WAR IN THE PERSIAN GULF

Operations Desert Shield and Desert Storm
August 1990–March 1991

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Introduction

Although now twenty years in the past, the events surrounding the invasion of Kuwait by the forces of Saddam Hussein in August 1990 and the subsequent U.S.-led coalition that ejected the Iraqis from that small nation are key to understanding today's situation in the Middle East. For the first time, the United States was directly and openly involved in sending major land forces to Saudi Arabia and the Persian Gulf region. For the first time since the fall of the Berlin Wall, the U.S. Army, which had trained to fight Soviet forces in Central Europe, moved a large portion of those forces to engage in open warfare in a completely different theater against a former Soviet client state. The overwhelming success of those endeavors, Operations Desert Shield and Desert Storm, renewed the confidence and assertiveness of the United States in its foreign policy in the Near East and throughout the world.

Other elements of what later became known as the first Gulf War also remain with us. American troops stayed in the region for over two decades, first containing a resurgent Saddam Hussein and then dealing with his aftermath. Equally important, the coalition partnerships cemented in that initial operation and in the regional peacekeeping operations that followed provided the basis for a growing series of multinational efforts that have characterized the post–Cold War environment. Finally, the growing interoperability of U.S. air, sea, and land forces coupled with the extensive employment of more sophisticated weapons based on advanced electronic technologies, first showcased in Desert Storm, have become the hallmark of American military operations and the standard that other nations strive to meet.

This pamphlet, prepared by the Center's Chief Historian, Dr. Richard Stewart, is based primarily on two works. The first is the Center's *The Whirlwind War: The United States Army in Operations Desert Shield and Desert Storm*, Frank N. Schubert and Theresa L. Kraus, general editors, prepared about a year after the events in question. The second is a chapter written by Brig. Gen. John Sloan Brown (former Chief of Military History, now retired) in the Center's comprehensive history of the U.S. Army, *American Military History*, vol. 2, *The United States Army in a Global Era, 1917–2008*. I hope that soldiers of all ranks will

enjoy this short account of a conflict that twenty years ago captured the attention of the world as the first test of the U.S. Army since the Vietnam War and its first large-scale armor engagement since World War II.

Washington, D.C.
28 May 2010

JEFFREY J. CLARKE
Chief of Military History

WAR IN THE PERSIAN GULF

Operations
DESERT SHIELD and DESERT STORM
August 1990–March 1991

DESERT SHIELD/DESERT STORM
AREA OF OPERATIONS
1990–1991
Air Base
0
150
Miles
BAGHDAD
Tigris River
I R A Q
Euphrates River
As Samāwah
An Nāṣiriyah
TALLIL
JALIBAH
Al Baṣrah
Khorramshahr
Abādan
I R A N
Ahvāz
K U W A I T
KUWAIT
RAFHA
ALI AL SALEM AIRBASE
KUWAIT INTERNATIONAL
AHMED AL JABER AIRBASE
Ar Ruqī
Wādī al Bāṭin
Ḥafar al Bāṭin
QAISUMAH
Ra's al Khafjī
P E R S I A N G U L F
RAS MISHAB
KING KHALID MILITARY CITY
JUBAYL
Al Jubayl
KING ABDUL AZIZ AIRBASE
KING FAYD INTERNATIONAL
Ad Dammām
Dhahran
DHAHRAN INTERNATIONAL
BURAYDAH
AL ARTAWIYAH SOUTH
S A U D I A R A B I A
KING KHALID INTERNATIONAL
RIYADH INTERNATIONAL
RIYADH

Map 1

War in the Persian Gulf

Operations Desert Shield and Desert Storm
August 1990–March 1991

In the early morning hours of 2 August 1990, Iraqi dictator Saddam Hussein launched an overwhelming invasion of tiny, oil-rich Kuwait. (*Map 1*) The United States Army, reveling in the end of the Cold War and on the verge of downsizing, faced a new and unexpected challenge. The fall of the Berlin Wall on 9 November 1989 had changed the strategic equation, not only in Europe but throughout the world. Within a few years, Soviet troops evacuated all of their former satellites in the Warsaw Pact, those satellites reconfigured themselves as independent and democratic states, the Soviet Union itself collapsed into fifteen different countries, and Germany reunited into a single nation. This collapse left the United States as the sole remaining superpower in a new, unsettled world. The United States came to have more responsibilities around the globe and more strategic maneuver room to intervene in foreign crises with less risk of catastrophic confrontation with the Soviet Union. At the same time, client states of the former Soviet Union—from Eastern Bloc Europe to Cuba to the Middle East—found themselves without their traditional patron and without the military and diplomatic restraint that patron-client relationship had provided in the past. One former Soviet client, the Ba'athist Iraq of Saddam Hussein, certainly felt empowered to press its luck.

Strategic Setting: The Army on the Eve of War in the Gulf

The Army at the end of the Cold War was a very different institution than the one that had emerged from the sting of defeat in Vietnam less than two decades before. That earlier Army, its confidence in ruins and struggling to rebuild itself as a volunteer force, virtually reinvented itself from the bottom up. Employing new doctrine, reinvigorated leadership, renewed emphasis on realistic training, and a full-court press to rearm and reequip itself to fight a modern war anywhere in the world, the Army in 1990 was small (in comparison with the army of the Vietnam era), highly trained, and fully professional. It was a high-quality force prepared to fight an intense war against a first-class foe. However, the collapse of Soviet power

and withdrawal of Soviet armies into the Soviet Union, the disintegration of the Warsaw Pact, and the dismemberment and disappearance of the Soviet Union seemed to many to remove the justification for maintaining a powerful U.S. Army. Political leaders sought a "peace dividend," and the Army projected budgets that would decrease the number of its active service members from seven hundred eighty thousand in 1989 to five hundred thirty-five thousand in 1995. Some Americans believed long-term peace was the order of the day and that we could dismantle our "bloated" military establishment. That "bloated" establishment would soon show the world how effective, and needed, it was. The United States would send the best-prepared force America had ever deployed in response to naked aggression in the Persian Gulf.

As Saddam Hussein's attack unfolded, three armored divisions of the elite Iraqi *Republican Guard* crossed the Kuwaiti border and sped toward the capital city. The several brigades and potpourri of military equipment of the hapless Kuwaiti Army, already disorganized by attacks from Iraqi special operations forces, proved no match for this assault. Within days, the Kuwaitis had surrendered or fled to Saudi Arabia, the *Republican Guard* divisions had closed to the Saudi border, and Iraqi follow-on forces had fanned out to secure the oil fields and commercial wealth of the small but prosperous country. Iraq had long coveted oil-rich Kuwait, characterizing it as a nineteenth province the British had purloined during the colonial era. Iraq's ambition had become aggravated during the prolonged, desultory Iran-Iraq War (1980–1988). Hussein had accrued enormous debts fighting the Iranians, leaving him with a large and battle-hardened army but an economy in disarray. The wealth of Kuwait, in his mind, could fix this problem.

Hussein's army had grown tenfold during the war with Iran. When fully mobilized, it numbered over a million soldiers. Perhaps more important, it was well equipped by the virtue of huge purchases from international arms markets. Although most of this equipment was of Soviet design and a generation behind its American counterparts, the sheer numbers of tanks, armored fighting vehicles, artillery pieces, and small arms of all types made it formidable. Although the Soviet Union was no longer available to assist Iraq internationally, Hussein could count on support among the most polarized or disaffected elements of the Arab World. Iraq's standing as a "Sunni Shield" against the power of resurgent Shi'ite Iran made many Arab states loath to confront him directly. For many in the region, Kuwait was seen as little more than an American dependency, and defiance of Israel's ally America was righteous in many Arabs' eyes.

For the American government and President George H. W. Bush, the first priority quickly became the defense of Saudi Arabia. Disruption of Kuwaiti oil supplies was damaging enough to the global economy; disruption of Saudi oil supplies could be disastrous. The Saudis shared Bush's view, and their leadership overcame an established national antipathy toward allowing foreign troops into their kingdom. On 6 August, Saudi King Fahd bin Abdul Aziz al-Saud formally approved American intervention to assist in the defense of his kingdom.

U.S. forces rapidly began to move to Saudi Arabia. Initial forces included two F–15 squadrons; Maritime Pre-positioned Squadrons 2 and 3, based on the islands of Diego Garcia and Guam; two carrier battle groups; the ready brigade of the 82d Airborne Division; and an airborne warning and control system (AWACS) unit. Much more would follow. Secretary of Defense Richard B. Cheney, at the direction of President Bush, unleashed what became arguably the most concentrated and complex projection of American military power since World War II. The initial missions of these forces were to protect Saudi Arabia and the Saudi oil fields from Iraq and to prevent further aggression. No decision had yet been made to turn that defensive mission into an offensive one to roll back Iraqi gains.

Operations

The first days of August began an anxious several weeks for American defense planners, especially after the 82d Airborne Division's ready brigade arrived on the scene. The staff of the U.S. Central Command (CENTCOM), commanded by General H. Norman Schwarzkopf Jr., knew the levels of risk they undertook as they sought to balance the proportions of support and combat troops coming into theater. Recognizing the enormous armored wherewithal of the Iraqis just across the border, the lightly armed paratroopers of the 82d characterized themselves as "speed bumps," intended at best to delay an Iraqi attack—and to signal the determination of the United States to defend Saudi Arabia with American lives. This in turn would buy time for the buildup of forces.

Every effort was made to effect a rapid buildup of combat power and logistical support. Although U.S. forces were at risk for a number of weeks, compared to historical precedent the American buildup in Saudi Arabia progressed quickly and efficiently. In a little over two months, the powerful XVIII Airborne Corps, consisting of an airborne division, an air-assault division, two heavy divisions, an armored cavalry regiment (ACR), and the requisite array of combat support (CS) and combat service support (CSS) assets, had deployed. The arriving inventory included

General Schwarzkopf

over 120,000 troops, 700 tanks, 1,400 armored fighting vehicles, and 600 artillery pieces. This is not to mention the 32,000 troops and 400 tanks provided by local Arab allies. Hundreds of planes were in theater operating out of Saudi, Turkish, and Qatari airfields, with more operating off of American aircraft carriers and long-range bombers able to range the theater from Diego Garcia and even from the United States. The Navy was on hand and active in the Persian Gulf and its approaches, having already imposed an effective blockade on Iraq. The risk of Iraqi attack receded after the first few weeks, but the need to prepare for any eventuality remained.

How to use the newly arriving forces to best effect was a critical concern. Although Central Command had contingency plans to defend Saudi Arabia from the Soviet Union or its allies from the earliest days of the Rapid Deployment Joint Task Force created in 1979, these plans were not up to date. Central Command and its service component commands worked on a unified campaign plan for the defense of Saudi Arabia during much of 1990, primarily via a computer-facilitated war game entitled Internal Look 90. The simulation yielded considerable insight, but plans were incomplete and had not yet been presented to the Joint Chiefs of Staff or the services for review. Lack of an approved plan proved especially significant during the fluid situation of August. Had an approved unified campaign plan been in place, it would have provided to the services detailed lists of force requirements. It took time to identify relevant requirements and then to match these requirements with specific units. The problem became particularly acute when identifying the many separate units needed to support a large force in the desert: water-purification companies, tactical petroleum terminal units, engineer real estate detachments, and medium-truck companies. Deployment lists drive service access to reserve capabilities. This in turn becomes contingent on political decisions by the president to mobilize the necessary reserves. During 10–28 August, more than twenty messages altering troop lists

on the original deployment order passed between Central Command and the Pentagon, reflecting the complexity of identifying specific units based on requirement, availability, and component.

General Yeosock

Operation DESERT SHIELD was a major test for Army logistics. The Army component (ARCENT—U.S. Army Central Command) commander, Lt. Gen. John J. Yeosock, arrived in Saudi Arabia on 6 August to oversee the massive effort. With a handful of staff officers, he set up an interim headquarters in the Saudi capital of Riyadh to supervise the arrival, sustainment, and overall planning for deploying Army units. Until General Schwarzkopf arrived in the theater on 25 August, General Yeosock also helped CENTCOM's acting deputy commander in chief, Lt. Gen. Charles A. Homer, U.S. Air Force, coordinate the arrival of the joint force. Yeosock knew the terrain and climate and was familiar with his Saudi hosts. From 1981 to 1983, he had served in Riyadh as project manager for the modernization of the Saudi Arabian National Guard, and this experience would serve him well in the months ahead.

The First Deployments

The first units of the XVIII Airborne Corps began deploying to Saudi Arabia on 8 August. The rapid deployment of the ready brigade of the 82d Airborne Division clearly signaled a U.S. national commitment to deter further Iraqi aggression. The brigade took its light antitank weapons and M551 Sheridans, armored reconnaissance vehicles that provided some antiarmor capability with a 152-mm. main gun and MGM–51 Shillelagh antitank missile. The paratroopers would be at considerable risk should Iraq decide to invade Saudi Arabia before the United States completed its force buildup. Nevertheless, the decision drew "a line in the sand."

The XVIII Airborne Corps, ordinarily headquartered at Fort Bragg, North Carolina, served as the Army's contingency corps. This mission required that it be ready to deploy on demand. Lt. Gen. Gary E. Luck

General Luck

had assumed command of the corps in July 1990 and was a decorated veteran of Vietnam and former commander of the Joint Special Operations Command. Under General Luck's leadership, the XVIII Airborne Corps provided command and control to the 101st Airborne Division (Air Assault), the 24th Infantry Division (Mechanized), and the 82d Airborne Division. The 101st Airborne Division, stationed at Fort Campbell, Kentucky, was in effect a light infantry division trained to deploy and assault by helicopter. The 24th Infantry Division, located at Fort Stewart, Georgia, served as the XVIII Airborne Corps' heavy division. A heavy division such as the 24th relied upon the speed, flexibility, mobility, and firepower of its tracked vehicles: armored personnel carriers, infantry fighting vehicles, self-propelled artillery, and main battle tanks. The 82d Airborne Division, the Army's premier light contingency force, routinely had one of its brigades designated as its ready brigade. This was the first to go to the Persian Gulf.

The first elements of the 82d's ready brigade departed Pope Air Force Base, adjacent to Fort Bragg, early in the afternoon of 8 August 1990 and arrived at Dhahran, Saudi Arabia, the following day. These immediately established defenses around the airfield to provide security for later-arriving units. As additional troops came into the country, the perimeter expanded. By the afternoon of 13 August, when the ready brigade reported 100 percent of its troops deployed from Fort Bragg and 88 percent of them already in Saudi Arabia, it had expanded its area of operations to provide security to Al Jubayl, the port through which the U.S. Marines would enter the theater.

The other two brigades of the 82d quickly followed the ready brigade. On 13 August, the 1st Brigade deployed an advance party, which arrived in Saudi Arabia two days later, and completed its deployment on the twentieth. The 3d Brigade began its deployment on 19 August and completed it on the twenty-fourth. Around this time, selected elements of

Troops of the 82d Airborne Division loading onto a C5B Galaxy Transport at Green Ramp, Pope Air Force Base, North Carolina

the XVIII Airborne Corps Support Command moved into Saudi Arabia to begin building the necessary logistical infrastructure.

While establishing defensive positions and conducting patrols, the soldiers began the long process of adapting to the environment. Their leaders carefully watched water consumption. The soldiers initially trained and worked only at night, in the early morning, and in the late afternoon to limit exposure to the searing desert sun. The sand made its way into everything—weapons, vehicles, clothing, and food—and constant attention was required to make sure equipment and weapons would work when they were needed. Although the corps' personnel flew to Saudi Arabia, most of their heavier equipment moved by ship. The transshipment of materiel continued through August and September from five Atlantic and Gulf of Mexico ports. Corps support units loaded at Wilmington, North Carolina.

Other Army units with more specialized, yet critical missions quickly followed the 82d into Saudi Arabia. Special Forces planners who accompanied the 82d Airborne Division began preparing for the arrival of the 5th Special Forces Group (Airborne). In addition, the lead elements of the 7th Transportation Group from Fort Eustis, Virginia, started their movement to the ports. That unit would control port operations and the unloading of equipment from ships once they docked in Saudi Arabia. On 14 August, the commander of the 11th Signal Brigade arrived in theater and began establishing an Army communications network. The first elements of

a Patriot missile battery of the 11th Air Defense Artillery Brigade also deployed in early August, and another battery from the 7th Air Defense Artillery Regiment arrived in Saudi Arabia on 16 August. The following day, the first aviation elements of the 101st Airborne Division and advance elements of the 24th Infantry Division arrived in theater. By the end of the first week of DESERT SHIELD, more than 4,000 Army soldiers had deployed to Saudi Arabia on 106 aircraft. Major weapon systems accompanying the soldiers included 15 AH–64 Apache helicopters, 8 OH–58 Kiowa observation helicopters, 18 M551 Sheridan light tanks, 56 tube-launched optically tracked wire-guided (TOW) antitank missile systems, 2 multiple-launch rocket system (MLRS) launchers, and 12 105-mm. towed howitzers.

Although the DESERT SHIELD forces continued to deploy at a steady pace, General Schwarzkopf needed more firepower. In the early weeks of the deployment, he anxiously awaited the arrival of the 24th Infantry Division (Mechanized) with its 216 M1A1 Abrams tanks. Despite the rapid movement of the Army's first combat units into Saudi Arabia, time and the initiative remained with Iraq. Saddam Hussein had six divisions available in Kuwait to launch into Saudi Arabia with no warning if he so chose.

Support of the Deployed Forces

The flow of the XVIII Airborne Corps' combat forces into Southwest Asia somewhat overshadowed the deployment of combat service support forces. General Luck understood the need for an adequate support structure, an imperative considerably magnified by the austere environment of Southwest Asia. Army divisions did have organic logistical organizations capable of supporting them for limited periods. When their defensive positions were near the ports, combat units could use organic capabilities to transport supplies to and process them in locations in the field. Eventually, however, the distance and sheer volume would overwhelm their ability to process, move, store, maintain, and account for materiel. Such operations also would detract from their primary defensive mission. For sustained operations and a stay of over thirty days, the Army Central Command needed a mature logistical system. However, the countervailing need to forestall possible surprise attacks by the Iraqis drove priorities and taxed the system. The XVIII Corps reported on the third day of its deployment, "The combination of moving combat forces as rapidly as possible as well as essential service support from the Corps has generated requirements which exceed limited resources immediately available to the corps."

As General Yeosock and the ARCENT staff had rehearsed in the Command Post Exercise INTERNAL LOOK 90, they planned on initially deploying only a minimum of essential support units and creating a limited logistical base. Priority of deployment would go to combat forces. Only later and if necessary would a mature logistics infrastructure be developed. Hence, when XVIII Airborne Corps units arrived in theater, logistical support was virtually nonexistent. The corps support units that were arriving quickly discovered they could not effectively handle the massive deployment of combat troops, who needed the full range of support: food, shelter, equipment, supplies, sanitation facilities, and transportation. General Yeosock realized the need to expand the support system rapidly.

Maj. Gen. William G. Pagonis, whom General Yeosock appointed as ARCENT's deputy commander for logistics, led the logistical buildup. Pagonis landed in Riyadh on 8 August, scant hours before the first transport carrying the ready brigade of the 82d Airborne Division hit the tarmac at Dhahran, two hundred fifty miles away. While en route to Saudi Arabia, Pagonis and his small staff (initially just four officers, later expanded to twenty-two) drafted a logistics plan for the theater. All had participated in the Cold War's Return of Forces to Germany (REFORGER) exercises, which provided a model for their DESERT SHIELD plan. The group outlined three major tasks necessary to create a sound logistics system in theater: the reception, onward movement, and sustainment of soldiers, equipment, and supplies.

When Pagonis arrived at Dhahran, he was appalled at what he found. Combat troop arrivals had quickly overwhelmed the local resources. Lt. Col. James Ireland on Pagonis' staff later recalled that as soldiers poured in, "we just didn't have anything. We had . . . soldiers here with no place to put them, no way to get them out there if we did have a place to put them, and difficulty feeding them." Soldiers slept on the sand and on handball and tennis courts. Hundreds slept on the ground behind the quarters occupied by the U.S. Military Training Mission to Saudi Arabia and dug slit trenches for latrines. Three American officers from the training mission frantically tried to process the incoming soldiers from the XVIII Airborne Corps, who had started to arrive late in the morning of 9 August. The training mission had no significant transportation resources of its own, so the officers arranged for Saudi buses and trucks to take the troops to a vacated air-defense facility fifteen miles from the airport. With no personnel, no facilities, no resources, and very little information, those three officers made the best of a bad situation and provided whatever support they could; but the overwhelming

General Pagonis

demands quickly took a physical toll. His staff officers "looked like zombies," Pagonis later recalled. "They hadn't slept for . . . days." On 11 August, the arrival of the 7th Transportation Group improved the situation, and soon a handful of active-duty soldiers and recalled reservists created an ad hoc logistical structure.

Pre-positioned stocks of equipment aboard ships stabilized most of the immediate crises in supplying and sustaining the new arrivals. Four ships that had been anchored off the coast of Diego Garcia brought rations, cots, tents, blankets, and medical supplies, as well as refrigerated trailers, reverse-osmosis water-purification units, forklifts, and tactical petroleum terminals. Those ships, which had been stocked and positioned so they could support an expeditionary force such as the one now deploying, arrived at Saudi Arabian ports on 17 August. They bought time for Pagonis to stand up a more formal logistics system. "There was no doubt about it," Pagonis later said. "We would have never made it if we did not have those four Army pre-po ships."

By the end of August, General Pagonis' staff, now configured as a Provisional Support Command, was gaining control of the situation. They built the logistics infrastructure while simultaneously receiving and moving troops. Within fifteen days after assuming responsibility for the airport at Dhahran, they had processed over forty thousand soldiers, formed an area support group and an area support battalion, and started unloading ships. By the end of September, the Provisional Support Command had moved over one hundred thousand people and discharged thirty-nine ships. In addition to serving its own elements, Pagonis' command supported the other Central Command component services—Navy, Air Force, and Marine Corps—once they were ashore in theater. The Army had executive agency for food, water, bulk fuel, ground munitions, port operations, inland cargo transportation, construction support, veterinary services, and graves registration for all U.S. forces, either providing the support directly or arranging for it through contracting or host-nation support.

Host-Nation Support and Contracting

Satisfying as many supply requirements as possible from local sources promised to ease logistical shortfalls and reduce the number of American support units ultimately deployed to the theater. Thus, Provisional Support Command staffers quickly surveyed as many local contractors in the region as possible and within a few short weeks had established the basis for an indigenous assistance and contracting program. Such measures became critical components of the overall logistical effort. Saudi Arabia was not a backward, primitive state. Soaring oil revenues in the 1970s had enabled the kingdom to make major investments in public works. The port of Ad Dammam was one of the best in the world. It and Al Jubayl had modern facilities, with immense capacities and staging areas. Airports, particularly at Dhahran, were large and modern, and the primary road system was well built—although inadequate for the high volume and heavy vehicles that a large military force would generate. The construction boom of the 1970s presented potential solutions to some of the problems involved in supporting the U.S. force. Huge public housing projects, designed initially for a growing population of expatriate workers and citizens migrating into the cities, stood largely unoccupied.

The U.S. Army quickly moved to create formal agreements for the use of resources available in Saudi Arabia. Some, such as housing and mess facilities near the ports of entry, proved critical to logistical success. Host-nation support included assistance to coalition forces and to other organizations located in a host nation's territory. An agreement for peacetime and wartime help had long been in force between the United States and the Federal Republic of Germany, where the United States had thousands of soldiers; but none covered the American presence in Saudi Arabia until August 1990.

Because of the fluid situation in August, contracting for host-nation support was conducted in a decentralized and informal manner. Initially, there were no controls and people at all levels did their own contracting. Efforts to find billeting and to move troops from Dhahran reflected the unstructured nature of contracting activities in August and early September. In one case, the acting support command headquarters commandant heard about empty Saudi housing nearby. Desperate for more space, he dropped what he was doing, drove to the site, decided that the price was reasonable, and said he would take it. In another case, an officer was forced to cruise the streets of Dhahran looking for idle buses or trucks to contract for imminently arriving troops. Whenever he saw a group of vehicles, he tried to negotiate a deal: there was no time for the

formal contracting process. "We were," he said, "literally out contracting for the buses while they [U.S. troops] were landing at the airport." He gave one Saudi entrepreneur a bag with $40,000 in cash, got a receipt, and waited for his trucks and buses. To his immense relief, the vehicles arrived as promised and the soldiers moved off the airfield.

The Saudi Arabian government made it clear from the start that it would shoulder many of the expenses of the deployment. As early as 18 August, the logistics operations center developed a list of the command's basic needs for host-nation support for the next forty-five days. The Saudis reacted energetically and cooperatively, providing tents, food, transportation, real estate, and civilian labor support. On 10 September, King Fahd verbally committed his nation to provide comprehensive support, although the details remained unclear until mid-October, when the Department of Defense sent a negotiating team to Saudi Arabia. Instead of concluding a contract or international agreement with the Saudis, the team reached an understanding that became a de facto agreement. That was done to prevent bureaucratic delays and to make "gifts" from Saudi Arabia to the United States as easy as possible while accommodating the kingdom's continuing desire to avoid formal ties. Saudi Arabia agreed to pay the costs of all contracts entered into by U.S. forces as of 30 October 1990 and backed up its promise with a check for $760 million that a nervous American officer personally carried back to New York for deposit. Saudi Arabia agreed to pay for all freshly prepared meals (known as Class A meals, or A-rations, in the Army), water, fuel, transportation within Saudi Arabia, and facilities including construction. By December, that assistance was valued at about $2.5 billion projected over one year.

Transportation

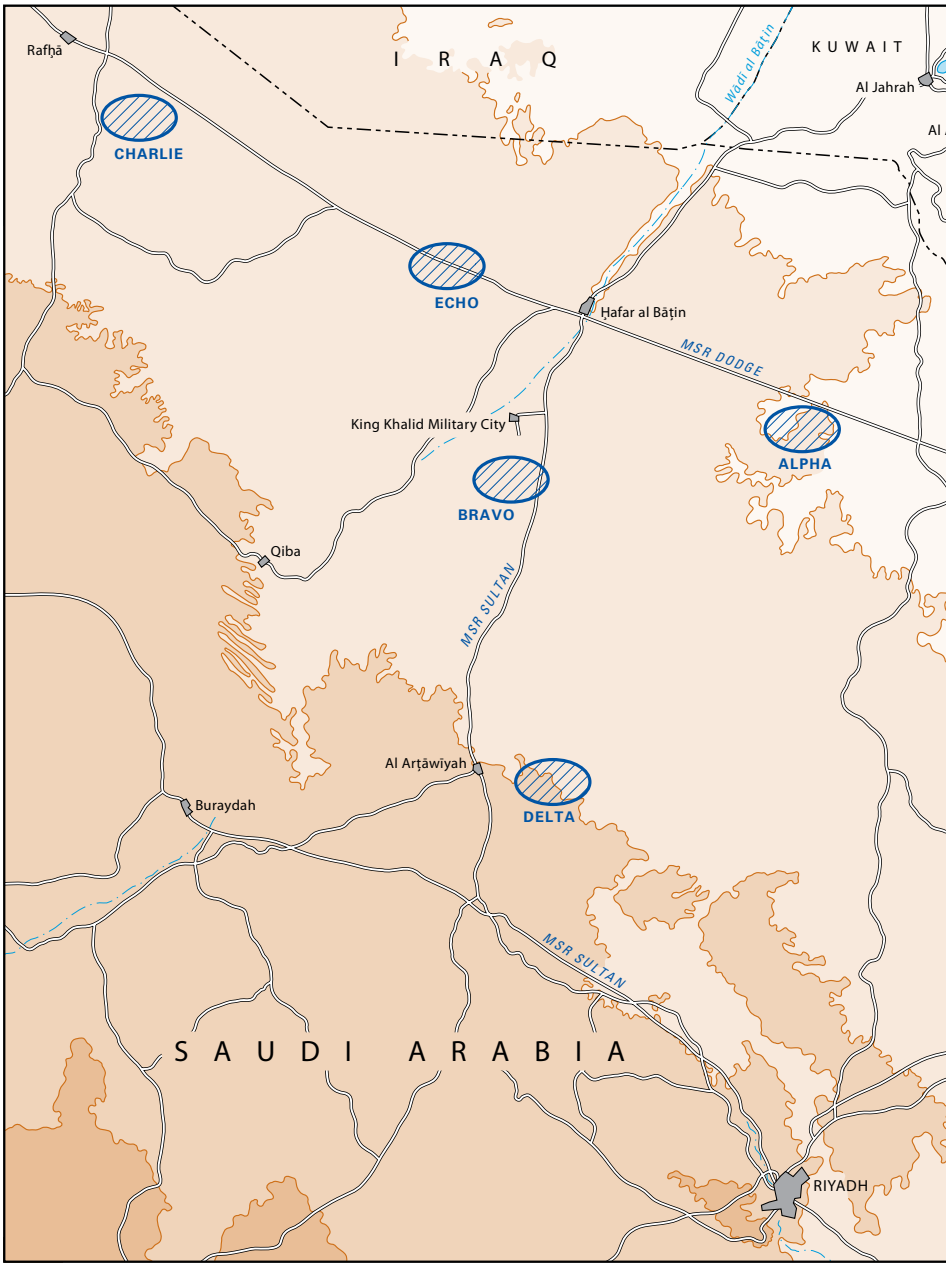
In time, the system of Saudi support and contracting matured and helped sustain American forces in theater; but the need to move the troops and their equipment from the ports still presented tremendous challenges. Both sat waiting for transportation, as it became apparent that unloading equipment at the ports was easier than delivering it to cantonments. The port of Ad Dammam, which before the crisis averaged only six ships a week, handled that many every day after the crisis began. Ground transportation provided the key link between the ports and the assembly areas. (*Map 2*)

Many of the improved roads in Saudi Arabia became main supply routes for the U.S. Army. The Army used two routes north from Dhahran to prepare for and execute the war. The northern route had two segments.

The first, designated Main Supply Route (MSR) AUDI, was a very good multilane road running from Dhahran, along the coast to just north of Al Jubayl. The second, MSR DODGE, was a paved two-lane road running generally northwest from AUDI to Hafar al Batin and then onward to Rafha. Old hands also called DODGE the Tapline Road, because it paralleled the Trans-Arabian Pipeline. Vehicular codenames seemed appropriate for roads that ran through or near some of the largest oil fields in the world.

The southern route also consisted of two main supply routes. An excellent multilane road running between Dhahran and Riyadh was named TOYOTA. The last segment, SULTAN or NASH, ran north from Riyadh to Hafar al Batin, where it intersected with DODGE. SULTAN was a multilane road for about one-third of the distance north from Riyadh before narrowing to two lanes. Some of these roads were well surfaced and in good repair, but there were not enough of them for the high volume of traffic. The distances were great. It was 334 miles from Dhahran to the theater logistical base at King Khalid Military City near Hafar al Batin along the northern main supply route and 528 miles via Riyadh. The XVIII Airborne Corps' forward tactical assembly area was over 500 miles from Ad Dammam by the northern route and 696 miles by the southern road. The highways thus became high-speed avenues for combat units and supplies moving to their destinations. Because large stretches were multilane roads, they allowed heavy volumes of traffic, both individual vehicles and convoys, to move quickly. Even those roads that were not multilane were paved and in generally good condition. To increase the efficiency of the road network, General Pagonis established a series of convoy support centers. These truck stops operated twenty-four hours a day and had fuel, latrines, food, sleeping tents, and limited repair facilities. They added to the comfort, safety, and morale of allies traveling in the theater and greatly enhanced the capability of the transporters. Because of the long distances, the primitive rest areas quickly became favorite landmarks to those who drove the main supply routes.

With excellent ports and durable roads, all the Army needed was the means to move equipment and supplies. The oil industry had traditionally needed large vehicles to transport heavy equipment to various well sites, so there were heavy equipment transporters and tractor-trailer cargo trucks in the country. The growing wealth of the kingdom, with an increasing urban population and an expanding pool of expatriate workers, meant a large fleet of buses. Likewise, expanding interaction with the West had prepared the business community to deal with Americans and had provided a relatively sophisticated core of bureaucrats and decision makers to deal with the demands placed on their economy.


Rafḥā
I R A Q
Wādī al Bāṭin
K U W A I T
Al Jahrah
CHARLIE
ECHO
Ḥafar al Bāṭin
MSR DODGE
King Khalid Military City
ALPHA
BRAVO
Qiba
MSR SULTAN
Al Arṭāwīyah
DELTA
Buraydah
MSR SULTAN
S A U D I A R A B I A
RIYADH

Map 2

SUPPLYING THE TROOPS
December 1990
Logbase
MSR
Main Supply Route
Unit positions approximate
ELEVATION IN FEET
0
1000
2000
3000 and Above
0
50
100
Miles
KUWAIT
Aḥmadī
Al Wafrah
Ra's al Khafjī
Al Mish'āb
An Nu'ayrīyah
BASTOGNE
Al Jubayl
MSR AUDI
MSR MERCEDES
Ad Dammām
Dhahran
MANAMA
BAHRAIN
Gulf of Bahrain
MSR TOYOTA
Al Hufūf
DOHA
QATAR
PERSIAN GULF

Tapline Road

Despite the confusion engendered by the rapid buildup, Army Central Command could point to great progress during the first month in Saudi Arabia. By early September, the entire 82d Airborne Division and the first elements of the 24th Infantry Division had arrived. The rest of the 24th and the 101st Airborne Division were on the way. The partnership with the Saudi government was evolving as well, and a logistical support organization was emerging. The shield was rapidly falling into place.

The mission of DESERT SHIELD was to defend Saudi Arabia with whatever forces were on hand while a buildup of additional forces was occurring. Success relied in part on presenting the Iraqis the illusion of facing a more formidable force than the United States was initially able to bring into the country. Had the Iraqis attacked in force before the defenses were in place, the results could have been catastrophic. Once DESERT SHIELD was set, the result was far from certain; but had the Iraqis attacked, their armored units would have faced a formidable defense in depth. Outlying security elements would have called in waves of air and aviation counterstrikes while retiring upon heavier forces to their rear. Soon, the Iraqi attack would have driven into heavy and precisely surveyed artillery fires and then it would have encountered the deadly accuracy of Abrams tanks and TOW missiles mounted on M3 Bradley fighting vehicles. American direct-fire weapons had double the effective

range of their Iraqi counterparts. Under pressure, American defenders would have had sufficient advantages in range to safely withdraw to subsequent firing positions. Iraqi losses would have been appalling well before they had the opportunity to engage in effective combat themselves. This grim pattern would have repeated itself for the entire two hundred kilometers the Iraqis would have had to attack through to reach targets of strategic significance. Even had an Iraqi force managed to sustain such an attack, its casualty rates would have been catastrophic. To the relief of all the forces in the coalition, such a large-scale Iraqi attack was never launched.

By mid-September, in concert with coalition forces, the XVIII Airborne Corps was capable of defending Saudi Arabia from the battle-hardened Iraqi Army. By early November, the political objectives of the United States and its allies had changed, however. Frustrated in efforts to achieve a diplomatic solution to the crisis, a worldwide coalition reinforced by United Nations mandates determined not to allow Saddam Hussein to enjoy the fruits of his aggression. President Bush committed the United States to the liberation of Kuwait and not just to the defense of Saudi Arabia. This objective would require offensive action, and forces deployed to Saudi Arabia did not have sufficient mass to succeed in such an offensive with minimum losses. On 9 November, President Bush announced that he would send another corps to Saudi Arabia, the U.S. Army VII Corps out of Europe, as proof of his determination that the Iraqi occupation of Kuwait would be reversed by force if necessary.

The bulk of the reinforcements needed for the ground operations of Operation Desert Storm came from Germany. The units selected to deploy from Germany included the VII Corps headquarters in Stuttgart; the 1st Armored Division in Ansbach; the 3d Brigade, 2d Armored Division (Forward), in Garlstedt; the 3d Armored Division in Frankfurt; the 2d Armored Cavalry Regiment in Nuremberg; the 11th Aviation Brigade in Illesheim; and the 2d Corps Support Command in Stuttgart. In addition, the 1st Division at Fort Riley, Kansas, also received deployment orders. The decision would raise the level of U.S. ground forces in the Persian Gulf region to over four hundred thousand.

"Deforger 90"

Discussions of the possible use of units based in Europe for Desert Shield dated from early August, when Department of the Army planners had asked for the deployment of CS and CSS units from Germany to Saudi Arabia. With the precedent for deployment of American forces from duty with the North Atlantic Treaty Organization (NATO) already

established, the Army could consider using not only its I and III Corps from the United States but also its V and VII Corps from Germany. Deployment from Europe offered numerous advantages. The corps were nearer to the theater of operations and had greater combat power based on the readiness, size, and possession of the most modern equipment in the Army's inventory, such as the M1A1 Abrams tank, the M2/M3 Bradley fighting vehicle, and the AH–64 Apache attack helicopter. In addition, the deployment afforded Chief of Staff of the Army General Carl E. Vuono the opportunity to accelerate the ongoing reduction of American forces in Europe.

The move from Europe did present problems. A forward-deployed corps had never carried out a deployment of the kind and magnitude contemplated. Furthermore, the VII Corps was neither structured for nor assigned a role in major out-of-theater contingencies. By deployment standards set by troops based in the United States, the movement from Germany would be unique. Unlike other transfers, in which units tended to be located on a single installation, United States Army, Europe (USAREUR), units came from multiple posts and numerous small communities. Such dispersion complicated relocation. Dependent on host-nation support and fixed facilities for logistics, the corps had responsibility for a network of military communities across southern Germany supporting more than ninety-two thousand soldiers and their families. Any deployment involved major challenges. The deploying corps would have to leave behind adequate means to take care of families and communities. They also had to move the soldiers and equipment to the Middle East as quickly as possible, nevertheless allowing them adequate time to assemble at arrival ports, collect equipment, deploy into the tactical assembly areas, equip and organize for combat operations, and prepare and train for battle.

While the U.S. Army, Europe, prepared for deployment, ongoing developments affected the troops in Germany. General Crosby E. Saint, then the USAREUR commander in chief, and his staff were planning to close about one hundred installations as the Army drew down to post–Cold War levels. They would need to return facilities and other properties to the German government and to restructure the residual force into a single combat-ready corps able to operate under NATO agreements. Accordingly, about twenty-one battalions were preparing to stand down, to turn in their equipment and property, and to return to the United States as a result of an arms-reduction agreement between NATO and Warsaw Pact nations. In September 1990, the Department of Defense had announced the first units scheduled to leave Europe. Some of those departures were set for as early as 1 March 1991 and others for 1 May. In anticipation of the reductions,

USAREUR already had plans to withdraw the remaining contingents. Considerations for selecting units for deployment included plans for withdrawing selected units as well as capabilities, recent training, and the status of equipment modernization.

The unit most affected by the changed plans for the Gulf was the VII Corps commanded by Lt. Gen. Frederick M. Franks Jr. General Franks convened a small planning cell to determine the final force package and to begin deployment planning. USAREUR and VII Corps planners eventually settled on a force package with an atypical corps structure. They developed a heavy corps organized around two heavy divisions from V and VII Corps and other theater assets, which provided the types of units lacking in the XVIII Airborne Corps. In particular, the inclusion of the 3d Armored Division, a V Corps unit with M1A1 Abrams tanks in its inventory, provided more armor than currently existed in other VII Corps units. Its deployment rather than the VII Corps' 3d Infantry Division (Mechanized) also left an infantry unit in the Würzburg area so that southern Germany was not stripped totally of combat troops.

On 9 November, the day after a speech by President Bush outlining the new goal of liberating Kuwait, General Franks held a commanders' conference to give training guidance to the deploying units as well as to begin planning for the base organization that would stay behind. The day after the conference, key VII Corps commanders departed for a reconnaissance trip to Saudi Arabia. Franks went to the Persian Gulf a few days later to talk with Schwarzkopf. At a 13 November strategy meeting of the CENTCOM staff, Schwarzkopf told Franks that his mission in the forthcoming offensive would be to attack the elite Iraqi *Republican Guard* and neutralize it as a combat-effective force.

To accomplish the move in a timely fashion, the ARCENT staff suggested that the VII Corps adopt the following movement sequence:

Tactical advance party
CS and CSS units
2d ACR
7th Engineer Brigade
Additional CS and CSS units
1st Armored Division
11th Aviation Brigade
VII Corps Headquarters and Headquarters Company
VII Corps Artillery
2d Armored Division (Forward)
3d Armored Division, V Corps

In the only change made to the recommended priority list, General Saint decided to move the 2d ACR up on the list and send it to Saudi Arabia first. The regiment, a self-contained unit, could deploy immediately to set up assembly areas and prepare to receive the rest of the corps.

With the movement sequence in place, USAREUR and VII Corps planners arranged for the move. Preparing for the large operation was not a new experience for the U.S. Army, Europe. Beginning in 1967, soldiers from combat divisions in the United States had flown into European airports for twenty-one REFORGER exercises conducted in response to a notional threat of a Warsaw Pact attack against NATO forces in what was then West Germany. Subsequently, they picked up unit equipment that had been shipped into the Antwerp, Rotterdam, and Bremerhaven seaports, as well as pre-positioned organizational materiel configured to unit sets, or POMCUS, that had been stored in Europe. For deployment to Southwest Asia, the process would be reversed with some changes. Yet, the similarity to REFORGER exercises was so apparent that soldiers and allies dubbed the movement DEFORGER 90.

In about seven weeks, U.S. Army, Europe, moved more than one hundred twenty-two thousand soldiers and civilians and fifty thousand five hundred pieces of heavy equipment from Germany to Saudi Arabia. The tight schedule, coupled with unpredictable German winter weather, made it essential to use all available modes of transportation. Thousands of tracked and wheeled vehicles, hundreds of aircraft, and tons of equipment and supplies deployed in virtually every way possible—421 barge loads from the primary loading sites at Mannheim and Aschaffenburg; 407 trains with 12,210 railcars; and 204 road convoys totaling 5,100 vehicles. In a deliberate effort to reduce the burden of increased traffic on the *autobahns* and to expedite the move, the large majority of vehicles, both tracked and wheeled, traveled by rail or barge.

Once at the three ports, the equipment was assembled in staging areas and subsequently sent in 154 shiploads to Saudi Arabia. The soldiers flew out of Ramstein, Rhein Main, Nuremberg, and Stuttgart. It took 1,772 buses to move the troops to the airports, 1,008 vehicles and drivers from the 37th Transportation Group to carry the baggage, and 578 aircraft to fly them all to Southwest Asia. As the VII Corps neared completion of the process, Lt. Gen. William S. Flynn, commander of the 21st Theater Army Area Command, noted how much more complex the move was than REFORGER had been. "We usually plan all year long to unload two or three ships in one port," he said. "For DESERT SHIELD we planned for a week and loaded some 115 ships through three ports and moved more than a

corps worth of equipment through the lines of communication."

Movement of the materiel from posts in Germany would not have been possible without the help of the German government. For example, shipping ammunition to Saudi Arabia became a theater team effort with handling units from the *Bundeswehr* and the *Bundesbahn* helping USAREUR personnel. American soldiers and German workers loaded munitions onto 1,276 trucks and 2,300 railcars at four railheads and three ports. During the peak of this operation, more tons of ammunition were moved in one day than the theater normally shipped in one year.

General Franks

While waiting their turn to leave, the heavy divisions continued training and readied their equipment and themselves for war. The VII Corps units, collectively considering themselves to be the U.S. Army's most flexible corps, readjusted their training to concentrate on a more active defense and on offensive operations. Tankers and Bradley crewmen fired crew-level gunnery at the Seventh Army Training Center at Grafenwöhr; maneuvered at the Hohenfels Combat Maneuver Training Center; trained on computer simulators at their home bases; and drilled extensively with chemical protection equipment.

Many soldiers learned to work with new faces. Because of the force reductions in Europe and other factors, Army planners and commanders assembled complete divisions using battalions and brigades borrowed from other divisions and support components that consisted in part of Reserve and National Guard units from the United States and Germany. Corps-level combat support and combat service support organizations also mixed regular and reserve units under a single headquarters. For example, military police from three regular brigades and two reserve battalions deployed under the VII Corps' 14th Military Police Brigade headquarters. The 2d Corps Support Command swelled from its peace-time strength of nearly eight thousand to twenty-five thousand through reserve augmentation.

VII Corps assembly area in Saudi Arabia

The 2d Armored Cavalry Regiment deployed to Southwest Asia first. Within days of President Bush's 8 November announcement, the regiment, which had patrolled West Germany's border with the East for more than forty-five years, had its equipment loaded and was under way. After reaching Saudi Arabia in early December, it began preparations for the arrival of the remaining VII Corps units at the designated tactical assembly areas.

The deployments from Germany demonstrated that rapidly dispatching forward-deployed units into another theater as a contingency force was a major challenge. With no formal doctrine for such massive intertheater movements and hampered by bad weather, dock strikes, and the problems inherent with loading hundreds of tanks and wheeled vehicles onto railcars and ships, the remaining VII Corps units moved less quickly than the 2d ACR. Although all corps equipment reached the European ports of debarkation on time for transshipment, ships did not put all of the VII Corps in Southwest Asia by the target date of 15 January. By that time, 91 percent of the corps' soldiers, with 67 percent of the tracked vehicles and 66 percent of the wheeled vehicles, had arrived in the theater of operations.

Once in the theater of operations, the distribution of unit equipment delayed movement to the tactical assembly areas in the desert.

Commanders had hoped to deploy in tactical formations, but the equipment of individual units frequently became dispersed among a number of ships. Equipment did not arrive in unit sets, complicating the buildup at the Saudi ports and delaying the VII Corps' forward movement. Lack of coordination between sea and air traffic had major effects on port overcrowding, preparations for combat, and force protection. For example, on 9 January, over thirty-five thousand VII Corps soldiers were in staging areas at Saudi ports waiting for their equipment or for ground transportation to move to the field.

MOPP Medics in the Desert
by Gene Snyder

Soldiers flew into airports near Al Jubayl and Ad Dammam. From there, they moved to the seaports, where they stayed in warehouses or tent cities and waited for their equipment. Once their equipment arrived, the soldiers oversaw the loading of their tanks, artillery, and other tracked vehicles onto heavy equipment transporters. Buses carried the officers, soldiers, and baggage. Between the arrival of the first ship, on 5 December 1990, and 18 February 1991, when the last equipment departed the Saudi ports for the VII Corps' tactical assembly areas, the corps launched 900 convoys; moved over 6,000 armored vehicles and thousands of other pieces of equipment over 340 miles into the desert; and sent forward 3,500 containers with critical unit equipment, repair parts, and supplies. By mid-February, a massive armored force was fully in place in Saudi Arabia ready to provide a "mailed fist"—the description used by VII Corps Commander General Franks—for the coalition ground offensive.

Mobilizing the Reserve Components

There was no question that the reserve components would play a key role in the imminent conflict. The all-volunteer force depended heavily on the Army Reserve and Army National Guard for any sustained combat operations. More than one thousand forty reserve and guard units, totaling about one hundred forty thousand soldiers from every state and territory,

supported the Persian Gulf operation. Key elements of combat support and combat service support had been placed in the reserve components in the preceding decades to save money and manpower. The active component units could not go to war without them, and thousands of reservists flowed to the Gulf in September and October. During the November deployments, even more Reserve and Guard units were committed to Saudi Arabia. After President Bush's 8 November order to increase troop levels in Southwest Asia, Secretary Cheney not only announced the deployment of the VII Corps and the 1st Division but also the federalization of three combat "roundout" brigades that were to be the third combat brigade of several active duty divisions—the 48th Infantry Brigade from Georgia, the 155th Armored Brigade from Mississippi, and the 256th Infantry Brigade (Mechanized) from Louisiana—and two field artillery brigades—the 142d from Arkansas and Oklahoma and the 196th from Tennessee, Kentucky, and West Virginia.

Not called up in great numbers for the Vietnam War, the Army's reserve component structure, like the active component, was rejuvenated in the late seventies and early eighties. Many senior leaders of the Army Reserve and National Guard felt they were now prepared to take their part in active ground combat. While the flow of combat support and combat service support assets from the reserves went relatively smoothly, as did their performance in theater, the callup of Reserve and National Guard combat units brought unique training issues of combat preparedness to the forefront. CS and CSS units require considerably less collective and far less maneuver training than combat units. War plans for Europe had envisioned some National Guard combat brigades as roundout units filling out active component divisions. These were scheduled for mobilization and movement to theater to fight side by side with their active component counterparts; but their required "days to train" were notably different. The thirty days of training available to them per year did not, of course, compare with full-time service. For almost twenty years, these selected National Guard units had trained for deployment to Europe to fight as roundouts; and their leadership believed they would be ready within the timelines envisioned. Since European scenarios envisioned escalating "roads to war" lasting months, general deployment plans (GDP) made allowance for National Guard days to train. DESERT STORM requirements for National Guard combat brigades emerged suddenly. The Army leadership created an extensive training regimen for the selected brigades to "certify" them in lieu of the days to train envisioned by the GDP.

On 15 November, three National Guard ground combat brigades received official alert notices to prepare for mobilization. Fifteen days

later, the approximately forty-two hundred officers and men of the 48th and fifty-five hundred soldiers of the 256th reported to active duty; the thirty-seven hundred men of the 155th reported on 7 December. The delay in the 155th's callup provided the local commanders at Fort Hood and the National Training Center (NTC) at Fort Irwin some flexibility in scheduling training. Army planners estimated at that time that it would cost about $120 million to activate all three units.

Predeployment training followed callup. Once alerted, each brigade had thirty days to report to a mobilization station and used that time to assess training, to prepare leaders, to hone individual and small-unit skills, and to conduct basic maintenance and logistics training. Once at the mobilization stations, the reservists were to prepare for overseas movement and undergo more individual and crew training. Finally, each brigade was to separately attend the Army's unique recertification training course at the National Training Center.

Upon federalization, soldiers of the 48th Infantry Brigade gathered at Fort Stewart, Georgia, their mobilization station, by 5 December. Between 5 and 8 December, they prepared for overseas movement. Like the regular units, they underwent physical, psychological, and dental evaluations; received new dogtags and identification cards, if necessary; and completed wills and financial forms. While at Fort Stewart, the soldiers also worked on common training tasks, generally referred to as basic survivability skills, such as weapons qualification, tank systems familiarization, and chemical-warfare training.

On 17 December, the soldiers began loading their equipment onto railroad cars for the cross-country trip to the National Training Center. Personnel movement by air to Fort Irwin began ten days later. The final flight of soldiers arrived in California on 3 January. Movement into the desert training area commenced the following day.

The arrival of the 48th Infantry Brigade posed a major challenge to Brig. Gen. Wesley K. Clark, commander of the National Training Center. Previously, the mission of the desert exercise post was to rigorously test and evaluate the performance of active Army armor and mechanized battalions that rotated through the center every thirty days or so. Now Clark had to address the training needs of an entire brigade; determine its ability to accomplish what the Army termed its mission essential task list, or METL; and then use his NTC cadre to train the components of the 48th to fully meet its required standards in each mission area. Ultimately, the job took fifty-five days, on par with the GDP expectations of the Cold War, and included squad-, platoon-, and company-level training in both live-fire and opposing-force (OPFOR) environments. Training culminated

with a twelve-day continuous exercise for the full brigade. On the advice of senior Army leaders, Clark designed a training sequence that incorporated lessons drawn from the Middle East, such as breaching the obstacles such as those Iraq had erected in Kuwait and defending against Iraqi tactics used in the eight-year war against Iran. The 48th continued its training throughout January and February, completing it on 28 February, the day the cease-fire was declared in Iraq and Kuwait. The unit did not deploy to the Persian Gulf.

The 155th Armored Brigade had a somewhat similar experience. While waiting for the 48th to finish at Fort Irwin, the 155th trained at Fort Hood. Its crews did experience serious difficulties on the gunnery ranges. The commander of the 155th later acknowledged that training at Fort Hood "was an eye opener." The ranges were up to 1.8 miles wider and 2.5 miles deeper than the unit's normal training range at Camp Shelby, Mississippi. After intensive training at Fort Hood, the brigade spent three weeks at the National Training Center.

The training of the 256th Infantry Brigade created new rounds of controversy regarding the use of roundout brigades in combat. The brigade had received M1 Abrams tanks in 1989 and was still in the new-equipment training process when federalized. The soldiers had only recently learned to drive the tanks; and maneuver, gunnery, and maintenance training had not yet been scheduled. In addition, the 256th, like the 155th, had arrived at its mobilization station, Fort Polk, Louisiana, with insufficient chemical protection and communications equipment, partially because of extensive redistribution of equipment to other National Guard units called up earlier. They too did not finish their training in time to deploy to the Gulf.

The two field artillery brigades, the 142d and the 196th, were federalized about the same time as their armor and infantry counterparts. However, both artillery brigades were nearly fully trained in gunnery and, unlike the maneuver brigades, the artillery units did not need most of the movement and synchronization skills best taught at the National Training Center. On 21 November, the 142d Field Artillery Brigade and its three subordinate units—the 1st and 2d Battalions, 142d Field Artillery, from Arkansas and the 1st Battalion, 158th Field Artillery, from Oklahoma—reported to active duty. The brigade arrived at its mobilization station, Fort Sill, Oklahoma, between 23 and 25 November and began focusing on "last minute" chemical-warfare and communications skills.

By 15 December, only twenty-four days after federalization, the 142d Brigade had its equipment at the Port of Galveston, Texas, awaiting transshipment to Southwest Asia. Consequently, the 142d borrowed equipment

to refresh skills while at Fort Sill. On 16 January, the brigade deployed to Saudi Arabia with the 1st and 2d Battalions, 142d Field Artillery, leaving three days later and the 1st Battalion, 158th Field Artillery, the only MLRS battalion in the reserve component, on 2 February.

On 15 December, the 196th Field Artillery Brigade was federalized with three subordinate battalions. On 2 February, it deployed to Saudi Arabia with one of its subordinate units, the 1st Battalion, 201st Field Artillery, from West Virginia. The two other units—the 1st Battalion, 623d Field Artillery, from Kentucky and the 1st Battalion, 181st Field Artillery, from Tennessee—joined the brigade several days later.

The speed of mobilization and high level of training by both mobilized National Guard field artillery brigades were recognized as a considerable reserve component success. It reinforced the message communicated by hundreds of CS and CSS units that the reserve component would serve effectively as part of the total force. The 142d and 196th Brigades, the first reserve artillery units to fight in major combat since the Vietnam War, performed with distinction. The experience of their kindred mobilized National Guard combat maneuver brigades would encourage a rethinking of Cold War days-to-train paradigms as the Army shifted to an expeditionary posture following DESERT STORM.

Planning for the Offensive

By early 1991, the Iraqis occupying Kuwait had created a formidable-looking layered defense of their own, with line infantry entrenched behind protective barriers along the border and backed up by local mobile reserves of regular army tank and mechanized divisions. These local reserves were themselves backed up by the operational reserves of the heavily mechanized *Republican Guard.* Of these Iraqi forces, the line infantry was considered brittle, the regular army heavy divisions reliable, and the *Republican Guard* formidable. Saddam Hussein had opined he could make the cost of liberating Kuwait higher than the coalition would be willing to pay. His specific admonition to Americans was "Yours is a nation that cannot afford to take 10,000 casualties in a single day."

The most direct avenue of approach for any coalition assault on the Iraqi forces in Kuwait would have been an attack into the teeth of Iraqi defenses along the Saudi-Kuwaiti border. The avenues available for such an attack included northward along the coastal road, from the "elbow" of the border northeast along the shortest route directly into Kuwait City, or along the Wadi al Batin in the far west of Kuwait. A more indirect approach would be an envelopment through Iraq, either close in by punching through thinly held defenses immediately west of the Wadi al Batin, or deeper by

Troops training in trenches

turning the Iraqi line altogether at its far west. Both the direct approach and the envelopment could be complemented by amphibious landings on the Kuwaiti coast and airborne or air-assault landings into the enemy's rear.

A factor complicating operational deliberations was the varying roles that the different allies were willing to play. The United States, Great Britain, and France favored attacking Iraq directly. Their Arab allies believed the legitimate mission was to liberate Kuwait and were reluctant to commit their ground forces to a wider war. Over time, a campaign plan emerged that accommodated coalition preferences and borrowed heavily from each of the basic operational choices available. Such compromises are often necessary to hold together temporary alliances, especially if composed of such disparate countries with varying goals.

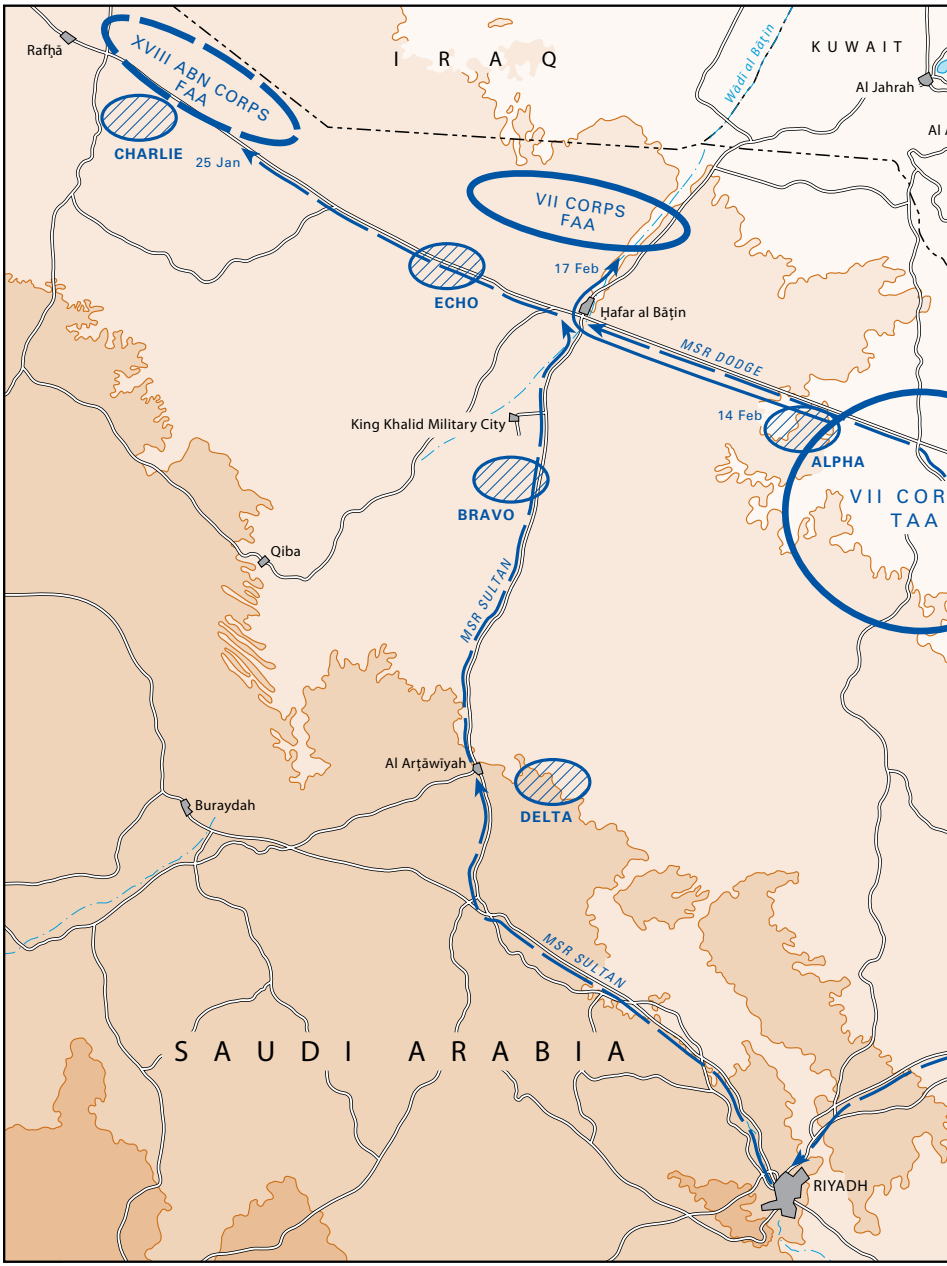
In the planned offensive, fighting would begin with a multiphased air campaign to establish preconditions for ground assault. Coalition air forces would successively smash Iraqi air defenses, secure air supremacy, suppress Iraqi command and control, isolate the Kuwaiti Theater of Operations (KTO), and attrit enemy ground forces in the path of the proposed offensive. The ground assault would begin with a division-size feint up the Wadi al Batin and a supporting attack by the marines reinforced with an Army armored brigade through the elbow of Kuwait. Arab thrusts equivalent in size to that of the marines would

go in on their left and right. A marine amphibious feint would tie Iraqi units into coastal defenses, while an air assault deep into Iraq would isolate the KTO from the Iraqi core around Baghdad. The main attack would be that of the VII Corps, consisting of five heavy divisions, four separate field artillery brigades, an armored cavalry regiment, and a separate aviation brigade. This massive armored thrust would envelop the Iraqi line at its far-west end before turning east to annihilate the *Republican Guard* and then sweep across the northern half of Kuwait. The four-division XVIII Airborne Corps would ride the VII Corps' left flank and continue to isolate the KTO from the west while assisting in closing the trap to the east. With the phased arrival of the VII Corps and the maturation of the plan of attack, the stage was set for DESERT SHIELD to become DESERT STORM. (*Map 3*)

Operation DESERT STORM

Operation DESERT STORM, the liberation of Kuwait, began on 17 January 1991 with massive air strikes and missile bombardments throughout Iraq. The coalition readily achieved air supremacy, and Iraqi command and control does in fact seem to have been virtually paralyzed by the time the ground war began. Logistical degradation wore unevenly, with Iraqi units closest to the border being the most disadvantaged. In part, this was because of the greater distances, every kilometer of which exposed units and their supply lines to coalition attack. This was also because of the lower priority of the line infantry units on the border and an absence of stockpiles of supplies in them comparable to those built up to support mechanized units to their rear as well as the *Republican Guard.* Overall, the coalition air campaign was a great success; but it did far less well against dug-in equipment than against command and control nodes and logistical assets. This situation changed radically when ground fighting forced theretofore hidden Iraqi equipment into movement. Then the synergy achieved by employing ground and air assets in concert demonstrated itself with devastating effect.

One limit on the operational success of the air campaign was the distraction caused by an urgent diversion of air assets to a campaign against Iraqi Scud missiles. Although the Iraqis launched only eighty-six Scuds, these relatively primitive missiles had an impact well beyond their number. Their range enabled them to reach, albeit inaccurately, soft and unprepared targets. Indeed, for Americans the bloodiest single incident of the war occurred when a Scud missile slammed into a barracks in the Dhahran suburb of Al Khobar on 25 February, killing twenty-eight and wounding ninety-seven—almost half from a single unit, the Army


Rafḥā
XVIII ABN CORPS
FAA
CHARLIE
25 Jan
I R A Q
Wādī al Bāṭin
K U W A I T
Al Jahrah
VII CORPS
FAA
17 Feb
ECHO
Ḥafar al Bāṭin
MSR DODGE
King Khalid Military City
14 Feb
ALPHA
BRAVO
Qiba
MSR SULTAN
Al Arṭāwīyah
DELTA
Buraydah
MSR SULTAN
S A U D I A R A B I A
RIYADH

Map 3

PREPARING FOR THE GROUND WAR
January–February 1991
Logbase
MSR
Main Supply Route
TAA
Tactical Assembly Area
FAA
Forward Assembly Area
Unit positions approximate
ELEVATION IN FEET
0
1000
2000
3000 and Above
0
50
100
Miles
KUWAIT
Aḥmadī
Al Wafrah
Ra's al Khafji
Al Mish'āb
PERSIAN GULF
PS
An Nu'ayriyah
BASTOGNE
XVIII ABN CORPS
TAA
MSR MERCEDES
MSR AUDI
Al Jubayl
Ad Dammām
Dhahran
MANAMA
BAHRAIN
Gulf of Bahrain
17 Jan
MSR TOYOTA
Al Hufūf
DOHA
QATAR

Reserve 14th Quartermaster Detachment from Greensburg, Pennsylvania. Perhaps as troubling, Scuds launched at Israel in January threatened to bring that embattled nation into the war, thus wrecking carefully constructed alliances with Arab nations hostile to or suspicious of Israel. Patriot air-defense missiles hastily deployed to Saudi Arabia and Israel at the time were reported to have destroyed a number of incoming Scuds; but this certainly did not deter the Iraqis from employing the missiles. By 24 January, 40 percent of all coalition air sorties were directed against the Scuds—as were significant intelligence, electronic-warfare, and special-operations resources. A vast cat-and-mouse game developed throughout the western Iraqi desert as American intelligence and reconnaissance assets attempted to find Scuds for fighter-bombers to engage while Iraqis attempted to fire their mobile missiles quickly and then scoot out of harm's way. Planes hunting Scuds were not, of course, pursuing other previously agreed-upon targets whose destruction had been preconditions for the ground assault.

The Desert Storm ground operational scheme consisted of a demonstration, a feint, three supporting attacks, an economy-of-force measure to isolate—guard, if you will—the battlefield, and a main attack that featured a penetration early on and in itself was an envelopment. The U.S. Navy demonstrated with the 5th Marine Expeditionary Brigade (MEB) in the Persian Gulf to create the impression that an amphibious assault was imminent. Like many, the Iraqis had been exposed to Marine Corps publicity concerning its ability to wreak havoc across the shore and had believed what they heard. Conscious exposure of the 5th MEB and its preparatory activities on Cable News Network (CNN) and through other media heightened the Iraqi sense of anxiety, as did the visible presence of naval vessels in the Persian Gulf. The Iraqis dug four divisions in along their seaward flank specifically for the purpose of defending against amphibious assault, and as many more divisions were postured in such a manner that they might quickly intercede when the marines came across the beaches. Instead, once the ground war was well under way, the 5th MEB landed behind friendly lines and became an operational reserve for the supporting attack.

The 1st Cavalry Division began its ground war by feinting up the Wadi al Batin, ultimately drawing the attention of five Iraqi divisions. After exchanging shots and doing some damage, the 1st Cavalry backed out of the wadi and swung west to catch up with the VII Corps and serve as its operational reserve.

Demonstrations and feints work best if the deception they are intended to promulgate is plausible and one the enemy is inclined to believe. The Iraqis

Patriot missile battery

had reason to be anxious concerning their 200-plus-kilometer coastline, particularly since important supply routes ran along it. They also fully expected an attack up the Wadi al Batin, recognizing that the prominent terrain feature would facilitate land navigation deep into the heart of their theater. Indeed, when the VII Corps did conduct its attack from the west, it came across mile after mile of vehicle defensive positions aligned precisely along the azimuth described by 240 degrees magnetic—facing in the direction of an attack up the Wadi al Batin. Without much effort, the theater deception plan had taken 20 percent of the Iraqi force structure out of the fight. By the time the Iraqis realized their mistake and attempted to redeploy, it was too late.

Supporting attacks are often timed to deceive an enemy into reacting to them as if they were the main attack. They may draw forces away from the main attack and, perhaps even more important, may lead the enemy to malposition his reserves. Since a supporting attack involves significant resources and some risk, a single supporting attack is generally preferred. Desert Storm featured three, largely because the two divisions of the I Marine Expeditionary Force (I MEF), reinforced

by the M1 tank–equipped Tiger Brigade of the Army's 2d Armored Division and beefed up by additional M1 tanks rotated into their inventory by the Army, had lined up on the most direct approach from the elbow of Kuwait into Kuwait City. Suitable but independent missions were designed for Arab allies to their left and right. These, the largely Saudi and Gulf Coalition Joint Forces Command–East (JFC-E) and the largely Egyptian, Syrian, and Saudi Joint Forces Command–North (JFC-N), were each assigned the mission of conducting a supporting attack as well.

Attack on Khafji

While the VII Corps completed its movement and planning was under way for ground combat operations, the Iraqis surprised the coalition forces by making a dramatic "lunge" down the coast from Kuwait against Saudi and coalition forces near the small town of Khafji in Saudi Arabia. An Iraqi mechanized division penetrated coalition lines on 30 January and briefly occupied Khafji, some seven miles inside the Saudi border. In doing so, it lost 80 percent of its strength and was quickly driven back. Weakened by the forward screen of security—including marines firing TOWs from light armored vehicles—and pummeled from the air, the Iraqis achieved little, lost much, and were chased back across the border by the Saudis in a day and a half. Nevertheless, the unexpected nature of the attack led to soul searching as to the nature and timing of the full coalition ground offensive.

The 100-hour Ground War

On 24 February, when ground operations started in earnest, coalition forces were poised along a line that stretched from the Persian Gulf westward three hundred miles into the desert. The XVIII Airborne Corps, under General Luck, held the left, or western, flank and consisted of the 82d Airborne Division, the 101st Airborne Division (Air Assault), the 24th Infantry Division (Mechanized), the French 6th Light Armored Division, the 3d Armored Cavalry Regiment, and the 12th and 18th Aviation Brigades. The VII Corps was deployed to the right of the XVIII Airborne Corps and consisted of the 1st Infantry Division (Mechanized), the 1st Cavalry Division (Armored), the 1st and 3d Armored Divisions, the British 1st Armoured Division, the 2d Armored Cavalry Regiment, and the 11th Aviation Brigade. These two corps covered about two-thirds of the line occupied by the larger multinational force.

Three commands held the eastern one-third of the front. Joint Forces Command–North, made up of formations from Egypt, Syria,

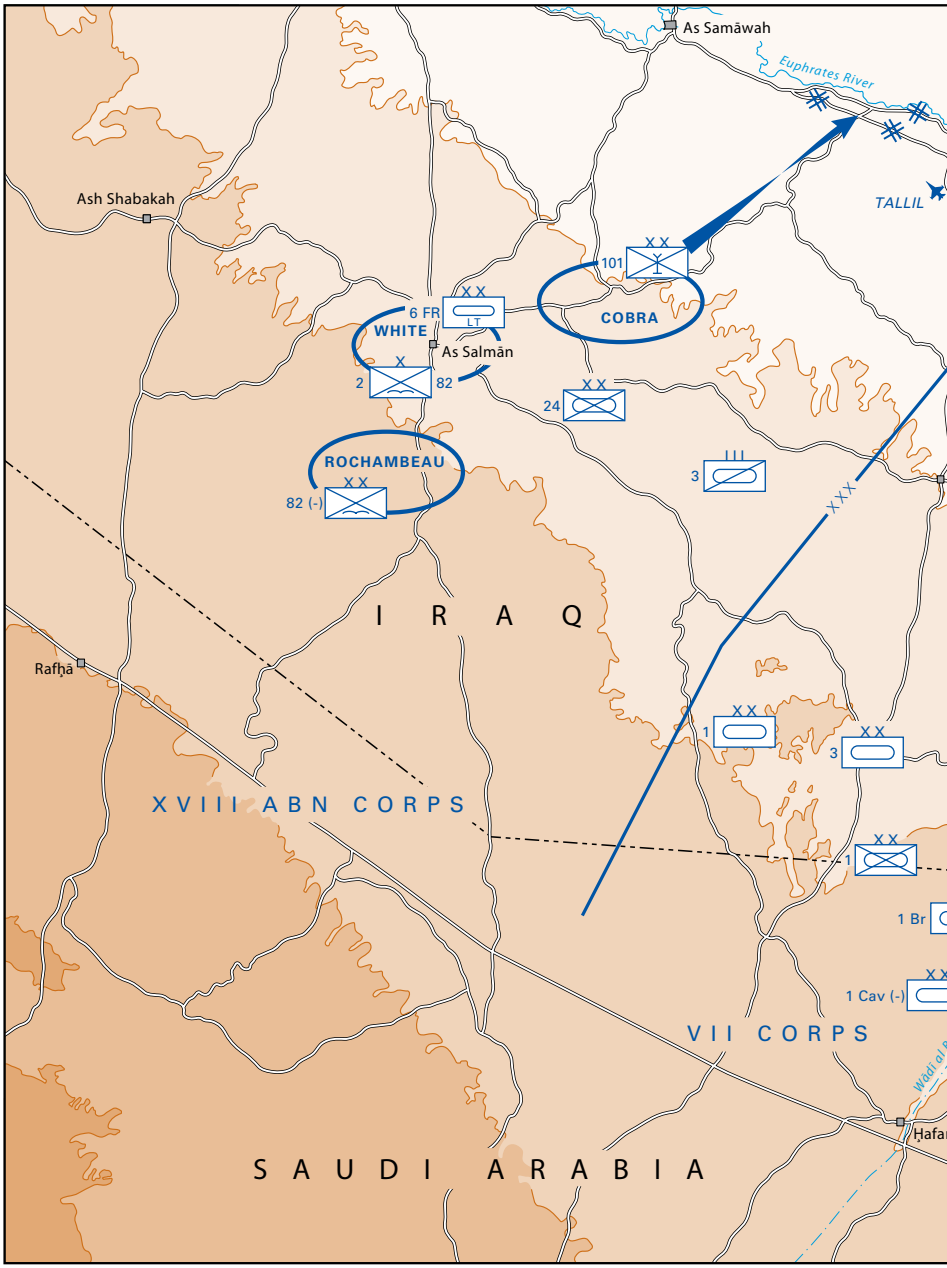
and Saudi Arabia and led by His Royal Highness Lt. Gen. Prince Khalid ibn Sultan, held the portion of the line east of the VII Corps. To the right of these allied forces stood Lt. Gen. Walter E. Boomer's I Marine Expeditionary Force, which had the 1st (Tiger) Brigade of the Army's 2d Armored Division as well as the 1st and 2d Marine Divisions. Joint Forces Command–East on the extreme right, or eastern, flank anchored the line at the Persian Gulf. This organization consisted of units from all six member states of the Gulf Cooperation Council. Like Joint Forces Command–North, it was under General Khalid's command.

Day One: 24 February 1991

After thirty-eight days of continuous air attacks on targets in Iraq and Kuwait, President Bush directed the U.S. Central Command to proceed with the ground offensive. General Schwarzkopf unleashed all-out attacks against Iraqi forces very early on 24 February at three points along the coalition line. In the far west, the French 6th Light Armored Division and the 101st Airborne Division started the massive western envelopment with a ground assault to secure the coalition left flank and an air assault to establish forward support bases deep in Iraqi territory. (*Map 4*) In the approximate center of the coalition line, along the Wadi al Batin, Maj. Gen. John H. Tilelli Jr.'s 1st Cavalry Division attacked north into a concentration of Iraqi divisions whose commanders remained convinced that the coalition would use that and several other wadis as avenues of attack. In the east, two Marine divisions, with the Army's Tiger Brigade and coalition forces under Saudi command, attacked north into Kuwait. Faced with major attacks from three widely separated points, the Iraqi command had to begin its ground defense of Kuwait and the homeland by dispersing its combat power and logistical capability.

The attack began from the XVIII Airborne Corps' sector along the left flank. At 0100, Brig. Gen. Bernard Janvier sent scouts from his French 6th Light Armored Division into Iraq on the extreme western end of General Luck's line. Three hours later, the French main body attacked during a light rain. Their objective was As Salman, little more than a crossroads with an airfield about ninety miles inside Iraq. Reinforced by the 2d Brigade, 82d Airborne Division, the French crossed the border unopposed and raced north into the darkness.

Before the French reached As Salman, they found some very surprised outposts of the Iraqi *45th Infantry Division*. General Janvier immediately sent his missile-armed Gazelle attack helicopters against the dug-in enemy tanks and bunkers. Late intelligence reports had assessed the *45th* as only about 50 percent effective after weeks of intensive


As Samāwah
Euphrates River
Ash Shabakah
TALLIL
101
COBRA
6 FR
WHITE
LT
As Salmān
2
82
24
ROCHAMBEAU
82 (-)
3
XXX
I R A Q
Rafḥā
1
3
XVIII ABN CORPS
1
1 Br
1 Cav (-)
VII CORPS
Wādī al
Ḥafar
S A U D I A R A B I A

Map 4

GROUND WAR
Situation 24 February 1991
Roadblocks
Unit positions approximate
ELEVATION IN FEET
0
500
1000
1500
2000 and Above
0
40
Miles
An Nāṣirīyah
Ḥawr al Ḥammār
Tigris River
Al Baṣrah
I R A N
Shatt al Arab
Khorramshahr
Abadan
JALIBAH
Az Zubayr
Ar Rumaylah oil fields
Safwān
Al Buṣayyah
Umm Qaṣr
Ar Rawḍatayn
Būbiyān
K U W A I T
KUWAIT
As Sālimīyah
Al Jahrah
Al Aḥmadī
P E R S I A N G U L F
III
2
XX
3 EG
20 SA
X
2 Mar
XX
XXX
1
2
1 Mar
XX
10 SA
X
ARCENT
XXXX
JOINT FORCES COMMAND
9 SY
XX
4 EG
XX
Ra's al Khafjī
10 SA (-)
X
r al Bāṭin
J F C - N
M A R C E N T
J F C - E

coalition air attacks and psychological operations, an assessment soon confirmed by its feeble resistance. After a brief battle that cost them two dead and twenty-five wounded, the French held twenty-five hundred prisoners and controlled the enemy division area, now renamed ROCHAMBEAU. Janvier pushed his troops on to As Salman, which they took without opposition and designated Objective WHITE. The French consolidated WHITE and waited for an Iraqi counterattack that never came. The coalition's left flank was secure. Meanwhile, Maj. Gen. James H. Johnson Jr.'s 82d Airborne Division carried out a mission that belied its airborne designation. While the division's 2d Brigade moved with the French, its two remaining brigades, the 1st and 3d, trailed the advance and cleared a two-lane highway into southern Iraq as the main supply route for the troops, equipment, and supplies supporting the advance north.

The XVIII Airborne Corps' main attack, led by Maj. Gen. J. H. Binford Peay III's 101st Airborne Division, was scheduled for 0500; but fog over the objective forced a delay. While the weather posed problems for aviation and ground units, it did not abate direct-support fire missions. Corps artillery and rocket launchers poured fire on objectives and approach routes. At 0705, Peay received the word to attack. Screened by Apache and Cobra attack helicopters, sixty Black Hawk and forty Chinook choppers of the XVIII Airborne Corps' 18th Aviation Brigade began lifting the 1st Brigade into Iraq. The initial objective was Forward Operating Base (FOB) COBRA, a point some one hundred ten miles into Iraq. A total of three hundred helicopters ferried the 101st's troops and equipment into the objective area in one of the largest helicopter-borne operations in military history.

Wherever Peay's troops went during those initial attacks, they achieved tactical surprise over the scattered and disorganized foe. By midafternoon, they had a fast-growing group of stunned prisoners in custody and were expanding FOB COBRA into a major refueling point twenty miles across to support subsequent operations. Heavy CH–47 Chinook helicopters lifted artillery pieces and other weapons into COBRA, as well as fueling equipment and building materials to create a major base. From the Saudi border, XVIII Corps support command units drove seven hundred high-speed support vehicles north with the fuel, ammunition, and supplies to support a drive to the Euphrates River.

As soon as the 101st secured COBRA and refueled the choppers, it continued its jump north. By the evening of the twenty-fourth, its units had cut Highway 8, about one hundred seventy miles into Iraq. Peay's troops had now closed the first of several roads connecting Iraqi forces in Kuwait with Baghdad. Spearhead units were advancing much faster

than expected. To keep the momentum of the corps intact, General Luck gave subordinate commanders wider freedom of movement. He became their logistics manager, adding assets at key times and places to maintain the advance. But speed caused problems for combat support elements. Tanks that could move up to fifty miles per hour were moving outside the support fans of artillery batteries that could displace at only twenty-five to thirty miles per hour. Luck responded by leapfrogging his artillery battalions and supply elements, a solution that cut down on fire support since only half the pieces could fire while the other half raced forward. As long as Iraqi opposition remained weak, the risk was acceptable.

In the XVIII Corps' mission of envelopment, the 24th Infantry Division had the central role of blocking the Euphrates River valley to prevent the northward escape of Iraqi forces in Kuwait and then attacking east in coordination with the VII Corps to defeat the armor-heavy divisions of the *Republican Guard Forces Command*. Maj. Gen. Barry R. McCaffrey's division had come to the theater better prepared for combat in the desert than any other in Army Central Command. Designated a Rapid Deployment Force division a decade earlier, the 24th combined the usual mechanized infantry division components—an aviation brigade and three ground maneuver brigades plus combat support units—with extensive desert training and desert-oriented medical and water-purification equipment.

When the attack began, the 24th was as large as a World War I division, with twenty-five thousand soldiers in thirty-four battalions. Its 241 Abrams tanks and 221 Bradley fighting vehicles provided the necessary armor punch to penetrate *Republican Guard* divisions. But with ninety-four helicopters and over sixty-five hundred wheeled and thirteen hundred other tracked vehicles—including seventy-two self-propelled artillery pieces and nine multiple rocket launchers—the division had given away nothing in mobility and firepower.

General McCaffrey began his division attack at 1500 with three subordinate units on line: the 197th Infantry Brigade on the left, the 1st Infantry Brigade in the center, and the 2d Infantry Brigade on the right. Six hours before the main attack, the 2d Squadron, 4th Cavalry, had pushed across the border and scouted north along the two combat trails toward the Iraqi lines. The reconnaissance turned up little evidence of the enemy, and the rapid progress of the division verified the scouts' reports. McCaffrey's brigades pushed about fifty miles into Iraq, virtually at will, and reached a position a little short of FOB Cobra in the 101st Airborne Division's sector.

M1A1 Abrams tank

In their movement across the line of departure and whenever not engaging enemy forces, battalions of the 24th Infantry Division generally moved in "battle box" formation. With a cavalry troop screening five to ten miles to the front, four companies, or multiplatoon task forces, dispersed to form corner positions. Heavier units of the battalion, whether composed of tanks or Bradleys, occupied one or both of the front corners. One company or smaller units advanced outside the box to provide flank security. The battalion commander placed inside the box the vehicles carrying ammunition, fuel, and water needed to continue the advance in jumps of about forty miles. The box covered a front of about four to five miles and extended about fifteen to twenty miles front to rear.

Following a screen of cavalry and a spearhead of the 1st and 4th Battalions, 64th Armor, McCaffrey's division continued north, maintaining a speed of twenty-five to thirty miles per hour. In the flat terrain, the 24th kept on course with the aid of long-range electronic navigation, a satellite-reading triangulation system in use for years before Desert Storm. Night did not stop the division, thanks to more recently developed image-enhancement scopes and goggles and infrared- and thermal-imaging systems sensitive to personnel and vehicle heat signatures. Around midnight, McCaffrey stopped his brigades on a line about seventy-five

miles inside Iraq. Like the rest of the XVIII Airborne Corps, the 24th Division had established positions deep inside Iraq against surprisingly light opposition.

The VII Corps, consisting mainly of the 1st Infantry Division, the 1st and 3d Armored Divisions, the 1st Cavalry Division, the British 1st Armoured Division and the 2d Armored Cavalry Regiment, had the mission of finding, attacking, and destroying the heart of Saddam Hussein's ground forces, the armor-heavy *Republican Guard*. In preparation for that, Central Command had built up General Franks' organization until it resembled a mini army more than a traditional corps. The "Jayhawk" corps of World War II fame numbered more than one hundred forty-two thousand soldiers compared with Luck's one hundred sixteen thousand. To keep his troops moving and fighting, General Franks had more than forty-eight thousand five hundred vehicles and aircraft, including 1,587 tanks, 1,502 Bradleys and armored personnel carriers, 669 artillery pieces, and 223 attack helicopters. To provide a sense of the logistical challenge to keep such a phalanx supplied, for every day of offensive operations the corps needed 5.6 million gallons of fuel, 3.3 million gallons of water, and 6,075 tons of ammunition.

The plan of advance for the VII Corps paralleled that of Luck's corps to the west: a thrust north into Iraq, a massive turn to the right, and then an assault to the east into Kuwait. Because Franks' sector lay east of Luck's—in effect closer to the hub of the envelopment wheel—the VII Corps had to cover less distance than the XVIII Airborne Corps. But intelligence reports and probing attacks into Iraqi territory in mid-February had shown that the VII Corps faced a denser concentration of enemy units than did the XVIII Corps farther west. Once the turn to the right was complete, both corps would coordinate their attacks east so as to trap *Republican Guard* divisions between them and then press the offensive along their wide path of advance until Iraq's elite units either surrendered, retreated, or were destroyed.

General Schwarzkopf originally had planned the VII Corps attack for 25 February, but the XVIII Airborne Corps advanced so quickly against such weak opposition that he moved up his armor attack by fourteen hours. Within his own sector, Franks planned a feint and envelopment much like the larger overall strategy. On the VII Corps' right, along the Wadi al Batin, the 1st Cavalry Division would make a strong but limited attack directly to its front. While Iraqi units reinforced against the 1st Cavalry, Franks would send two divisions through sand berms and mines on the corps' right and two more divisions on an "end around" into Iraq on the corps' left.

On 24 February, the 1st Cavalry Division crossed the line of departure and hit the Iraqi *27th Infantry Division.* That was not their first meeting. General Tilelli's division had actually been probing the Iraqi defenses for some time. As these limited thrusts continued in the area that became known as the Ruqi Pocket, Tilelli's men found and destroyed elements of five Iraqi divisions, evidence that the 1st succeeded in its theater reserve mission of drawing and holding enemy units.

The main VII Corps attack, coming from farther west, caught the defenders by surprise. At 0538, Franks sent Maj. Gen. Thomas G. Rhame's 1st Infantry Division forward. The division plowed through the berms and hit trenches full of enemy soldiers. Once astride the trench lines, it turned the plow blades of its tanks and combat earthmovers along the Iraqi defenses and, covered by fire from Bradley crews, began to fill them in. The 1st Division neutralized ten miles of Iraqi lines this way, killing or capturing all of the defenders without losing one soldier, and proceeded to cut twenty-four safe lanes through the minefields for passage of the British 1st Armoured Division. On the far left of the corps sector and at the same time, the 2d ACR swept around the Iraqi obstacles and led 1st and 3d Armored Divisions into enemy territory.

The two armored units moved rapidly toward their objective, the town of Al Busayyah, site of a major logistical base about eighty miles into Iraq. The 1st Armored Division on the left along the XVIII Airborne Corps' boundary and the 3d Armored Division on its right moved in compressed wedges fifteen miles wide and thirty miles deep. Screened by cavalry squadrons, the divisions deployed tank brigades in huge triangles, with artillery battalions between flank brigades and support elements in nearly one thousand vehicles trailing the artillery.

Badly mauled by air attacks before the ground operation and surprised by Franks' envelopment, Iraqi forces offered little resistance. The 1st Infantry Division destroyed two T–55 tanks and five armored personnel carriers in the first hour and began taking prisoners immediately. Farther west, the 1st and 3d Armored Divisions quickly overran several small infantry and armored outposts. Concerned that his two armored units were too dispersed from the 1st Infantry Division for mutual reinforcement, Franks halted the advance with both armored elements on the left only twenty miles into Iraq. For the day, the VII Corps rounded up about thirteen hundred of the enemy.

In the east, the U.S. Marine Central Command (MARCENT) began its attack at 0400. General Boomer's I MEF aimed directly at its ultimate objective, Kuwait City. The Tiger Brigade, 2d Armored Division, and the 1st and 2d Marine Divisions did not have as far to go to reach their

The 1st Armored Division pushes north.

objective as did Army units to the west—Kuwait City lay between thirty-five and fifty miles to the northeast, depending on the border-crossing point—but they faced more elaborate defense lines and a tighter enemy concentration. The 1st Marine Division led from a position in the vicinity of the elbow of the southern Kuwaiti border and immediately began breaching berms and rows of antitank and antipersonnel mines and several lines of concertina wire. The unit did not have Abrams tanks, but its M60A3 Patton tanks and TOW-equipped high mobility multipurpose wheeled vehicles, supported by heavy artillery, proved sufficient against Iraqi T–55 and T–62 tanks. After the marines destroyed two tanks in only a few minutes, three thousand Iraqis surrendered.

At 0530, the 2d Marine Division, with Col. John B. Sylvester's Tiger Brigade on its west flank, attacked in the western part of the MARCENT sector. The Army armored brigade, equipped with M1A1 Abrams tanks, gave the marines enough firepower to defeat any armored units the Iraqis put between Boomer's force and Kuwait City. The first opposition came from a berm line and two mine belts. Marine M60A1 tanks with bulldozer blades quickly breached the berm, but the mine belts required more time and sophisticated equipment. Marine engineers used mine-clearing line charges and M60A1 tanks with forked mine plows to clear six lanes in the division center, between the Umm Qudayr and Al Wafrah oil fields. By late afternoon, the Tiger Brigade had passed the mine belts. As soon as other units passed through the safe lanes, the 2d Marine Division

repositioned to continue the advance north, with regiments on the right and in the center and the Tiger Brigade on the left tying in with the coalition forces.

Moving ahead a short distance to a major east-west highway by the end of the day, the 2d Marine Division captured intact the Iraqi *9th Tank Battalion* with thirty-five T–55 tanks and more than five thousand men. Already, on the first day of ground operations, the number of captives had become a problem in the marine sector. After a fight for Al Jaber Airfield, during which the 1st Marine Division destroyed twenty-one tanks, another three thousand prisoners were seized. By the end of the day, the I Marine Expeditionary Force had worked its way about twenty miles into Kuwait and taken nearly ten thousand Iraqi prisoners.

Day Two: 25 February 1991

On 25 February, XVIII Airborne Corps units continued their drive into Iraq. The 82d Airborne Division began its first sustained movement of the war; although, to the disappointment of General Johnson and his troops, the division had to stay on the ground and rode to its objectives in trucks. The 82d followed the French 6th Light Armored Division north to As Salman. Meanwhile, the 101st Airborne Division sent its 3d Brigade out of objective COBRA on an air-assault jump north to occupy an observation and blocking position on the south bank of the Euphrates River just west of the town of An Nasinyah. (*Map 5*)

In the early morning darkness of the same day, General McCaffrey put his 24th Infantry Division in motion toward its first major objective. Following close air support and artillery fires, the division's 197th Brigade attacked at 0300 toward Objective BROWN in the western part of the division sector. Instead of determined opposition, the brigade found only a handful of hungry Iraqis dazed by the heavy artillery preparation. By 0700, the 197th had cleared the area around BROWN and established blocking positions to the east and west along a trail, which was then being improved to serve as the Corps main supply route. Six hours later, the division's 2d Brigade followed its own artillery fires and attacked Objective GREY on the right, encountering no enemy fire and taking three hundred prisoners. After clearing the area, the brigade set blocking positions to the east.

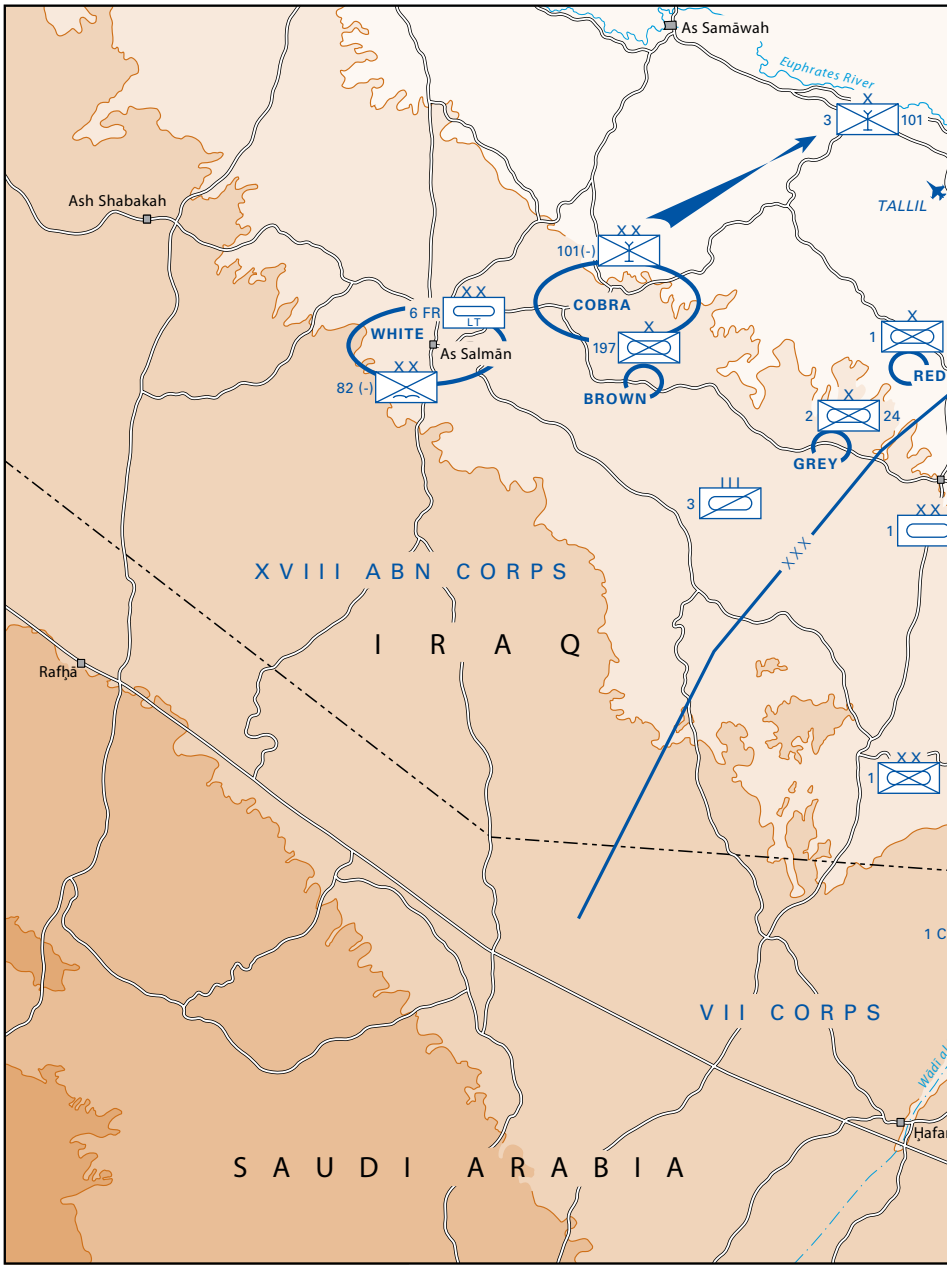
At 1450, with the 2d Brigade on Objective GREY, the 1st Brigade moved northwest into the center of the division sector and then angled to the division right, attacking Objective RED directly north of GREY. Seven hours later, the brigade had cleared the RED area, set blocking positions to the east and north, and processed two hundred captives.

To the surprise of all, the 24th Division had taken three major objectives and hundreds of men in only nineteen hours while meeting weak resistance from isolated pockets of Iraqi soldiers from the *26th* and *35th Infantry Divisions*. By the end of the day, the XVIII Airborne Corps had advanced in all division sectors to take important objectives, establish a functioning forward operating base, place brigade-size blocking forces in the Euphrates River valley, and capture thousands of prisoners of war—at a cost of two killed in action and two missing.

In the VII Corps, General Franks faced two problems on this second day of ground operations. The British 1st Armoured Division, one of the units he had to have when he met the *Republican Guard* armored force, had begun passage of the mine breach cut by the 1st Infantry Division at 1200 on the twenty-fifth but would not be completely through for several hours, possibly not until the next day. With the 1st and 3d Armored Divisions along the western edge of the corps sector and the British not yet inside Iraq, the 1st Infantry and 1st Cavalry Divisions lay vulnerable to an armored counterattack.

A more troubling situation had developed along the VII Corps' right flank. The commitment of some coalition contingents had concerned General Schwarzkopf months before the start of the ground war. Worried about postwar relations with Arab neighbors, some Arab members of the coalition had expressed reluctance to attack Iraq or even enter Kuwait. If enough of their forces sat out the ground phase of the war, the entire mission of liberating Kuwait might fail. To prevent such a disaster, Schwarzkopf had put the 1st Cavalry Division next to coalition units and gave the division the limited mission of conducting holding attacks and standing by to reinforce allies on the other side of the Wadi al Batin. If Joint Forces Command–North performed well, the division would be moved from the corps boundary and given an attack mission. Action on the first day of the ground war bore out the wisdom of holding the unit ready to reinforce allies to the east. Syrian and Egyptian forces had not moved forward, and a huge gap had opened in the coalition line. U.S. Central Command notified the 2d ACR to prepare to assist the 1st Cavalry Division in taking over the advance east of the Wadi al Batin.

But Franks could not freeze his advance indefinitely. The VII Corps had to press the attack where possible, and that meant on the left flank. Maj. Gen. Ronald H. Griffith's 1st Armored Division and Maj. Gen. Paul E. Funk's 3d Armored Division resumed their advance north shortly after daybreak. Griffith's troops made contact first, with outpost units of the Iraqi *26th Infantry Division*. With the 1st Armored Division still about thirty-five to forty miles away from its objective, Griffith's troops


As Samāwah
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XVIII ABN CORPS
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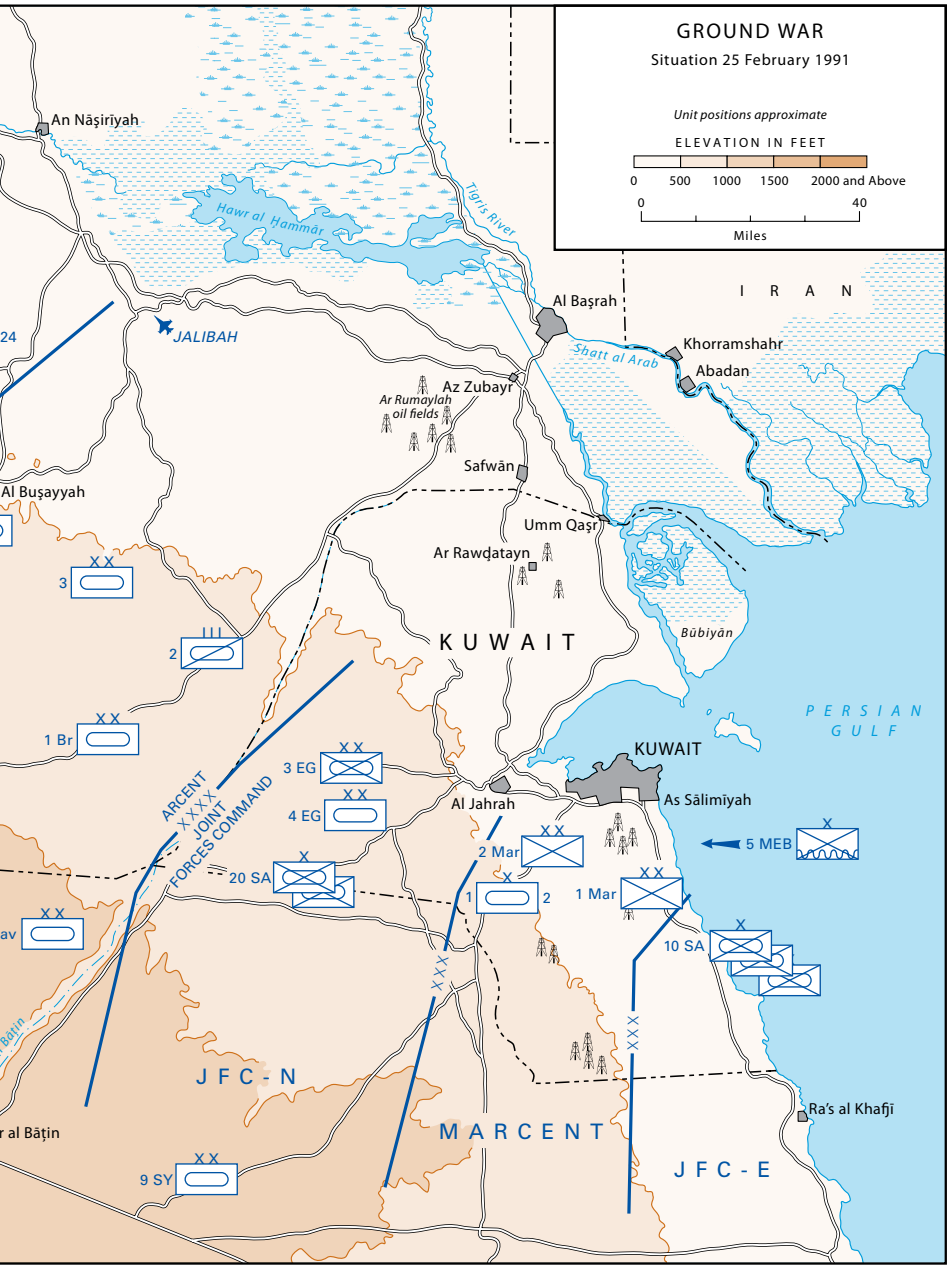
Map 5


GROUND WAR
Situation 25 February 1991
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Miles
An Nāṣirīyah
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Shatt al Arab
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K U W A I T
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coordinated close air support strikes followed by attack helicopter runs on enemy targets. As the division closed to about ten to fifteen miles, artillery, rocket launchers, and tactical missile batteries delivered preparatory fires. As division lead elements came into visual range, psychological operations teams broadcast surrender appeals. If the Iraqis fired on the approaching Americans, the attackers repeated artillery, rocket, and missile strikes. In the experience of the 1st Armored Division, that sequence was enough to gain the surrender of most Iraqi Army units on a given objective. Only once did the Iraqis mount an attack after a broadcast; and in that instance, a 1st Armored Division brigade destroyed forty to fifty tanks and armored personnel carriers in ten minutes at a range of 1.2 miles.

By the late morning of 25 February, Joint Forces Command–North had made enough progress to allow the VII Corps and Marine Central Command on the flanks to resume their advance. That afternoon and night in the 1st Infantry Division sector, the Americans expanded their mine breach and captured two enemy brigade command posts and the *26th Infantry Division* command post with a brigadier general and complete staff. Behind them, the British 1st Armoured Division made good progress through the mine breach and prepared to turn right and attack the Iraqi *52d Armored Division.*

Approaching Al Busayyah in early afternoon, the 1st Armored Division directed close air support and attack helicopter sorties on an Iraqi brigade position, destroying artillery pieces, several vehicles, and taking nearly three hundred prisoners. That night, the 2d ACR and 3d Armored Division oriented east and encountered isolated enemy units under conditions of high winds and heavy rains.

With the coalition advance well under way all along the line, a U.S. Navy amphibious force made its final effort to convince the Iraqis that CENTCOM would launch a major amphibious assault into Kuwait. Beginning late on 24 February and continuing over the following two days, the Navy landed the 7,500-man 5th Marine Expeditionary Brigade at Al Mish'ab, Saudi Arabia, about twenty-eight miles south of the border with Kuwait. Once ashore, the 5th became the reserve for Joint Forces Command–East. Later investigation showed that the presence of the amphibious force in Persian Gulf waters before the ground war had forced the Iraqi command to hold in Kuwait as many as four divisions to meet an amphibious assault that never materialized.

At daybreak on 25 February, Iraqi units made their first counterattack in the Marine sector, hitting the 2d Marine Division right and center. While Marine regiments fought off an effort that they named the Reveille

DESERT STORM, 101st Style *by Peter Varisano*

Counterattack, troops of the Tiger Brigade raced north on the left. In the morning, the brigade cleared one bunker complex and destroyed seven artillery pieces and several armored personnel carriers. After a midday halt, the brigade cleared another bunker complex and captured the Iraqi 116th Brigade commander among a total of eleven hundred prisoners of war for the day. In the center of the corps sector, the marines overran an agricultural production facility, called the Ice Cube Tray because of its appearance to aerial observers.

By the end of operations on 25 February, General Schwarzkopf for the second straight day had reports of significant gains in all sectors. But enemy forces could still inflict damage and in surprising ways and places. The Iraqis continued their puzzling policy of setting oil fires—well over two hundred now blazed out of control—as well as their strategy of punishing Saudi Arabia and provoking Israel by Scud attacks. They launched four Scuds, one of which, as mentioned earlier, slammed into a building filled with sleeping American troops in Dhahran and caused the highest one-day casualty total for American forces in a war of surprisingly low losses to date.

Day Three: 26 February 1991

On 26 February, the XVIII Airborne Corps units turned their attack northeast and entered the Euphrates River valley. With the French and the 101st and 82d Airborne Divisions protecting the west and north flanks, the 24th Infantry Division spearheaded Luck's attack into the valley. The first obstacle was the weather. An out-of-season *shamal* (extreme

windstorm) in the objective area kicked up thick clouds of swirling dust that promised to give thermal-imaging equipment a rigorous field test throughout the day.

After refueling in the morning, all three brigades of the 24th Division moved out at 1400 toward the Iraqi airfields at Jabbah and Tallil. (*Map 6*) The 1st Brigade went north, then east about forty miles to take a battle position in the northeast corner of the corps sector; the 2d Brigade moved thirty-five miles north to a position along the eastern corps boundary and then continued its advance another twenty-five miles until it was only fifteen miles south of Jahbah; and the 197th Brigade went northeast about sixty miles to a position just south of Tallil. Meanwhile, the 3d ACR screened to the east on the division's south flank.

During these attacks, the 24th encountered its heaviest resistance of the war. The Iraqi *47th* and *49th Infantry Divisions*, the *Nebuchadnezzar Division* of the *Republican Guard,* and the *26th Commando Brigade* took heavy fire but stood and fought. The 1st Brigade took direct tank and artillery fire for four hours. For the first time in the advance, the terrain gave the enemy a clear advantage. McCaffrey's troops found Iraqi artillery and automatic weapons dug into rocky escarpments reminiscent of the Japanese positions in coral outcroppings on Pacific islands that an earlier generation of 24th Infantry Division soldiers had faced. But Iraqi troops were not as tenacious in defense as the Japanese had been, and the 24th had much better weapons than its predecessor. American artillery crews located enemy batteries with their Firefinder radars and returned between three and six rounds for every round of incoming. With that advantage, American gunners destroyed six full Iraqi artillery battalions.

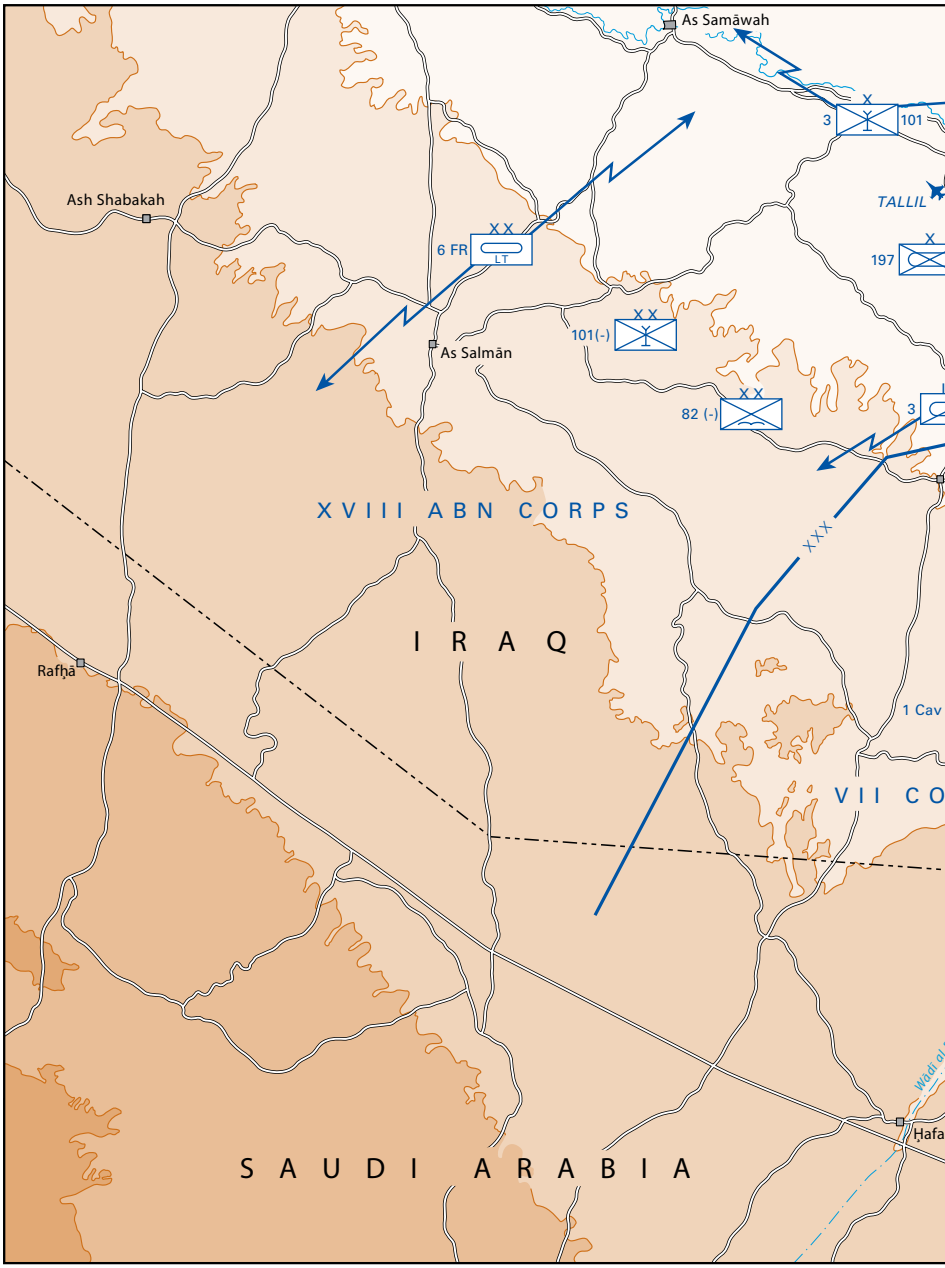
In the dust storm and darkness, American technological advantages became clearer still. Thermal-imaging systems in tanks, Bradleys, and attack helicopters worked so well that crews could spot and hit Iraqi tanks at up to four thousand meters (two-and-a-half miles) before the Iraqis even saw them. American tank crews were at first surprised at their one-sided success then exulted in the curious result of their accurate fire: the "pop-top" phenomenon. Because Soviet-made tank turrets were held in place by gravity, a killing hit blew the turret completely off. As the battle wore on, the desert floor became littered with pop-tops. A combination of superior weaponry and technique—precise Abrams tank and Apache helicopter gunnery, 25-mm. automatic cannon fire from the Bradleys, overwhelming artillery and rocket direct-support and counterbattery fire, and air superiority—took the 24th Division through enemy armor and artillery units in those "valley battles" and brought Iraqi troops out of their bunkers and vehicles in droves with hands raised in surrender.

Multiple-launch rocket system (MLRS) battery

After a hard but victorious day and night of fighting, the 2d Brigade took its objectives by 2000 on the twenty-sixth. The other two brigades accomplished their missions by dawn.

In the VII Corps' sector on 26 February, the 1st Armored Division fired heavy artillery and rocket preparatory fires into Al Busayyah shortly after dawn and by noon had advanced through a sandstorm to overrun the small town. In the process, General Griffith's troops completed the destruction of the Iraqi *26th Infantry Division* and, once in the objective area, discovered they had taken the enemy *VII Corps* headquarters and a corps logistical base as well. More than one hundred tons of munitions were captured and large numbers of tanks and other vehicles destroyed. The 1st Armored Division pressed on, turning northeast and hitting the *Tawakalna Division* of the *Republican Guard.* Late that night, Griffith mounted a night assault on the elite enemy unit and, in fighting that continued the next day, killed thirty to thirty-five tanks and ten to fifteen other vehicles.

In the 3d Armored Division sector, General Funk's men attacked to the east of Al Busayyah. Through the evening, the division fought its toughest battles in defeating elements of the *Tawakalna Division*. The VII Corps reached the wheeling point in its advance and began to pivot to the east. From here, General Franks' divisions began the main assault on *Republican Guard* strongholds. Meanwhile, the 1st Infantry Division was ordered north from its position inside the mine-belt breach. As the attack east began, the VII Corps presented in the northern part of its sector a front of three divisions and one regiment: the 1st Armored Division on the left (north) and the 3d Armored Division, the 2d ACR, and the 1st Infantry Division on the right (south). Farther south, the British 1st


As Samāwah
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LT
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197
XVIII ABN CORPS
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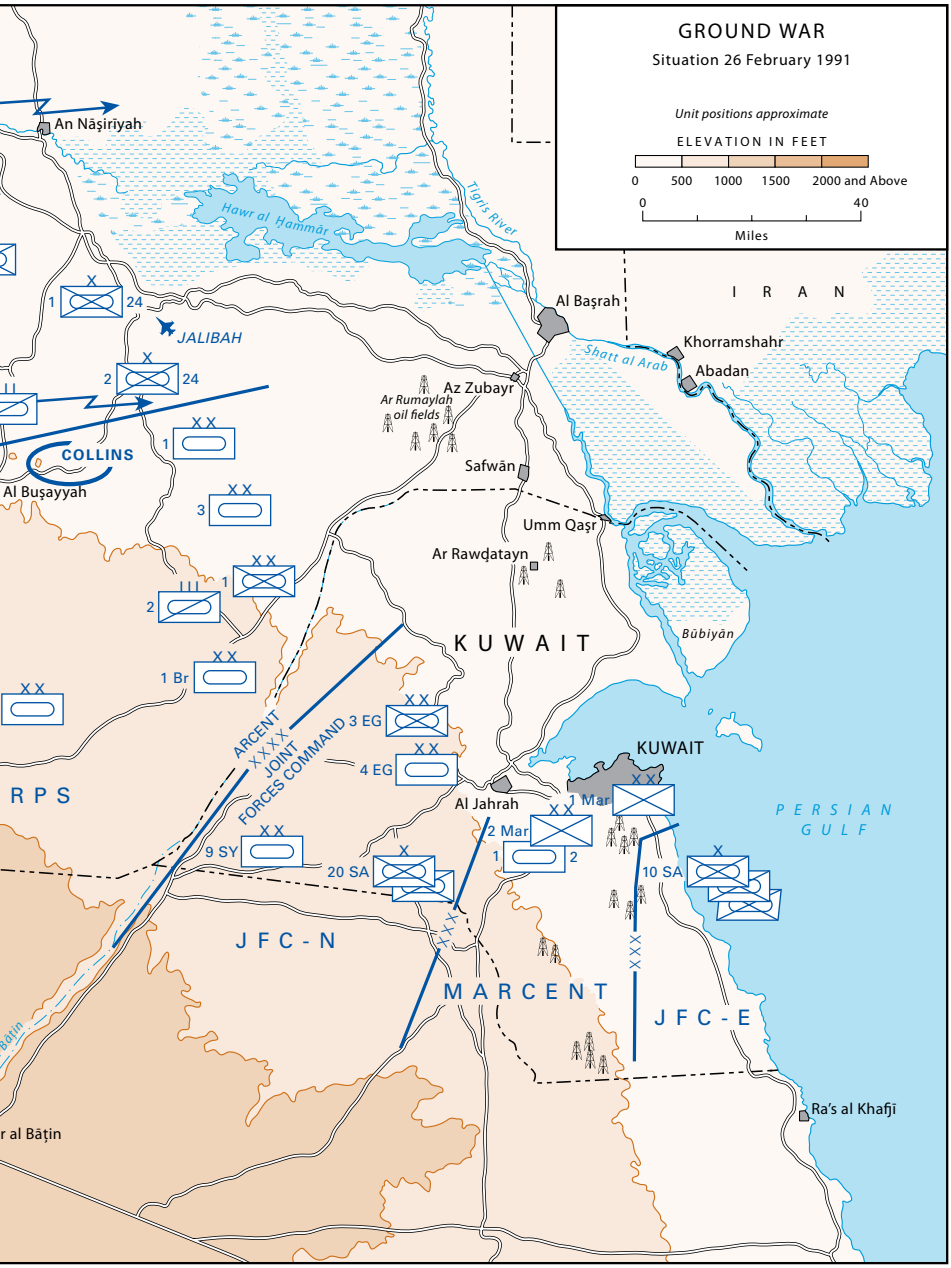
Map 6


GROUND WAR
Situation 26 February 1991
Unit positions approximate
ELEVATION IN FEET
0
500
1000
1500
2000 and Above
0
40
Miles
An Nāṣirīyah
Hawr al Hammār
Tigris River
Al Baṣrah
I R A N
Khorramshahr
Shatt al Arab
Abadan
JALIBAH
Az Zubayr
Ar Rumaylah oil fields
COLLINS
Safwān
Al Buṣayyah
Umm Qaṣr
Ar Rawḍatayn
K U W A I T
Būbiyān
1 Br
ARCENT
XXXX
JOINT FORCES COMMAND
3 EG
4 EG
KUWAIT
Al Jahrah
1 Mar
2 Mar
9 SY
20 SA
10 SA
P E R S I A N
G U L F
J F C - N
M A R C E N T
J F C - E
Ra's al Khafjī
r al Bāṭin

Armoured Division, with over seven thousand vehicles, cleared the mine breach at 0200 and deployed to advance on a separate axis toward its objective and on to the corps boundary. From ARCENT headquarters came word that the VII Corps would soon be even stronger. At 0930, the ARCENT commander, Lt. Gen. John J. Yeosock, released the 1st Cavalry Division from its theater reserve role and gave it to the VII Corps. Now the Corps had an additional, large, and heavily armored exploitation force to pursue the Iraqis wherever they turned.

In the early afternoon, the 2d ACR advanced east of Objective COLLINS in the middle of the shamal. The regiment, screening in front of 1st Infantry Division, had just arrived from the mine belt along the Saudi border that it had breached during the first day of the ground war. The cavalrymen had only a general idea of the enemy's position. The Iraqis had long expected the American attack to come from the south and east and were now frantically turning hundreds of tanks, towed artillery pieces, and other vehicles to meet the onslaught from the west. On the Iraqi side, unit locations were changing almost by the minute. As the cavalry troopers neared the 69 Easting, a north-south map line, one of the cavalry troops received fire from a building. The soldiers returned fire and continued east. More enemy fire came in during the next two hours and was immediately returned. Just after 1600, the cavalrymen found T–72 tanks in prepared positions at 73 Easting. The regiment used its thermal-imaging equipment to deadly advantage, killing every tank that appeared in its sights. But this was a different kind of battle than Americans had fought so far. The destruction of the first tanks did not signal the surrender of hundreds of Iraqi soldiers. The tanks kept coming and fighting.

The reason for the unusually determined enemy fire and large number of tanks soon became clear. The cavalrymen had found two Iraqi divisions willing to put up a hard fight: the *12th Armored Division* and the *Tawakalna Division*. Col. Leonard D. Holder Jr.'s regiment found a seam between the two divisions and for a time became the only American unit obviously outnumbered and outgunned during the ground campaign. But, as the 24th Division had found in its valley battles, thermal-imaging equipment cut through the dust storm to give gunners a long-range view of enemy vehicles and grant the fatal first-shot advantage. For four hours, Holder's men killed tanks and armored personnel carriers while attack helicopters knocked out artillery batteries. When the battle of 73 Easting ended at 1715, the 2d ACR had destroyed at least twenty-nine tanks and twenty-four armored personnel carriers, as well as numerous other vehicles and bunkers, and had taken thirteen hundred prisoners. That night, the 1st Infantry Division passed through Holder's cavalrymen and continued the attack east.

Night Attack *by Mario Acevedo*

Farther to the south, the British 1st Armoured Division attacked eastward through the *48th Infantry* and *52d Armored Divisions* and remnants of other Iraqi units trying to withdraw north. This attack marked the start of nearly two days of continuous combat for the British, some of the toughest fighting of the war. In the largest of this series of running battles, the British destroyed forty tanks and captured an Iraqi division commander.

To the east, the Marine advance resumed on the twenty-sixth with the two Marine divisions diverging from their parallel course of the first two days. The 2d Marine Division and the Army's Tiger Brigade, the 1st Brigade of the 2d Armored Division, continued driving directly north while the 1st Marine Division turned northeast toward Kuwait International Airport. The army tankers headed toward Mutla Ridge, an extended fold in the ground about twenty-five feet high. The location next to the juncture of two multilane highways in the town of Al Jahrah, a suburb of Kuwait City, rather than the elevation, had caught General Boomer's attention weeks earlier. By occupying the ridge, the brigade could seal a major crossroads and slam the door on Iraqi columns escaping north to Baghdad.

The brigade advanced at 1200 with the 3d Battalion, 67th Armor, in the lead. Approaching Mutla Ridge, the Americans found a minefield and waited for the plows to cut a safety lane. On the move again, the brigade began to find enemy bunker complexes and dug-in armored units. Enemy tanks, almost all of the T–55 type, were destroyed wherever encountered, and most bunkers yielded still more prisoners. During a three-hour running battle in the early evening, Tiger tankers cleared the Mutla police post and surrounding area. Moving up and over Mutla Ridge, the 67th's tanks found and destroyed numerous antiaircraft artillery positions. Perimeter consolidation at the end of the day's advance was complicated and delayed by the need to process an even larger number of prisoners of war than the day before: sixteen hundred.

The Tiger Brigade now controlled the highest point for hundreds of miles in any direction. When the troops looked down on the highways from Mutla Ridge, they saw the largest target an armored brigade had probably ever seen: hundreds of shattered enemy vehicles of all types. The previous night, Air Force and Navy aircraft had begun destroying all vehicles spotted fleeing from Kuwait. Now the brigade added its firepower to the continuous air strikes. On the "Highway of Death," they could see hundreds of burning and exploding vehicles, including civilian automobiles, buses, and trucks. Hundreds more raced west out of Kuwait City to unknowingly join the deadly traffic jam. Here and there, knots of drivers, Iraqi soldiers, and refugees fled into the desert because of the inferno of bombs, rockets, and tank fire. These lucky ones managed to escape and join the ranks of the growing army of prisoners.

At the close of coalition operations on 26 February, a total of twenty-four Iraqi divisions had been defeated. In all sectors, the volume of prisoners continued to grow and clog roads and logistical areas. Iraqi soldiers surrendered faster than the Central Command could count them, but military police units estimated that the total now exceeded thirty thousand.

The day ended with at least one other major logistical problem. The 24th Division had moved so fast in two days that fuel trucks had difficulty keeping up. After taking positions on the night of the twenty-sixth, the lead tanks had on average less than one hundred gallons of fuel on board. Brigade commanders had the fuel, but lead elements were not sure where to rendezvous in the desert. The problem was solved by the kind of unplanned actions on which victories often turn. A small number of junior officers took the initiative to lead tanker-truck convoys across the desert at night with only a vague idea of where either brigade fuel supplies

or needy assault units were located. By approaching whatever vehicles came into view and asking for unit identity, those leaders managed to refuel most of the division's vehicles by midnight.

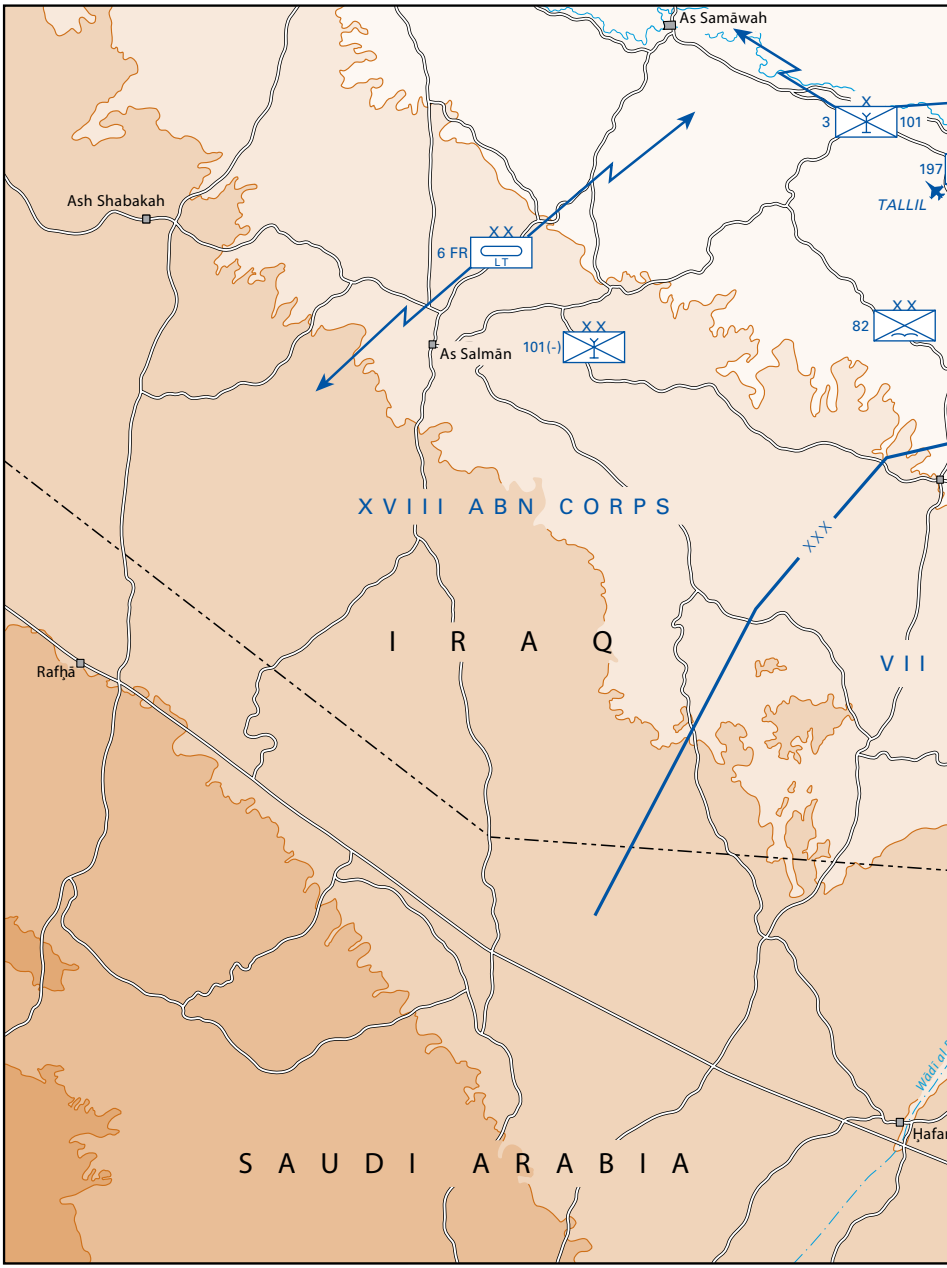
Day Four: 27 February 1991

On the morning of 27 February, the XVIII Airborne Corps prepared to continue its advance east toward Al Basrah. Before the assault could resume, the 24th Infantry Division had to secure its positions in the Euphrates River valley by taking the two airfields toward which it had been moving. Tallil Airfield lay about twenty miles south of the town of An Nasiriyah; Jalibah Airfield lay forty miles east by southeast, near the lake at Hawr al Malih. The task of taking the airfields went to the units that had ended the previous day in positions closest to them. While the 1st Brigade would conduct a fixing attack toward the Jalibah Airfield, the 2d Brigade planned to move east about twenty-five miles and turn north against the same objective. Moving north, the 197th Brigade would take Tallil. (*Map 7*)

Following a four-hour rest, the 2d Brigade attacked at midnight, seized a position just south of Jalibah by 0200 on the twenty-seventh, and stayed there while preparatory fires continued to fall on the airfield. At 0600, the 1st Brigade moved east toward the airfield, stopped short, and continued firing on Iraqi positions. At the same time, the 2d Brigade resumed the attack with three infantry-armor task forces and crashed through a fence around the runways. Although the airfield had been hit by air strikes for six weeks and a heavy artillery preparation by five battalions of the XVIII Corps' 212th Field Artillery Brigade, Iraqi defenders were still willing to fight. Most Iraqi fire was from ineffectual small arms; but armor-piercing rounds hit two Bradleys, killing two men of the 1st Battalion, 64th Armor, and wounding several others in the 3d Battalion, 15th Infantry. As nearly two hundred American armored vehicles moved across the airfield knocking out tanks, artillery pieces, and even aircraft, Iraqis began to surrender in large numbers. By 1000, the Jalibah Airfield was secure.

At midday, heavy-artillery and rocket-launcher preparations, followed by twenty-eight close air sorties, were directed on Tallil Airfield. As the fires lifted, the 197th Brigade advanced across the cratered runways and through weaker resistance than that at Jalibah. But, like the 2d Brigade at Jalibah, the 197th killed both armored vehicles and aircraft on the ground and found large numbers of willing prisoners.

As the 197th Brigade assaulted Tallil, General McCaffrey realigned his other units to continue the attack east centering on Highway 8.


As Samāwah
3
101
197
TALLIL
Ash Shabakah
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82
As Salmān
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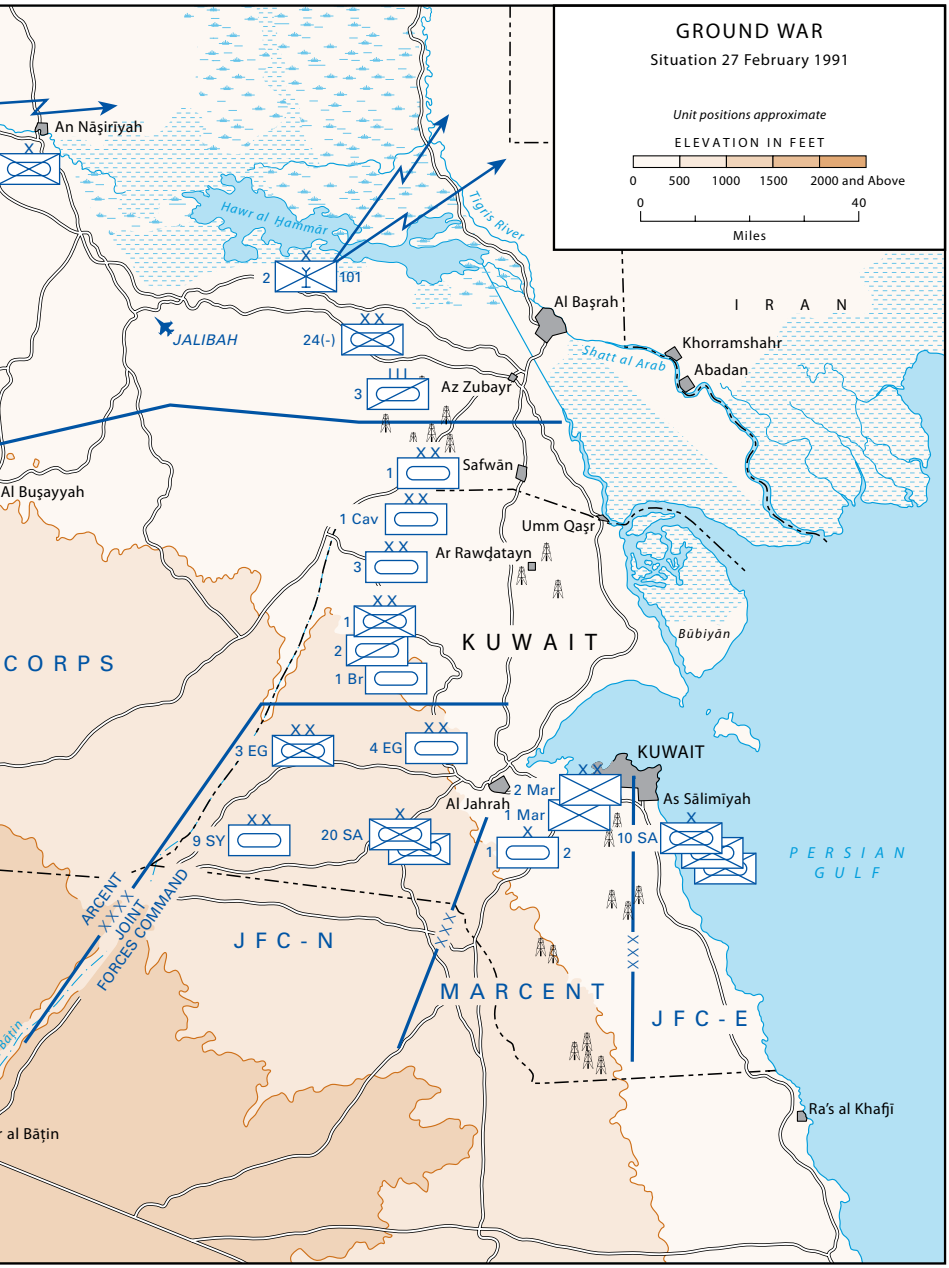
XVIII ABN CORPS
XXX
I R A Q
VII
Rafḥā
Ḥafar
S A U D I A R A B I A

Map 7


GROUND WAR
Situation 27 February 1991
Unit positions approximate
ELEVATION IN FEET
0
500
1000
1500
2000 and Above
0
40
Miles
An Nāṣirīyah
Hawr al Hammār
Tigris River
2
101
JALIBAH
24(-)
Al Baṣrah
I R A N
Khorramshahr
Shatt al Arab
Abadan
3
Az Zubayr
Safwān
1
Al Buṣayyah
1 Cav
Umm Qaṣr
3
Ar Rawḍatayn
1
2
1 Br
K U W A I T
Būbiyān
CORPS
3 EG
4 EG
KUWAIT
2 Mar
Al Jahrah
1 Mar
As Sālimīyah
9 SY
20 SA
1
2
10 SA
P E R S I A N
G U L F
ARCENT
XXXX
JOINT
FORCES COMMAND
J F C - N
M A R C E N T
J F C - E
Ra's al Khafjī
al Bāṭin

The 1st Brigade took the division left (north) sector, tying in with the 101st Airborne Division. The 2d Squadron, 4th Cavalry, the 24th's reconnaissance unit, moved east from the Hawr al Malih lake area to set up a tactical assembly area behind the 1st Brigade. The 2d Brigade left its newly won airfield position and assumed the center sector of the division front. The 3d Armored Cavalry Regiment took the right sector, tying in with the VII Corps to the south. With the 24th Division now oriented east after its northern advance of the first two days, a new series of attacks began between the Tallil Airfield and the Ar Rumaylah oil fields just southwest of Al Basrah.

The attacks down Highway 8 showed more clearly than any other episode the weaknesses of Iraqi field forces and the one-sidedness of the conflict. Through the afternoon and night of 27 February, the tankers, Bradley gunners, and helicopter crews and artillerymen of the 24th Infantry Division fired at hundreds of vehicles trying to redeploy to meet the new American attack from the west or simply to escape north across the Euphrates River valley and west on Highway 8. With no intelligence capability left to judge the size or location of the oncoming American armored wedges and attack-helicopter swarms, as well as insufficient communications to coordinate a new defense, Iraqi units stumbled into disaster. Unsuspecting drivers of every type of vehicle, from tanks to artillery prime movers and even commandeered civilian autos, raced randomly across the desert or west on Highway 8 only to run into General McCaffrey's firestorm. Some drivers, seeing vehicles explode and burn, veered off the road in vain attempts to escape. Others stopped, dismounted, and walked toward the Americans with raised hands. When the division staff detected elements of the *Hammurabi Division* of the *Republican Guard* moving across the 24th's front, McCaffrey concentrated the fire of nine artillery battalions and an Apache battalion on the once-elite enemy force. At dawn the next day, the twenty-eighth, hundreds of vehicles lay crumpled and smoking on Highway 8 and at scattered points across the desert. The 24th's lead elements, only thirty miles west of Al Basrah, set up a hasty defense in place.

The 24th Division's valley battles of 25–27 February rendered ineffective all Iraqi units encountered in the division sector and trapped most of the *Republican Guard* divisions to the south while the VII Corps bore into them from the west, either blasting units in place or taking their surrender. In its own battles, the 24th achieved some of the most impressive results of the ground war. McCaffrey's troops had advanced one hundred ninety miles into Iraq to the Euphrates River, then turned east and advanced another seventy miles, all in four days. Along the way,

they knocked out over 360 tanks and armored personnel carriers, over 300 artillery pieces, over 1,200 trucks, 500 pieces of engineer equipment, 19 missiles, and 25 aircraft and rounded up over 5,000 enemy soldiers. Just as surprising as these large enemy losses were the small numbers of American casualties: 8 killed in action, 36 wounded in action, and 5 nonbattle injuries. In the entire XVIII Airborne Corps, combat equipment losses were negligible: only 4 M1A1 tanks, 3 of which were repairable.

In the VII Corps' sector, the advance rolled east. The battles begun the previous afternoon continued through the morning of 27 February as General Franks' divisions bore into *Republican Guard* units trying to reposition or escape. As the assault gained momentum, Franks for the first time deployed his full combat power. The 1st Cavalry Division made good progress through the 1st Infantry Division breach and up the left side of the VII Corps' sector. By midafternoon, after a high-speed 190-mile move north, General Tilelli's brigades were behind the 1st Armored Division tying in with the 24th Infantry Division across the corps boundary. Now Franks could send against the *Republican Guard* five full divisions and a separate regiment. From left (north) to right, the VII Corps deployed the 1st Armored Division, 1st Cavalry Division, 3d Armored Division, 1st Infantry Division, 2d Armored Cavalry Regiment, and the British 1st Armoured Division.

The dust storms had cleared early in the day, revealing in the VII Corps' sector an awesome array of armored and mechanized power. In a panorama extending beyond visual limits, 1,500 tanks, another 1,500 Bradleys and armored personnel carriers, 650 artillery pieces, and supply columns of hundreds of vehicles stretching into the dusty, brown distance rolled east through Iraqi positions, as inexorable as a lava flow. To Iraqi units, depleted and demoralized by forty-one days of continuous air assault, the VII Corps' advance appeared irresistible.

Turning on the enemy the full range of its weapons, the VII Corps systematically destroyed Iraqi military power in its sector. About fifty miles east of Al Busayyah, the 1st and 3d Armored Divisions tore into remnants of the *Tawalkana, Medina*, and *Adnan Divisions* of the *Republican Guard.* In one of several large engagements along the advance, the 2d Brigade, 1st Armored Division, received artillery fire and then proceeded to destroy not only those artillery batteries but also sixty-one tanks and thirty-four armored personnel carriers of the *Medina Division* in less than one hour. The 1st Infantry Division overran the *12th Armored Division* and scattered the *10th Armored Division* into retreat. On the south flank, the British 1st Armoured Division destroyed the *52d Armored Division* then overran three infantry divisions. To finish

destruction of the *Republican Guard Forces Command,* General Franks conducted a giant envelopment involving the 1st Cavalry Division on the left and the 1st Infantry Division on the right. The trap closed on disorganized bands of Iraqis streaming north in full retreat. The only setback for the VII Corps during this climactic assault occurred in the British sector. American Air Force A–10 Thunderbolt aircraft supporting the British advance mistakenly fired on two infantry fighting vehicles, killing nine British soldiers.

At 1700, Franks informed his divisions of an imminent theaterwide cease-fire but pressed the VII Corps attack farther east. An hour later, the 1st Squadron, 4th Cavalry, 1st Infantry Division, set a blocking position on the north-south highway connecting Al Basrah to Kuwait City. The next morning, corps artillery units fired an enormous preparation involving all long-range weapons: 155-mm. and 8-inch (203-mm.) self-propelled pieces, rocket launchers, and tactical missiles. Attack helicopters followed to strike suspected enemy positions. The advance east continued a short time until the cease-fire went into effect at 0800, 28 February, with American armored divisions well inside Kuwait.

In ninety hours of continuous movement and combat, the VII Corps had achieved impressive results against the best units of the Iraqi military. Franks' troops destroyed more than a dozen Iraqi divisions, an estimated 1,300 tanks, 1,200 infantry fighting vehicles and armored personnel carriers, 285 artillery pieces, and 100 air-defense systems and had captured nearly 22,000 men. At the same time, the best Iraqi divisions destroyed only 7 Abrams tanks, 15 Bradleys, 2 armored personnel carriers, and 1 Apache helicopter. And, while killing unknown thousands of enemy troops, the VII Corps lost twenty-two soldiers killed in action.

In the Marine Central Command's sector on 27 February, the 2d Armored Division's Tiger Brigade and the 2d Marine Division began the fourth day of the ground war by holding positions and maintaining close liaison with Joint Forces Command–North units on the left flank. The next phase of operations in Kuwait would see Saudi-commanded units pass through General Boomer's sector from west to east and go on to liberate Kuwait City. At 0550, Tiger troops made contact with Egyptian units; four hours later, JFC-N columns passed through the 2d Marine Division. During the rest of the day, Tiger troops cleared bunker complexes, Ali Al Salem Airfield, and the Kuwaiti Royal Summer Palace, while processing a continuous stream of prisoners of war. The Army brigade and the 2d Marine Division remained on Mutla Ridge and Phase Line BEAR until the cease-fire went into effect at 0800 on 28 February. Prisoner interrogation during and after combat operations revealed that

Burning oil fields in Kuwait sabotaged by retreating Iraqi troops

the Tiger Brigade advance had split the seam between the Iraqi *III* and *IV Corps,* overrunning elements of the *14th, 7th,* and *36th Infantry Divisions,* as well as brigades of the *3d Armored, 1st Mechanized,* and *2d Infantry Divisions.* During four days of combat, Tiger Brigade task forces destroyed or captured 181 tanks, 148 armored personnel carriers, 40 artillery pieces, and 27 antiaircraft systems while killing an estimated 263 enemy and capturing 4,051 prisoners of war, all at a cost of 2 killed and 5 wounded.

Cease-fire

When the cease-fire ordered by President Bush went into effect, coalition divisions faced the beaten remnants of a once-formidable force. The U.S. Army had contributed the bulk of the ground combat power that defeated and very nearly destroyed the Iraqi ground forces. The Iraqis lost 3,847 of their 4,280 tanks, over half of their 2,880 armored personnel carriers, and nearly all of their 3,100 artillery pieces. Only five to seven of their forty-three combat divisions remained capable of offensive operations. In the days after the cease-fire, the busiest soldiers were those engaged in the monumental task of counting and caring for an estimated sixty thousand prisoners. And these surprising results came at the cost of 148 Americans killed in action. In the theater of operations,

the U.S. military and its allies had won arguably the fastest and most complete victory in American military history. Kuwait had been liberated.

Analysis

Of the many successful aspects of Army operations during Operation Desert Storm, three stand out. First, Army units moved so fast that they found their enemy consistently out of position and oriented in the wrong direction. In one hundred hours of combat, the XVIII Airborne Corps moved its lead elements one hundred ninety miles north into Iraq and then seventy miles east. The armor-heavy VII Corps drove one hundred miles into Iraq and then fifty-five miles east. Iraqi units showed themselves unable to reposition even short distances before U.S. Army units were upon them. This use of the element of surprise was largely possible because of the total U.S. control of the air, which made any Iraqi reconnaissance flights impossible.

Second, American forces enjoyed substantial technological advantages, most notably in night vision and electro-optics. Two types of vision-enhancing technology had been incorporated into Army operations preceding the deployment to the Persian Gulf. One of these aids represented advanced development of a device first field-tested during the Vietnam War, the image intensification system known as Starlight. Gathering and concentrating the faint light of the moon and stars, Starlight offered a view of terrain out to about one hundred yards in shades similar to a photographic negative. It did not depend on a transmitted beam that an adversary could detect. Still, it had drawbacks, among them the system's need for a clear night as well as its expense, weight, and size. So, the early Starlight scopes had been distributed only to specialized units such as long-range patrol and sniper teams. Thermal-sight mounts in M1A1 tanks, M2/M3 Bradleys, and most helicopters were a generation newer and more capable than the Starlight scopes. Picking up heat differentials within their field of view, they allowed trained operators to see in darkness as if it were daylight. American troops in Desert Storm truly "owned the night."

Other products of advanced technology contributed significantly to success. A number of location and navigation devices, early global positioning systems (GPS), minimized disorientation on the ground, a perennially serious problem that was magnified by the featureless desert environs of Southwest Asia. They all had solid-state electronics that read transmissions from orbiting satellites and gave their users precise coordinate locations. Using these devices, the troops could determine firing data for artillery units, correct azimuth bearings to objectives,

and measure angles of descent for aircraft heading for landing zones or targets. Iraqis were astonished by the ease with which large American formations navigated the featureless desert guided unerringly by GPS. It seemed as if age-old problems of map- or terrain-reading errors were soon to disappear.

Among weapons, the AH–64A Apache attack helicopter armed with AGM–114 Hellfire missiles belied its reputation as an overly complex, breakdown-prone system. The Apache proved a highly effective tank killer. The multiple launch rocket system and Army tactical missile system demonstrated great effect against entrenched enemy and in counterbattery missions in their own right. When combined with the Firefinder device to locate the source of enemy fire, the rocket and missile systems suppressed Iraqi artillery fire quickly and permanently. Because of the Firefinder advantage, enemy batteries were rarely heard from in the XVIII Airborne Corps' sector after the first two days of the conflict, a great relief to Army commanders concerned about one of the few advantages of the Iraqis—the greater range of their newer artillery. The older mainstays of U.S. Army artillery, 155-mm. and 8-inch (203-mm.) pieces, underlined their well-founded reputations as accurate and dependable direct-support systems.

Just as impressive as the high-technology Army inventory at the beginning of the crisis in late 1990 was the ability of American defense agencies to answer demands from the U.S. Central Command for new products. A dramatic example of this response capability came in the days before the ground war. The successful coalition counterattack on the city of R'as al Khafji in the first week of February was marred when American support fire killed several CENTCOM troops. Fratricide proved a recurrent problem during DESERT STORM, as units could precisely engage at ranges greater than they could precisely identify. General Schwarzkopf ordered accelerated research on antifratricide methods. A joint research team, coordinated by the Defense Advanced Research Projects Agency, immediately went to work on the problem of making American vehicles and positions visible only to American armored vehicles and aircraft. Just nineteen days later, Central Command distributed the results of the agency's work: On the Army side of the research effort, the Center for Night Vision and Electro-Optics at Fort Belvoir, Virginia, came up with the Budd Light and over twenty other solutions to the problem, some of which were fielded before the end of the war.

Third, American soldiers outperformed their Iraqi enemies. Particularly gratifying to higher-echelon commanders was the conduct of personnel in the all-important middle-level action positions: junior officers and

noncommissioned officers. These were the lieutenants and sergeants who took the initiative to lead convoys across dangerous desert expanses at night to resupply the advance; found and engaged thousands of enemy tanks and positions in the confusion of heavy rains and blinding dust storms; and, when called for, treated a defeated enemy with dignity and care. As General McCaffrey observed of his junior officers and noncommissioned officers during the 24th Infantry Division's dash to the Euphrates River valley, "They could have done it without us."

The impressive overall performance notwithstanding, problems requiring postwar attention did occur. Several types of equipment drew criticism from commanders. American field radios proved unreliable, and commanders who had the opportunity to try British-made Iraqi radios pronounced them superior. Fortunately, the initiative of key commissioned and enlisted personnel at the battalion and company levels bridged communications gaps at crucial times. In a curious split decision on a weapon, the M109 155-mm. self-propelled howitzer won praise for fire effect on targets, but its chassis proved too underpowered to keep pace with mechanized and armored assaults. One piece of combat engineer equipment earned similar criticism. The M9 armored combat earthmover cut through berms easily but could not keep up with assaults over open terrain.

Despite its brevity, the 100-hour Persian Gulf War lasted long enough to update an age-old postwar lament, criticism of the supply effort. This time, the speed of the advance exposed a shortcoming: helicopters, tanks, and Bradleys outdistanced supply trucks. Lifting fuel tanks and ammunition pallets by helicopter provided a quick fix, but choppers carrying fuel gulped it almost as fast as they delivered it. If the ground war had lasted longer, General Schwarzkopf would have had to halt the advance to fill forward operating bases. On the morning of 27 February, as the VII Corps prepared to complete the destruction of the *Republican Guard Forces Command*, the 1st and 3d Armored Divisions' tanks were almost out of fuel.

After isolating and evaluating various aspects of Army operations and systems, questions remained about the overall course of the war and its outcome. Was the Army really as good as the overwhelming victory and one-sided statistics of the war suggested? Was Iraq's military really that weak? Complete answers awaited more careful analysis of the combatants; but in the immediate aftermath of the ground campaign, two conclusions seemed justified.

First, Iraq's military was not prepared for a war of rapid movement over great distances. The Iraqis, in their most recent combat experience

against Iran, had developed skills at slow-paced, defense-oriented warfare. Those skills proved inadequate to stop a modern army with high-speed armor capabilities and total control of the air.

Second, the U.S. Central Command used its air-land warfare to devastating advantage. With air supremacy established more than a month before the ground war began, the success of General Schwarzkopf's corps-size envelopment to the west was assured. The relentless day and night pounding of aerial bombardment made easier the task of even those coalition units not in the envelopment, for when they attacked straight ahead into Iraqi positions, they often found enemy units less than 50 percent effective. Ground attacks forced enemy attempts to reposition, which in turn exposed them to air attacks while moving. The combination of a powerful air offensive and a fast-moving armor-heavy ground campaign proved devastating in the desert environs of Southwest Asia.

Americans reasonably expected to win the war with Saddam Hussein but nevertheless were surprised by the speed of the victory and its low cost in coalition lives. The Americans had suffered one hundred forty-eight battle deaths and their allies another ninety-nine, versus something upwards of twenty thousand for the Iraqis. Another sixty thousand Iraqis were wounded or captured. This result can be explained largely by the superb equipment, rigorous training, and professional character the coalition armed forces brought to the fight. The epitome of these qualities was the evermore professional American soldier, thoroughly trained to make the absolute best use of the most modern equipment. The operational scheme for DESERT STORM was well thought out and capitalized on coalition strengths while playing upon Iraqi weaknesses. Never before had American forces been more fully prepared for a war they were called upon to fight. The Army that had recovered its balance in the 1970s and trained so hard in the 1980s had done all that was asked of it in the desert in 1991.

Epilogue

American forces had rapidly deployed with very little warning to fight on a distant and unexpected battleground. In the aftermath of the Cold War, this seemed to be the shape of things to come. The Army faced the daunting task of redesigning itself after the close of DESERT STORM to meet global challenges while reducing its active component from seven hundred seventy-two thousand in 1989 to five hundred twenty-nine thousand in 1994—with commensurate cuts in the National Guard and Army Reserve. Initial efforts to make this small force more mobile to meet the continuing challenges of expeditionary warfare focused on

expanding sealift, airlift, and the infrastructure that complemented them. These initiatives were soon followed by the establishment of stockpiles located in selected areas, called pre-positioned stockpiles, close to likely trouble spots overseas. Over time, these initiatives also included efforts to change the nature, in particular the weight, of the forces being moved. Improved strategic mobility would be the product of strategic lift, pre-positioning, and transformed forces.

As effective of a deployment as Desert Shield had been over the course of the four-and-a-half months before major combat operations began, it retrospectively seemed frenzied and ad hoc to those who had participated in it. Convenient roll-on/roll-off (RO/RO) shipping was not sufficiently available to accommodate the huge mass of vehicles being moved. Break-bulk shipping, requiring cranes and heavy equipment to offload, was more plentiful but required considerably more time in port. It took extraordinary efforts to keep track of supplies and equipment in international shipping containers, and maddening delays resulted when recordkeeping broke down. Units in Saudi Arabia too often found themselves piecing together their hardware first from one ship and then from another, rummaging through hundreds of containers to find items they had lost track of, or pursuing supplies and equipment that had been unloaded from the ships but then wheeled past them to the "iron mountains" of supplies building up in the desert. The hasty preparations for war in a distant theater were a far cry from the methodical long-term preparations that characterized major Cold War plans.

An obvious first step to solve some of the issues of rapid deployment was to procure more shipping, particularly roll-on/roll-off shipping capable of accommodating battalions or brigades at a time. Sealift in the Maritime Administration's Ready Reserve Fleet expanded from 17 RO/RO ships in 1990 through 29 in 1994 to 36 in 1996. Expanding sealift was accompanied by corresponding improvements in infrastructure and training. During Desert Shield, many divisions deployed through seaports they had not contemplated for that purpose and others did so through facilities that were antiquated or in poor condition. By 1994, a massive $506 million deployment infrastructure refurbishment plan was under way, investing heavily in port facilities, railheads, and airfields to speed departing units on their way. The lion's share of this expenditure went to such high-profile troop establishments as Fort Bragg, North Carolina, for airborne forces; Fort Campbell, Kentucky, for aviation; Fort Stewart, Georgia, and Fort Hood, Texas, for heavy forces; and Fort Bliss, Texas, for air defense. Training budgets adapted as well to ensure that units were proficient with respect to deployment processes. In 1994 alone,

$26 million went to Sea Emergency Deployment Readiness Exercises (SEDREs) wherein combat units raced to port, loaded themselves onto ships, and deployed into a training event featuring some combination of amphibious, over-the-shore, and through-port entry into a selected battlefield. National Training Center scenarios began featuring a speedy tactical draw of vehicles and equipment such as might be the case when marrying troops with hardware previously shipped or pre-positioned. By the mid-1990s, rotations to draw battalion sets of equipment in Kuwait and then train in the Kuwaiti desert offered further expeditionary training as part of the long and drawn-out campaign to contain the still-standing Saddam Hussein. The Army was preparing itself to be an agile and powerful expeditionary force.

The disposition of pre-positioned equipment for U.S.-based units adjusted to the new realities. During the Cold War, such equipment had been stockpiled in division sets in Germany and the Benelux countries. In annual REFORGER exercises, troops from the United States flew to Europe, drew and manned that equipment, and rolled out to training areas, thus demonstrating their capability to rapidly reinforce NATO. During the 1990s, this capability dispersed more broadly, with a total of eight brigade sets spread through Europe, Korea, Kuwait, Qatar, and afloat. The set of equipment pre-positioned afloat in the Indian Ocean offered the most flexibility. It consisted of a brigade set of two armored and two mechanized infantry battalions with a thirty-day supply of food, fuel, and ammunition aboard sixteen ships, of which seven were roll-on/roll-off. Collectively considered, the sets in Kuwait, Qatar, and afloat could have positioned a heavy division into the Persian Gulf in days rather than the month plus of DESERT SHIELD. By the mid-1990s, the expeditionary intent of the Army proposed a capability to deploy five-and-a-third divisions into a theater of war within seventy-five days.

Deployment on such a scale would require reliance on the reserve component as never before. The post-Vietnam force structure had located major elements of the combat support and combat service support upon which the active component depended in the Reserves and National Guard. During DESERT STORM, when active-duty strength was 728,000; that of the Reserves 335,000; and the National Guard 458,000, 39,000 Reservists and 37,000 National Guardsmen were called up to support a total force of 297,000 deployed to Southwest Asia. With the active force reduced to 529,000 and still falling in 1994, and the Army budget decreased from $77.7 billion in 1990 to $63.5 billion in 1994, reliance on the reserve component early on during major deployments became even more critical. The relative size, composition, balance, and roles of

the active and reserve components would remain an important aspect of Army deliberations throughout the 1990s and beyond.

A major consideration with respect to strategic mobility was the logistical footprint of forces once deployed. American heavy divisions had gotten into the habit of accumulating huge depots, called iron mountains, of spare parts and supplies of all types in their immediate rear "just in case" they might need it. Without reliable means for precisely tracking and quickly delivering specific repair parts, they had no other options. During the 1990s, information technology advanced to the point that it seemed possible to radically reduce the need for these stockpiles. Required materials might be delivered "just in time" as they were needed rather than hoarded in advance. Emerging technologies offered the promise of helping to provide visibility of supplies and repair parts as they moved through the supply and transportation networks with the use of bar coding, satellite communications, and GPS monitoring. Other technical advances, including embedded vehicle diagnostics, greater fuel efficiency, and on-board water-generation systems, held out future hope of further reducing the amount of supplies needed on hand. The expectation of rapid deployment would become a way of life for thousands of servicemen and women in the United States and overseas; and the material means to support that way of life became increasingly available as the decade progressed.

The experience of Operations Desert Shield and Desert Storm was to prove a harbinger of an active decade ahead of deployments to northern Iraq to rescue the Kurds, to Somalia to attempt to rescue the starving from their own corrupt warlords, to Haiti, and to Bosnia. Meanwhile, those same forces regularly redeployed to Kuwait in a series of rapid-response exercises (nicknamed by some commuter containment) to maintain a watch on the resilient and dangerous Saddam Hussein. Those deployments were to be followed in the first year of the new millennium by the start of a series of global operations against a new enemy: the shadowy terrorists of al-Qaeda and fellow extremists. Operations were to be launched to a number of regions and nations across the globe against those who supported the use of terrorism in general and not just those who harbored al-Qaeda. One of those operations, starting in March 2003, was to return to the Persian Gulf region in force to settle, once and for all, with Hussein.

Abbreviations

ACR	armored cavalry regiment
ARCENT	U.S. Army Central Command
AWACS	airborne warning and control system
CENTCOM	U.S. Central Command
CNN	Cable News Network
CS	combat support
CSS	combat service support
FOB	Forward Operating Base
GDP	general deployment plans
GPS	global positioning system
JFC	Joint Forces Command
KTO	Kuwaiti Theater of Operations
MARCENT	U.S. Marine Central Command
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MLRS	multiple-launch rocket system
MSR	Main Supply Route
NATO	North Atlantic Treaty Organization
NTC	National Training Center
OPFOR	opposing force
REFORGER	Return of Forces to Germany
RO/RO	roll-on/roll-off
SEDRE	Sea Emergency Deployment Readiness Exercise
TOW	tube-launched optically tracked wire-guided
USAREUR	United States Army, Europe

Map Symbols

Airborne Division (Air Assault)

Armored Cavalry Regiment (ACR)

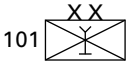
Airborne Brigade

Armored Division

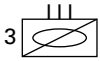
Infantry Division (Mechanized)

Marine Expeditionary Brigade (MEB)

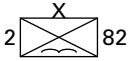
Examples



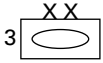
101st Airborne Division (Air Assault)



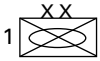
3d ACR



2d Brigade, 82d Airborne Division



3d Armored Division



1st Infantry Division (Mechanized)

5th MEB

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