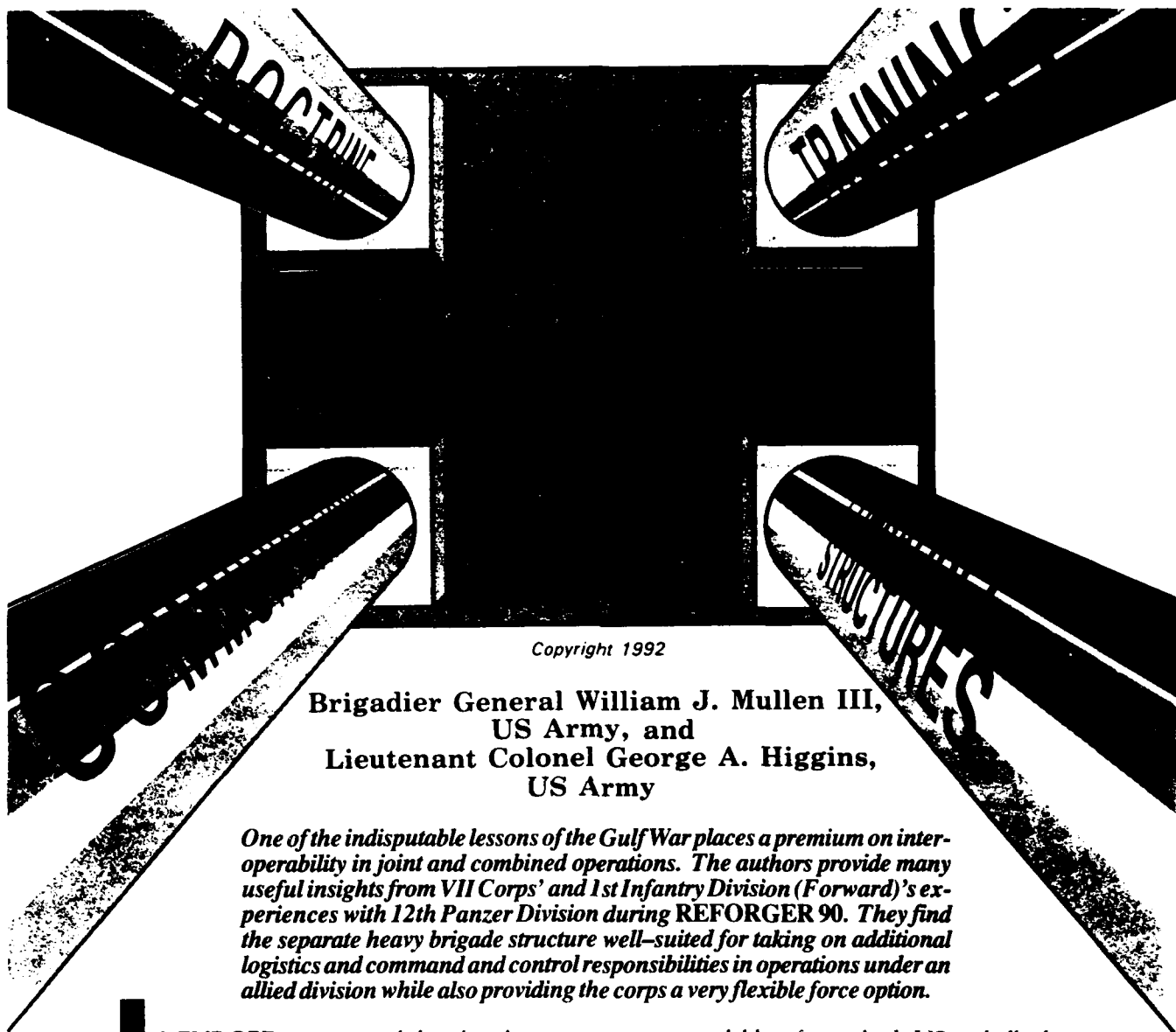
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One of the indisputable lessons of the Gulf War places a premium on interoperability in joint and combined operations. The authors provide many useful insights from VII Corps' and 1st Infantry Division (Forward)'s experiences with 12th Panzer Division during REFORGER 90. They find the separate heavy brigade structure well-suited for taking on additional logistics and command and control responsibilities in operations under an allied division while also providing the corps a very flexible force option.

IN EUROPE, interoperability has been a longstanding, even if not fully achieved, goal for the US Army and its NATO allies. Recent events suggest, however, that interoperability will be an important defining criterion for successful NATO military operations. The dismantling of the Iron Curtain in Europe, the reunification of Germany, the dissolution of the Warsaw Pact and consequent conventional force reductions by the United States, its allies, the Soviet Union and the former Warsaw Pact members indicate that the residual NATO forces in Europe may, of necessity, embrace interoperability in more vigorous manner.

Assuming for the moment that NATO's strategic military goals will not change, and that the

means available—forces, both US and allied—will diminish, then adjustments in the ways NATO forces operate are sure to follow. Precisely what specific changes to strategic and operational concepts will be driven by force reductions is not yet clear, but the essence of the challenge is to accomplish NATO's missions of deterrence and defense with far fewer forces than before the historic events of November 1989.

This discussion of interoperability focuses on US Army forces in the European Theater; however, allied combat operations during Operation Desert Storm suggest that interoperability has application outside NATO.

One solution to this challenge is the suggested formation of multinational corps. Such a unit is

appealing in many respects, but raises some questions, two of which immediately come to mind. First, is interoperability workable at all? Second, what is the principled basis for successful interoperability? This article answers both questions, drawing on the extensive experience the 1st Infantry Division (Forward) (1st ID [F]) gained while working with the German army's 12th Panzer Division for a number of years.

Interoperability is Workable

REFORGER 90 was forward-looking and unique in several respects. First, recognizing that the political and fiscal environments were undergoing changes, United States Army, Europe (USAREUR) leadership shaped a REFORGER that in contrast to earlier REFORGER exercises, relied more heavily on CPX/command field exercise (CFX) play and employed far fewer heavy combat vehicles, especially tanks. Second, it exercised and assessed the light-heavy force concept in a European environment. Finally, an important objective of REFORGER 90 was to exercise and assess interoperability between US and German army forces. The task of assessing interoperability fell to VII US Corps and two of its major subordinate commands (MSCs), 12th Panzer Division and 1st ID (F).

Throughout the exercise, 12th Panzer Division fought under the operational control (OPCON) of VII Corps, while the 1st ID (F) operated under the OPCON of 12th Panzer Division. In addition, at various times during the exercise, German panzer and panzer grenadier battalions came under the OPCON of 1st ID (F). As a result, commanders and staff officers from corps to battalion level learned some insightful lessons about German-American interoperability that point to four fundamental pillars—articulated as general principles—upon which successful interoperability must rest.

Training. The first pillar of interoperability is *units that intend to fight together must train together*. This is another way of stating a training doctrine principle *train as you fight* articulated in US Army Field Manual 25-101, *Battle Focused Training*. VII Corps, 12th Panzer Division's,

and 1st ID (F)'s highly successful operations during REFORGER 90 affirm this principle of interoperability. Stemming from a wartime General Defense Plan (GDP) relationship, VII

[REFORGER 90 recognized] that the political and fiscal environments were undergoing changes . . . USAREUR leadership shaped a REFORGER that . . . relied more heavily on CPX/CFX play and employed far fewer heavy combat vehicles, especially tanks. . . . It exercised and assessed the light-heavy force concept . . . [and] interoperability between US and German army forces.

Corps and 1st ID (F) have had a longstanding training relationship with 12th Panzer Division. The corps GDP called for 12th Panzer to defend with two of its own brigades and 1st ID (F) OPCON to it.

This wartime relationship has caused 12th Panzer Division and 1st ID (F) to train together for several years. Training has included terrain walks, CPXs and REFORGERs. In all these training events, commanders attempted to replicate expected wartime conditions, including exercise of doctrinal precepts, C³ arrangements and organizational structures. The results were greater mutual familiarity and understanding of operational methods, needed procedural adjustments and the development of suitable work-arounds where doctrinal, structural or materiel differences required it. For VII Corps, 12th Panzer Division and 1st ID (F), REFORGER 90 turned out to be a training exercise that validated the success of the training and contributed to a growing view by all sides that interoperability is workable and that a first major principle of its success lies in training together.

Doctrine. The second pillar of interoperability can be stated as *units that intend to fight together must understand one another's doctrine, and the doctrines cannot be too dissimilar*. German and US Army doctrines are similar enough to enable units to operate together. Some roots of our

German army division and brigade headquarters do not demand the volume of detailed information during operations to which US commanders are accustomed. Instead, every 2-3 hours 12th Panzer Division expected to receive a logically structured situation report that specified the friendly battalion locations, combat power remaining and insights into the threat facing each part of the force.

Some roots of our current AirLand Battle doctrine can be found in German army doctrine. . . . Key similarities include: the idea of centralized planning with decentralized execution; heavy reliance on the initiative of junior leaders; mission-type orders (Auftragstaktik); commander's intent; and a maneuver, rather than attrition, orientation.

current AirLand Battle doctrine can be found in German army doctrine as early as the 1936 version of *Truppenführung*. Some key similarities include: the idea of centralized planning with decentralized execution; heavy reliance on the initiative of junior leaders; mission-type orders (*Auftragstaktik*); commander's intent; and a maneuver, rather than attrition, orientation.

Despite these key similarities, doctrinal differences remain. The 1st ID (F)'s experiences and lessons learned operating under 12th Panzer Division, however, illustrate that such differences are reconcilable if commanders and staffs from both units make efforts to understand and accommodate those differences.

During REFORGER 90, 1st ID (F) commanders and staffs had to understand and make adjustments to the German staff estimate/planning process, which differs in several respects from the US model. First, 12th Panzer Division employed a stylized staff estimate model designed to give the commander only the information he needs to provide guidance or make decisions. When the staff completes its estimate brief, the commander announces his decisions and issues concise guidance. The staff then turns this guidance into an operation order (OPORD) which itself is brief, focusing mainly on the tasks that subordinate units are expected to accomplish. When the OPORD is issued and briefed to subordinate brigades and separate battalion commanders, staff briefs are short and to the point. The commander then spends considerable time explaining his intent and vision of how he expects the fight to go. As an example, during one OPORD briefing that lasted exactly 50 minutes, the 12th Panzer Division commander spent just over half the time articulating his intent.

Second, unlike the standard American practice, German commanders require no backbriefs from subordinates detailing how the subordinate unit commander intends to achieve the higher commander's intent. The division commander assumes that his subordinates understand the tasks he has assigned them and know how to carry them out. This does not mean, however, that no further interaction between higher and

US and German reconnaissance crews pass information during a field training exercise, 6 February 1989.



Stemming from a wartime General Defense Plan (GDP) relationship, VII Corps and 1st ID (F) have had a longstanding training relationship with 12th Panzer Division. The corps GDP called for 12th Panzer to defend with two of its own brigades and 1st ID (F) OPCON to it.

subordinate units takes place before execution. Conducted by either the chief of staff or the G3 (operations and plans officer), the 12th Panzer Division staff holds a staff review session after subordinate headquarters have had the opportunity to read and digest the OPORD. At these sessions, staff officers are expected to work out problems or differences, coordinate and synchronize their operations and identify issues that require the division commander's decision. The chief of staff and G3 exercise a great deal of decision authority at these staff sessions and problems are generally solved at the lowest levels.

Third, German reporting/estimate/decision cycles proved to be different from what American officers are used to. German army division and brigade headquarters do not demand the volume of detailed information during operations to which US commanders are accustomed. Instead, every 2–3 hours 12th Panzer Division expected to receive a logically structured situation report (SITREP) that specified the friendly battalion locations, combat power remaining and insights into the threat facing each part of the force. While this difference is fairly easy for US units to accommodate, German commanders and staffs may have to make greater adjustments if under a US headquarters, which charac-

teristically demands more detailed information.

Although these lessons learned illustrate some differences between German and US doctrines and procedures, the similarities are greater than any differences and those differences can be overcome through training.

Communications. The third principle that underlies successful interoperability is *units that intend to fight together must be able to communicate with each other*. This principle has two components: language and equipment.

Although many German commanders and staff officers speak English, few American officers speak German well enough to translate or understand OPORDs and fragmentation orders (FRAGOs), oral or written. The consequence of this asymmetry in foreign language skills is the high potential for misunderstanding, an obstacle to successful interoperability. All OPORDs and FRAGOs received by 1st ID (F) from 12th Panzer Division during REFORGER 90 were written in German without an English translation. This challenge was overcome by augmenting the G3 plans section in 1st ID (F) headquarters with senior NCOs (noncommissioned officers) who could speak and read German well enough to understand the details in an OPORD. The 1st ID (F) also maintained a liaison detachment

The 1st ID (F) also found that liaison officer (LNO) teams were a critically important factor in the receipt of orders and transmission of reports. Greater clarity of understanding was achieved when orders, reports and questions were transmitted orally in English to the 1st ID (F) LNO at 12th Panzer headquarters, who then translated the report into written form in German Such bilingual LNO teams—staffed and equipped for 24-hour operations—were taken from 1st ID (F)'s organic structure; but without them, overcoming the language barrier would have been all but impossible.

headed by a major in the command post of the 12th Panzer Division. Even so, German idioms and some military terminology proved tricky. Language problems were usually solved through gaining a clear understanding of the commander's intent.

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Communications equipment is a second communications component necessary to achieve effective interoperability. Knowing that German and American FM radios are not compatible, the 12th Panzer Division and 1st ID (F) relied on strategically placed LNO teams during REFORGER 90. German or American bilingual LNO teams, equipped with secure FM communications were stationed at higher, lower or lateral headquarters as needed. As an example, for one two-day period during which 12th Panzer Division counterattacked over a great distance, Panzer Battalion 361 (OPCON to 1st ID [F]) posted an LNO in the 1st ID (F) tactical operations center (TOC) and the 1st ID (F) sent an LNO team, consisting of a battalion S3 with secure radio and a linguist, to Panzer Battalion 361's TOC. The arrangement worked well, enabling orders and reports to be sent and received rapidly and allowing a high degree of flexibility and agility of operations.

At brigade and higher command levels, as in US units, German commanders rely on secure telephone communications relayed through



German and US officers working on map overlays during interoperability training, fall 1984.

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microwave links between headquarters. At brigade level and higher, the German army currently uses a secure system called AUTOKO. To maintain communications with 12th Panzer headquarters, a signal platoon was attached to 1st ID (F) TOC to install and maintain the AUTOKO equipment. AUTOKO is an excellent system, but like all systems, it has limitations. Both the pace of operations and great distances covered (70–100 kilometers) stretched the system to its limits. Additional relays, which were not readily available, would have solved this problem. Nevertheless, experiences on REFORGER 90 suggest that as the US Army fields its MSE (mobile subscriber equipment) systems and NATO allies change their systems, some thought needs to be given to addressing this hardware challenge to successful interoperability.

Compatible Structures. The final pillar upon which effective interoperability rests is compatibility of structures. Simply stated, *units that intend to fight together should have compatible structures.* There is no requirement for structures to be identical or even similar, just compatible.

Even so, the more compatible two allied units' structures are, the easier all else becomes. The 1st ID (F), as a forward-deployed separate heavy brigade, had a structure compatible with that of a German panzer division and its brigades.

A key element of this compatibility lies in the separate brigade's organic combat service support (CSS) structure. Containing a robust forward support battalion (FSB), division materiel management center (DMMC) and division transportation office (DTO), 1st ID (F) proved during REFORGER 90 to be especially suited for operations under an allied division. The 1st ID (F) was OPCON to 12th Panzer Division throughout the exercise and was able to sustain itself over long distances with ease. The separate heavy brigade's logistic lines of communication (LOC) to the corps support command (COSCOM) gave the corps commander an unusual degree of flexibility in the employment of 1st ID (F), anywhere in the corps area of operation.

In fact, under the OPCON of 12th Panzer Division, 1st ID (F) conducted a range of diverse operations that included covering force



US and German officers coordinate convoy movements at a rest stop during REFORGER 90.

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operations across a sector 70 kilometers wide, high-risk economy-of-force operations on 12th Panzer and VII Corps' south flank and fast-moving offensive operations requiring forward passage of lines through allied brigades.

A second aspect of structural compatibility that proved crucial to successful interoperability was the robustness inherent in the forward-deployed separate brigade's command and control (C²) capacity. Besides its five organic battalions and four separate companies, at one time during REFORGER 90 1st ID (F) exercised effective C² over six additional battalions: one panzer battalion, one German air defense (Gepard) task force, an engineer battalion, a US reinforcing artillery battalion, a US military intelligence battalion and a US attack helicopter battalion. The insight here is that a C² structure that is robust enough to accept additional combat power—allied and US—gives the allied division and corps commanders immense flexibility to quickly move combat power to the decisive point anywhere in the corps sector, plug into the corps logistic structure and absorb the diverse combat power necessary to turn the tide of battle.

Future Interoperability. In very broad terms, this assessment of interoperability during REFORGER 90 implies that the Army can, perhaps must, prepare for the future in three important ways.

First, a major need appears to be sufficient language capability to permit adequate communication. There is an asymmetry between American and allied leadership with respect to bilingualism which is somewhat embarrassing. It would be wonderful if we had available sufficient numbers of Army officers and NCOs able to speak and read foreign languages with the proficiency requisite to interoperability. Unfortunately, this does not seem to be the case, especially when consideration is given to the number of languages which may be needed both inside and outside of NATO. In practical terms we must think of augmenting affected units with personnel with the requisite language skills, much as was done during *Desert Storm*. In an emergency, linguists could be found by levying the Special Operations Forces or through canvassing the rest of the Army. Preferable to the foregoing would be building the needed capability.

ty into the Reserve Components with sufficient robustness to meet the demands of interoperability to include the supporting training strategy.

A second key initiative focuses on the Army's need to develop compatible force structures to facilitate interoperability. Tailoring existing structure is the answer for unplanned requirements; a specific force structure may be the better approach to meet long-term needs. In either case, the unit operating as part of a larger foreign army formation must be able to sustain itself because it will most likely be separated from its normal combat support and combat service support. Allowance must be made to provide sufficient C² structure, as well as combat support and combat service support, to be robust enough and flexible enough to meet the demands of interoperability. The separate heavy brigade structure met those requirements in NATO. However, an *ad hoc* arrangement is certainly feasible as well.

A third initiative is the training of multinational units. Organizing a multi-national unit is the best way to ensure a stable relationship for training. At the brigade level, the German-French Brigade in Stuttgart, Germany, offers a suitable model of such an organization. Feasible too, are long term combined arms training associations. In this regard, the United States could reestablish the relationship between US units and those of our NATO allies, similar to that which existed within VII Corps between the corps, the 12th Panzer Division and the 1st ID (F). With some sort of a mandated long-term relationship, based upon a warfighting mission in effect, units will train together, work out the bugs,

Besides its five organic battalions and four separate companies, at one time during REFORGER 90 1st ID (F) exercised effective command and control over six additional battalions. . . . A command and control structure that is robust enough to accept additional combat power—allied and US—gives the allied division and corps commanders immense flexibility.

and will be ready to fight together in time of war.

The 12th Panzer and 1st ID (F) and VII Corps experiences during REFORGER 90 demonstrate that German-American interoperability at the battalion through corps level is workable. Success rests on four pillars which, when summarized, amount to an affirmation that interoperability will work if units train together; have doctrines which are similar; can communicate with each other; and have force structures which are compatible.

It is useful to recall former Army Chief of Staff General Carl E. Vuono's goal for the 1990s: an Army that is deployable, lethal, agile and versatile. The Army's brilliant performance recently during *Desert Storm*—during which the Army proved itself to be deployable, versatile, agile and, ultimately, lethal—validated Vuono's future vision of Army requirements. An interoperable Army is without doubt a crucial dimension of versatility that will come to the fore in the future. Events in the Gulf War make it clear that the need for interoperability is not peculiar to the European Theater. **MR**

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The EMOTIONAL WOUNDS of War

Robert Saperstein
and
Dana Saperstein
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As America and its service members once again adjust to a period of peace following the rigors and pains of war, it would do all well to purposely plan to accommodate the almost certain appearance of what is now called Post-Traumatic Stress Disorder. The authors present a clear explanation of the disease, its causes and treatment, and urge that as a nation, we take steps to give this real problem and its victims the attention they deserve.

BOB AND TED were best friends and Huey [UH-1 helicopter] flying partners in Vietnam. They flew people and supplies everywhere throughout their combat region, every day. They flew together for close to nine months and knew each other well. On one trip, resupplying a Special Forces camp, they were under heavy fire. Ted had the controls; he was focused on getting in and out as quickly as possible. It took a few seconds before he noticed the bullet hole in the windshield in front of Bob's face. Then he realized Bob was slumped over in his seat. Bob had been shot through the head by a sniper. Ted landed the slick, jumped out and ran around to help Bob. He pulled Bob's helmet off, and the top of his head came off with it.

Ted finished his tour but never felt safe or comfortable at the Huey controls again. He and Bob had seen an incredible amount of tragedy but as a team they thought it could never touch them. After Bob's death, each mission terrified him.

Ted made it through the war physically unscathed, but he brought the ghosts of his war experience home with him. Night after night Ted dreamed of the horrible things he witnessed in Vietnam, but the worst nightmare was Bob's death. He would wake up screaming, holding Bob's bloody head and helmet in his hands. He started sleeping with the light on and on some nights he would not sleep at all.

Back home, he was training other Army pilots to become flight instructors. He had been an excellent pilot; it was the only thing he ever really wanted, and it was the thing he did best. But increasingly, he was scared of flying. Sometimes, during the war training exercises, he would feel

like he was flying with Bob back in Vietnam. These flashback experiences really shook him up, and his performance was deteriorating daily.

He started to drink and drug himself to sleep. At first, this numbed the nightmares but took its toll on his flight performance. He was grounded and eventually given a medical discharge because of his inability to control his drinking and drug abuse.

Ted became increasingly withdrawn from his family and friends. He could not sleep more than an hour or two before the war nightmares threw him awake. He was desperate to numb the dark cloud that grew inside him. Within two years of returning from Vietnam, Ted committed suicide; a tragic end to a career officer's life that may not have occurred if he or those around him knew about Post-Traumatic Stress Disorder.

BEING HUMAN means having dramatic, overwhelmingly gut-wrenching experiences. We each, in our own very personal way, must cope with these situations and the very strong emotions they inspire as best we can. But sometimes traumatic events can be emotionally overwhelming, cracking the internal mantle of well-being we all protect and nourish.

In some situations, and for some people, particularly in the stress-filled battle experience, their usual coping mechanisms can fail, no matter what their technical training. The resulting internal disharmony can lead to a variety of troubling emotional and physical symptoms. Once known as shell shock and battle fatigue, the term "Post-Traumatic Stress Disorder" (PTSD) is now used to describe the specific cluster of prolonged, disabling symptoms that can arise from any unusually traumatic experience.

From "Disease of the Soul" to PTSD

Undoubtedly, the intense drama of war has had its psychological impact on soldiers (and civilian victims) throughout history. Although soldiers return home from the battle, often the ghosts of battle continue to haunt them. Yet, it was not until the beginning of the 20th century that the relationship between the extraordinary

experience of war and psychological illness received much attention.

PTSD's forebears extend back at least to the Civil War in the United States and the Crimean War abroad. At that time, Russian and British medical scholars wrote of the "diseases of the soul" among the men returning from battles in the Crimea and India.

In the United States, seemingly physically fit young Civil War veterans complained of palpitations, chest pain, headache, dimness of vision and giddiness. At the time, physicians attributed the symptoms to a disturbance of the sympathetic nervous system and called it Irritable Heart or DaCosta's Syndrome. In the field, the frequently prescribed cure for a chronically morose, "unfit" soldier was a good dose of battle. Soldiers exhibiting very bizarre or extreme behavior were thought chronically insane. In all cases, psychological illness was not attributed to the war experience.

Through the remainder of the 19th and the first few decades of the 20th centuries, psychological symptoms were either not emphasized or flatly ignored. The horrors of the battlefield were not seen as factors that might contribute to psychological dysfunction. In fact, battlefield veterans were viewed through Homeric lenses as courageous and manly heroes who were to stand tall and face adversity with confidence and valor. Any soldier outside the mold was an outcast, not a victim.

At the same time, most physicians were generalists who concentrated on treating physical symptoms; there was no room for sympathy toward soldiers who suffered invisible wounds while massive numbers of their fellow fighters were being torn apart on the battlefield. The unsophisticated understanding of the human psyche (psychology was more a philosophical endeavor than a science) and the romantic view of the battlefield tended to repress the reality that the shock of combat can take its toll mentally, as well as physically.

Certainly, the Civil War produced its share of emotional/psychological casualties. Accurate numbers cannot be obtained, but there was an



World War I, brought a new industrialization of the battlefield and with it came a tremendous amount of psychological damage. (Amazingly enough, by 1942, 58 percent of all veterans hospital patients were World War I shell shock cases.). . . Unfortunately, tolerance and understanding of these wounds in the medical and military communities did not increase appreciably.

enormous number of reported desertions (about 200,000 on each side). Historians also tell of units which seemed to dissolve or disappear during battle, only to reform once the fighting stopped. Most likely, mixed among the deserters and self-protective pragmatists of the disappearing units, were many men suffering from PTSD.

The next major conflict, World War I, brought a new industrialization of the battlefield and with it came a tremendous amount of psychological damage. (Amazingly enough, by 1942, 58 percent of all veterans hospital patients were World War I shell shock cases.) The official terms used for war-induced stress disorders were now "neurasthenia," "shell shock" and "war neuroses." Unfortunately, tolerance and understanding of these wounds in the medical and military communities did not increase appreciably. Soldiers who were psychologically unable to contribute in battle were shot for cowardice, court-martialed or, in some units, "tied to the barb wire lines that protected the trenches." The more fortunate of the suffering soldiers were sent to the rear for a short rest and then returned to the front lines.

By World War II, experts had a slightly more sophisticated understanding of anxiety, stress disorders and psychopathology; they wrote of "combat stress," "battle fatigue," "combat exhaustion" and "acute combat reaction." Regardless of the enhanced understanding, the casualties continued. Fortunately, through the more recent conflicts of this century, the knowledge gained from psychiatrists, internists, psychologists, stress researchers and behaviorists has coalesced into a greater appreciation of the complex reaction of the human psyche exposed to a traumatic environment.

Perhaps the greatest knowledge-integrating force was the Vietnam War. Once again, the shocking conditions of human conflict produced numerous emotional casualties. In response to the scores of Vietnam-era veterans with stress symptoms, new theoretical and therapeutic methodologies emerged. At the same time, medical professionals began to notice that some victims of criminal assaults, survivors of natural

or man-made disasters and other accident victims exhibited symptoms remarkably similar to those of the battle-scarred soldier. However, it was not until 1980 that the American Psychiatric Association formally included PTSD in its *Diagnostic and Statistical Manual of Mental Disorders* (DSM III R).

Despite official recognition of the disorder, it is difficult to estimate the number of combat veterans currently suffering from PTSD. In 1988, after a comprehensive five-year study funded by the Veterans Administration, the Research Triangle Institute reported that 15 percent of those who served in Vietnam "currently suffer from PTSD." That amounts to almost one-half million PTSD casualties, including about 7,000 women (mostly nurses). Many health officials suggest that the number of veterans diagnosed with PTSD is increasing. In part, this is due to World War II and Korean War veterans who have suffered for years and are only now seeking medical assistance because of the media attention given to PTSD. Also, for others, the original trauma lies smoldering in the psyche, like a lit fuse of emotional dynamite. Their symptoms may be tolerable until other traumatic events, such as retirement, old age or the death of a spouse, exacerbate them.

What Causes PTSD?

According to the American Psychiatric Association, PTSD is defined (see chart) as a behavioral disorder that can occur "following a psychologically distressing event that is outside the range of usual human experience." An important aspect of the conceptual understanding of PTSD is that the "trigger" or "stressor" event is one that "would be markedly distressing to almost anyone and is usually experienced with intense fear, terror and helplessness."

The DSM III R includes a wide variety of stressors that might trigger PTSD. Although the event commonly involves a serious threat to a person's life, it need not be confined to a wartime experience. In fact, the study and treatment of victims of violent crimes (such as rape, assault and torture) has had a large impact on the under-

standing of PTSD and has influenced the expanded view of triggering events. Natural disasters (earthquakes, floods, fires, and the like) or man-made events (airplane crashes, automobile accidents, hostage situations, and so on) may also

In response to the scores of Vietnam-era veterans with stress symptoms, new theoretical and therapeutic methodologies emerged. At the same time, medical professionals began to notice that some victims of criminal assaults, survivors of natural or man-made disasters and other accident victims exhibited symptoms remarkably similar to those of the battle-scarred soldier.

contribute to PTSD. The operant condition is an "event that is outside the range of usual human experience."

The psychiatric definition is purposely somewhat broad because it is not understood why, given a similar stressor event, PTSD occurs with some people and not with others. Thus far, experts have not identified a singular factor that might significantly influence the probability of an individual developing PTSD. The president of the Society for Traumatic Stress Studies said in a paper titled "Predicting Post-Traumatic Stress Syndrome Among Vietnam Veterans" that "the vast majority of combatants were ordinary, naive, decent, youthful, innocent, and well-intentioned Americans doing what they thought they were supposed to do." Most likely, a person's propensity toward PTSD involves a number of factors, including psychological and physical health, heredity, ability to acknowledge and talk about feelings surrounding the event, along with the type, severity and duration of the triggering event.

How an individual perceives the external event determines whether a stress disorder will develop. The perception of the stressor is the crucial element in initiating PTSD. Therefore, it is vital to focus on the individual's subjective



Many individuals deny their discomfort and internal emotional turmoil and resort to self-medication, using and abusing alcohol and drugs to numb their pain. For a PTSD sufferer, this form of substance abuse is like adding lead weight to a sinking ship, pushing the individual deeper and deeper into a cycle of pain and alienation.

experience of the trauma, rather than on objective criteria that might apply to all situations or individuals. The range of responses to the infinite variety of potentially traumatic events varies, depending on the perception of the trauma and the individual's sensitivity. Since perceptions are highly subjective and contingent upon each individual's interpretive framework, only a general rule can be used to predict with whom and under what circumstances a stress disorder will develop.

Surprisingly, a physical injury is not essential in developing PTSD. The event need only be psychologically traumatizing. Following a triumphant battle, viewing the maimed bodies of the enemy might be met with relief by some and extreme agitation and guilt by others. The variability of responses makes predictions very uncertain and unsatisfying; human emotional reaction is not easily contained in a clean theoretical framework.

Symptoms. The symptoms of PTSD are grouped in three characteristic clusters. First is the tendency to relive the traumatic event in nightmares, flashback episodes, intrusive and vivid images and recollections, and intense emotional distress when exposed to situations that symbolize the trauma. The second cluster of symptoms is characterized by a numbed emotional state, a generalized detachment and disinterest, and extreme avoidance of activities, thoughts or feelings associated with the shock. The final cluster is characterized by what is called hyperarousal, which includes difficulty sleeping, irritability and hostility, difficulty concentrating and hyperphysiological response when exposed to events that symbolize aspects of the trauma. It is important to note that the combination of symptoms and their severity are different for each individual. The intensity of PTSD falls on a continuum; some individuals are only mildly affected, while others have their lives totally disrupted.

PTSD symptoms are often self-perpetuating and self-aggravating as the victim spirals through a predictable pattern of intensifying symptoms. The cycle might start with physical pain, emo-

tional discomfort or a symbolic event in the environment that reminds the individual of the traumatic incident. This triggers visual images, thoughts or flashbacks of the event that cause an increase in autonomic nervous system activity. Sometimes called the fight-or-flight response, the body's normal reaction to a shocking situation is hyperactivity in cardiovascular functioning, respiration and muscle tone. When the individual relives the trauma in his mind, his body responds physiologically as though the trauma is recurring. This increased anxiety aggravates the physical and emotional discomfort and the cycle continues, further reminding the victim of the traumatic incident. The individual sinks deeper and deeper into his pain and discomfort.

Although the spiral might be initiated by events in the environment, once the cycle is set in motion, environmental circumstances actually fade into the background. Like a needle stuck in the groove of a scratched record, the continuous loop between the mind's recollection of the event, the induced surges of anxiety and aggravated physical symptoms maintains the spiraling effect of the stress disorder. This also explains why some individuals, despite contrary physical

Characteristics of PTSD

Condensed from *DSM III R*

I. **Triggering event:** An event outside the range of usual experience, markedly distressing to almost anyone, that is accompanied by intense fear, terror and helplessness.

II. **Symptoms:** Of variable intensity and severity but appear in three characteristic clusters.

A. Reexperiencing the traumatic event in nightmares, flashback episodes, intrusive and vivid images and recollections, and intense emotional distress when exposed to situations that symbolize the trauma.

B. Numbed emotional state, a generalized detachment and disinterest, and extreme avoidance of activities, thoughts or feelings associated with the shock.

C. Hyperarousal, which includes difficulty sleeping, irritability and hostility, difficulty concentrating and hyperphysiological response when exposed to events that symbolize aspects of the trauma.

The traumatic experience [of war] can be very intense, and often continuous, so emotional suppression becomes habitual; a soldier who stops to grieve in the middle of a fire fight will quite possibly get killed. . . .

Once the intense external pressure to survive is removed, it may be some time before the door to the mind's dark closet cracks open under the internal pressure of all the suppressed emotions related to the war trauma.

exams, experience continuous physical pain or discomfort and are unresponsive to medical, as opposed to psychological treatment.

The onset of symptoms may be immediate, gradual or as has been the case for many war veterans, PTSD may not develop until much later. This is understandable given the nature of war-time experience. In the midst of the life-and-death reality of war, the soldier must shift out of his normal emotional and moral awareness to survive. In effect, it is impossible for a soldier to survive the battlefield without learning to suppress his emotions to a large degree. In most nonwar situations, there is room for an emotional reaction to an intense situation; grief, sadness, anger and remorse are all normal emotions. But in times of war, there is no time for the emotional soldier. The heated reality of war dictates that the emotional aspects of the battle experience be ignored and suppressed, at least until well after the experience has ended.

The traumatic experience for a war veteran can be very intense, and often continuous, so emotional suppression becomes habitual; a soldier who stops to grieve in the middle of a fire fight will quite possibly get killed. Then, after the soldier has physically left the battlefield, he still carries these habitual ways of functioning. Many soldiers have learned to keep themselves disconnected from their emotions, and plugging back into a mainstream life is not always done easily or quickly.

So, once the intense external pressure to survive is removed, it may be some time before the door to the mind's dark closet cracks open under the internal pressure of all the suppressed emotions related to the war trauma. Oddly enough, sometimes an unrelated trauma occurring long after the initial war-induced trauma, like being involved in a car accident or a violent crime, lets loose the flood gates into delayed onset of PTSD. Once the victim is put into a potentially triggering emotional state of extreme fear, anxiety and helplessness (and the simultaneous physiological fight-or-flight response), it uncaps the similar, but suppressed, feelings of the original trauma. Once unleashed, these old memories can become the focal point of the cycle into intensified PTSD symptoms.

Unfortunately, many individuals deny their discomfort and internal emotional turmoil and resort to self-medication, using and abusing alcohol and drugs to numb their pain. For a PTSD sufferer, this form of substance abuse is like adding lead weight to a sinking ship, pushing the individual deeper and deeper into a cycle of pain and alienation. Over a period of time, it requires more and more energy to remain numb, which means the individual has less and less energy available to invest in a healthy life. In these cases, the substance abuse adds a new layer of disease to an already complex and highly confused emotional state and makes proper diagnosis and treatment much more difficult.

Treatment. Whether it is love, hate, joy or the fear, terror and helplessness associated with PTSD, it takes a considerable amount of energy to suppress or deny strong emotions. Some portion of the traumatized person's mental energy becomes devoted to shrouding the emotions tied to the trauma. In turn, the person's psychological state remains integrally tied to his past emotional trauma. Whatever the degree of dysfunction, individuals with PTSD cannot leave their traumatic experience behind until they make emotional peace with that part of their past. Fortunately, in most cases, psychological wounds can be cleansed with appropriate treatment. Those suffering from PTSD need not live with their trauma indefinitely.

Healing these emotional wounds is a matter of reawakening the experience and the associated emotions and consciously acknowledging them with understanding and self-forgiveness. There are a variety of effective therapeutic techniques—psychotherapy in group, family and individual settings, veterans' rap groups and hypnotherapy are a few examples. Despite the differing methods, each is aimed at taking the individual back to the ignored and festering traumatic emotions so that they can be given their due respect and then laid to rest properly. Of foremost importance for people suffering with PTSD, they must look to outside resources to get the help they need to heal their wounds.

While this task might seem relatively simple, it is a terrifying prospect for people with PTSD to actually meet the emotions of their traumatic experience(s) directly. Whether consciously or unconsciously, these people have fought, moment by moment, to keep their emotional turmoil at bay. As with all battles, the repeated nightmares, headaches, numbing the pain with alcohol or drugs and feeling alienated and apathetic demonstrate that the fight takes its toll.

The primary path to health is a safe, supportive atmosphere where feelings can be expressed and heard. A variety of programs have been developed to deal with PTSD. Veterans' groups have probably been the most creative and committed to finding healthy solutions. Both the debilitating symptoms of PTSD and its roots need to be addressed. This usually involves teaching people how to manage their anger, stress-reduction techniques, teaching alternative behaviors particularly concerning substance abuse and, especially, educating them on what PTSD is.

The treatment process is not a magical cure performed by a doctor or therapist, but a process of coming to terms with intense emotions. The process usually takes some time; in fact, it can be painfully slow. This is particularly true for the war veteran whose traumatic experience may have spread out over the many months of battle. Coming to terms with this type of experience often feels like a slow march through hell. Initially in treatment, the symptoms may seem to get more intense as the traumatic emotions surface.

This is an expected response. Certainly, an intense and deeply painful emotional response would have been appropriate given the nature of the triggering trauma.

One of the mysteries of the stress disorder is that the intensity of the suppressed emotions seems to increase rather than dissipate, the longer they remain submerged. The traumatic experience left unresolved is really no different than a physical wound left untreated and disregarded; they both fester and spread, slowly infecting other parts of the body as long as they are ignored.

Trauma does give survivors an opportunity to make positive changes in their lives (although, given the choice, they probably would prefer to have forgone the trauma). Many people pay little attention to their emotional health, until forced. Leading a positive, emotion-filled life is a skill to be learned, just like staying physically fit. Often, out of the trauma, people gain a very personal awareness of human vulnerability, and a true appreciation for life can emerge. Given the impact of the traumatic experience, personal values are not likely to remain unexamined or unaltered, and certainly, change and growth make humans human.

Prevention. There seem to be an infinite variety of ways humans can be exposed to trauma; it is a reality of our lives. Undoubtedly, it is impossible to prevent, or remove, the potential for traumatizing events affecting people's lives. At least now, with our current understanding of the human mind, it is no longer necessary to ignore these invisible wounds in the context of the combat experience. Thus, we would likely find more success in creatively dealing with emotional trauma than in trying to prevent it.

Just as the traumatized person must move out of emotional denial to begin the healing process, we must not deny the continued potential for emotional wounds and PTSD. In this sense, prevention issues for PTSD are no different than for any health-related issue; the first step

Individuals with PTSD cannot leave their traumatic experience behind until they make emotional peace with that part of their past. . . . Healing these emotional wounds is a matter of reawakening the experience and the associated emotions and consciously acknowledging them with understanding and self-forgiveness.

is education and demystification.

By making sure people understand cause-and-effect relationships in PTSD, we help them better understand the interplay between their emotions, their experiences and their behavior. Anger, grief and sadness are normal human emotions; suppressing these emotions can possibly lead to psychological disease. Fostering an understanding of these connections at least gives people the choice to be attentive to the problem.

Being aware that there are sexually transmitted diseases does not mean healthy humans stop having sex, it means they need education about healthy sex. Similarly, PTSD is not a disease that affects the weak, but rather a condition that occurs when strong emotions are not given proper attention and recognition. Its existence means that we need to learn better ways of acknowledging and expressing emotions, which begin with education.

Also, the symptoms of PTSD are signals that help is needed, not drugs or alcohol, but a good PTSD therapy program. Increasing people's awareness of the hows, whys, and whats of PTSD will help ensure that people seek attention if needed. We certainly can help each other, and especially those suffering from PTSD, to use our emotional energy creatively, to help propel us into a future that does not need to numb and mask emotions, especially the sadness and grief that come with being human. **MR**

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The Lessons of DIEN BIEN PHU



Howard R. Simpson Copyright 1992

The study of past battles often provides valuable lessons to those who may fight in the future. The author offers several valid insights into the faulty planning and execution of the French stand at Dien Bien Phu in 1954 in Indochina.

AT 2400 ON 7 MAY 1954, after 55 days of continual combat, General Vo Nguyen Giap's red battle flag, bearing the gold-lettered slogan, "Fight and Win," flew from the captured command post of the French mountain stronghold of Dien Bien Phu. The fall of Dien Bien Phu signaled the end of French rule in Indochina, the establishment of the North Vietnamese Army as a recognized professional fighting force in Asia and the opening of a new phase in the struggle for Vietnam—a struggle that would eventually lead to direct US military involvement.

The battle of Dien Bien Phu also revealed a number of important truths about revolutionary warfare and counterinsurgency. Unfortunately for the West, particularly the United States, these lessons were largely ignored. Given the choice between studying defeats and victories, most military professionals will often opt for the latter, unless the defeat in question was that of a real or potential enemy. At the time of Dien Bien Phu, there was a tendency in the Pentagon to view the defeat as one more French military disaster, another debacle linked in American minds with France's collapse in World War II. True, the outcome of Dien Bien Phu stemmed from a host of errors in planning, intelligence and tactics, but the whys and wherefores were generally forgotten following the French withdrawal from Indochina.

A study of Dien Bien Phu can be as important today as it was more than 37 years ago. Certain aspects of the campaign have a direct application to contemporary limited-intensity conflict and provide a number of lessons for the professional soldier:

- The battle was a clear demonstration of the flexibility of a guerrilla foe and his ability to change procedures to fit a specific tactical situation.
- The taint of colonial paternalism or too much Western influence can be fatal to a "national" army in the Third World, exerting negative psychological pressure that weakens morale and degrades battlefield performance.
- Underestimation of a guerrilla enemy by regular forces is a cardinal military sin.
- An overdependence on air support and supply can lead to disaster during a guerrilla-type campaign in difficult terrain or adverse weather conditions.

To better understand the battle of Dien Bien Phu, the issues and those involved, it is useful to review the situation in Indochina during the early 1950s.

General Henri Navarre, the newly appointed commander of the French Expeditionary Corps had arrived in Saigon on 19 May 1953. A cold and effete man, the 55-year-old Navarre knew little of Asia or Indochina. He had come to Viet-



nam with the outlines of a special "Navarre Plan" designed to restore the confidence of his troops and shift the French war effort out of neutral through offensive action. With US military and economic aid supporting the bulk of the war effort (to keep the French "fighting the good fight" in Asia while guaranteeing their continued membership in NATO), Navarre was under pressure to come up with some impressive successes.

Shortly after his arrival, Navarre turned his attention to the background material and recommendations drafted by his predecessor, General Raoul Salan, an old Indochina hand nicknamed "Le Chinois." One of Salan's recommendations involved the occupation of Dien Bien Phu, a small administrative hamlet in a strategic valley in Northwest Vietnam that had been abandoned to the Vietminh in 1952. Salan had seen Dien Bien Phu, together with the already established position at nearby Na-san, about 60 miles to the east, as mutually supporting strongpoints blocking further enemy moves on Laos.¹ Its location would also bolster the tribal capital of Lai Chau, not far from the Chinese border, and provide operational support to the *Groupements de Commandos Mixes Aéroportés* (GCMA), the French-led, anti-Vietminh tribal guerrillas of the region, primarily the Black Thai and the Meo. Dominance of the confluence of the Nam Yum and Nam Ou rivers at Dien Bien Phu would also deny a precious transport asset to the enemy.

As Navarre's immediate staff secretly weighed the advantages and disadvantages of seizing Dien Bien Phu, they were influenced by the recurrent, hopeful vision of a major, set-piece battle. Such a dream sequence had become part of the folklore of the French Expeditionary Corps. This "best of all possible worlds" scenario had Giap's divisions pouring from the forested hills onto the valley floor of Dien Bien Phu, where they would be blocked by the French barbed wire, decimated by artillery and air strikes, and mopped up by tanks.

In August 1953, while the plans for a French attack on Dien Bien Phu were progressing, Navarre ordered the evacuation of Na-san. This

General Navarre [planned] . . . to restore the confidence of his troops and shift the French war effort out of neutral through offensive action. With US military and economic aid supporting the bulk of the war effort (to keep the French [fighting] while guaranteeing their continued membership in NATO), Navarre was under pressure to come up with some impressive successes.

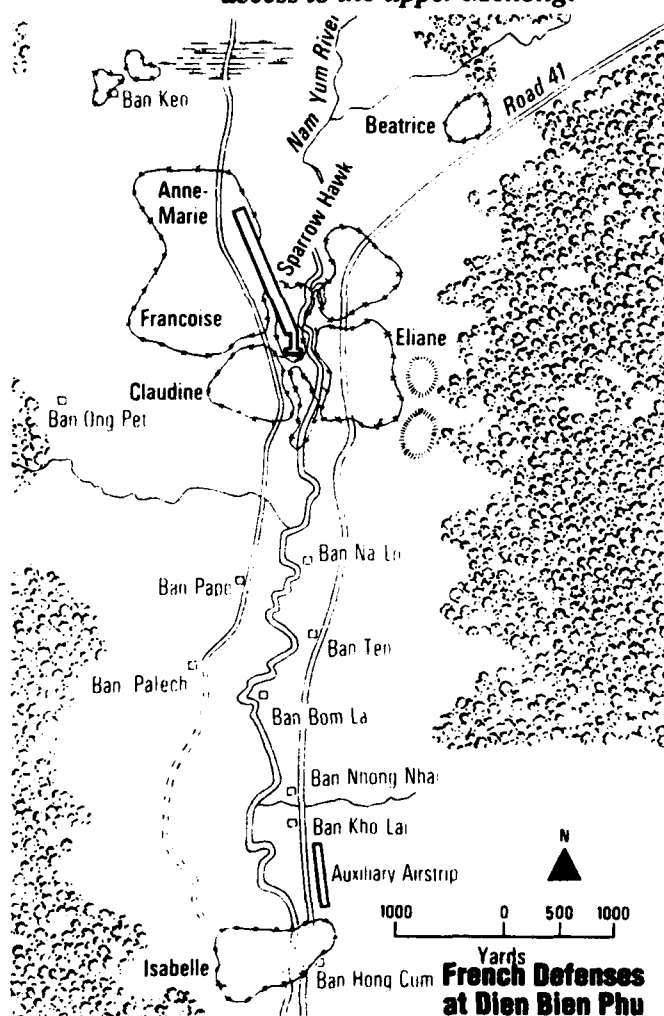
strongpoint had been sitting in stagnant suspension since the heavy Vietminh attacks of December 1952. In reality, it was an empty symbol of power, ignored or bypassed by the enemy and requiring constant resupply by airlift from Hanoi. To Navarre, who needed every combat unit and aircraft he could muster, the evacuation made practical sense. But it removed a stanchion of Salan's recommendation that projected Na-san, Dien Bien Phu and Lai Chau as mutually supporting bases.

The valley of Dien Bien Phu, 16 kilometers long and 9 kilometers wide at its broadest point and dominated by jungle mountains, was no stranger to the clash of arms. It had long been a stopping point for invaders from the north seeking access to the upper Mekong. In 1888, a French column had camped at Dien Bien Phu during operations against the Siamese. It later became an administrative post manned by a small detachment of troops under French command. In 1939, a small emergency airstrip was built to support the garrison at Lai Chau. From 1940 to 1945, the Japanese occupation forces largely avoided Dien Bien Phu, and the French used the strip occasionally for the clandestine landings of agents and members of Force 136, an anti-Japanese resistance unit.²

When Japanese forces reversed their live-and-let-live policy toward French authorities in Indochina in 1945 and attacked French garrisons throughout Vietnam, Dien Bien Phu was used to evacuate French wounded to the relative safety of China. A heavy fire fight during this pe-

riod found a French Foreign Legion company charging with fixed bayonets to retake the airstrip from the Japanese. The company commander, a certain Captain Jules Gaucher, was fated to be one of the first fatalities at Dien Bien Phu in 1954, when Vietminh artillery made a di-

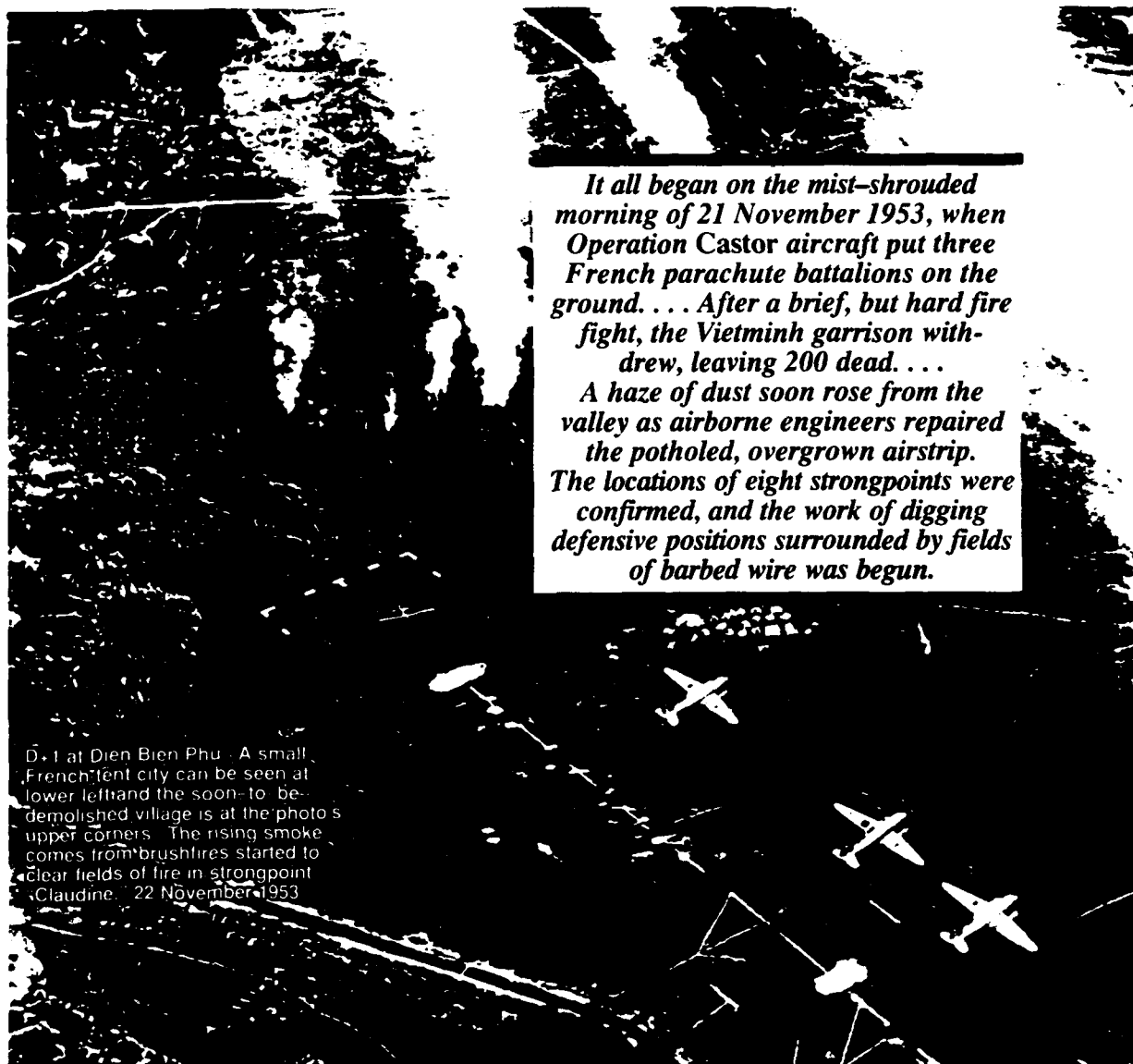
The valley of Dien Bien Phu, 16 kilometers long and 9 kilometers wide at its broadest point and dominated by jungle mountains, was no stranger to the clash of arms. It had long been a stopping point for invaders from the north seeking access to the upper Mekong.



rect hit on the command post (CP) where Lieutenant Colonel Gaucher was commanding the 13th Half-Brigade of the Foreign Legion. Dien Bien Phu was also famous for the quality of the local opium crop. The French, the Japanese, Chinese Nationalist war lords and the Vietminh had clashed over this rich harvest in the past.

There were outspoken objections to Navarre's decision to proceed with the seizure of Dien Bien Phu. His air force commanders had grave doubts about maintaining a constant air bridge from Hanoi, some 280 kilometers distant. They were particularly concerned about the vagaries of weather in North Vietnam's mountain country.³ The same misgivings were expressed by air force officers responsible for ground support. Brigadier General Jean Gilles, the tough, one-eyed commander of French airborne troops in Indochina was definitely unenthusiastic. He had commanded the strongpoint of Na-san, where his men had had to fight hard to retake a hill position overrun by the enemy in a night attack. As a "para," he was basically against static positions, particularly in a guerrilla war of movement. Appointed by Navarre to lead the airborne assault on Dien Bien Phu, his prime concern was to turn the seized airstrip over to its new garrison force and get his paras out of the "chamber pot" valley he saw as a potential trap.

Considerable time was spent discussing the possibility that the Vietminh might move artillery to Dien Bien Phu. It was finally decided that the lack of roads and truck transport made this an impossibility. If, by any chance, the enemy managed to sneak some light pieces that far, the High Command was confident they could be dealt with easily by air strikes and Dien Bien Phu-based artillery. Warnings not to underestimate enemy capabilities from parachute and commando officers with long experience in Indochina were ignored by staff officers, whose prime experience had been limited to the campaigns of World War II in North Africa and Europe. A fatal symptom of this mentality was Navarre's decision to name Colonel Christian Marie Ferdinand de la Croix de Castries as Gilles' successor at Dien Bien Phu once the



It all began on the mist-shrouded morning of 21 November 1953, when Operation Castor aircraft put three French parachute battalions on the ground. . . . After a brief, but hard fire fight, the Vietminh garrison withdrew, leaving 200 dead. . . . A haze of dust soon rose from the valley as airborne engineers repaired the potholed, overgrown airstrip. The locations of eight strongpoints were confirmed, and the work of digging defensive positions surrounded by fields of barbed wire was begun.

D-1 at Dien Bien Phu. A small French tent city can be seen at lower left and the soon-to-be-demolished village is at the photo's upper corners. The rising smoke comes from brushfires started to clear fields of fire in strongpoint Claudine. 22 November 1953

valley had been taken. De Castries had been a dashing tank officer in World War II, and Navarre promised to supply him with tanks with which he could sweep the enemy clear of the valley.⁴

It all began on the mist-shrouded morning of 21 November 1953, when Operation Castor aircraft put three French parachute battalions on the ground at Dien Bien Phu in a few hours. After a brief, but hard fire fight, the Vietminh garrison withdrew, leaving 200 dead on the field. A

haze of dust soon rose from the valley as airborne engineers repaired the potholed, overgrown airstrip. The locations of eight strongpoints were confirmed, and the work of digging defensive positions surrounded by fields of barbed wire was begun. These positions—with a touch of French gallantry—were named after women. Beatrice, Gabrielle, Anne-Marie, Huguette, Claudine, Isabelle, Elaine and Dominique became islands of defense scattered throughout the valley. Intelligence officers hunkered down to interrogate lo-

cal tribesmen on Vietminh movements, and miles of field telephone wire was strung connecting the CP to the scattered battalions.

The sky was filled with aircraft. Flying Boxcars (C-119s), piloted by American contract pilots

As Navarre's immediate staff secretly weighed the advantages and disadvantages of seizing Dien Bien Phu, they were influenced by the recurrent, hopeful vision of a major, set-piece battle. . . . This "best of all possible worlds" scenario had Giap's divisions pouring from the forested hills onto the valley floor of Dien Bien Phu, where they would be . . . decimated.

Considerable time was spent discussing the possibility that the Vietminh might move artillery to Dien Bien Phu. It was finally decided that the lack of roads and truck transport made this an impossibility. If . . . the enemy managed to sneak some light pieces that far, the High Command was confident they could be dealt with easily by air strikes and Dien Bien Phu-based artillery.

of the "Flying Tigers," droned over the valley dropping metal grillwork sections of the airstrip and free-falling rolls of barbed wire. Dakotas (C-47s), in well-spaced flights, launched swaying chutes loaded with everything from mortar ammunition to electric generators, from empty sandbags to gasoline stoves. Cases of wine, beer and pastries thudding to the ground—with considerable breakage—brought cheers from the sweating garrison.

On 25 November, the first Dakota landed on the strip. Infantry and artillery reinforcements were brought in to man the strongpoints. These reinforcements grew to a total of 12 battalions by the time the siege started in early March, including two Foreign Legion parachute battalions, four other Legion battalions, two battalions of

North Africans and two "tribal" battalions of more doubtful quality.⁵

The Vietminh propaganda apparatus had launched a major effort to shake the loyalty of these colonial troops and was making good use of captured, indoctrinated North Africans and West Africans to pass the message of "friendship" to those still in French ranks. Vietnamese troops of the newly formed national army were under particular pressure. Communist cadres influenced their families with tales of French atrocities and slipped pamphlets describing Emperor Bao Dai's dissolute, playboy life into their ranks. Even the stolid legionnaires were targeted in the campaign. Some legion deserters were already serving with the Vietminh. Members of the Thai battalion—adapted to small actions and counter guerrilla operations—were unprepared for the sustained battle they were about to face.

By the end of November, there were more than 5,000 French Union troops at Dien Bien Phu. By 25 December, there were 10,910, including 10 infantry battalions, plus artillery, armor and service troops. On 18 December, the first 20-ton Chaffee tank arrived.⁶ It was delivered by air in detached sections and reassembled laboriously with a block and tackle rig. By 15 January 1954, there were 10 Chaffees ready for action.

On 25 January, Colonel Charles Piroth, the artillery commander, could count 25 105mm howitzers, four 155mm howitzers and 16 120mm mortars at his disposal.⁷ Still convinced that the Vietminh could never move their artillery within range of Dien Bien Phu, Piroth had installed his artillery in exposed battery firing positions within uncamouflaged, sandbag revetments that offered minimum protection. He counted on using his firepower to smash advancing enemy infantry or to support French offensive action outside the defense perimeter. Planning for counterbattery fire was sorely neglected.

During this period, the Vietminh Central Committee, at the urging of Giap, had made the decision to attack Dien Bien Phu to, in Giap's words, "obtain a strategic decision."⁸ The Vietminh commander saw the French presence in

the valley as a windfall, a chance not to be missed. There, in an isolated position surrounded by mountains and difficult jungle terrain, were some of Navarre's best troops, wholly dependent on air resupply. Considering the French seizure of Dien Bien Phu as "a fundamentally favorable occasion," Giap ordered four of his divisions to seize Lai Chau and encircle Dien Bien Phu.⁹ By late December, battalion-strength patrols of French paras had already begun to run into stiff resistance 10 kilometers from the outer defenses.

Giap came prepared. The 75mm recoilless rifles and the old Japanese 75mm mountain guns of his divisions had been supplemented with new 120mm mortars and 105mm howitzers. Significantly, a special effort had been made to attach an antiaircraft battalion armed with Soviet 37mm guns to each division. Transport troops and the *Dan Cang* (labor units) worked day and night under the high jungle cover to cut trails and new roads through the rough mountains. Footpaths were slashed, leveled and widened to accommodate Molotova trucks. Hundreds of bicycles, later described by Giap as "our taxis of the Marne," were adapted to carry heavy loads.¹⁰ Shallow underwater fords, reinforced with logs and practically invisible from the air, facilitated the Vietminh advance. Small (advance) patrols, led by artillery officers trained in China, surveyed the ridges and mountains dominating the valley to select sites for masked gun positions.

Within the fortress, defenses were improved. The air bridge continued as supplies were delivered daily and wounded from the patrol actions were evacuated to Hanoi. Conflicting intelligence reports spoke of enemy movement near Dien Bien Phu (from on the ground GCMA patrols) and of silent, empty trails (from air reconnaissance).¹¹ An aura of foreboding hung over the valley. "They are out there," a legion officer murmured, sweeping the high ground with his binoculars, "They are waiting. This time it will be a true battle."¹²

It was. The bloody fighting began in earnest during early March, turning the valley into a nightmare landscape torn by heavy explosives



Bearcat fighters and Dakotas on the airstrip and (below) a 105mm howitzer position before the siege.



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and littered with the debris of smashed equipment and aircraft. The hidden Vietminh batteries quickly made the airstrip untenable. A commando patrol of Vietminh sappers infiltrated the

The Vietminh propaganda apparatus had launched a major effort to shake the loyalty of these colonial troops and was making good use of captured, indoctrinated North Africans and West Africans to pass the message of "friendship" to those still in French ranks. Vietnamese troops of the newly formed national army were under particular pressure.

strongpoint during the night of 12 March to set charges under the metal stripping, scatter propaganda leaflets and demonstrate the vulnerability of the "impregnable" position.¹³

The initial assaults proved costly. Official French estimates put Vietminh dead during the 14 March attack on Gabrielle at more than 1,000, and Giap soon switched to a constant, steady pressure, nibbling at the French positions. Supplies and reinforcements for the garrison were parachuted at night to avoid antiaircraft fire. Some of the reinforcements were volunteers: cooks, mechanics and service troops who had never used a parachute before. As the perimeter narrowed, the drop zone became smaller, and men and supplies dropped too soon or too late fell directly into enemy units.

The parachute battalions and the Foreign Legion formed the backbone of the defense, fighting and counterattacking around the clock in a strange rebirth of trench warfare. Piroth, deeply affected by his inability to locate and neutralize the Vietminh artillery, committed suicide by holding a grenade to his chest. De Castries, shaken and drawn, retired to his dugout and his own dreamworld, leaving tactical decisions to his parachute commanders.¹⁴ Tireless Vietminh sappers, working in relays under heavy fire, pushed their trenches within yards of the French positions, and Vietminh assault groups attacked

again and again. Hundreds of dead lay around the outer defense perimeter and sprawled over the redoubts of captured strongpoints. With no evacuation possible, the French wounded lay on litters in the damp trench outside the surgical dugout. Those beyond help were piled in abandoned trenches or left where they had fallen in a sea of mud.

One by one, the strongpoints fell. A message from a para officer to his commander reveals the drama of defeat. "Bruno from Thomas, we're holding but we're down to ten. No more grenades, no more mortar shells . . . things are falling apart." De Castries' last message to Hanoi summed up the disaster. "We're submerged. The three strongpoints to the East of the Nam Yum [River] have now fallen. I no longer know where my wounded are. We're under the fire of Stalin organs [multiple rocket launchers]. The radio will be destroyed at 1730. We'll fight till the end . . ." ¹⁵

High above the valley the last transport parachuted its cargo of food and medicine in the hope it would be of some use to the survivors of the battle. Death marches, privation, illness and continuous communist "reeducation" sessions lay ahead for the thousands of prisoners taken at Dien Bien Phu, many of whom would never return alive from the Vietminh camps.

On 13 May 1954, Giap issued his "order of the day on the victory of Dien Bien Phu." It included a prophetic phrase: "With the campaign of Dien Bien Phu our army has taken a step forward . . . this [new] maturity constitutes a solid base permitting us to envisage the destruction of much larger enemy forces."¹⁶ Not too many years later, the United States, having replaced France in the conflict with communist forces in Indochina, would come dangerously close to experiencing a Dien Bien Phu of its own at Khe Sanh, and Giap's prophecy would remain pertinent.

In reviewing the lessons already mentioned, it is important to realize that many of the French headquarters officers responsible for the planning of Dien Bien Phu saw the Vietminh as basically a guerrilla force, a "peasant" army. Even the

experiences of some combat officers in countering limited-strength Vietminh attacks, followed by quick withdrawals, made it difficult for them to imagine facing enemy divisions willing to stand and fight. Giap himself has admitted to some trepidation about the defensive strength of Dien Bien Phu and the difficulties of supplying his forces for an extended campaign in the difficult terrain of northwest Vietnam. But once the decision was made to attack, the resources of a "People's War," including a full mobilization of the peasantry as a labor force, were brought to bear on the objective.

Giap, although prone to divide his actions into "phases," did not allow his procedures to be set in concrete. While preparing to attack the fortified camp in a basically classic manner with massed forces, he ordered his troops in the Tonkin Delta—regulars, regionals and militia—to step up small, deadly assaults on positions where "the adversary is relatively weak."¹⁷ These constituted an intensification of guerrilla actions best fitted to the local terrain and tactical realities. At the same time, he sent specially trained "hunter-killer" units into the jungled mountains around Dien Bien Phu to track the GCMA commandos posing a threat to what was soon to become his "rear" in the coming battle. It was essential to the Vietminh to eliminate the GCMA as the beyond-the-perimeter eyes and ears of the Dien Bien Phu garrison. Giap thus demonstrated his ability to launch different operations, using different procedures in support of a major objective. Once the battle was joined, he maintained flexibility and did not hesitate to change tactics when direct, massed assaults proved too costly.

In a more distant epoch, the French Expeditionary Corps of the 1950s might have been an efficient, professional fighting machine. But, by 1953, it had already become an anachronism. As one of the last existing colonial armies, it was showing the strains and cracks caused by new directions in the postwar world. The winds of political change were already buffering the sources of its recruitment, and the old military paternalism that had held its famous regiments together



Vietminh porters hauling in ordnance and (below) a bicycle convoy ferrying supplies.



Transport troops and the Dan Cang (labor units) worked day and night under the high jungle cover to cut trails and new roads through the rough mountains. Footpaths were slashed, leveled and widened to accommodate Molotova trucks. Hundreds of bicycles. . . . were adapted to carry heavy loads.

was becoming outmoded. The normally dependable North African and West African troops who had fought "like lions" in World War II were still performing well in Indochina, depending on the quality of their French officers and the veteran noncommissioned officers of their own race. But the seemingly never-ending war in a far-off land and exposure to Vietminh propaganda was taking its toll. Leaflets, loud-speaker lectures to cut off units, and word-of-mouth campaigns in the dingy bars near military camps often posed the questions, "What are you doing here? Why did you come here to die?" Many colonial troopers had begun to ponder the answers, particularly when rumors of unrest and opposition to continued French rule at home reached them in Indochina. Not too long before

the fall of Dien Bien Phu, some colonial units, battered by artillery and suffering heavy losses, including their officers, left the battle to seek shelter in the muddy caves along the banks of the Nam Yum River. Ironically, among those Algerian noncommissioned officers who fought to the end and lived through captivity were some who would become the professional cadre of the National Liberation Front (FLN) in the war for Algerian independence against France.

Although colonial armies are now part of the historical past, their spectre lingers on. The ARVN was never able to shed its origins as a European-trained colonial force. When US advisers took over the role of the French, the tinge of colonialism remained, providing a continuing theme for Vietcong propagandists who

COMBAT CUISINE

The cooks of the French Expeditionary Corps were the unsung heroes of the Indochina War. France has always made an effort to see that its men-at-arms eat adequately, if not well, and French soldiers—much to the chagrin of field surgeons—have long preferred to go into battle with a full stomach. The Indochina campaign presented special problems to quartermasters and cooks alike. The racial and religious diversity of the French Union Forces called for special menus. This, in turn, called for special procurement and delivery.

North African riflemen required lamb in abundance, harissa hot sauce for their cous-cous, dates and mint for their tea. Troops from French West Africa had a taste for yams, coconuts and hot peppers. The Vietnamese of the national army and those serving with French units (more than 50 percent of some parachute battalions) required pork, plentiful rice, noodles and *nouc mam*, the fermented fish sauce. The French Legion was partial to *boudin noir*, a rich blood sausage, required for the yearly celebration of *Camerone*, a famous battle in Mexico where a legion detachment fought to the death against overwhelming odds.

Wine, beer, pastis and brandy were plentiful in most French messes and a special effort was made to see that no one went thirsty in the field. The holiday period saw truck convoys risking ambushes and mines to deliver Christmas cheer to isolated outposts. Transport aircraft parachuted cased bot-

bottles, along with ammunition and medical supplies, to long-range patrols deep in the jungle. *Vinogel*, a horrendous concoction of concentrated wine packed in cans, was sometimes substituted when the real thing was not available. Mixed with water, it produced an alcoholized grape juice of purple hue that only a besieged garrison might savor.

The chefs of the legion were noted for their adaptability and imagination. War correspondents in the field soon learned that a hazardous jeep ride to a nearby legion unit was often "worth a detour." One shaven-headed legion cook conjured thinly sliced water buffalo, chopped Chinese mushrooms and the remains of a bottle of port into a passable *boeuf perigordine*. Bare chested Vietnamese "beps" could do wonders with a few scrawny chickens, some green onions, rice noodles and coriander. An invitation to a Spahi (Algerian cavalry) unit's mechoui feast following the end of the Muslim Ramadan fast meant helping yourself with your fingers to a whole, spitted lamb roasted over hot coals.

But, once the battle began at Dien Bien Phu and the airstrip became unuseable, the defenders had no time for culinary indulgence. They survived on air-dropped combat rations and tightened their belts as the enemy inched closer. By the time the fortress fell, they had little weight to spare, a condition that would prove fatal to many prisoners attempting to survive on the meager rice gruel and bits of fish supplied by their captors. ■

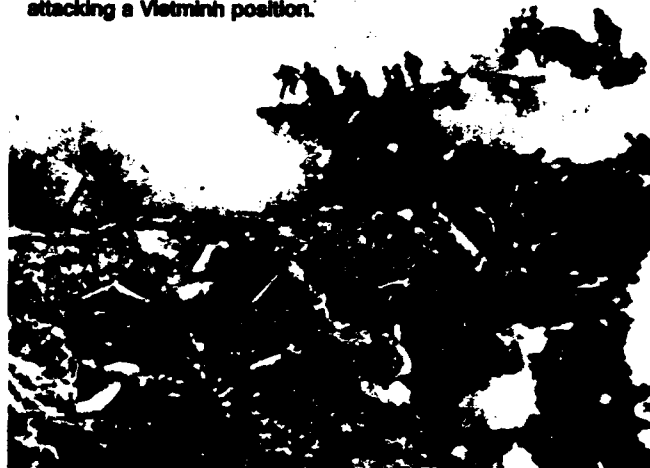
DIEN BIEN PHU

never failed to refer to the ARVN as a "puppet" army. Today, as we take a more active military role in the drug wars of Central America, US advisers should bear in mind that overeagerness to push US methods on their local military counterparts could be counterproductive. To us, "colonialism" is now a historical label. To many in the Third World, it remains a valid, negative symbol.

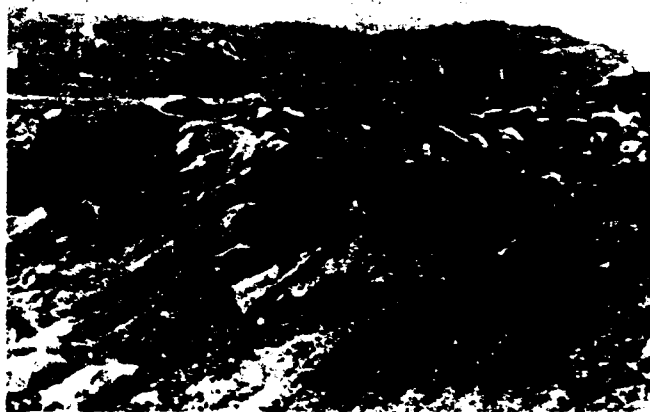
The one easily identifiable shortcoming of Western military forces in post-World War II clashes with guerrillas has been the underestimation of the foe's capabilities, motivation and determination. Nowhere was this more obvious—and fatal—than in the French planning and implementation of the Dien Bien Phu Campaign. French staff officers and commanders, graduates of Saint Cyr and the École de Guerre, veterans of Italy, the landings in Southern France and the Rhineland Campaign, found it difficult, if not impossible, to accept Ho Chi Minh's guerrillas as military equals. Those who did—because of harrowing firsthand experience—found it hard to convince their fellow officers that the skinny Vietminh with his rice roll and individual weapon could be a dangerous and clever adversary. When a seasoned para commander such as Lieutenant Colonel Marcel Bigeard referred to the "Viet," there was a note of grudging respect in his voice. Map-marking officers in Saigon headquarters used the same word with marked contempt.

Underestimation of an irregular enemy or ally is nothing new. Major Robert Rogers, the commander of the unorthodox Roger's Rangers during the French and Indian War, tried to warn his British superiors about the worth of the enemy's unconventional tactics to no avail. Some card-punching US senior officers were guilty—often to their regret—of treating the Vietcong with disdain. At no time during the Dien Bien Phu Campaign could Giap be accused of the same mistake. In no less than seven messages, orders of the day and congratulations to his troops, he returned again and again to the danger of underestimating the enemy. For example, on 20 March 1954, he warned, "His [enemy] morale is

French parachutists counter-attacking a Vietminh position.



Bearcat fighters and aircraft revetments shredded by communist artillery fire.



The parachute battalions and the Foreign Legion formed the backbone of the defense, fighting and counterattacking around the clock in a strange rebirth of trench warfare. . . . With no evacuation possible, the French wounded lay on litters in the damp trench outside the surgical dugout.

affected, his difficulties are numerous. But don't underestimate him. If we underestimate him we'll lose the battle." Even in his victory message after the battle had ended, Giap cautioned his men to "guard against the subjectivity that leads to complaisance and the underestimation of the enemy."¹⁸ In the contemporary international environment of limited-intensity conflict, guerrilla warfare and terrorism, we would do well to adapt even a paraphrase of Giap's warnings to our own use.

Few hard-pressed combat officers will willingly forgo the asset of efficient air support, but an overreliance and dependence on such support can prove dangerous. Notwithstanding the fact that some of Giap's early defeats can be credited to the prompt application of air power in the form of fighter-bombers loaded with napalm, it is also true that the French High Command's faith in the effectiveness of air supply and support contributed to the loss of the battle. The gigantic supply effort required for Dien Bien Phu siphoned off badly needed air assets from other fronts. The typhoon-like storms and heavy rains of North Vietnam made a hash of flight plans. When the Vietminh artillery shut down the airstrip, all supplies and munitions had to be parachuted to the garrison, a procedure made dangerous and inaccurate by antiaircraft fire. Air strikes against Vietminh supply lines were limited in their effectiveness by the enemy's use of camouflage and the quick repair teams located at

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intervals along the jungle roads and trails (a technique used later on the Ho Chi Minh Trail). Repeated strikes directed at the approximate locations of the enemy's masked batteries, often dug directly into the surrounding limestone ridges, were largely ineffective and costly. The Vietminh, while respecting French air power, had adapted their tactics and movements to survive under its threat. They had learned to live with it. The defenders of Dien Bien Phu could not have survived without it.

These are but a few lessons to be learned from the battle for "DBP Airport," as it was called by the paras. A more detailed study, including the psychological and physical effects of jungle warfare on both sides, would doubtless provide additional insights. Military planners and serving officers must look to the future, but a sound knowledge of the past is often the key to what lies ahead. **MR**

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Howard R. Simpson, a former US Foreign Service officer, is a novelist and writer on military matters. He is a graduate of the Naval War College. He was at Dien Bien Phu prior to the battle as a US Information Agency war correspondent during an assignment in Vietnam and was later an adviser to Prime Minister General Nguyen Khanh.

Training

Operational Experts for War

Lieutenant Colonel Richard P. Geier, US Army

Understanding the theory of war does not mean a leader can execute the theory. The author argues that the skills required to execute today's tactical operations must be learned, as well as taught. Unit commanders must take trained soldiers and mold them into a cohesive staff. He offers areas where specialized staff training is required and the various training events that will meet those requirements. Finally, he reviews the method used by the German army to develop its staff officers.

IN RECENT years, great progress has been made in training and emphasizing the art of war. Students at the Command and General Staff Officer Course (CGSOC) and the School of Advanced Military Studies (SAMS) learn about the operational art of war. The graduates of these programs are well versed in the theory of warfare, but do they know how to apply that theory? Do they know how to execute their operation plans (OPLANs), operation orders (OPORDs) and grand strategies?

The process of command and staff operations is an art during the planning stage, but when the commander has decided upon his course of action, the procedure becomes more of a science. It is the application of this operational science that allows units to publish, distribute and supervise OPORDs. The effective use of automation and communications equipment is also an operational science. Practitioners of the operational science know how to cope with logistics/personnel constraints and intelligence products. They also know how to train their units in the operational science so they can conduct centralized planning and decentralized execution. In short, operational scientists are tactical operations "doers" and not just

tactical operations "thinkers."

Today, tactical operations experts are relatively rare. The skills they must have are simply not taught in our higher-level Army schools. Today, operations officers become experts only through long-term operational experience. The details of how to plan and execute orders are still emphasized in our officer and noncommissioned officer (NCO) basic and advanced courses and somewhat in the Combined Arms and Services Staff School (CAS³). However, these techniques are focused toward platoon, company and battalion operations. Little instruction is given on how to operate a brigade, division or corps. To demonstrate that there is a need to emphasize operations training and the development of operational experts, this article discusses current problems with the execution of the operational arts and proposes solutions to those problems through the use of operational science.

Operations Training in TRADOC

A well-trained and cohesive staff is a combat multiplier. The US Army Training and Doctrine Command (TRADOC) must provide units with personnel who are well versed in operational and procedural doctrine for the commander to

mold into a high-performance staff. A commander can then focus on preparing and executing coherent and comprehensive plans and orders. The commander should not have to train the staff in the basics. He does not have time and, if we use the TRADOC schools properly, he should not have to emphasize the basics. Currently, however, we are not properly using the educational assets of TRADOC and often the schoolhouse does not provide instruction in the basics.

An operational asset that is often overlooked is the role and mission of the NCO on division and corps staffs. TRADOC has recognized this need by forming the Battle Staff NCO Course at Fort Bliss, Texas. This excellent, but often underutilized, school teaches students how to be effective operational staff NCOs. Graduates of this school should be in high demand, because one of the significant problems of division and corps staffs is the high commissioned officer turnover. The captains and majors on these staffs change jobs very often in order to be company commanders, battalion S3s (operations and plans officers) and XO's (executive officers). This is probably not going to change, so a key to a high-performing division and corps staff will be the skilled and more permanent operations/intelligence NCO. Having trained staff NCOs allows operations officers to concentrate on tactical operations while the NCOs move, secure, emplace and administer the operations center. These important jobs must be recog-

nized as such, and promotion boards must reward staff NCOs for successful tours. When we have staffs manned by trained sergeants major and master sergeants who will be in that position for at least three years, we will be well on the way toward having efficient and effective staff sections.

TRADOC no longer emphasizes command and staff operations at brigade level, where the multidimensional battlefield synchronization problems first occur. Our officer advanced courses briefly cover the duties of an assistant brigade S3 but do not go into detail on how to plan, coordinate and synchronize brigade operations. CAS³ focuses on staff coordination/procedures but not on operations. CGSOC emphasizes division and corps operations, but the core subjects are geared toward the lowest common operational experience level—that of the military doctors, lawyers, chaplains, dentists, pharmacists, veterinarians, Finance and Adjutant General

Graduates of [the Battle Staff NCO Course] should be in high demand, because one of the significant problems of division and corps staffs is the high commissioned officer turnover. . . . This is probably not going to change, so a key to a high-performing division and corps staff will be the skilled and more permanent operations/intelligence NCO.



officers. SAMS emphasizes division, corps and echelons above corps operations. The Senior service colleges (SSCs) focus on national strategy.

Officer advanced courses must continue to emphasize battalion-level staff operations. Likewise, CAS³'s focus should not change. CGSOC must begin to emphasize brigade and division operations, and the Army must ensure that the proper students attend this course. If a doctor, for example, is not going to serve on a brigade or division staff immediately after graduation, he should not attend a CGSOC that focuses on warfighting skills. We need those spaces to assure that all our staff officers at brigade and division levels are CAS³ or CGSOC graduates. The SAMS course should concentrate on the division and corps operational levels, where most SAMS graduates will serve. The Tactical Commanders Development Course at Fort Leavenworth, Kansas, will serve as an operational refresher for future battalion and brigade commanders. The senior service schools should focus on corps and echelons above corps operations, campaigns and grand strategy.

Effective control of any unit is a result of training conducted prior to the operation and the efficacy of the OPORDs given to subordinate units. We have problems in the way we prepare, distribute and implement our orders.

Upon the receipt of a division or corps commander's guidance, units begin to develop OPORDs and OPLANs. The G3 (operations and plans) officer, G2 (intelligence) plans officer, G1 (personnel) plans officer and G4 (logistics) plans officer do the developmental work. (Most often these plans officers have different military educational backgrounds.) The plans are often developed in separate vans, hurriedly compiled and bound into a large package and sent to divisions and brigades. The size of the typical corps and division order has grown over the years. We seem to have a "more information is better" philosophy, developed perhaps because of our emphasis on our initial general deployment plans. We need to rely more on division and corps standing operating proce-



Having trained staff NCOs allows operations officers to concentrate on tactical operations while the NCOs move, secure, emplace and administer the operations center. These important jobs must be recognized as such, and promotion boards must reward staff NCOs for successful tours.

dures (SOPs) developed not to "pass" a Battle Command Training Program (BCTP) but rather to streamline the division and corps orders process.

Fort Knox, Kentucky, has produced a comprehensive battalion tactical SOP that is flexible enough to be used by armor units worldwide. The Combined Arms Center should do the same for brigades and divisions. The SSCs should write a standard corps SOP. We cannot afford to rewrite SOPs after every change of command or before every brigade, division, BCTP or corps exercise. The differences between operations in Korea, Europe or anywhere else are not great enough to justify separate tactical SOPs in each theater. Five years ago, there was a push toward standardization. This effort, for whatever reasons, did not cause units to standardize operational procedures. It is time to begin

The RTO does not transcribe the whole message (few, if any know, shorthand). The important message may sit in an "in" box waiting the operations officer's perusal. Once the RTO gets the operations officer's response and transmits it, the inevitable questions about the message will result in the RTO's answer of "wait . . . out" while he [gets] the answer.

If . . . the operations officer is the individual monitoring and responding on the operations net, he is constantly aware of the tactical situation. . . . He can distinguish the important from the unimportant. With the guidance and support of his commander, [he] can provide leadership and discipline on the radio net [and] rapidly make decisions (within the limits of his authority).

again. TRADOC must take the lead, and the rest of the Army must follow.

It is important that we begin to teach the science of war in the CGSOC- and SSC-level schools. We must teach the "how to" of command and control. These skills need to be taught in a "dirty" environment. Producing an order in a classroom is not the challenge that we face in the field. What is required is the knowledge and practice of orders production and reproduction in the mud or dust, at night with field-generated power and equipment found in most units. During these practice sessions, future operations officers must work in a highly stressful environment similar to that found in field units.

If our schools taught this operationally vital course of instruction, it might lead to more rapid development and fielding of enhanced tools to make the operations process easier and more efficient. As long as this process is taught in a classroom without the real-world constraints, the TRADOC combat developments people will not be energized to focus the material require-

ments community on the need for operations equipment. There have been efforts in the past to correct this problem, but the facts are that we still use the Tactical Computer Terminal (TCT), acetate, grease pencils and jelly rolls. We urgently need a better way to reproduce and distribute tactical overlays and orders.

Operations Training in Units

TRADOC is not the only institution responsible for operational training. The unit commander must take trained officers from TRADOC and mold them into a cohesive battle staff. Many commanders believe that since we added the commander's intent portion to our operations orders that we have simplified this training process. In reality, the commander's intent, if used properly, requires a commander to spend more time with his subordinate commanders and staff in tactical training. A commander's intent cannot include all the actions that may occur during an operation. Only constant, demanding training will allow subordinates to know what a commander would want them to do during an unforeseen combat situation. Quarterly command post exercises are, at a minimum, required to train staffs and commanders. The more intensive training that units undergo in preparation for BCTP are even better suited to ensure that brigades, divisions and corps are well trained, efficient and responsive.

A commander's staff training produces products. These products are complete, clear yet brief and to the point OPLANs, OPORDs, overlays and matrices. After the training period is over and the commander is satisfied with the product, these documents should be filed in each staff section to form the basis of a staff workbook. This workbook will be invaluable when preparing future OPLANs and OPORDs. The workbooks serve as reminders not SOPs. They allow staffs to format their orders quickly and will serve as a "mind jogger" should they overlook anything. A staff workbook will also ease staff transition due to PCS (permanent change of station) or battle loss.



Medical Service officer speaking during a CGSC terrain walk. Of the nearly 1300 students at the CGSC, only 3 percent are from medically related fields.

CGSOC must begin to emphasize brigade and division operations, and the Army must ensure that the proper students attend this course. If a doctor, for example, is not going to serve on a brigade or division staff immediately after graduation, he should not attend a CGSOC that focuses on warfighting skills.

Communications Training

Many tactical operations officers believe that communications is the responsibility of those wearing Signal Corps brass. This attitude is a result of a void in our operations training. A well-trained operations officer knows how to create disciplined, responsive communications networks. They know how to troubleshoot radios; conduct signal profiles; understand pulse code modulation multichannel and Mobile Subscriber Equipment (MSE); and deal with secure radio encryption devices.

Operations, like any other military task, require training, discipline and leadership. Based on observed performance at the National Training Center (NTC), Fort Irwin, California, and other field exercises, communications training, discipline and leadership on operations nets are often deficient in our units.

Tactical operations radio nets must be responsive to their commanders. Operations officers should be required to produce these responsive nets. Training junior enlisted radio telephone operators (RTOs) is not the solution to this

problem. RTOs are normally not experienced or mature enough to be able to distinguish the important radio traffic from the unimportant. Therefore, they are required to transcribe every word of every message. Then, they pass the messages to the operations officer. Upon receipt of the message, the operations officer makes a decision or obtains guidance. He then prepares a response for the RTO to transmit. That is the normal procedure in many units. What really happens is that the RTO does not transcribe the whole message (few, if any know, shorthand). The important message may sit (with all the unimportant messages) in an "in" box waiting the operations officer's perusal. Once the RTO gets the operations officer's response and transmits it, the inevitable questions about the message will result in the RTO's answer of "wait ... out" while he finds the operations officer to get the answer.

This operational "system" does not produce an efficient, responsive operations net; consequently, the unit is unlikely to outperform an enemy's operational decision cycle. It, however,



As long as [orders production] is taught in a classroom without the real-world constraints, the TRADOC combat developments people will not be energized to focus the material requirements community on the need for operations equipment. . . .

We still use the Tactical Computer Terminal, acetate, grease pencils and jelly rolls . . . to reproduce and distribute tactical overlays and orders.

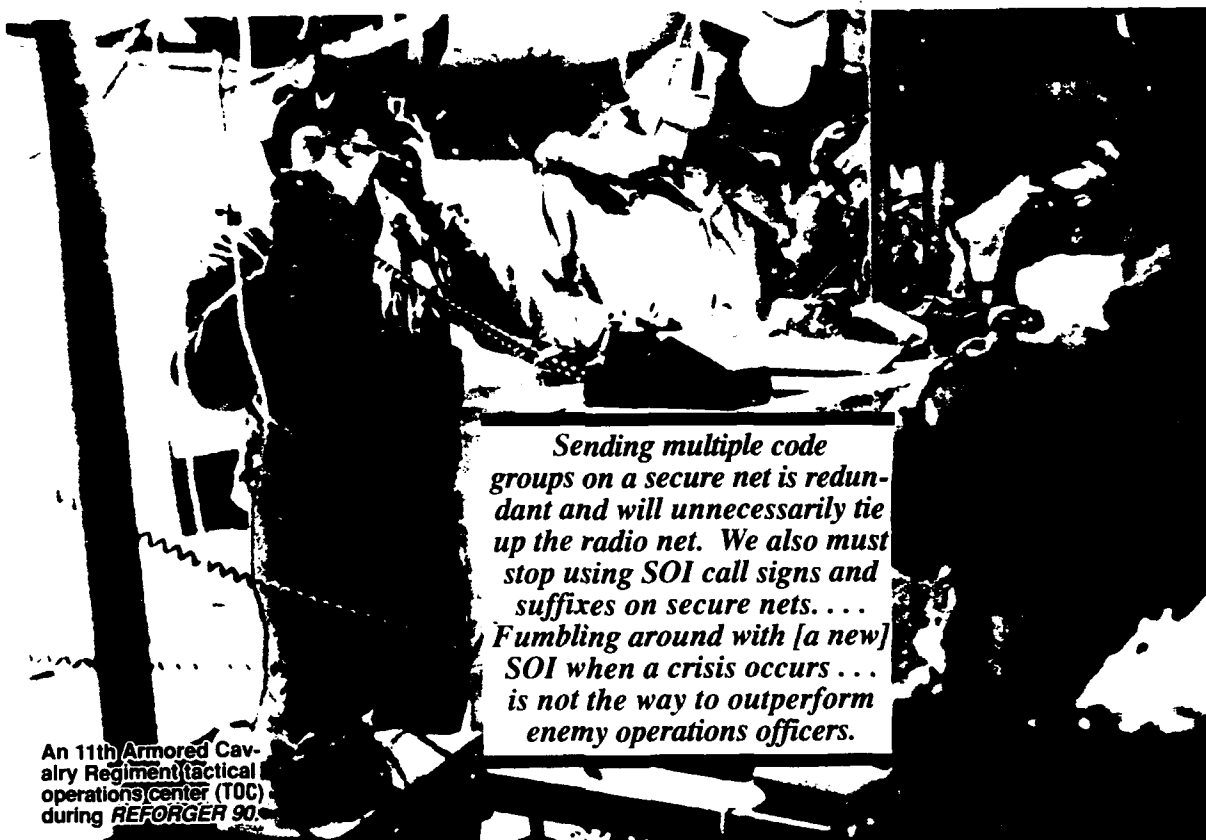
the operations officer is the individual monitoring and responding on the operations net, he is constantly aware of the tactical situation. Because of his training, the operations officer is thoroughly versed in how his commander does business. He can distinguish the important from the unimportant. With the guidance and support of his commander, an operations officer can provide leadership and discipline on the radio net. He can rapidly make decisions (within the limits of his authority, as determined by his commander). The RTO can then be used to pass messages within the operations center, post maps and graphics and other important tasks.

Operational experts must understand the science of communications. They must be taught

to do FM signal profiling so they can plan to use retransmission radios or plan to move the operations center at the appropriate time. They must know how long it takes an AN/TRC-145 multi-channel rig to set up its signal "shot" and wire in the many phones in the operations center. They must learn about the MSE, tactical facsimile and single-channel ground and airborne radio system (SINCGARS) radios.

Operations officers must be knowledgeable about the technical and operational use of secure radio equipment. The Vinson secure gear is excellent. The only problem with the equipment is its capability to produce secure code variables in every unit that has a variable generator. Nothing is more frustrating to an operations officer than to attempt to "chop" or attach a company or battalion from its parent unit to another unit, then discover that contact cannot be made on a secure radio net because of different secure variables. Signal officers will claim that in this case all that must be done is to conduct a remote "AK" function, and the variable will be sent to the new unit over the radio. Experienced, well-trained operations officers know that this happens only in practice in the motor pool. It rarely works in the field because of normal signal attenuation, common when transmitting over any typical tactical distance. Operational experts will develop and enforce SOPs to correct this problem.

Operations experts must be taught to use the secure gear to its fullest capability. They cannot allow operators to send coded message traffic on a secure net. Sending multiple code groups on a secure net is redundant and will unnecessarily tie up the radio net. We also must stop using signal operation instructions (SOI) call signs and suffixes on secure nets. That absolutely ridiculous requirement is driven by people who worry about operations security should secure gear fail. Operations experts know that if they are to defeat their enemy counterparts, they must be able to act faster and more accurately. Fumbling around with the SOI when a crisis occurs, which always seems to happen right after frequency and call sign changes, is not the



An 11th Armored Cavalry Regiment tactical operations center (TOC) during REFORGER 90.

Sending multiple code groups on a secure net is redundant and will unnecessarily tie up the radio net. We also must stop using SOI call signs and suffixes on secure nets. . . . Fumbling around with [a new] SOI when a crisis occurs . . . is not the way to outperform enemy operations officers.

way to outperform enemy operations officers.

Habitual call signs must become doctrine at all levels. Units should have SOI coded call signs for use should the secure gear fail. We know, however, that Vinson rarely fails; therefore, we should not complicate our operations just because we might have an unusual occurrence. The code makers will wring their hands with worry about this statement, but they are not the individuals who have to find that strange call sign in an SOI, in a bouncing vehicle, at night, in the middle of a crisis.

Intelligence Training

IPB, intelligence preparation of the battlefield, is a science but not exclusive to the G2. (In fact, many senior commanders believe that this process should be retitled Commander's Preparation of the Battlefield.) The operations expert, if he is to be considered a true expert, must be trained not only to use IPB products but also to produce the products. Many operations officers believe they should not be bothered with IPB. Just as many intelligence officers believe they should not be involved in operational planning and execution. This is why many

units perform poorly during tactical operations.

Sound operations require sound intelligence. The most accurate intelligence is a result of tactical operations. Since operations and intelligence are so interwoven, why do we train operations and intelligence officers separately? Why are they often isolated from one another in our Area Security Information Centers and operations centers? We must develop and train operations/intelligence officers. Any G2 should be able to assume the role of the G3 and vice versa. G2s and G3s should sit and work together, sharing a common operations map. Only then can tactical opportunities or dangers become rapidly apparent and immediate action taken to exploit opportunity or avoid danger. CGSOC and the SAMS course should be where we begin the process of developing operations/intelligence officers. The parochialism of the maneuver officer and the military intelligence officer should end at Fort Leavenworth, if not earlier.

Automation Training

Operational experts must come to terms with the science of automation. Operational tools will increasingly become more automated. The

Maneuver Control System (MCS), using the TCT, has been in the field since the early 1980s. The 9th Infantry Division has been using the MCS.20 tactical computer system for several years. Both systems have had problems, but only a very short-sighted operations officer would believe that these problems will not, in time, be solved. Automation will provide us with a force-multiplying tool. In fact, the enhanced communications capability of the MSE and the SINCGARS radios will help solve the current major weakness of battlefield automation—communications.

Automation will force the Army to standardize its operational procedures. Software costs will prohibit corps and divisions from designing unique operational reports and procedures. Standardization, as mentioned earlier in this article, will enhance the schoolhouse's ability to train operational experts. The value of having school-trained operations officers, along with cost savings resulting from not having to purchase unique software, should offset any loss of flexibility that standardization may cause.

While automation will be a boon for operations/intelligence officers, it could become a potential disaster for commanders. Automation can either expand the current information explosion or allow us to better cope with it. Artificial intelligence will probably allow us to automatically filter the important from the unimportant based on a commander's guidance. It will also allow us to convert information to intelligence. The danger is that commanders may wait for the computer to provide 100 percent of the information that he feels he needs to make a decision. An automated system may never be capable of a 100 percent solution. If it could, it might come too late for the commander to take advantage of it. Automation may cause commanders to become timid. If automation prevents commanders from being aggressive and taking calculated risks, then automation has failed us. We cannot afford to neglect to upgrade the tactical training of our commanders so that they use, but not misuse, new operational technology.

Training Centralized Planning/ Decentralized Execution

An increased emphasis on training the operational sciences will create operational experts. These individuals will give the US Army the real ability to have centralized planning and decentralized execution of military operations. A corps of operations officers similarly trained and specifically managed by an "Operations Officer Personnel Branch" under functional area 54 will give commanders the ability to execute *Auftragstaktik*. If it sounds like this is a proposal to establish a German-style general staff corps—frankly, in a way, it is.

For many years, the US Army has admired the German army's *Auftragstaktik*, loosely translated as mission-type orders with maximum flexibility for subordinate commanders to carry out those orders. In our efforts to achieve this proven operational technique, we have established the commander's intent portion of an OPORD's paragraph 3a. This is a step in the right direction. However, in many orders that are published in the field today, the commander's intent is followed immediately by long and detailed instructions that allow subordinate commanders absolutely no freedom of action.

Why does this happen? Partly, it is a result of insufficient training due to time constraints and conflicting priorities. It is further exacerbated by high personnel turnover. A major contributing factor to this problem is the widely differing operational backgrounds of the commanders and staffs. There are no common operational reference points for operational tactics, techniques and procedures. Therefore, commanders and operations officers must conduct operations planning and execution in the "crawl" mode, with long and detailed operations orders. Rarely, will the unit work together, with the same key people, long enough to advance to an operational "walk." If, however, commanders and staffs are operational experts with common training/backgrounds and who use standardized procedures, we can quickly develop high-performing, competent units.

Perhaps we do not need a General Staff Branch complete with red pant stripes and red loops on the epaulets. We do, however, need to create operational experts with selection criteria and background similar to our German General Staff counterparts. We can select our future operational experts soon after they complete their company command and CAS³. Captains should be identified by battalion commanders and CAS³ instructors and sent before a selection board. Once confirmed by a selection board, selectees should be given a speciality code 54. These captains should come from all combat, combat support and combat service support branches. While in the rank of captain, these officers should serve as observer/controllers at the combat training centers, instructors at their basic branch school or as advisers to Reserve Component units. Immediately upon selection to major, they should attend CGSOC with a subsequent assignment back to their basic branch to serve as battalion S3/XO or brigade S3. They should then serve on a division staff. Those officers who successfully serve in these positions should return to Fort Leavenworth to attend the SAMS course. Upon completion of SAMS, the graduates should be assigned to division or corps staffs.

Individuals who complete this rigorous process will be operational experts. If the Army has these experts in command and staff positions at all tactical levels, we will have a more combat-effective Army. These operational experts, because of the common training and backgrounds, will be aware of the requirements of their counterparts not only on their own staffs but also on the staffs of the higher and lower echelons. They can, therefore, anticipate, plan and execute operations at all levels. They will be able to teach those who are not selected to this program on the

We must develop and train operations/intelligence officers. Any G2 should be able to assume the role of the G3 and vice versa. G2s and G3s should sit and work together, sharing a common operations map. Only then can tactical opportunities or dangers become rapidly apparent and immediate action taken to exploit opportunity or avoid danger.

operational process and thus raise all to a higher level of performance.

Could this program become elitist and therefore counterproductive? Only if commanders allow it to become so. If a commander stifles the initiative and performance of a nonselectee, he is a poor commander who probably discriminates against officers who are not airborne, Ranger-qualified or selectees to the CGSOC resident course. This is a risk of such a program. The Germans have overcome that risk. Witness the success of Generals Erwin Rommel and Hermann Balck. We can overcome this risk. We should at least try; for the payoff of having superbly trained operational experts in our battalions, brigades, divisions and corps is worth the risk.

Future wars will be more lethal and fast paced (at least initially) than ever before. To win a short war, we cannot learn to be operationally sound during battle. With our current emphasis on military history and the operational art, we are becoming accomplished battle artists. Our problem is that while we know how to "paint" a battlefield, we do not know how to pick the right landscape, construct the canvas or mix the paint. We need operational scientists with hard operational skills. We cannot create them overnight. We should start training them now. **MR**

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Downsizing the US Army Medical Corps

By Major Andrew B. Cornell, US Army

Before you decide not to read this article, answer one question. Do you want your or your family's access to military health care to get even worse? As the US Army prepares to shrink, there are some primary issues in downsizing the physician structure of the US Army Medical Department (AMEDD) to prevent this from happening. First, several questions need to be answered: Where are we? Where are we going? How do we get there?

Where are We? The AMEDD is a worldwide health care delivery team composed of just over 92,000 persons. Approximately 2.7 million authorized military medical beneficiaries are provided care by the AMEDD team, composed of about 17,600 physicians in six corps—Medical Corps, Nurse Corps, Dental Corps, Medical Service Corps, Army Medical Specialist Corps and Veterinary Corps. Additionally, there are about 650 warrant officers who serve as physician assistants, medical equipment maintenance officers and veterinary food inspection officers. The team is completed by 44,500 enlisted and 30,000 civilian personnel.

The Medical Corps had a budgeted end strength (BES) of 5,525 in 1990. These 5,525 officers were all physicians and were spread over 41 military specialties. Numerous additional subspecialties were also in the inventory. (A single specialty such as orthopedic surgery can be subspecialized into hip replacement, hand surgery and so forth.)

Like the AMEDD, the Medical Corps' primary mission is to "conserve the fighting strength," with the primary responsibility of caring for active duty soldiers in peace, as well as in war. The chief motivation, however, must always be wartime medical readiness.

During peacetime, there is a secondary benefit derived from a competent, effective and economical medical department. It provides care to other authorized beneficiaries such as active duty family members, retirees and their family members, and other specific categories of beneficiaries. As any military health care system user can tell you, however, it is not always easy to access the health care system. The reason for this difficulty is a basic les-

son in economics—the distribution or allocation of scarce resources. The demand (number of patients trying to use the system) is greater than the supply (number of physicians to provide the care).

We need more physicians. In fact, rather than the current BES of 5,525, the AMEDD needs approximately 7,800 physicians. These physicians must be afforded to four different components of the military medical system—the direct care system (wartime and peacetime), graduate medical education (GME), medical research and development (R&D) and other nonpatient care roles.

About 5,600 physicians are required to provide a full range of medical services to the Army's 2.7 million medical beneficiaries. Furthermore, these 5,600 direct-care physicians must be in the right "mix." Consider these ratios, for example. There should be one general surgeon per 14,800 population served. Each community of 54,200 should have one dermatologist. A single pediatrician can support 9,370 people (of which about 3,000 would be expected to be age 17 and below).

It is possible to determine the physician-to-population ratio for all 41 medical specialties. The Medical Corps Affairs Office of the Army Surgeon General has performed such a study called "The Medical Corps Optimization Study." These ratios, referenced above, were derived from a combination of a 1980 report by the Graduate Medical Education National Advisory Council (of the American Medical Association), a review of successful civilian health maintenance organizations, the difference in health care utilization rates between civilian and military communities, and expert opinions from consultants to The Surgeon General.

Included in this direct-care portion of the AMEDD are 184 physicians in leadership roles (commander, deputy commander for clinical services and others). An additional 1,850 physicians should be afforded to keep the GME system viable. In fact, there are presently about 1,850 physicians in GME. The GME system is to the Medical Department what advanced individual

training is to the soldier. A physician requires the residency or fellowship training afforded by GME to practice specialized skills required on the battlefield or in our community hospitals and medical centers. The length of GME depends on the specialty but generally can be from two to six years.

GME production of new physicians should be maintained at about its present level (spread over all specialties) in order to replace those physicians who retire or separate each year. If 40 new general surgeons graduate each year to replace those retiring or separating from the service for other reasons, the AMEDD retains its dynamic equilibrium. Since GME is functionally related to the number of physicians on active duty, by specialty, it follows that reductions in specific GME programs will result in the related decrease in strength of those same specialties. Historically, it has not been possible to recruit adequate numbers of replacement surgeons. Therefore, the Army trains its own through GME. GME is the process by which the AMEDD rejuvenates itself.

There are two other GME-related issues. First, a retention advantage is gained when we train our own physician specialists. Physicians trained in Army-sponsored GME have a contractual obligation to serve in the Army for a specified number of years. Second, significant interrelationships are required among a wide variety of medical specialties to conduct training. Training surgeons requires an interface with primary care, internal medicine, surgical subspecialties, anesthesiology and other specialties. The GME system is complex. Small changes in a single training program, such as internal medicine, can literally affect the accreditation of numerous other programs such as cardiology, general surgery, pediatrics, allergy, immunology, family practice, emergency medicine and others.

The Medical Research and Development Command, Fort Detrick, Maryland, has 147 physicians assigned to health care research roles. Recall the significant contributions made to medical knowledge by the Army's research in treating malaria. Some current R&D projects are developing an AIDS vaccine, antitoxins for protection from biological warfare agents, treatment regimens for chemical agents, new military medical equipment, research on the medical effects of equipment on the soldier, battlefield stress and many others.

There are 212 physicians in nonleader, nondirect patient care roles such as headquarters and staff assignments, The Armed Forces Institute of Pathology and many others. The total R&D and nonleader/nondirect care number represents less than a 5 percent overhead administrative requirement.

In review then, AMEDD is severely underresourced to meet all the needs of the beneficiary population it serves. The true number of physicians required to accomplish assigned and implied tasks is approximately 7,800. The Fiscal Year 1990 BES was 5,525.

Where Are We Going? The BES, 5,421 at the end of Fiscal Year 1991, will be reduced incrementally to 5,025 by Fiscal Year 1996. In light of the already described patient access problems, clearly, there is no reason to downsize the Medical Corps.

It should be no surprise that patient access to military medical care is a problem when the family practice requirement to care for 2.7 million medical beneficiaries is 967 (1 per 2,800 population served), but the inventory is only 314. This general situation is repeated across many specialties. Consequently, the more expensive Civilian Health and Medical Program of Uniformed Services (CHAMPUS) and other alternative care costs continue to escalate. As we downsize, this trend should be expected to continue.

The Army will significantly downsize over the next five years. The reduction will be from around 780,000 to possibly 535,000 or about 33 percent. The casual observer might be inclined, therefore, to assume the AMEDD should take the same 33 percent reduction. Because many active duty soldiers will retire and they and their family members will remain in the system, the population of medical beneficiaries that the Army services will only drop from 2.7 million to about 2.4 million or 11 percent. In other words, we should reduce from about 7,800 to 6,942 physicians in order to appropriately accommodate the population we are trying to serve. The net effect of our "reduction" should be an increase from our present constrained BES of 5,421 to 6,942, or a growth of 1,521 physicians. Given the present downsizing environment throughout the Department of Defense, however, this is a hard position to support and no rational person would attempt such an endeavor.

The number of officers in the Army is expected to be reduced from about 105,000 to about 78,790, or 25 percent. The AMEDD must share in that reduction or wrongfully become a greater proportion of the Army officer end strength.

How Do We Get There? We should change the concept from downsize to "rightsize." The AMEDD must build an active duty medical support structure that focuses on supporting the contingency force. Those physicians and other medical personnel not required to be "in uniform" to deploy and support the needs of the Army must be civilianized, contracted, made into CHAMPUS

partners or provided through some other cost-effective, innovative vehicle.

Medical facility commanders will have to be more innovative in the future in managing more than just their facilities. They will have to manage access to, and delivery of, health care assets throughout their whole communities, using coordinated or managed care initiatives. The AMEDD is working on this concept in the "Gateway to Care" program. The AMEDD will have to package comprehensive health services that are of acceptable

quality at the most competitive prices attainable. More and more the management of Army medicine is mirroring the businesslike image of its successful health maintenance organization civilian counterparts. **MR**

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MR WWII ALMANAC

January 1942

This month, we are adding a minichronology to the World War II Almanac. During the next four years, this feature will highlight events that occurred 50 years ago.

Thursday 1—A declaration of the United Nations is signed by 26 nations in Washington D.C.

Saturday 3—The Allies set up the South-West Pacific Command.

Sunday 4—Japanese begin preinvasion bombardment of Rabaul, New Britain.

Chiang Kai-shek appointed supreme allied commander, China.

Monday 5—Over 80,000 American and Filipino forces complete withdrawal to Bataan.

Tuesday 6—President Franklin D. Roosevelt asks Congress to approve additional spending on war production.

Friday 9—Japanese forces begin siege of Bataan.

Saturday 10—Japanese make first demand for Bataan's surrender.

Monday 12—Japan formally declares war on the Dutch East Indies.

German U-boat sinks British steamer, *Cyclops*, 300 miles east of Cape Cod; by the end of the month, U-boats have sunk 40 ships off US Eastern seaboard.

Wednesday 14—ARCADIA Conference to determine Allied strategy ends in Washington D.C.

Thursday 15—Japanese invade Burma.

Friday 16—Twenty-one American republics meet in Rio de Janeiro, Brazil, to discuss hemispheric security.

Saturday 17—British Eighth Army captures Wadi Halfaya, North Africa.

Monday 19—Archibald P. Wavell warns Prime Minister Winston Churchill that if Singapore is attacked, it cannot be held.

Wednesday 21—The Chinese government accepts General Joseph W. Stilwell as chief of Allied Staff for Chiang Kai-shek.

Saturday 24—Battle of Makassar Strait, Indonesia, first big naval battle of World War II and a small victory for the United States—delayed the invasion of Java.

Monday 26—First convoy of US troops arrives in Northern Ireland.

Saturday 31—British forces complete withdrawal to Singapore and destroy causeways to aid in its defense.

Head of US delegation to the Soviet Union for lend-lease arrives in Iran.

This chronology is compiled by Major George J. Morlica II, a military history instructor at the Combat Studies Institute, US Army Command and General Staff College.

MR LETTERS

18-Hour Heavy Forces

In "A 'Light' Infantry Division with More for the Fight" in the August 1991 *Military Review* the author states, in part, "Obviously, the light forces will have to go it alone until the heavy forces can arrive by sea." I disagree. The soldiers of the Victory Division have already demonstrated on at least one occasion that we are able to put the mechanized combat power of the M1A1 tank and the M2A2 infantry fighting vehicle in the air, on a combination of C-5 and C-141 aircraft, within the same 18-hour sequence used by the 82d Airborne Division, Fort Bragg, North Carolina, or the 75th Ranger Regiment, Fort Benning, Georgia. We may not be able to get the whole division there in this way, but one thing is sure—the light forces will not have to go it alone until the heavy forces arrive by sea.

LTC Mitchell H. Stevenson, USA,
Headquarters, 724th Support Battalion (MAIN),
24th Infantry Division (Mechanized) Support Command,
Fort Stewart, Georgia

Our Nation Assistance Mission

I read with great interest Colonel James R. McDonough's article, "Building the New FM 100-5: Process and Product," in your October 1991 issue. Without question, we have entered an era of profound change for our national security environment. President George Bush challenges us to develop "a defense policy that adapts to the significant changes we are witnessing—without neglecting the enduring realities that will continue to shape our security strategy." We in the US Army must give serious thought to the breadth of those changes and the impacts they will have on our future roles and missions. As we reshape the Army, our doctrine must concurrently evolve to reflect the impact of these changes. McDonough appropriately observed that our doctrine "offers us the opportunity to focus the Army as we transition . . ."

The Army's principal mission will always be to deter war and, if deterrence fails, to achieve quick, decisive victory on the battlefield. No one will—nor should they—challenge or diminish this clear priority. However, as stated in the draft US Army Field Manual 100-1, *Operations*, "our Army will not

be wasted if it is never actually called upon to fight . . ." In fact, I would argue that the best of all possibilities would be to achieve our national security objectives through measures that do not require the threat or actual use of our military might. Clearly, it is much better to achieve our objectives without having to place the lives of our soldiers on the line.

Accordingly, McDonough has provoked and challenged the Army leadership to forge the doctrine that will take us into the post-Cold War era. We must refine our doctrine to be able to effectively operate in an environment of new—perhaps seemingly ambiguous—realities and clear challenges. Of the issues he addressed, I found the discussion of "our evolving missions in areas such as . . . nation assistance" to be of particular interest. These "evolving mission areas" reflect a notion that the Army may have a role, if not a mission, to support and execute our government's national security efforts in a manner that has not received a great deal of rigorous consideration in the recent past. We must be ready to "promote peace" while we also "deter war."

Bush has identified regional instability as one of the principal challenges to our national security objectives, and he has established as one of our four national security objectives "a stable and secure world, fostering political freedom, human rights and democratic institutions." While deterrence certainly addresses that challenge, it does so in a reactive manner. What is needed is a complementary "proactive" approach to achieve *enduring* stability by focusing energy toward a host nation's sustainable development. Stability in this context is not the preservation of the status quo. Instead, stability means establishing conditions that permit orderly change and allow democratic governments and market economies to flourish. The attainment of regional stability is a complex challenge and requires the effective application of all elements of national power.

In peacetime operations, our nation can proactively focus its energies toward the attainment of enduring regional stability by addressing the root causes of instability. Some of these root causes arise from conditions of economic poverty, social and ethnic strife and environmental degradation. These give rise to aggression, coercion, insurgencies,

subversion, terrorism and illicit drug trafficking, which pose direct threats to struggling democratic institutions.

Nation assistance is a concept that supports peacetime operations. It is a proactive, peaceful way to focus our nation's international involvement on institution development. Institutions are crucial to a host nation's ability to adequately provide for its own security, political, economic and environmental needs and to ensure the development of democratic processes through which the people can participate in the shaping of their own government. *Effective institutions are key to enduring stability.*

Why is nation assistance of concern to the military? It is rightly argued that during peacetime, the principal responsibility for the development and orchestration of nation assistance efforts belongs to the Department of State. However, we in the Department of Defense, military and civilian, have unique capabilities with which we are able to assist the State Department in the execution of its responsibilities. Not only do we have technical expertise important to institutional development (such as medical, logistics, engineering, communications and many others), we have the ability to rapidly project these capabilities on a worldwide basis and effectively operate under the most adverse and primitive conditions. We have a command and control structure that can organize and focus efforts toward the most challenging and diverse of missions. We are and have been public servants for more than 200 years. Most important, not only do we have capabilities that should be brought to bear for these peacetime purposes, but we also are the greatest stakeholders. US soldiers are the ones who will pay the highest price if our peacetime engagement and nation assistance efforts fail.

Why should the Army seek to take on a new requirement to support nation assistance in a time of diminishing resources? Why should we actively seek a role that may be perceived by some as detracting from our primary purpose of deterrence and ability to fight and win? I am convinced that peacetime operations are not an expensive drain on our resources in either time or money. Instead, it is a cost-effective method that superbly complements our role of deterrence and enhances our ability to achieve an *enduring stability*!

If the Army is to have an operational role in times of peace, it must provide the doctrinal focus to ensure that we are effective in applying Army means to achieve our objectives of national security. We must be effective in our ability to support other US government agencies. We must be able to identify and effectively apply the right influence

and resources to a given national security issue, including the root causes of instability and the conditions for an enduring peace.

This is but one of the many new challenges we face in the refinement of our Army's doctrine. Our doctrine must not only show us how to fight and win on the traditional AirLand battlefield but how to engage in and "preserve the peace." Perhaps, through peacetime engagement, the most decisive victory for America and the free world will be won off the battlefield.

LTG Henry J. Hatch, USA, US Army Corps of Engineers, Washington, DC

Coalition Warfare—Plan For It!

In a previous letter, "ALBF's (AirLand Battle-Future's) Victory Criteria" (July 1991 *Military Review*), I suggested some analytical problems with ALBF (now called AirLand Operations [ALO]) that I will not repeat here. An article by the commander of US Army Training and Doctrine Command (TRADOC), General Frederick M. Franks, in the October 1991 issue of *Army*, leads me to make another review and to conclude that the ALO doctrine is fatally flawed.

General Gordon R. Sullivan has stated that "doctrine is the engine that drives change." Franks has said, "An evolving and responsive doctrine that addresses our current situation and our new responsibilities must result This concept for the evolution of . . . [ALO] provides an interim framework for shaping the discussion we must now pursue." Given the import that the chief of staff of the Army and TRADOC commander attach to doctrine and the need for discussion, and in that spirit, I believe it is critical that ALO relate to the emerging reality that is the world of 2005. To do this, we must address the fatal flaws of the doctrine as written.

ALO assumes that US forces are on the ground in the theater of operations before hostilities begin and that there are no coalition forces present. Such a thesis is necessary to justify the doctrinal assumption of what amounts to a large-scale meeting engagement. If this means that we will only fight in Korea, Europe and Texas, then this point may not be valid. Any war we will fight is bound to be a coalition effort, and we should plan for it and write doctrine that reflects this reality. We should plan for the three phases of such a conflict:

- The defense phase in which primarily indigenous forces are defending against a potential aggressor and the United States is using political and economic efforts while conducting a military show of

force to dissuade or deter the aggressor from beginning offensive military operations.

- The defense and lodgment phase in which a joint US or host nation force is defending while the United States builds its forces and targets (with the appropriate element of power) the group that can change the opponent's objectives.

- The offensive phase in which attacks are conducted, not necessarily against the opposing force but against the opponent's strategy and its political center-of-gravity as it has been translated onto the battlefield.

The doctrine emphasizes maneuver warfare concepts as originally espoused by B. H. Liddell Hart and J. F. C. Fuller. Unfortunately, the doctrine also suffers the same disease one sees in their writings. Weaknesses are attacked in order to "win." This means that attacking weaknesses is synonymous with attacking the center-of-gravity. It is hard to imagine any rational opponent who would not seek to defend its decisive point/center-of-gravity. In other words, weak spots are not necessarily decisive points in the course of the battle. It is critical that we understand the difference. Additionally, there is no discussion of the relationship between battlefield success and the achievement of political objectives. "Winning" is creating the conditions that allow/cause political objectives to be achieved. All doctrinal discussions must keep this in mind.

The focus on corps level, with many resources migrating to corps control, does not reflect the need in the year 2005 to field autonomous self-contained force packages at the brigade level and below. This is especially true of armored forces that are attached to US Marine Corps units for forced-entry missions. It is also true of units involved in low-intensity conflict. We need to build flexibility at a lower level of command.

This leads to the final flaw. ALO is parochial, by necessity. It fails to reconcile/consider Marine and US Air Force assets and efforts, as part of the rationalization of using the Total Force. For example, a force structure reconciliation must consider the continued relevance of Marine Corps air and Army light divisions. General Carl E. Mundy Jr. (commandant of the Marine Corps) has laid out the issue quite accurately in the October 1991 *Marine Corps Gazette*:

"The nation cannot afford to maintain excessive redundant capabilities within the four Department of Defense Services. We need to be able to provide specialized forces. Forces armed, trained, and equipped to perform the functions necessary to meet our assigned Service roles for use by the Commanders in Chief (CINCs) of the unified com-

mands in carrying out their combatant missions. Compositing a brigade of the 82nd Airborne Division with a naval task force comprised of an amphibious and/or a carrier battle group and an Air Force composite wing, under a designated joint task force (JTF) headquarters, provides the basis for a truly rapid and affordable rapid-response force. We need to worry less about who commands and more about smooth integration."

As we build the doctrine and forces for 2005, we should be mindful of the need for a coherent doctrine and a lack of parochialism in force development and use. The forces we develop and the doctrine that guides the design and warfighting methodologies of those forces must reflect domestic, fiscal and global realities. We should pick up the challenge that Mundy has presented. To do less is to posture ourselves to not win.

COL Bruce B. G. Clarke, USA, Carlisle, Pennsylvania

Doctrine Flows from Concepts

Colonel Bruce B. G. Clarke's letter raises a number of issues at the heart of the current Armywide discussion about how our doctrine must adapt to meet a changed strategic and fiscal environment. While he correctly points to some of the themes of change required in the process of doctrinal revision, his judgment that the doctrine is fatally flawed is premature. AirLand Battle-Future (ALBF), now called AirLand Operations (ALO), is a concept from which the next version of US Army Field Manual (FM) 100-5, *Operations* will flow. The concept is important and valuable, but it is not doctrine. Clarke's concern, therefore, about the perceived shortcomings in the evolution of the concept as it leads to doctrine can—and I submit will—be addressed in the next version of FM 100-5.

The first of Clarke's concerns is the rhetorical presumption of an already deployed force when an operational commander exercises the four stages of ALO—prepare, shape the battlefield, decisive action and reconstitution. There is some merit to this conclusion, particularly if the reader views it as a logical extension of its predecessor, the May 1986 version of FM 100-5. In a strategic environment that focused on a single identifiable threat with a sizable forward-deployed force having detailed deployment and mobilization plans in support of a fully developed theater, the ready-to-fight context was appropriate.

What was true of the 1986 version of FM 100-5, however, does not necessarily apply to the projected 1993 version. In the new strategic environment,

fighting and deterrence will require power projection of continental US-based forces perhaps augmented by the deployment of forward-presence forces to another theater of operations. While the four operational stages described in the concept guidance document (TRADOC Pamphlet 525-5, *AirLand Operations*, 1 August 1991) do not embrace the prerequisite mobilization and deployment requirements, the purpose of ALO explicitly charges that the doctrine resulting from this concept must describe an Army "prepared to deploy on short notice and operate successfully on many battlefields and in many environments." Prerequisites for this Army of the future are "[c]onducting operations across the operational continuum, power projection, decisive advantage, and joint and combined operations"

This direction for doctrine also addresses Clarke's concern that ALO excludes consideration of joint forces. This is clearly not the case. A major intent for the next round of doctrine is to address the employment of combined forces and interagency operations, in addition to joint forces, as the Army considers future operations.

Clarke's concern about a force structure reconciliation to avoid "excessive redundant capabilities" is a concern that the Army can resolve after the future doctrine finds a clear expression. General Gordon R. Sullivan's direction that "doctrine is the engine of change" means that before the Army begins organizational change beyond the current force level reductions, we must understand how we will operate. Given the scope of the 1993 version of FM 100-5, keystone doctrine will appropriately be the logical starting point in deciding the necessary force structure capabilities for future joint, combined and interagency operations.

Not only does ALO, as the umbrella concept for the next generation of doctrine, direct the expansion of capstone doctrine, to include the joint, combined and interagency nature of a power projection force, but so does the Army senior leadership. Our senior leaders agreed during the doctrine day of their Senior Leaders' Wartighter Conference (SLWC) conducted at Fort Leavenworth, Kansas, 19-21 November 1991, that the next FM 100-5 should be a keystone doctrine addressing an expansion of topics. It should include the requirements of mobilization and deployment for missions across the continuum of military operations and should describe fundamental strategic-operational-tactical links. The historic gathering of field commanders and TRADOC commandants at this first SLWC marks the beginning of the Army's discussion of what doctrine must do to adapt to the future.

Continuing discussion of strategic-operational-tactical links will also address Clarke's concern that ALO is the direct intellectual descendant of the maneuver warfare concept, as well as his three phases of future conflict. Both AirLand Battle of 1986 and ALO consider maneuver important but always in the context of a balance with fires. The challenge of defining doctrinal considerations to address the complexity of ways, ends and means at the strategic, operational and tactical levels in missions spanning the operational continuum are considerable. We can expect joint, interagency and coalition forces to undertake missions in operations short of war that, while they could escalate into armed conflict, would hopefully achieve their strategic political objective with an "indirect" use of military forces.

These are exciting times for professionals interested in the future course of their Army and their country. The challenge of defining concepts and translating Army capabilities into an instrument of national security policy and strategy requires great thought and discussion internal and external to the Army. The next version of FM 100-5 will describe how the Army will think about how to do its job with all the hard pieces, such as deploying to an undeveloped theater with unfamiliar coalition forces and tailored joint forces included. The May 1986 version of FM 100-5 was an outstanding document in a simpler world. Adapting to change to keep the warfighting excellence our soldiers and nation deserve requires the attention and contribution of thoughtful professionals like Clarke to enrich the debate.

LTC John W. Reitz, USA, FM 100-5 Doctrine Development, School of Advanced Military Studies, USACGSC

The School of Advanced Military Studies, the doctrine proponent for FM 100-5, would welcome and address other thoughtful letters like Colonel Clarke's that would continue the dialog and surface issues needing to be addressed.—Editor

Mechanized Warriors—All-Weather Offense

Michael J. Mazarr's article, "Middleweight Forces for Contingency Operations" in the August 1991 *Military Review*, explores one of the alternatives I highlighted in my Insights article, "Armor Future: To Fight, Deter or Disappear," in the August 1990 issue. Ironically, in August 1990, I deployed with the 24th Infantry Division (Mechanized) (ID(M)) to the Kingdom of Saudi Arabia. I had no idea

when I wrote the article that I would be so intimately involved in demonstrating armored forces' capability to deter (Operation *Desert Shield*) and fight (Operation *Desert Storm*). Consequently, my interest level peaked when Mazarr cited *Desert Shield* and *Desert Storm* as evidence to support his argument for middle-weight forces.

Mazarr submits that a "primary lesson" of *Desert Storm* is that advanced technology, improved command and control systems and air supremacy can all compensate for the shortcomings of middle-weight forces. This argument appears to be based on the erroneous conclusion that "high-tech" weapons and air power are defeat mechanisms. He is almost right in defensive operations, but deadly wrong in the offense. With defensive forces, as opposed to offensive forces, a smaller amount of ground combat power with bountiful air support can successfully accomplish the mission. However, offensive operations require forces that can seize and hold terrain and destroy the enemy's center-of-gravity, which for Iraq was the Republican Guard.

Since Mazarr notes that the exact schedule of the buildup was not yet released, let me add a little firsthand knowledge and perspective. He focuses on the arrival of ground forces but seems to disregard the almost immediate arrival of a large force of combat aircraft. The 24th ID(M), the 82d Airborne Division, the 101st Airborne Division (Air Assault) and the 1st Marine Division had the majority of their combat power on the ground by mid-September. In fact, the 24th ID(M) immediately deployed into its defensive sector 200 kilometers northwest of Dammam, with all its combat elements and a large majority of its combat service support by 10 September 1990. These ground forces, combined with other coalition forces and the ever-increasing coalition air force, would have made any Iraqi attack into Saudi Arabia, at the least, extremely painful and, ultimately, would have ended in defeat. It was our firm belief that every day Saddam Hussein waited after the arrival of the first fast sealift ships, his window of opportunity was rapidly closing. By 30 September 1990, when XVIII Airborne Corps and 1st Marine Division were fully deployed, Hussein's window was slammed shut.

No doubt, the need still exists for a greater strategic mobility capability. I am convinced, though, that the deployment of a middleweight or heavy-weight force must be by sea. Air insertion just does not provide combat power rapidly enough. The first fast sealift ships arrived with a mechanized brigade combat team just 20 days after alert. Considering that the C-5A/B can carry two M1s or four

M3s and could carry, at best, five of any middle-weight weapon systems currently being studied, all the C-5s in the inventory could not have delivered that size force in the time the fast sealift ships did, especially since most of the military airlift command's fleet was dedicated to the 82d and 101st.

I cringe when Mazarr argues that high-tech weapons and air-to-surface missiles were the overwhelming defeat mechanism of the Iraqi armored force. As the executive officer of 2d Squadron, 4th Cavalry task force during the ground phase of *Desert Storm*, I remember vividly that for at least 48 of the 100 hours, the weather was so bad that no aircraft were flying while mechanized warriors continued the fight. It is clear that technology has significantly increased our "adverse-weather" capability, but we are a long, long way from unlimited all-weather operations. Is Mazarr willing to risk the middleweight force or fight only when the weather conditions are right? I think not.

Additionally, I observed the damage caused by the air campaign from the Saudi-Iraqi border to Highway 8 along the Euphrates River to within 30 kilometers of Basra and through the northern part of Kuwait to the outskirts of Kuwait City. While the air campaign certainly demoralized the Iraqi army, the actual destruction of equipment and materiel in the tactical zone of operations was minimal. In fact, in one major ammunition storage area consisting of over 300 separate ammunition bunkers, only two were destroyed by aerially delivered munitions. With few exceptions, every armored vehicle I saw destroyed was struck by direct fire or attack helicopters.

I am sure that close air support accounted for its fair share of kills. However, the aerial attacks were not the decisive factor as Mazarr claims. Again, an element of combat power restricted by weather conditions cannot be decisive except by the grace of Mother Nature. The reality is that the defeat mechanism of *Desert Storm* was, again, the mechanized warriors closing with and destroying the enemy through shock effect, mobility and firepower. The combat support aircraft's assistance was important and totally within the principles of AirLand Battle, but by no means was it decisive. At least in the 24th ID(M), in every case I am aware of, the attack helicopters were committed only after ground maneuver forces had fixed the enemy force. The term "decisive" should be reserved for the soldiers and Marines who sought out the Iraqis and killed them.

Mazarr contends that we must build a middle-weight force that is rapidly deployable with enough firepower to affect the outcome of a fight

in a contingency operation. I submit that deployability is but one way to project the proper force in worldwide contingencies, with the other two options being forward deployment of heavy forces or increased strategic lift capability.

Obviously, this issue is an emotional one for me. However, it is critical that as we build the proper force of the future, we do not draw the wrong lessons from the Gulf War. Mazarr leads us down the right path but with the wrong directions. The age-old truth was again validated in *Desert Shield* and *Desert Storm*—soldiers on the ground are the fundamental building block of successful combat operations. High-tech weapons and air power were tremendous factors contributing greatly to the success of the Gulf War operations; however, they will only be decisive when we can make them an all-weather, 24 hours-a-day, nonstop force so richly demonstrated by the US mechanized warrior. The mechanized Army, as part of the joint and combined

arms team, prevented an attack into Saudi Arabia through deterrence, then fought and destroyed the Iraqi army, liberating Kuwait.

**MAJ Joseph C. Barto III, USA, Headquarters,
Headquarters Troop, 2d Squadron, 4th Cavalry,
Fort Stewart, Georgia**

In the photo on page 28 of our November 1991 issue, the caption incorrectly identified the pictured vehicle as a "former East German Fuchs chemical detection vehicle." The Fuchs was developed in West Germany. The vehicle, which can also detect radiation, has spawned a US program to develop an "Americanized" version called the Fox.

The September 1991 issue of Military Review, which was devoted to the Gulf War, contained a section on "Forces Committed." On page 80, we listed Denmark's contribution to the coalition as one corvette. Denmark also sent a 29-member medical team, which was under the operational control of the British 33 Field Hospital in Al Jubayl, Saudi Arabia.

MR BOOK REVIEWS

DESERT VICTORY: The War for Kuwait by Norman Friedman. 435 pages. Naval Institute Press, Annapolis, MD. 1991. \$24.95 clothbound. \$18.95 paperback.

Norman Friedman believes the coalition forces triumphed through a combination of US prowess and Saddam Hussein's ineptitude—no surprise to anyone wondering why Hussein failed to attack Saudi Arabia before the United States completed its strategic buildup or to anyone studying the many Arab armies' past failures. He also argues that "the course of the war strengthened Saddam's hand . . ." because the Iraqi army suffered badly while the Republican Guard divisions were partially saved by the cease-fire's timing. He questions the failure to complete the Republican Guard's destruction with an argument that details the political and military considerations.

Advertised as "the first complete and authoritative assessment" of the Gulf War, *Desert Victory* represents an important first step in its analysis. Suitable for the military novice or the military professional, it focuses on the campaign at the operational and strategic levels. Following a chronological format, its 13 chapters each address a separate aspect of the invasion of Kuwait and operations *Desert Shield* and *Desert Storm*. Also included are 107 pages of appendixes on the technological and

doctrinal details of the various forces.

A real strength of this book is Friedman's discussion of service interoperability and joint operations. He stresses the need for flexibility and for any operation to take into account the different services' relative needs. Friedman espouses the US Navy's attitude toward "jointness," especially as he critiques the air tasking order's inherent inflexibility and explains the Navy's opposition to the concept of a theater commander in chief.

His coverage of the US Army's operations in *Desert Storm* is disappointing, both in length and in content. He totally underestimates the Army officer corps' ability to comprehend and appreciate a maritime strategy or the capabilities of naval and US Marine units. And given the ground campaign's enormity, he spends very little space explaining *AirLand Battle* or how it translated into actual operations during the war.

He places great importance on logistics, particularly at the strategic level, but glosses over Army capabilities at the operational and tactical levels. The Army corps and divisions did suffer from logistic shortcomings. But Friedman minimizes the heavy units' logistic capabilities within a theater of operations, disregarding what they can accomplish once the logistic infrastructure is in place. He does,

however, admit that the heavy divisions have a staying power only dreamed about by other nations. Too many Third World "tin horns" purchase their flashy combat power at the expense of sustainability, whether in spare parts or fuel trucks.

His analysis of events prior to *Desert Shield* illustrates the dilemma facing future US political and military planners who rely on US intelligence-gathering systems using satellite imagery (which do not easily lend themselves to an analysis of Third World military capabilities and intentions) at the expense of aerial photos and, even better, human intelligence. The author recounts one very telling anecdote, quoting a US analyst who stated he would give up all his photos for one spy on the ground. Friedman believes this problem will grow more acute and that it bodes ill for the future when one considers the most likely theaters for US military involvement.

His concluding chapter, "Lessons Learned and Mis-learned," highlights the problems of using this campaign, with all its unique characteristics, as any sort of definitive model for future operations. He correctly reproaches those who would have the American public believe air power won this war. Unlike World War II, in which the United States occupied the defeated countries, no means other than photo imagery exists to verify the true extent of target damage. Friedman suggests reading his counterarguments and rereading the problems of target destruction indicated in the Strategic Bombing Survey of World War II.

In his argument for US adherence to a maritime strategy, Friedman wants it both ways—he advocates a maritime strategy while simultaneously criticizing the Army's lack of strategic mobility. He virtually ignores the fact that it is the maritime strategy advocates who fail to budget adequate sea-lift capability for either the Army or Marine heavy forces.

Despite the criticisms listed above, *Desert Victory* provides a good account of this remarkable campaign. Friedman, who completed his manuscript in mid-April 1991, deserves much credit for this book's readability given its fast production.

MAJ Kevin E. McKedy, USA,
US Military Academy, West Point, New York

THUNDER IN THE DESERT: The Strategy and Tactics of the Persian Gulf War by James Blackwell. 252 pages. Bantam Books, Inc., New York. 1990. \$12.50.

James Blackwell states that "this book is a first draft of history. It is not the final word on what happened in the great Persian Gulf War." This is

probably the best way to summarize *Thunder in the Desert*. Those who are seriously interested in the strategy and tactics of the war will be disappointed.

Blackwell, a former Army major, current deputy director for political-military studies and a senior fellow at the Center for Strategic and International Studies, served as CNN's military affairs analyst during the war. He acknowledges that his CNN experience is his primary source, along with *Army Times* reports on file at the Department of Defense. He supplements with information from his interviews after the war, his experiences at the center and from various handbooks, but he does not document what comes from where.

The information is not that new anyway. People who listened attentively to CNN's coverage of the war will discover that they already know much of what is in this book. Those who read the recent accounts of major unit operations serialized in *Army Times* will discover they know much more.

Thunder starts with a Tom Clancy-like introduction consisting of activity snapshots on the eve of the Operation *Desert Storm* air campaign. It then backtracks several thousand years to provide a brief perspective of Iraq's military heritage from the Sumerians of 3000 B.C. through the Iran-Iraq War of the 1980s before highlighting the composition and capabilities of the Iraqi military invading Kuwait. Actual discussion of the Kuwait invasion, which Blackwell describes as a "textbook blitzkrieg operation," comprises only a few pages.

The book's first half concludes with the chapter, "Sitzkrieg," or the war of sitting in place. In it, Blackwell provides general background information about Central Command and the deployment and training of US forces through the end of 1990, but he seldom discusses force employment in theater. He affirms that by the end of September 1990, the coalition was "fully capable of defending" Saudi Arabia, which is doubtful according to other accounts.

The book's second half concentrates on the war. Blackwell provides an air campaign overview from initial planning to the start of the ground war, including types of missions flown by US aircraft. He provides no specific information about the way other coalition members contributed to the air campaign or about the Turkish bases' important role. The ground war overview is likewise general. Blackwell refers to the coalition plan as a strategy of annihilation and to the Iraqi plan as one of attrition.

Blackwell offers little information about the actual tactics used by either side. In fact, discussions of individual battles are confined to paragraphs, not pages. More time is devoted to the

early engagement at Khafji than to the several major battles constituting the ground war. The account ends with the cease-fire. Blackwell concludes that Iraq lost because it faced better forces with better equipment and a better plan.

Thunder in the Desert will evoke more questions than it will answer. It is clearly slanted toward the US role in the war. Seldom does the book penetrate the surface of the complex plans that permitted an equally complex coalition to defeat Iraq. Those desiring a broad-brush look at the war or perhaps even a refresher of the news coverage provided as it happened will find *Thunder in the Desert* well written and enjoyable. Others preferring an in-depth analysis should wait for one of the many books undoubtedly to follow.

LTC Kenneth L. Privratsky, USA, Hoover Institution, Stanford University, Stanford, California

HAZARDOUS DUTY: An American Soldier in the Twentieth Century by John K. Singlaub with Malcolm McConnell. 574 pages. Summit Books, New York. 1991. \$24.95.

Many readers will be familiar with the name Major General John K. Singlaub (US Army, now retired) only because of his relief by President Jimmy Carter as a result of Singlaub's disagreement with the proposed reduction of US forces in South Korea. Indeed, Singlaub devotes considerable space to the Korean situation, the press interview that led to publication of his opinions and his meeting with the president. Military readers will note, however, that whatever his personal views, Singlaub consistently stated that once a decision on the withdrawal was made, he would support it fully. (Singlaub reveals that congressional investigation determined that no formal decision had been reached at the

PASS IN REVIEW

A HESSIAN DIARY OF THE AMERICAN REVOLUTION by Johann Conrad Dohla. Edited by Bruce E. Burgoyne. 276 pages. University of Oklahoma Press, Norman, OK. 1990. \$28.95.

This book is Private Johann Conrad Dohla's diary kept during six years of service in the Bayreuth Regiment during the American Revolutionary War. It includes descriptions of what life was like on troop transports of the time; what military duty was like in British-held Rhode Island, Pennsylvania and New York City; and the experience of being a prisoner of war in Virginia and Maryland after Yorktown. However, the great strength and value of this book is that it shows, in some detail, what life was like in a German regiment in Revolutionary America.—David Syrett, *Queens College of the City University of New York, Flushing, New York*

ARMOR 2000 by Peter Gudgin. 159 pages. Arms and Armour Press, London. (Distributed by Sterling Publishing Co., Inc., New York.) 1990. \$24.95.

This volume of the "2000" series provides information on tanks and armored fighting vehicles (AFVs), predicting they will still be operating in 2000. The characteristics of firepower, mobility, protection and general design are discussed separately, beginning with the history and development of tanks and AFVs and ending with a prediction of what will be next. This book is written for the neophyte with limited knowledge of tanks and AFVs. It has plenty of pictures and charts but not too much technical jargon.—CPT Armor D. Brown, USA, *US Army Armor Center, Fort Knox, Kentucky*

SCHWARZKOPF: An Insider's View of the Commander and His Victory by Robert D. Parnish and N. A. Andreacchio. 238 pages. Bantam Books, Inc., New York. 1991. \$4.50.

This interesting but superficial book does not live up to its title. Written for the nonmilitary audience, its recounting of operations *Desert Shield* and *Desert Storm* borrows heavily from official biographies and open accounts of the war. The promised "insider's view" consists of often repeated anecdotes about the commanders and the US Army. If you missed the war on television, this would be a book to read. The military professional, however, will find it lacks the insight and depth necessary for an accurate and effective account of either the war or its commander.—MAJ Charles K. Pickar, USA, *School of Advanced Military Studies, USACGSC*

time of the interview.) It is this high degree of professionalism that is a hallmark of Singlaub's career from second lieutenant through major general.

Singlaub's story reads like both an adventure novel and an American history textbook. Since 1943, Singlaub has been an active eyewitness to and participant in the military and foreign policy battlefields of the United States. His autobiography chronicles that participation from his commissioning and initial assignment with the Office of Strategic Services in World War II to his recent efforts to aid the Nicaraguan Contras against the Sandinistas. Along the way, he provides a soldier's view of the Chinese revolution; the Korean War; actions of the Military Assistance Command, Vietnam, Studies and Observations Group; and his relationship with Oliver North, William Casey and the arms-for-hostages issue.

Singlaub's ardent anticommunist views come through loud and clear throughout the book. Having experienced firsthand the extremes of Nazism in Germany and communism in China, Korea and Vietnam, he passionately criticizes US government policies that have contributed to gains in communist influence, particularly in Latin America. Officials, also, are taken to task, particularly Carter for his Korean and Panamanian policies.

Singlaub's criticism of State Department professionals in China in the 1940s, however, is off the mark. US policy toward China in the 1940s was aimed at defeating the Japanese, and that policy included espousing Kuomintang (KMT)-Communist collaboration. While reports from John Davies and John Service clearly contained anti-Nationalist China views, one of which is quoted by Singlaub, he ignores the Davies report that the United States

A CONCISE HISTORY OF THE MIDDLE EAST, revised 4th edition, by Arthur Goldschmidt Jr. 465 pages. Westview Press, Boulder, CO. 1991. \$50.00 clothbound. \$24.95 paperback.

This revised edition is easy to read and well written. It is an up-to-date survey of the Middle East intended to "reflect the latest scholarship and the most recent events of the Middle East." Although directed at the college student, it is a useful reference for the military planner seeking to understand the history and current situation the United States faces vis-à-vis the Middle East. The author provides an objective perspective on how and why this area has become "the most troubled region of a turbulent world."—LTC John Skelton, USA, *School of Advanced Military Studies, USACGSC*

INSIDE THE SOVIET MILITARY by Carey Schofield. 240 pages. Abbeville Press, New York. 1991. \$40.00.

Do not mistake this glossy-papered, photo-essay book for another coffee-table travelogue through the Soviet armed forces. This first-person account by a female British journalist has replaced all of them. Lavishly illustrated, with a preface by former Soviet Minister of Defense Dmitri Yazov and a foreword by noted Sovietologist Chris Donnelly, these essays bring the state of the Soviets' armed forces into clearer focus than any comparable work. Do not wait for its price to be discounted. It is worth buying at any cost.—MAJ James F. Gebhardt, USA, *On-Site Inspection Agency, Travis Air Force Base, California*

DESERT WARRIORS: The Men and Women Who Won the Gulf War by the staff of USA Today. 213 pages. Pocket Books, Inc., New York. 1991. \$4.95.

This compilation of stories, previously published in *USA Today*, focuses on people; there is no discussion of the strategy and politics of the war or the decisive impact of US technology. Instead, letters home provide a flavor of what the war was like for those in Saudi Arabia. In addition, a short eulogy is provided for each of the 322 Americans who died during the war. Unfortunately, the story concentrates almost exclusively on the ground soldiers; virtually ignored are the sailors, as well as the airmen, who bore the brunt of the war. This book is of little use to the professional.—LTC Phillip S. Meilinger, USAF, *School of Advanced Airpower Studies, Maxwell Air Force Base, Alabama*

should "make a determined effort to capture politically the Chinese Communists rather than allow them to go by default to the Russians." As both Davies and Service left China in 1945, Singlaub attributes more blame for the KMT defeat to them than they deserve.

Singlaub characterizes Oliver North as a sordid, gullible and tragicomic figure lacking integrity—a far different image from that held by many Americans following North's appearance before congressional committees. As an active participant in the effort to provide aid to the Contras, Singlaub had firsthand knowledge of North's and retired US Air Force Major General Richard Secord's arms dealings. Singlaub details his efforts and how they were thwarted by North, Secord and Albert Hakim to the detriment of the Contra resistance. Despite the electoral victory of Violeta Chamorro in Nicaragua, Singlaub remains pessimistic about the possibility of a true democracy in that country.

Hazardous Duty is the memoir of a professional soldier and patriot whose courage, candor and active participation in American history since 1943 provide him a unique perspective on current events. His is a story well worth reading.

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

BRITISH INTELLIGENCE IN THE SECOND WORLD WAR, VOLUME 5: Strategic Deception by Michael Howard. 271 pages. Cambridge University Press, New York. 1990. \$34.50.

The latest volume in the series on British intelligence in World War II examines the British intelligence contribution to British and Allied deception efforts worldwide. After a rough and very primitive start in 1939, the British became progressively better as they began to win the counterintelligence war against Germany. In fact, it was their victories in signal and counterintelligence that set the stage for their successes at deception. In breaking most of the Axis powers' operational, diplomatic and intelligence encryption systems, the Allies were able to read every stage of their opponents' intelligence process from unrefined agent reports to aerial reconnaissance readouts, and last, but probably most important, the final intelligence assessments provided both to and by the high commands involved. It has all the elements of an exciting and informative tale.

Unfortunately, the author writes in a very dry textbook style that makes for slow reading. The book could also have used more maps and tables, particularly during the discussions of which codes were broken and how breaking the codes contributed to a

particular deception effort. Moreover, since the British intelligence effort concentrated on that nation's foremost opponent in the war, Germany, the book focuses primarily on the European Theater.

Nonetheless, this book is the only available treatise on the problems associated with coordinating intratheater deception efforts within an overall strategic deception program. It contains much information on heretofore unpublished areas of the Allied deception efforts in Burma, other areas of the Far East and the Royal Navy's strategic deception program. As such, it is a valuable addition to any library on World War II and a must read for anyone interested in understanding the intelligence contribution to deception efforts in that war.

CDR Carl O. Schuster, USN,
US Navy Mobile Units Pacific

THE FIRST AIR WAR: 1914-1918 by Lee B. Kennett. 275 pages. The Free Press, New York, NY. 1991. \$24.95.

For too long, the Great War in the air has remained the stepchild of historical research. While producing innumerable "there I was" accounts, World War I has inspired decidedly fewer pieces of solid scholarship on the air power subject, and those so far produced, like Dennis Winter's little classic, *The First of the Few: Fighter Pilots of the First World War*, have been monographs. *The First Air War* stands alone as a vital synthesis of the air war, as a whole, as well as an indispensable introduction to a neglected area of military history.

Kennett succeeds admirably in his self-appointed task of producing an overview "in which all the parts of the picture are visible, with each given the prominence that the historical record indicates it merits." Beginning with the reconnaissance mission, he surveys the rapidly emerging roles of aviation, the varied types of aircraft these operations helped generate, and the training and development of the first combat pilots. The chapter on maritime aviation's origins is especially important, highlighting one of the most interesting aspects of early air development.

The author's concluding chapter brilliantly draws together these multiple concerns to develop a succinct evaluation of air power's place in World War I. He notes that military aviation's development clearly predated the war's outbreak. The often-advanced notion that air power was from its inception a "Cinderella," bereft of support and influence, struggling against the inertia of a high command intensely hostile to all innovation, ignores the widespread popularity and intense interest aviation generated both in the public and among decision

makers. He rightly stresses World War I's role in furthering the rise of air power; indeed, he might have further emphasized how the World War I experiences (the British air defense system or German ideas regarding close air support, for example) so decisively shaped the first great World War II air battles. Based on impressive archival work, *The First Air War* is an outstanding contribution to our understanding of military aviation's key developmental years. Kennett has produced a graceful, elegant volume that will serve as the starting point for all students and scholars of air power or of aviation's role in World War I.

LTC Gary P. Cox, USAF, School of Advanced Airpower Studies, Maxwell Air Force Base, Alabama

ENGAGE THE ENEMY MORE CLOSELY:
The Royal Navy in the Second World War by Correlli Barnett. 1,052 pages. W. W. Norton & Co., Inc., New York. 1991. \$35.00.

Since Correlli Barnett's *The Desert Generals* appeared in 1957, he has explored Britain's 20th-century decline, especially its military dimension, in a number of provocative books. He has never defined "military" narrowly. He has studied the industrial base that supported Britain's military power (or, more accurately, failed to), as well as the attitudes and beliefs of labor, management and the governing establishment. These attitudes and beliefs, Barnett has persuasively argued, lay at the root of Britain's problems.

Now, he has turned his attention to the Royal Navy, in a massive study that, in some ways, rewrites the late S. W. Roskill's much-praised official history. Briskly and vividly written, it incorporates the *Ultra* dimension of the war at sea that Roskill could not discuss, as well as much new material from private papers. (His gleanings from those of Admiral Sir Bertram Ramsay, for example, provide a new perspective on D-day.)

Barnett's operational narrative and analysis will provide an excellent starting point for students of the Royal Navy's last great war. Some of the themes Barnett develops in this book will be familiar to readers of his previous work, particularly his stress on the obsolescence of much of Britain's industrial plant, management thinking and labor practices—obsolescence that lumbered the Royal Navy with inadequate propulsion machinery, carrier aircraft and much, much more.

Some of Barnett's long-standing complaints, however, are less well-founded than his structures on British industry. In particular, he has trouble making up his mind about Winston Churchill.

Churchill is blamed for cutbacks in British defense spending in the 1920s. These cutbacks certainly turned out to be unfortunate but were hardly Churchill's work alone, as Barnett, also the author of the excellent *The Collapse of British Power*, must fully realize. Barnett recognizes that in the desperate days of 1940–1941, Churchill had to "keep the war aflame so that America would believe that Britain's cause was worth backing" without allowing that recognition to temper his criticisms of the strategic improvisations to which that need forced Churchill and his government.

Churchill is not the only sufferer from cavalier treatment. US readers, in particular, may find Barnett's statement that the atomic bomb was dropped to impress Stalin rather than to force a Japanese surrender a rather unconvincing resurrection of 1960s revisionist historiography. Nonetheless, Barnett has written a powerful book that students of Britain's final war as a great power can read with pleasure and profit.

Raymond Callahan, University of Delaware,
Newark, Delaware

BATTLES OF THE REVOLUTIONARY WAR: 1775–1781 by W. J. Wood. 308 pages. Algonquin Books of Chapel Hill, Chapel Hill, NC. 1990. \$25.94.

In *Battles of the Revolutionary War*, W. J. Wood condenses enormous quantities of information available on 11 engagements of that war into accurate accounts emphasizing the battles' tactical aspects. The author's introduction advises that the book's objective is to dispel historians' tendencies to regard the American Revolution's battles as being of questionable worth for serious study because they are too much alike—the British advancing as if on parade, Americans hiding behind trees. With his condensation, Wood succeeds admirably.

However, as a summary of engagements and tactics described in detail by others, the book provides little background or perspective. Serious American Revolution students will discover no original scholarship here and will seek more detailed discussions of the conflict elsewhere. The book's audience, therefore, is those with just a passing knowledge of the war's tactical aspects, and therein lies its major disappointment. If Wood succeeds in attaining his major objective—making the point that these battles deserve serious study—he does not do so directly.

Clearly, his accounts indicate there was much more to each encounter than minuetts engaged by bumpkins, but having thrown down that gauntlet, he fails to do battle on his point. He writes no

formal defense of that thesis, and the reader, having taken up Wood's challenge by way of investing his reading time, is clearly left with the feeling the author forgot a final, necessary summary chapter. Regardless of this shortcoming, this is a volume worth reading for those interested in a quick look at selected battles of the American Revolution.

**CPT Bernard E. Grady, USA, Retired,
Doylestown, Pennsylvania**

**ENVIRONMENTAL HAZARDS OF WAR:
Releasing Dangerous Forces in an Industrial
World.** Edited by Arthur H. Westing. 96 pages. Sage
Publications, Inc., Newbury Park, CA. 1991. \$39.95.

This book, the second in a series from the Peace Research Institute, Oslo, Norway, and the United Nations Environmental Program, comes at an opportune time. *Environmental Hazards of War* explores the environmental damage that might be expected from a major war in an industrializing world even if nuclear and chemical weapons are not used. Authors from four countries examine the potential ecological consequences of damage to nuclear, chemical and hydrological facilities (dams and dikes) and the technical, legal and cultural strategies to mitigate such consequences.

Based on extrapolation from peacetime accidents, damage in previous wars and commonsense reasoning, worst-case estimates are presented to show the impact, long- and short-term, on the human and natural environments.

Unfortunately, no account is given of the use of the many widely accepted computer models to quantify the potential effects. There is also no discussion of other likely sources of environmental damage, such as the recently conspicuous burning oil wells and damaged oil-loading facilities. And the effects of depleted uranium penetrators and the wide use of defoliants, among others, are not discussed.

Several recent books by the Stockholm Interna-

tional Peace Research Institute, Sweden, do a much better job covering the broader range of collateral damage caused to the environment by modern warfare. Finally, the authors' pacifist views tend to show throughout the discussions.

**MAJ David N. Clark, Utah ARNG,
Stansbury Park, Utah**

THE MODERN HISTORY OF IRAQ by Phebe Marr. 382 pages. Westview Press, Boulder, CO. 1985. \$16.95 paperback.

This 1991 reprint is an in-depth socioeconomic history of Iraq since the British mandate that molded the country in 1920-1932, when Iraq gained its independence. The author, a senior fellow at the National Defense University, Washington, DC, seen prominently on television during the Gulf War, uses an impressive array of Arabic and English sources to compile this book. Though the book includes no new information since 1984, the background it provides is still pertinent. It explains how Saddam Hussein has shaped and molded a disparate Iraqi people.

What the book is *not* is an analysis of the Iraqi military or the Iran-Iraq War (for that, see Anthony H. Cordesman's *Lessons of Modern War, Volume II: The Iran-Iraq War*). But behind the men and machines is a society and a form of government that rely on control. Had policy makers in Washington read this book before Operation Desert Storm, they would have been less sanguine about Hussein's removal from power short of the United States deposing him militarily. This book shows that Hussein is a political survivor who knows how to use Iraq's oil might to give his people butter, as well as guns; he proved that during the Iran-Iraq War. Based on his track record as detailed by Phebe Marr, do not count him out yet.

**Aaron A. Danis, Naval Investigative Service,
Washington, DC**

USACGSC Press Begins Operation

The US Army Combined Arms Command, Fort Leavenworth, Kansas, has established the US Army Command and General Staff College (USACGSC) Press. The new press will operate under the aegis of USACGSC's Combat Studies Institute, long known for its *Leavenworth Papers* series of monographs and other works on military history. The goal of the press is to become the university press of the Army, publishing works on a broad range of military subjects of interest to soldiers, scholars and the general public. The press is now seeking manuscripts. All publications of the press will become, by federal law, a part of the public domain and will be available to the general public from the Superintendent of Documents, US Government Printing Office. For more information, contact Dr. Roger J. Spiller, Director, Combat Studies Institute, USACGSC, Fort Leavenworth, KS 66027-6900.



Military Review

Military Review 1991 Writing Contest Winners

The 1991 *Military Review* Writing Contest theme, "The Army in American Society," drew the interest of Active, Reserve Component and retired officers, government employees and civilian scholars, who offered views on a wide variety of historical and current aspects of the theme. The winners are:

1st Place (\$500)—"Blacks, the Army and America: Opportunity and Ultimate Cost" by **Major Rainier H. Spencer**.

2nd Place (\$200)—"Media Access to the Battlefield in the Age of Information" by **Captain James B. Brown**.

3rd Place (\$100)—"The Future of Women in the Army" by **Lieutenant Colonel Robert L. Maginnis**.

The winning essays, along with three other contest entries, will be published in *Military Review* in the spring and summer of 1992. *Military Review* and the US Army Command and General Staff College congratulate the winners and thank all those who submitted essays for taking the time and making the effort to write about these important professional issues.

Announcing MR's 1992 Writing Contest

We are pleased to announce the 1992 *Military Review* Writing Contest. Entries on the topic, "The US Army in Joint, Combined and Coalition Warfare," will be accepted through 1 July 1992. Through the generosity and continued support of the 1985 Command and General Staff Officer Course Class, the cash awards will remain the same, and the winning manuscripts will be published in *Military Review* this fall. 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; historical perspectives; service relationships; recent operational lessons; and education and training. The common thread should be consideration of current and future joint, combined and coalition warfighting capabilities. 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 2,000 and 2,500 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.