

Gulf War Commemoration



DESERT VICTORY

**THE U.S. ARMY
IN THE GULF**



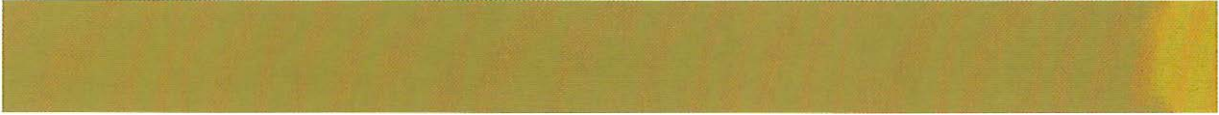
DESERT VICTORY

THE U.S. ARMY IN THE GULF



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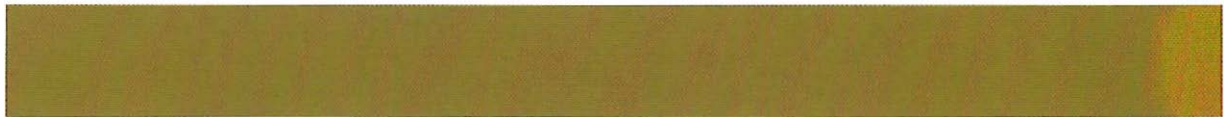



The Association of the United States Army takes great pride in presenting this overview of the United States Army's participation in Operation Desert Storm. I often say, "History strengthens," and that adage is certainly true where this history is concerned. Whether a soldier was a tanker or a transportation specialist, a general or a private, reserve component or active, he or she can look back with great pride at contributions made during this campaign. This pamphlet is designed to evoke some memories that will strengthen those veterans as they face today's challenges.

Most members of today's Army were not serving ten years ago. Some were so young that they have little memory of military events in 1991. This piece of history may strengthen them by giving them a look at the power of teams that learn to work together and then execute what they have learned on the battlefield. No soldier can be completely confident on the eve of battle, but the Army that took the field for Desert Storm knew it had done all it could do to be ready to meet the challenge. Today's soldier who prepares for tomorrow's war can take strength from the lessons of those who fought ten years ago.

The vast majority of our citizens have never experienced anything approaching the challenges facing the American soldier of Desert Storm, and they have little contact with the great Army that carries on the traditions begun in 1775 and moved forward so brilliantly in Desert Storm. This history should strengthen them with the knowledge that today's Army strives in everything it does to move beyond the tremendous performances of units a decade ago.

GORDON R. SULLIVAN
General, U.S. Army Retired
President, AUSA
32d Chief of Staff, U.S. Army






A decade has passed since the United Nations coalition defeated the Iraqi aggressors and liberated Kuwait in Operation Desert Storm—a stunning victory of historic proportions. The entire nation was swept up in the exhilaration of victory as the battle reports revealed the magnitude of our success—quick and decisive combat operations that drove the forces of Saddam Hussein from Kuwait. As a nation, we must continue to honor those who fought—and those who died—in Desert Storm.

This short overview is designed as part of a comprehensive effort to honor all those who contributed to our victory. Operation Desert Storm was a remarkable display of diplomatic and military resolve, and the United States Army played a central role in every phase of the operation. Building on years of investment in quality soldiers, in competent and confident leaders, in an effective operational doctrine, in a mix of forces, in modern equipment, and in tough, realistic training, the U.S. Army demonstrated that it had become perhaps the finest fighting force of the twentieth century. The Army made full use of its robust capabilities, including extensive participation by the Army National Guard and Army Reserve, providing the coalition commander with the means by which he could fulfill his operational responsibilities. Innovation and flexibility were required every minute of every day, and the American soldier rose to the challenge.

Desert Storm is an important part of the Army's heritage. This pamphlet makes the details accessible to those who might otherwise lack knowledge of the scope and drama of the operation. The strategic and operational distances were immense. The forces involved were large and complex. The enemy was formidable. Ten years later, all Americans should continue to take enormous pride in their Army's accomplishments—a victory unprecedented in our nation's long military history.

CARL E. VUONO
General, U.S. Army Retired
31st Chief of Staff, U.S. Army



DESERT STORM MESSAGE TO OUR TROOPS

Soldiers, sailors, airmen, and Marines of United States Central Command: This morning at 0300 we launched Operation Desert Storm, an offensive campaign that will enforce United Nations resolutions that Iraq must cease its rape and pillage of its weaker neighbor and withdraw its forces from Kuwait. The President, the Congress, the American people, and indeed the world stand united in their support for your actions. You are a member of the most powerful force our country, in coalition with our allies, has ever assembled in a single theater to face such an aggressor. You have trained hard for this battle and you are ready. During my visits with you, I have seen in your eyes a fire of determination to get this job done and done quickly so that we may return to the shores of our great nation. My confidence in you is total. Our cause is just! Now you must be the thunder and lightning of Desert Storm. May God be with you, your loved ones at home, and our country.

General H. Norman Schwarzkopf, USA
Commander in Chief, U.S. Central Command

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Only 100 ground combat hours were necessary for the United States Army to reestablish itself convincingly as a dominant land combat force. During that brief period, for example, mechanized forces moved more combat power faster and farther than any similar force in history, at a battlefield tempo far beyond the enemy's ability to match or even track. Helicopter-borne forces conducted history's greatest, most effective vertical envelopment by placing the combat elements of the 101st Airborne Division (Air Assault) 260 kilometers behind enemy lines, paralyzing the enemy's command and control functions and enabling wholesale destruction of his forces. As the leading element of the coalition, the United States Army decisively defeated the fourth largest field army in the world. It did so at the lowest cost in human life ever recorded for a conflict of such magnitude.

THE ARMY OF 1990

The Army that deployed in 1990 to Saudi Arabia and ultimately accomplished these feats was the product of almost twenty years of reform and experimentation, and bore little resemblance to the Army that left the Republic of Vietnam three years before its conquest by the Communist North Vietnamese in 1975. At the end of the Vietnam War, some weapon systems were obsolete while others were obsolescent, and conventional warfare had to compete with counterinsurgency operations for military doctrinal, organizational and training priorities and resources. At the same time, Army leaders at all levels were struggling to maintain good order and discipline in the face of rampant drug abuse, open racial tension, poor training, and the new dilemmas posed by the transition from a conscript to an all-volunteer Army.

By 1990, those problems had either disappeared or were well on the way to resolution. Not only were new weapons in place, but military

theorists and planners had also broadened doctrine to address a range of possible conflicts from small tactical deployments of short duration to major wars over a broad front. Meanwhile, the Army had largely addressed its internal problems. Partially a product of a fundamental shift in public sentiment away from the antimilitarism and pessimism of the 1970s, and partially as a result of successful U.S. military operations in Grenada and Panama in the 1980s, the Army had rebounded from its post-Vietnam doldrums. Since 1973, the concept of the all-volunteer force had been refined and embraced by Army leaders and used to dramatically improve morale and discipline. To an extent not seen since the Korean War, the Army Reserve and Army National Guard had been woven into the fabric of Army warfighting capability. Army leaders evolved new doctrine for ready forces, focused on the acquisition of new equipment to support that doctrine, tied both together with rigorous training programs, and concentrated on leader development initiatives that improved officer and noncommissioned officer professionalism. By the summer of 1990, the U.S. Army was a technologically sophisticated, highly trained, well led and confident force.

It was the land force that provided the essential muscle to lead America's coalition partners in the liberation of Kuwait, the decisive defeat of the Iraqi army, and the restoration of stability in the Persian Gulf.

From the Iran-Iraq War to the Invasion of Kuwait

The Iran-Iraq War ended in August 1988 with both sides exhausted and Iraq claiming victory but without Iraqi success in achieving control of the strategic Shatt al Arab strait. Thereafter, the United States and the Gulf states continued to

support Iraq, with American policy in the Persian Gulf trying to moderate Iraqi behavior through closer economic ties. Despite human rights abuses and continuing development of chemical and nuclear weapons, Iraq's secular leadership seemed less threatening than Iran's Islamic fundamentalists. Meanwhile, the continued financial contributions of Saudi Arabia and the sheikhdoms of the Gulf Cooperation Council enabled Iraq to rebuild its armed forces, which had been mauled by eight years of war.

In spite of the continued U.S. support of Iraq, there was a growing perception in the United States that the major near-term threats to the states of the southern Persian Gulf and to Western oil supplies came not from the Soviet Union but from the Gulf region itself. The Iran-Iraq war had shown that both combatants had the resources to sustain massive forces, even in the face of sizable losses. Both now had the experience of a decade of war to go with traditions of political instability. Meanwhile, the Iranian revolution represented a constant danger not only to Iraq but to the southern Gulf States and the industrial West as well.

The end of the war left Iraq both remarkably strong and desperately weak. By regional standards, the Iraqi armed forces appeared formidable, and the war seemed to have forged a strong feeling of national cohesion. Iraqis believed they had won the war and defended Arab interests against the traditional Persian threat. Iraq also saw itself as a major oil power with a dominant role in the region. At the same time, it had incurred a debt estimated as high as \$70 billion. The \$5 billion to \$6 billion in interest that the government paid annually consumed nearly one-third of its oil revenues. The years of fighting had left much of the nation's industrial capacity weakened and its ability to export oil severely impaired. Economically, the war had also diminished Iraq's international position and forced the regime into a position of dependence on its wealthy neighbors. Iraqi resentment focused largely on wealthy Kuwait, which held territory that Iraq coveted and considered its own.

Although the states of the southern Gulf did not appreciate the depth of Iraqi bitterness at their supposedly inadequate support, they were not blind to the threat implicit in Iraq's postwar military strength and confidence. The Saudis knew that the border with Iraq was ideal for mobile land force operations and that the entire Arabian Peninsula was vulnerable to attack from the

northeast. Major Saudi oil facilities were only 320 kilometers away. King Khalid Military City, with its two armored brigades, provided only limited security, and other Gulf Cooperation Council members had no military forces of consequence. Any assault on Kuwait might easily become the first stage of a two-phase attack on the rest of the peninsula.

The United States shared Saudi Arabia's concerns. Kuwait, the door to the entire oil-producing region, was very vulnerable. Threats to its stability, from either external or internal pressures, would have broad ramifications, endangering the flow of oil and the economic health of the industrial West.

In the two years after the fighting between Iran and Iraq ended, Iraq increased its pressure on Kuwait. The war had left the Shatt al Arab approach to Al Basrah and the city itself a shambles. Iraq again turned its attention to the border that it shared with Kuwait. In addition to demands for compensation for revenues allegedly lost due to Kuwaiti oil sales in excess of OPEC quotas and for oil pumped from fields claimed by Iraq, Saddam Hussein's government renewed its interest in Bibiyan and Warbah Islands. He cleared the way for action, beginning negotiations for a final settlement with Iran, massing troops on the Kuwaiti border, and sounding out the American reaction to a possible military move into Kuwait.

Saddam appeared to ignore the statement of the Carter Doctrine by the administration of President George Bush in National Security Directive 26 of October 1989, warning that the United States would defend its vital interests by force, if necessary. Meanwhile, Kuwait struggled to find a counterbalance to the increasing Iraqi threat. It had a military agreement with Egypt that dated from the last phase of the Iran-Iraq war and even made an overture toward Iran, which might again serve as a potential counter to Iraq. But neither those connections nor the Gulf Cooperation Council had the potential strength to ward off a determined Iraqi attack. Kuwait needed protection such as that provided by Great Britain at the turn of the century and by the United States in 1987. Yet, like Saudi Arabia and other Arab states, Kuwait accepted American construction support and air defense missiles but stopped short of inviting an American presence in support of its own defense.

During the first seven months of 1990, Iraqi troop movements and presidential bombast

DESERT SHIELD

foreshadowed the impending crisis. But the United States did not recognize the imminence of the Iraqi threat until it was too late. On 2 August 1990, when Iraqi tanks rolled through Kuwait to the Saudi border and Saddam Hussein's government declared that Kuwait no longer existed as an independent country, perceptions quickly changed. President Bush decided to uphold the Carter Doctrine and commit the United States to direct military action.

At 0200 on that day, the Hammurabi Armored and Tawalkana Mechanized Divisions, two of Iraq's elite heavy units, rushed across the border in tightly disciplined formations and quickly overran a single Kuwaiti brigade deployed along the frontier. The Kuwaitis, equipped with only Saladin and Ferret armored cars, had no hope of checking the onslaught of nearly 1,000 Soviet-supplied Iraqi T-72 tanks. The ensuing rapid ground advance swept south, capturing most Kuwaiti forces in garrison and reaching Kuwait City by 0500. Meanwhile, three Republican Guard special forces brigades launched a heliborne assault into the city, closing the back door on Kuwaiti withdrawals. Seaborne commandos deployed farther south and cut the coastal road. By early evening the city was reasonably secure, despite some sporadic resistance from a few die-hard Kuwaitis. To the west, a third Iraqi heavy unit, the Medina Armored Division, screened the main attack against the unlikely event that the Gulf Cooperation Council's Peninsula Shield Brigade in northern Saudi Arabia might intervene. The Iraqis committed four Guard infantry divisions behind the lead armored forces to begin mopping up. All three of the heavy divisions then moved hastily south to establish a defensive line along the Saudi border. Saddam's military machine had conquered Kuwait in less than 48 hours.

With a large majority of the nations of the world opposed to the invasion of Kuwait, President Bush built a broad-based coalition in support of intervention. The United States, which took the lead in developing and coordinating opposition to Iraq, achieved a diplomatic triumph of great magnitude and far-reaching consequence. Urged forward by the United States, the United Nations General Assembly imposed an embargo on Iraq, and the Security Council voted to condemn the invasion. Almost immediately coalition forces moved toward Southwest Asia. By far the largest contributor to the force, the United States honored commitments to Saudi

Arabia first made by President Harry Truman. The result was Operation Desert Shield, which before it was over became Desert Storm.

DESERT SHIELD

From the moment the first American soldiers were dispatched to Saudi Arabia, it took less than half a year to transform a relatively undeveloped region in Southwest Asia into a combat theater capable of sustaining two Army corps. Over the course of Operation Desert Shield, the Army moved the equivalent of the population of the city of Atlanta more than 8,000 miles to Saudi Arabia. This required unloading 500 ships and 9,000 aircraft that carried 1,800 Army aircraft, 12,400 tracked vehicles, 114,000 wheeled vehicles, 38,000 containers, 1,800,000 tons of cargo, 350,000 tons of ammunition, and more than 350,000 soldiers, airmen, marines, sailors and civilians. Within the theater, 3,568 convoys of supply vehicles covered 35 million miles, traversing 2,746 miles of roadway in Saudi Arabia and Kuwait. Many of these roads were carved out of barren desert or improved by Army engineers. More than 70 percent of the manpower dedicated to building the combat theater in Saudi Arabia came from the Army National Guard and the Army Reserve.

Responsibility for military operations in the Persian Gulf and northeast Africa resided with the U.S. Central Command, or CENTCOM. Since November 1988, CENTCOM's commander in chief (CINC) had been General H. Norman Schwarzkopf. Schwarzkopf understood that the changing world environment might shift the Army's strategic focus from Europe back to his command's area of responsibility. Iran and Iraq chose to end their mutually exhausting war in 1988 after more than eight years. Shortly thereafter, the Berlin Wall came down, presaging both an end to the Soviet threat in Europe and a decline of Soviet influence in the Middle East. With a huge, well-equipped Iraqi military at loose ends, Schwarzkopf realized that the Iraqis had replaced the Soviets as the most serious threat in the Persian Gulf. In November 1989, Schwarzkopf directed that the plan addressing a possible Soviet invasion of Iran, OPLAN 1002-90, be revised as soon as possible to reflect an Iraqi invasion of Kuwait and Saudi Arabia. In December, the Joint Chiefs of Staff (JCS) granted him



permission to shift the geographic focus of the biennial Joint Chiefs' war game from Iran to Saudi Arabia.

To test how the command might deploy to blunt such an Iraqi invasion, the CENTCOM staff staged Exercise Internal Look 90, which ran from 23 through 28 July concurrently at Fort Bragg, North Carolina, and Hurlburt Field, Florida. The exercise postulated an Iraqi attack into Saudi Arabia with six heavy divisions. In the plan's scenario, XVIII Airborne Corps, commanded by Lieutenant General Gary E. Luck, was given sufficient time to deploy to the region and to establish a defense in eastern Saudi Arabia before the attack began. While just a battle on paper, Internal Look proved to be a sobering exercise. Iraqi armor, though badly mauled by helicopters

and tactical aircraft, continued to advance as far south as Al Jubayl, nearly 200 kilometers across the Saudi frontier. Elements of XVIII Airborne Corps succeeded in holding Dhahran, Ad Dammam and the Abqaiq refineries, but at a cost of almost 50 percent of their fighting strength.

Internal Look provided an essential common framework for joint participants during the coming war. For logisticians, Internal Look underscored the reality that any force intervening in the region would depend heavily on Saudi support. The main tactical lesson from the exercise was that ground forces would have difficulty dealing with Iraqi armored forces, no matter how much Air Force and attack helicopter support they received. Most importantly, Internal Look emphatically demonstrated what CENTCOM

planners had known for some time: that a serious shortage of sealift posed the greatest single element of risk. After the exercise, Schwarzkopf resolved to give ground combat units first priority for deployment by sea.

The Response

On 2 August at 0230 Eastern Daylight Time, the Chairman of the Joint Chiefs of Staff, General Colin L. Powell, ordered the Director of the JCS to summon General Schwarzkopf to Washington. In the meeting which ensued, Schwarzkopf laid out preliminary military options to respond to the invasion and a summary of Iraqi military capabilities. At the regular morning National Security Council meeting on 3 August, the President agreed with other members that some force might be needed. At Camp David on 4 August, Schwarzkopf expanded his briefing to the President, this time including details for deployment of a defensive force to Saudi Arabia. Shortly after the meeting, King Fahd asked the President for a briefing on the situation from American officials. National Security Advisor Brent Scowcroft hurriedly began to assemble a briefing team to travel to Saudi Arabia in an effort to convince the Saudis to ask for help. The team, including senior officers from CENTCOM, U.S. Army Forces Command (FORSCOM) and Headquarters, Third Army, briefed the Saudi king on 6 August.

The next day, King Fahd issued the invitation for American troops to assist in the defense of Saudi Arabia. On 8 August, President Bush announced that he would commit American forces.

While Internal Look 90 had provided a conceptual blueprint for Desert Storm, the CENTCOM leadership was obliged to hammer out most of the details of the operation through a process of ad hoc decisionmaking and eleventh-hour improvisation. The U.S. Army had never projected such a large force so quickly over so great a distance. The only American forces in Saudi

Arabia consisted of a military mission of 38 officers and enlisted men who were training Saudi Arabian land forces, and a handful of other soldiers who were working with the Saudi National Guard. Initially, the commanding general of Third Army, Lieutenant General John J. Yeosock, relied heavily on the latter, appointing the project manager, Brigadier General James B. Taylor, as his interim chief of staff. Yeosock's small group had little time to prepare, as the division ready brigade (DRB) of the 82d Airborne Division and the assault command post of the XVIII Airborne Corps were soon to arrive.

The first troopers of the 82d's 2d Brigade departed Pope Air Force Base, North Carolina, at 1000 on 8 August, 36 hours after being alerted. The last element of the brigade left four days later. The 82d's load-out and departure process had to be adjusted daily to respond to both the air flow and the tactical requirements being set by XVIII Airborne Corps. Since antiarmor capabilities were of overwhelming importance, the usual planned sequence of departure had to be reorganized to include attack helicopters and certain artillery much higher in the priority for available air transportation. To make essential departure times from Pope, both Air Force and Army planners worked day and night reconfiguring loads to fit tactical exigencies at the other end of the operation. The initial pulse of combat power needed in the theater immediately required an enormous surge in aircraft.



Soldiers of the 82d Airborne Division board an Air Force C-5 at Pope Air Force Base, en route to Saudi Arabia.

U.S. Transportation Command (USTRANSCOM) dispatched C-141 and giant C-5 aircraft to Pope from bases all over the world. For the first time the President activated the Civilian Reserve Air Fleet (CRAF). Overnight, crewmen accustomed to relatively simple palletized loading for Air Force aircraft found themselves pondering weight, balance and cubic-foot requirements for Boeing 747s, which only the day before had been carrying parcels for UPS. Nevertheless, in seven days an entire division ready brigade—4,575 paratroopers and their equipment—arrived on the ground ready to fight in Saudi Arabia. The remaining two brigades and their equipment flew out between 13 August and 8 September using 582 C-141 sorties. By 24 August, more than 12,000 soldiers from all three brigades, including all nine infantry battalions, were on the ground.

During the early days of Desert Shield, as soldiers and equipment poured into Dhahran under the mounting threat of a preemptive Iraqi strike, the XVIII Airborne Corps command and control team constantly updated their plan of defense, which changed and grew bolder with each arriving aircraft. The 2d Brigade and Aviation Brigade of the 101st Airborne Division (Air Assault), under the command of Major General J. H. Binford Peay, began deployment by air on 17 August, moving 117 helicopters, 487 vehicles, 2,742 soldiers and 123 pallets of equipment into the theater over a 13-day period. The remainder of the 101st deployed by sea from the port of Jacksonville, Florida. To allow full coverage of the vast tracts of Arabian Peninsula desert the XVIII Airborne Corps was required to defend, additional combat aviation units were sent, including the Apache-equipped 2-227th Attack Helicopter Battalion from Fort Rucker, Alabama, and the 12th Aviation Brigade from Wiesbaden, Germany.

The heavy element of XVIII Airborne Corps, the 24th Infantry Division (Mechanized), also received its order to deploy on 6 August, when FORSCOM instructed its commanding general, Major General Barry R. McCaffrey, to move one armored brigade to the port at Savannah, Georgia, within 18 hours. The tanks and other armored vehicles of this division were essential for defending against the formidable array of Soviet-equipped armored formations available to the Iraqis. Just as the first of the 82d's aircraft took off for Saudi Arabia, the vehicles of the 2d Brigade of the 24th arrived fully stocked with

fuel and ammunition, ready to load aboard Navy fast sea-lift vessels. Not since World War II had the Navy outloaded a heavy Army division configured to fight immediately upon arrival at its destination. Over the Navy's objection, the Department of Defense waived peacetime restrictions and allowed the brigade to embark ready for combat in Saudi Arabia.

The sealift of the 24th Division proceeded rapidly, with the first of 10 ships departing on 13 August. Although most of the division's soldiers flew to Saudi Arabia aboard 57 military transports and civilian charter airliners, the division transported 1,600 armored vehicles, 3,500 wheeled vehicles and 90 helicopters via sealift. One month into the deployment, the brigades from Fort Stewart, Georgia, were in assembly areas, ready to assume defensive positions. Two weeks later, the 197th Infantry Brigade (Mechanized), from Fort Benning, Georgia, would arrive to serve as the 24th's third maneuver brigade.

As the situation on the ground stabilized and further XVIII Airborne Corps forces arrived, this hourly process solidified into three distinct "Desert Dragon" plans, each representing a milestone in the ability of the corps to defend key portions of Saudi Arabia against Iraqi invasion. From defense of selected enclaves along the Persian Gulf coast (Dhahran, Al Jubayl), the plan eventually matured into a full defense in sector, using the 82d, 101st and 24th Divisions to defend the most likely avenues of approach for Iraqi forces invading Saudi Arabia.

Although U.S. Army units comprised the great majority of the ground forces in the defensive bulwark being constructed in northeastern Saudi Arabia, coalition forces were also integrated into the plan. A provisional Arab mechanized division, under the command of a Saudi major general, was positioned closest to the Kuwait border. Equipped with American-built, 1970s-era M60A3 tanks and French AMX-10 armored personnel carriers, this force was made up of battalions from several Arab nations which had never operated together before. However, each consisted of soldiers who were absolutely committed to defending their homelands against Iraqi aggression. The mission of this, the so-called "Eastern Area Command," was to serve as a sort of covering force which would, if heavily pressured by an Iraqi invasion, withdraw through the American forces after attriting and disorganizing the attackers.

Once ashore, U.S. Marine Corps units were also integrated into the defensive plans. Due to their dependence on support afloat, they were disposed along the coast, but had responsibility for defending the sector that included the highway which connected Kuwait with Dhahran, the most likely enemy high-speed avenue of approach. This narrow but crucial strip would be defended in depth with their infantry, two battalions of tanks (one of which was equipped with 1960s-era M60A1s), and two battalions of wheeled light armored vehicles. To upgrade the capabilities of these Marine mobile formations, the British 7th Armoured Brigade, with its 120mm-gunned Challenger tanks, was attached temporarily to the Marine expeditionary force on the coast.

Overall, by 3 September, coalition forces were prepared to defend with the Eastern Area Command forward, backed up by the highly mobile 101st Airborne Division (Air Assault) in the north and west, the 24th Infantry Division (Mechanized) in depth behind the 101st, and the Marines along the coast. The 82d Airborne Division, under the command of Major General James H. Johnson, Jr., was to defend critical facilities in and around the coastal cities of Dhahran, Ad Dammam and Abqaiq and to eliminate commando raids in rear areas.

In addition to the units habitually assigned to XVIII Corps, two other major U.S. Army combat formations were dispatched to Saudi Arabia to bolster the "shield." The 1st Cavalry Division (an armored division commanded by Major General John H. Tilelli, Jr.) departed Fort Hood, Texas, for their seaport of embarkation at the port of Houston in August, and finally reached their defensive positions in Saudi Arabia at the beginning of November. They took with them the 1st Brigade of the 2d Armored Division (the "Tiger" Brigade), the last deployable remnant of the "Hell on Wheels" Division, which was then in the



The Abrams tanks of the 24th Infantry Division (Mechanized) provided crucial firepower and armored protection during the early phases of Operation Desert Shield.

process of inactivation. Once in Saudi Arabia, the 1st Cavalry Division took up positions behind (south of) the 24th and 101st, constituting the XVIII Airborne Corps' counterattack force.

Upon its arrival in the desert, the Tiger Brigade replaced the British 7th Armoured Brigade and remained attached to the Marine forces on the coast, providing important additional firepower with its Bradley infantry and cavalry fighting vehicles and, most significantly, its 120mm gun-equipped M1A1 Abrams tanks. The projectiles from these guns—particularly the depleted-uranium "silver bullets"—could destroy the best tanks the Iraqis possessed from ranges far greater than those from which the Iraqis could hope to effectively engage the Americans in return.

Additional M1A1s were brought to the theater with Colonel Douglas H. Starr's 3d Armored Cavalry Regiment, which began its deployment from Fort Bliss, Texas, through the port of Beaumont on 22 August. When this unit arrived in the theater, it, too, was assigned to bolster the defenses along the coast, providing a covering force forward of the Marines.

The Role of the Army Reserve and Army National Guard

Even as the XVIII Airborne Corps' first units were deploying to Saudi Arabia, the Army was in the process of requesting a call-up of reserve forces to support the deployment. In late August, President Bush authorized a limited mobilization of reserve forces, which included 25,000 U.S. Army Reserve and Army National Guard soldiers from combat support and combat service support units. These soldiers and units performed four basic functions: general support within the continental United States (CONUS), movement support, support of deployed forces, and medical support. Over half of the units (25 of 46) called up served within CONUS.

A second stage of reserve component mobilization occurred in September with the activation of 138 Army National Guard and Army Reserve units, including 6,300 Guardsmen and 6,700 Reservists. Of these, all but three units deployed to Southwest Asia. Although combat service support units constituted the bulk of the units mobilized during this phase (transportation, quartermaster/supply, ordnance/ammunition handling, and so on), many were combat support units, including military police and intelligence outfits.

By October, the U.S. and coalition forces in Saudi Arabia were completely adequate to stymie further Iraqi aggression, but the United States' strategic objectives were much more ambitious. Beyond blunting further Iraqi offensive actions, these objectives included liberating Kuwait and reinstating their legitimate government; destroying the Iraqis' offensive military capability to prevent further aggression; and restoring the prewar regional balance of power. Such requirements for extensive offensive operations would be difficult to achieve with the forces on hand in October, and impossible to accomplish with the minimal casualties needed to maintain public support at home.

On 22 October, General Schwarzkopf and his staff briefed General Powell on their plans for the conduct of offensive operations, and requested a second corps to provide the additional combat power necessary for a rapid and decisive victory. Powell concurred, and after returning to Washington, both he and Secretary of Defense Richard B. Cheney decided that, in addition to a Europe-based corps, other forces should also be

deployed. These included the 1st Infantry Division (Mechanized), three additional aircraft carrier battle groups, a battleship, the corps-sized I Marine Expeditionary Force, and the 5th Marine Expeditionary Brigade.

Reinforcements

President Bush, at a news briefing on the afternoon of 8 November, publicly announced his decision to increase troop strength in Southwest Asia to ensure "an adequate offensive military option."

The augmentation required a major call-up of Army Reserve and Army National Guard units in all fifty states. Among the Army National Guard units eventually federalized were the 48th Infantry Brigade from Georgia (the designated "roundout" brigade for the 24th Infantry Division); the 155th Armored Brigade from Mississippi (the roundout brigade for the 1st Cavalry Division); the 256th Infantry Brigade (Mechanized) from Louisiana (the roundout brigade for the 5th Infantry Division); the 142d Field Artillery Brigade from Arkansas and Oklahoma; and the 196th Field Artillery Brigade from Tennessee, Kentucky and West Virginia. The reinforcements package also cut in half the U.S. Army's divisional strength in Europe by ordering the redeployment of one of the two Army corps stationed there. Those units selected to deploy from Germany included VII Corps headquarters; the 1st Armored Division; the 3d Brigade, 2d Armored Division (Forward); the 3d Armored Division; the 2d Armored Cavalry Regiment; the 11th Aviation Brigade; and the 2d Support Command (Corps). The 1st Infantry Division (Mechanized) at Fort Riley, Kansas, also received deployment orders. The decision to send two additional armored divisions eventually raised the level of U.S. forces in the Persian Gulf region to over 400,000.

Amidst controversy that lasted well beyond the end of the war, none of the Army National Guard maneuver brigades ever deployed outside the United States. Both field artillery brigades did, however, and they served with distinction during Desert Storm.

In addition to federalizing the five Army National Guard brigades, Secretary Cheney on 14 November authorized the call-up of another 72,500 Army National Guard and Army Reserve troops. The new authority more than doubled the number of citizen-soldiers called.

Reserve mobilization reached a new level on 18 January 1991, when President Bush authorized the activation of the Individual Ready Reserve. That decision to call up reservists who were not already assigned to units gave the Department of Defense greater authority and flexibility as the Persian Gulf crisis approached its critical stage. The President's action permitted the activation of up to 1,000,000 ready reservists for 24 months, ending the 200,000-person and 180-day limitations. The new declaration also permitted the involuntary call-up of individuals. With the authority delegated by the President, Secretary Cheney increased the overall reserve-component call-up from 189,000 to 316,000. The Army's share rose from 115,000 to 220,000.

With the possibility of ground combat becoming more likely, the Army Staff was most concerned that follow-on units be at full strength and qualified individual replacements be readily available. To accomplish this, mailgrams ordered 20,000 reservists to report to designated reception centers by 1 February.

Those selected were in occupational specialties where replacements would most likely be needed. Infantry, artillery, armor and engineer skills accounted for 42 percent of the individuals activated, while mechanics and vehicle operators added an additional 20 percent. Screening at the reception centers provided medical, compassionate and administrative releases. With less than two weeks available, formal preparation was often limited to donning gas masks, zeroing in individual weapons, and performing physical training to harden muscles and increase endurance. As many were experienced soldiers who had recently participated in Operation Just Cause, further retraining could best be accomplished by their assigned units. Of some 13,000 ready reservists completing this process, 5,800 were assigned in the United States, 4,500 to Europe, 2,700 to Southwest Asia, and 120 to the Pacific.

To assist mobilization of the Individual Ready Reserve, the U.S. Army's Training and Doctrine Command (TRADOC) provided additional reception and training support. Beginning in January, elements of the 70th, 78th, 80th, 84th, 85th, 98th, 100th and 108th Divisions (Training) were mobilized in each of the continental army areas and supported eight mobilization stations. The 4159th U.S. Army Reserve Forces School had been mobilized in December to assist in the training of Guardsmen at Fort Hood, Texas. In January the 2077th U.S. Army Reserve Forces School, the Sixth U.S. Army Intelligence

Training Army Area School, and parts of five additional schools, one from each continental army area, were also mobilized.

Although ultimately many mobilized reserve component units and individuals remained in the United States, they provided the Army with a strategic reserve or filled positions vacated by regulars in the United States and overseas. This ensured that the Army's training and sustainment base remained intact and that commitments elsewhere in the world would not be neglected. Had further reinforcements for Southwest Asia been necessary for rotational or replacement purposes, or had unforeseen contingencies occurred elsewhere, those units could have been committed by the beginning of 1991. And, had they deployed to a combat zone, additional Reserve and Guard units of similar size and capability were ready to be activated and take their place.

Deployment of Forces from Europe

Preparing for the large-scale troop movement was not a new experience for U.S. Army, Europe (USAREUR). Beginning in 1967, soldiers from combat divisions in the United States had flown into European airports for 21 REFORGER ("Return of Forces to Germany") exercises, conducted in response to the threat of a Warsaw Pact attack against NATO forces in western Europe. For deployment to Southwest Asia the process would be reversed, with some obvious changes. Yet the similarity to REFORGER exercises was so apparent that the soldiers and allies dubbed the movement "DEFORGER 90." Phase I commenced in August with the deployment of a few USAREUR units to Saudi Arabia. Although modest in scale, it provided practical experience for Phase II in November-December with the deployment of VII Corps, commanded by Lieutenant General Frederick M. Franks, Jr., the major maneuver elements of which included Major General Ronald H. Griffith's 1st and Major General Paul E. Funk's 3d Armored Divisions, as well as Colonel Don Holder's 2d Armored Cavalry Regiment.

While waiting their turn to leave, the VII Corps units continued training and readied their equipment and themselves for war. Tankers and Bradley fighting vehicle crewmen fired crew-level gunnery at the Seventh Army Training Center at Grafenwoehr and the Hohenfels

Combat Maneuver Training Center; used computer simulators at their home bases; and trained extensively with chemical protection equipment.

Many soldiers had to learn 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 Army Reserve and Army 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 Support Command swelled from its peacetime strength of fewer than 8,000 to 25,000 through reserve augmentation.

The 2d Armored Cavalry Regiment was the first USAREUR combat unit to deploy to Southwest Asia. Within days of President Bush's 8 November announcement, the regiment, which had patrolled West Germany's border with the East for more than 45 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 tactical assembly area.

Hampered by bad weather and strikes by socialist dockworkers' unions, the remaining VII

Corps units did not share the 2d Armored Cavalry's success. Although all corps equipment quickly reached European ports for transshipment, not all VII Corps equipment was delivered to Southwest Asia by the target date of 15 January. At this time, only 91 percent of the corps' soldiers, with 67 percent of the tracked vehicles and 66 percent of the wheeled vehicles, had arrived in theater. Commanders had hoped to deploy in tactical formation, but the property 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 forward movement of VII Corps.

VII Corps soldiers flew into airports near Al Jubayl and Ad Dammam. From there they moved to the ports and waited for their equipment. Between the arrival of the first ship on 5 December 1990 and 15 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 3,500 containers with critical unit equipment, repair parts and supplies forward.

To assist the units that remained in Europe, 41 Army Reserve units and 14 Army National Guard units from the United States and Europe helped provide force protection, medical care and transportation support. For example, 44 chaplains and 3,460 medical personnel deployed to Germany to replace those recently sent to Saudi Arabia.

In a unique development in U.S. military history, nearly all 300,000 U.S. dependents remained in Europe. Since the deploying units would return to Germany after the Persian Gulf crisis, the families remained in familiar surroundings, among friends, and within a functioning family support structure. The movement from Germany marked the first time a large forward-deployed force had been sent to another country while family and support structures stayed behind in a foreign theater.



The mobility and shock provided by the three major armored formations of VII Corps were essential to achieve the coalition's strategic goals. Here, M1A1 Abrams tanks of the 3d Armored Division prepare for combat.

1st Infantry Division Deployment

Readying for such an eventuality was not uncommon for 1st Infantry Division soldiers, who had for years rehearsed for and taken part in large-scale deployments. Also, the unit's emergency deployment plan, although geared toward a crisis in Europe, could be adapted easily to almost any locale. Once trouble began in the Persian Gulf, division planners tailored the deployment concepts to fit a move to the Middle East.

Meanwhile, the soldiers of "The Big Red One," under the command of Major General Thomas G. Rhame, began preparing for combat. Several months before the Persian Gulf crisis began, the division had completed extensive desert training at the National Training Center at Fort Irwin, California. In late August, the division underwent more training at Fort Hood, rehearsing a Middle East scenario against III Corps soldiers. Predeployment activities culminated in late November with refresher training in combat skills.

Equipment loading began in late November, and the troops continued training without their gear while awaiting their deployment dates. The unit loaded 650 vehicles on the first day and altogether shipped about 7,000 vehicles and trailers to the port of Houston, Texas. During the period 1 to 24 December, 14 ships were filled with the division's equipment. The first departed Houston on the 6th and the last on the 28th. As was the case for the deployments from Germany, materiel was not shipped in unit sets, later causing some confusion at the Saudi ports. Beginning on 15 December, the nearly 11,900 soldiers of the 1st Infantry Division departed incrementally by air, aboard 57 military transports and chartered civilian airliners, from Forbes Field in Topeka, Kansas. The majority of the troops reached Saudi Arabia on New Year's Eve, and the last equipment ship docked in late January. The division immediately moved into a tactical assembly area in the desert.

Coalition Forces

In addition to the ground forces of the XVIII Airborne and VII Corps, major elements of the British and French armies were on hand to participate in Desert Storm. Normally part of the

British Army of the Rhine, the British 1st Armoured Division had inherited the traditions of the famed "Desert Rats" of World War II, and shared a NATO background with the Americans. Although its personnel possessed significantly less NATO experience than the British or Americans, the French 6th Light Armored Division had some personnel who possessed substantial expertise in desert operations. Among its 10,000 men were elements of the renowned Foreign Legion, perhaps the best desert-trained troops on the allied side, and several formations that had seen combat against Libyan forces in Chad. Despite differences in equipment, organization and doctrine, the French division worked well with the XVIII Airborne Corps.

The Arab forces varied in size and quality. The Egyptian 4th Armored and 3d Mechanized Divisions had experienced, well-trained, disciplined troops under competent senior officers, many of whom had served as battalion commanders in the 1973 war with Israel. The Egyptians were equipped with American materiel and had participated with Americans in many multinational exercises.

The Saudis also used American equipment, but were not as well organized or trained as the Egyptians. The Saudi army, consisting of the relatively well-financed Saudi Arabian National Guard and the Royal Saudi Land Forces, lacked manpower, experienced leadership, training, logistical support, and expertise in large-unit operations. What remained of the Kuwaiti army also lacked training and, as a consequence of the invasion, lacked a great deal of equipment. The 10,000 troops from Bahrain, Qatar, Oman and the United Arab Emirates were in need of equipment, too, although their level of training surpassed that of the Saudis and Kuwaitis.

Of the other coalition partners who contributed ground forces, Morocco, Pakistan and Bangladesh provided relatively small but well-trained forces, each with experience in counterinsurgency. Afghanistan sent 300 Mujahideen to serve as military police, and Senegal deployed 500 soldiers, who impressed American observers with their daily 90-minute sessions of extremely rigorous physical conditioning.

Syria's force of 15,000 represented the least-known quantity. No one knew how the Syrians would perform, but the memory of their defeat by the Israelis in the Bekaa Valley in 1982 was not encouraging. As a result of several factors, including the strong resemblance of their

equipment to that of the Iraqis and multiple changes of heart regarding participation in offensive operations against the Iraqis, the Syrians were ultimately assigned to rear-echelon missions during Desert Storm.

Because the VII and XVIII Corps were only two elements of the coalition forces organizing for the ground offensive, questions of command and control surfaced during the decisive weeks of planning. U.S. Army Central Command (ARCENT) functioned as the higher headquarters for all U.S. ground forces except the Marines, and had no authority over the coalition forces. For political reasons, the creation of an overall ground command that included the Arab troops among the nearly 700,000 soldiers from 28 countries was virtually impossible. General Schwarzkopf planned to be his own ground commander, dismissing arguments similar to those advanced by the British about General Dwight D. Eisenhower in World War II that he lacked the time and resources to supervise the battle while dealing with strategic and politico-military issues at the CENTCOM level. Indeed, in practice, Central Command left several matters for the Army component and the Marines to resolve among themselves, resulting in friction over boundaries and the transfer of the 1st (Tiger) Brigade, 2d Armored Division, to the Marines to increase their firepower.

Internal command and control problems were fairly straightforward compared to the confusing lines of authority between Central Command and other coalition partners. During the first months of Desert Shield, the coalition worked under an informal arrangement, whereby General Schwarzkopf led the Americans; General Mohammed Saleh Al Hammad, chief of the Royal Saudi General Staff, directed the Saudis, Egyptians and Moroccans; and the leaders of the other national forces reported directly to their respective governments. When it came to issues of common interest, the coalition commanders conferred with one another. Such an amorphous relationship led to calls for a more formal command structure, perhaps a political committee and a council of military commanders, but no formal combined organization ever emerged. In accord with NATO practice, the British government placed its force under Schwarzkopf, except in matters of grand strategy and policy, and the French later followed suit. By the time of the ground offensive the coalition had effectively evolved into two combined commands—

the Western allies under General Schwarzkopf, and the Arab members now under His Royal Highness Lieutenant General Prince Khalid ibn Sultan, commander of the joint forces. In practice, the Arabs followed CENTCOM's lead, but without formally ceding authority to Schwarzkopf. Although inconsistent with the unity-of-command principle, the structure was probably the best available given the linguistic, cultural and doctrinal differences between Westerners and Arabs. Considerable coordination and the professional dedication of the senior officers who were involved made the coalition arrangement work.

Ultimately, the leaders at the top of the hierarchy, namely Schwarzkopf, Saudi General Khalid (commanding the Arab forces), and the commanders of the British and French contingents, Air Chief Marshal Sir Patrick Hine and Lieutenant General Michel Roquejeoffre, respectively, cooperated through daily conferences. With CENTCOM and Saudi General Staff headquarters located in adjacent facilities in Riyadh, substantial coordination also took place between American and Saudi staff officers on a daily basis. In the field the Army Central Command, the VII and XVIII Airborne Corps, and the 5th Special Forces Group (Airborne), 1st Special Forces, stationed liaison teams with Arab units, reaching down in some cases below the brigade level. Other ARCENT and corps liaison officers served with the British and French allies.

The Enemy

In September, the best intelligence available to CENTCOM indicated that the Iraqis were a well-equipped, battle-hardened foe who would have the advantage of secure lines of communication. They had an impressive array of modern equipment, mostly of Soviet design, including weapons of mass destruction. Although the extent of their will to fight was unknown, their capability for fighting was unquestionable.

The Iraqi armed forces were certainly much more combat experienced than the forces of the coalition, although once Desert Storm began, coalition forces realized that "combat weary" was a more accurate appraisal of many non-Republican Guard units. Shortly after its September 1980 attack into Iran sputtered to a halt, the Iraqi military assumed a strategic defense, seeking to wear down the numerically

superior Iranian army. The resulting stalemate continued until 1985 when the Iraqis experimented briefly with limited offensives supported by massed artillery and heavy air support.

The Iranian offensive which captured the Al Faw peninsula in 1986 effectively ended the stalemate. In April 1988, the Iraqis launched a series of corps-level counterattacks to regain territory lost to Iran. The operations were carefully rehearsed and meticulously orchestrated. The Iraqis preceded each division- and corps-level attack with an extensive heavy artillery preparation, accompanied by liberal use of chemical weapons and air strikes. Preparation, planning, and mass application of firepower paid off. By July, the war was essentially over.

As a result of the Iran-Iraq War, the Iraqi army expanded from 12 divisions of 350,000 men in 1982 to 56 divisions of 1,100,000 men by late 1989, making it the fourth largest military power in the world. It was organized and trained along British lines and was largely equipped with the best tanks and armored vehicles the Soviets, French and South Africans had to offer.

The Iraqi army's tactical units were organized and trained in three distinct tiers. Infantry divisions comprised the bottom tier. In the Iran-Iraq War, they proved capable at best of maintaining a static defense. Since the end of the Iran-Iraq War, they had atrophied so that even a respectable static defense in Kuwait was beyond the capability of most. Army mechanized and armored divisions were somewhat better, manned by long-service professional soldiers trained well enough to keep tanks and armored vehicles operating. The best units were elements of the Republican Guard.

When the Iraqi army returned to the attack against the Iranians in 1988, the Republican Guard was in the forefront, translating the lessons of mobile defense into offensive operations. Acting either as an independent force or in concert with regular army formations like the 3d Corps, the Guard conducted the main attack in at least five operations, demonstrating its superior planning, training, equipment and, most importantly, its esprit de corps. As it became more practiced in the offense, the Guard used amphibious and airmobile forces to cut off retreating Iranian units. To those familiar with past Iraqi operations, the Guard's dominant role in the invasion of Kuwait came as no surprise.

Created originally as a palace guard of two brigades, by July 1990 the Guard had grown to a

separate corps with 28 combat brigades organized in eight divisions, including armor, mechanized infantry, infantry and special forces. The Guard possessed the best equipment Baghdad could provide. While an ordinary army armored division might field 250 tanks—usually a combination of obsolescent T-54s, T-55s and T-62s—a Republican Guard armored division had 312 of the more modern T-72s. Some Guard armored brigades had the T-72M1, the best Soviet tank then available to the world market. The T-72s, however, accounted for only 20 percent of the total Iraqi tank inventory. The more advanced armor on the T-72 and T-72M1 could sustain direct hits from older 105mm rounds fired by the earlier models of the M1 Abrams and M60 series at 2,000 meters. Iraqi T-72M1s and T-72Ms had laser range finders, and the 125mm gun, standard on all T-72s, could penetrate the Abrams at 1,000 meters, although even the Americans' oldest tanks' 105mm rounds could destroy a T-72 at almost twice that range.

Similar disparities existed between regular and Guard mechanized infantry divisions. The artillery brigades within the Guard were equipped with Austrian, French and South African artillery systems, many of which were superior in range to any in the U.S. Army inventory. Guard air defense units had the proven SA-6 mobile surface-to-air missile, normally used to protect high-value strategic targets.

Not only was the Guard better equipped, but it was treated like an entirely distinct organization, apart from the rest of the Iraqi army. The Republican Guard operated directly under general headquarters control. To ensure its unswerving political loyalty, many of its officers and soldiers actually came from Saddam's hometown of Tikrit. During its expansion in the mid-1980s, the Guard offered enlistees cash bonuses, new cars, and subsidized apartments.

Even as it deployed into the Kuwait Theater of Operations (KTO), the Republican Guard continued to maintain a separate and exclusive existence. Guard bunkers in Kuwait were appointed with the best furniture, carpets and appliances, largely stolen from the Kuwaitis. Closer to the center of the Iraqi logistical system at Basrah, the Guard never ran short of food, water or military supplies, while regular units often suffered shameful neglect, with all of the corollary morale problems. Officers from regular units were known to cultivate and bribe the Guard for spare parts, supplies and luxury items.

The Republican Guard's special status came at a high price. The Guard was expected to fight even if other units folded, and was positioned in the KTO to backstop the regular units. In this way, they were not only insulated from the initial shock of enemy action, but were well positioned to conduct counterattacks and could serve as a spear in the back of the forward-deployed units, should their soldiers' courage flag.

The KTO was so vast that if it was to perform as a theater-wide operational fire brigade, the Guard needed theater-wide mobility. To this end Saddam purchased more than 2,000 heavy equipment transporters (HETs), each capable of carrying a T-72 tank great distances over improved roads. He had enough HETs to carry all three Guard heavy divisions in Kuwait simultaneously. Thus the Guard could either reinforce anywhere in Kuwait in fewer than 24 hours or, should the war not develop as planned, be recalled to Baghdad in a matter of days.

Although Saddam Hussein treated the Iraqi air force as an elite group, it was not, unlike the Republican Guard, capable of bold offensive action. Its greatest contribution was to preserve its aircraft strength to pose a continuous over-the-horizon threat. Despite its numbers, the Iraqi air force was no match for the coalition, nor could it offer credible support to Baghdad's ground forces. Close air support, as practiced by the U.S. and other Western air forces, was unknown to them. Iraqi fighter-bombers might attempt independent air interdiction against point targets, but they were incapable of working under the control of forward ground units. Even the Iraqi attack helicopter fleet of Soviet Hinds and French Alouettes and Gazelles was incapable of much beyond rudimentary support as flying artillery.

Iraq protected its forward troops in the KTO from air attack with a mixture of missiles and guns. The most serious threats to army aviation were short-range systems like the SA-9 and SA-13 missiles, along with the shoulder-fired SA-14s and SA-16s. The density of anti-aircraft artillery in theater was of particular concern to U.S. Army planners. More than 3,700 anti-aircraft artillery systems larger than 14.5mm were spread throughout the KTO. The deployed army supplemented its anti-aircraft artillery with the fires of more than 10,000 machine guns of 12.7mm caliber or larger.

Iraq possessed both Scud missiles and weapons of mass destruction. Iraq's Scud-B was originally designed by the Soviets to deliver a one-ton payload to a maximum range of 300

kilometers. The Iraqis modified it during the war with Iran to deliver a half-ton warhead to 475 kilometers. A newer version, the al-Abbas, could range 600 kilometers with the same payload.

The modified Scuds were notoriously inaccurate. The al-Abbas at maximum range could be expected to hit within only about 4 kilometers of its target. Baghdad possessed both fixed and mobile launchers. Intelligence had detected a total of 64 fixed sites in western Iraq, all aimed at Israel. Twenty-eight of those fixed sites were complete, and the remainder were nearing completion. No one knew exactly how many mobile launchers the Iraqis had, but the best guess before the war was 48 of various design. Some analysts suspected the Iraqis were producing more, perhaps many more. The hunt for mobile launchers would be the thorniest problem of the war.

The coalition most feared Saddam's weapons of mass destruction. He not only possessed them in great quantities, but he had used them on his own people in the past. Saddam had built a large arsenal of mustard and nerve agents and had provided artillery, aircraft and missiles capable of delivering them. The same systems could deliver Saddam's anthrax and botulinum biological weapons.

The senior leadership of the Iraqi army consisted largely of committed professionals who had learned a great deal about fighting in eight years of war against Iran. Most officers possessed university degrees from local or foreign institutions, and the more senior staff officers had trained at Soviet, Chinese or European staff colleges. Senior staffs had demonstrated respectable skill in planning and executing the invasion of Kuwait. To command and control their forces, the Iraqis had established a redundant communications network unequalled even by some first-rate Western armies. The network reached from each of the multiple command centers in and around Baghdad through intermediate headquarters in the KTO, to the lowest Iraqi unit along the Saudi border.

Aside from their general equipment inferiority and the poor quality of their lower-tier units, the Iraqi army suffered from even more profound problems. These began with Saddam Hussein. Without military training of any type, he had a reputation for exercising strict personal command over his armed forces in the field. The resultant overcentralization by an incompetent leader stifled Iraq's ability to put together a credible offensive operation for most of the eight-year war with Iran. Only after the disastrous Al Faw

campaign in 1986 did Iraqi general headquarters gain some degree of planning and operational discretion, and only then did the army perform well enough to defeat Iran. Even in the wake of that victory, however, Saddam Hussein reserved major decisions for himself, and he rewarded failure harshly, sometimes executing officers for relatively trivial tactical mistakes. After seeing the price of failure so dramatically demonstrated after the Iranian seizure of Al Faw, senior Iraqi commanders, particularly those in the Guard units, sacrificed themselves and their men slavishly to avoid disgrace in the eyes of their leader. No commander would consider independent action, particularly if failure was likely. Thus, CENTCOM planners realized from the beginning that should they be able to sever linkages between Saddam Hussein and his commanders in the field, the Iraqi army would probably be incapable of large-scale maneuver.

Most Iraqi units were not tactically proficient. Missions such as attacks, passages of lines, and counterattacks could be performed only by certain units, principally the Guard and the 3d Corps. Even within the best units, tactical and technical proficiency was not always apparent. All but the most elementary artillery missions were beyond the limited abilities of most Iraqi artillerymen. Even with reasonably proficient crews, good tanks and armored vehicles were nothing without proficient, flexible commanders. Most significantly, other than during the very brief attack into Kuwait, the Iraqis had never demonstrated much ability to fight at night.

Neither the air force nor the air defense command was capable of protecting Iraqi ground forces from air attack. Soldiers could rely only on camouflage, deception and entrenchment to survive prolonged aerial bombardment. The Iraqi logistics system was hard-pressed just to supply the army in peacetime. Even a moderate interruption would effectively deny units along the Saudi border access to such essentials as food and water. While planners could count tanks and artillery pieces, they were less successful in measuring the will of the Iraqi military to fight, an intangible that would potentially have enormous impact on the war. The Iran-Iraq War seemed to show that the frontline infantry were as badly motivated as they were equipped and trained. If subjected to any pressure whatsoever, they would break and run. The regular army heavy divisions would fight, probably with some tenacity, surrendering only if retreat were impossible. The Guard, however, was expected to fight to the

death and to maintain its cohesion and ability to fire and maneuver even if badly mauled.

DESERT STORM

Shaping the Battlespace: Setting the Conditions for Victory

During the 45-year Cold War standoff in Central Europe, the United States had developed systems to collect information by a variety of strategic, operational and tactical means, and to fuse it into intelligence for use at every level. Warsaw Pact intentions were known, and most importantly from the tactical level, detailed knowledge of Warsaw Pact commanders and capabilities was the basis for planning. In Europe, intelligence battalions down to division level provided continuous coverage and updates on the enemy situation.

The challenge posed by the situation in the Kuwait Theater of Operations was at once less and more difficult. Years of data collection on Soviet equipment elsewhere in the world provided comprehensive knowledge of much of Iraq's arsenal, but Baghdad's concept of a defensive war of attrition, coupled with their appreciation of American skill in electronic eavesdropping, caused the Iraqis to harden much of their command and control system and impose severe limitations on radio and radar transmissions. Thus, while U.S. intelligence assets knew well the equipment the Iraqis were using, they were initially severely hampered in understanding what they were doing with it. The intelligence effort was further hampered by a paucity of Arabic linguists, particularly those skilled in the Iraqi dialect, to exploit what little data could be gathered. Once the air operation began, however, signal intercepts became more profitable as hardened communications were damaged or destroyed and the Iraqis were driven to use less secure communications.

Human intelligence (HUMINT) was particularly difficult to collect and analyze due to the closed nature of Iraqi society and the vigorous activities of their internal security forces. However, significant numbers of Kuwaiti refugees were available for debriefing in Saudi Arabia, and

as Desert Storm progressed, more and more Iraqi soldiers deserted, providing another useful source of HUMINT. Eventually, about 300 Kuwaitis living in the United States volunteered to serve as translators, augmenting the relatively small number available in the U.S. Army.

With its generally clear skies and sparse ground cover during the summer and autumn, the KTO was an ideal region for overhead observation, which facilitated targeting and mapping, and the ongoing evaporation of the Soviet threat in Europe freed many intelligence assets that were previously committed to NATO. Although the ideal aircraft, the U.S. Air Force's SR-71, had been mothballed only the year before, CENTCOM could still count on other aircraft, including RF-4Cs, U-2s, TR-1s and British Tornados. All could produce wide-angle imagery, but none could survive Iraqi air defenses until they were suppressed by a coordinated air operation.

In addition to problems in seeing the battlefield, getting the information to the users proved difficult. The tactical intelligence structure was designed to draw intelligence from the bottom up, building on it gradually as it proceeds upward from units in contact. In the desert, commanders' expectations for tactical intelligence, especially below corps, remained unmet. They required much more specific intelligence than ever before, driven in part by the burgeoning information required to fully apply precision weapon systems in an offensive operation. The priority placed on transporting combat forces to the theater precluded the deployment of many intelligence units until well into Desert Shield. The first such unit could become only partially operational by 7 September, and its full complement of personnel and equipment did not arrive until November. ARCENT's organic intelligence structure was not complete until C+160, the same day the air operation began. Moreover, to mask intentions, CENTCOM directed that intelligence collection units remain well back from the border, severely hampering their effectiveness. Thus XVIII Airborne Corps' military intelligence battalions arrived between September and October, but were unable to develop an adequate picture of the battlefield until they moved into forward positions on 19 January. The same proved true for VII Corps. Not configured for contingencies and embedded in the NATO intelligence structure, VII Corps had to rely on higher echelons for most intelligence information. The intelligence structure, designed largely for the defense of Europe,

was inadequate for the grand offensive maneuver envisioned for Desert Storm.

Part of the solution to these problems was provided by two systems: the Joint Surveillance Target Attack Radar System (JSTARS) and the unmanned aerial vehicle (UAV).

Before Desert Shield, the Army and the Air Force had been developing JSTARS principally as a means to help the ground commander determine which deep targets to attack and when. JSTARS is a highly modified Boeing 707 aircraft equipped with a synthetic aperture radar. In the targeting mode, the radar could search a 4 x 5-kilometer area and provide locations of assembly areas and individual vehicles to an accuracy sufficient for attack by air or artillery. As a surveillance system, JSTARS could range several hundred kilometers to portray a 25 x 20-kilometer sector. It would be able to watch all of Kuwait and major portions of southern Iraq. The system was designed to operate in both modes simultaneously. In either mode, JSTARS could detect all moving targets and many stationary features such as the Iraqi obstacle system. Information produced by the radar could be passed to ground stations and Airborne Warning and Control System (AWACS) aircraft in near real time.

The JSTARS package that was deployed consisted of two E-8A aircraft and six ground stations that were able to maintain almost continuous coverage over the KTO in nightly 11-hour flights inside Saudi air space. The system complemented side-looking airborne radar missions mounted by XVIII and VII Corps' own organic Army Mohawk aircraft.

Although JSTARS guaranteed all-weather coverage to a depth of 150 kilometers, tactical commanders still needed a close-in system to see over the next hill. XVIII Airborne Corps capitalized on the "Horus" radar possessed by the French 6th Light Division. Horus was a prototype moving-target indicator mounted on a Puma helicopter that functioned much like the JSTARS. In its first use, the all-weather Horus directed Apache attack helicopters and multiple launch rocket systems (MLRSs) to targets during night deep operations. Another technical solution was to employ drones (unmanned aerial vehicles, or UAVs) equipped with television cameras and other sensors. Although the Navy and Marines possessed the Israeli-designed Pioneer drones, the Army had only an experimental platoon of five; it did not arrive in theater until 26 January and did not fly its first mission until 1 February.

As the main attack force, only VII Corps ultimately had access to Pioneer.

The other half of the intelligence problem was dissemination, with imagery the biggest challenge. The intelligence system before Desert Storm was not designed to push all the required intelligence down to the tactical level. During the previous 20 years, the Army and the other services had dismantled their capability to produce tactical imagery at lower levels. Instead, the Army chose to capitalize on electronically generated imagery products from corps to divisions. Called secondary dissemination, this method replaced the familiar aerial exploitation units in divisions and corps. Rather than tactical units developing their own negatives for study on a light table, photographs would be analyzed at a higher level, converted to digital data, and transmitted to the using units for reassembly at special terminals. Much like a closed-circuit video relay of the pictures, such links were still largely incomplete. Now, on the eve of war, off-the-shelf purchases and prototypes had to be fielded because transmission of digital data required bandwidths well beyond those of the standard communications net allocated to intelligence.

Getting new equipment fielded in time was a close-run race, one that in some cases was completed too late. Trojan, a satellite system for secure voice and digital imagery transmission, did not get to the theater until February. Once in place, however, Trojan became the principal channel for transmitting intelligence “templates” depicting likely Iraqi troop dispositions.

The Air Operation

Air planners have long sought to vindicate the view that the ever-increasing accuracy of aerially-delivered munitions has made it possible to win wars the “clean” way, i.e. through strategic targeting. In this view, the application of air power then becomes a campaign, if not a separate war, distinct from (and possibly not including) ground combat. Army leaders, on the other hand, recognize the historically proven reality that wresting terrain from an enemy requires ground operations. Thus, ground commanders see air power as the means to weaken the enemy and shape the battlefield for successful prosecution of ground operations. This disparity of perspective became abundantly apparent during preparation for and execution of Desert Storm.

In early August, the U.S. Air Force developed a plan for offensive air operations against Iraq. Stunningly, the plan had no provision to target the Iraqi forces poised on the Saudi border. Dubbed “Instant Thunder,” it became the basic plan for air operations in Desert Storm. Although, at the direction of the Chairman, JCS, and the Secretary of Defense, the air planners soon modified it to include targets in the KTO, some Air Force planners continued to believe that victory was achievable through air power alone. The Army, in contrast, remained convinced that ground and air power applied in synergy would be necessary to eject Saddam from Kuwait.

More than four months later, on 15 January, General Schwarzkopf was briefed by Lieutenant General Charles A. Horner, the Joint Forces Air Component Commander (JFACC), on his plans for a phased, sequential air operation beginning with strategic air attacks, followed by the establishment of air supremacy, attacks on the Republican Guard, and finally, attacks on the forward defenses of the KTO. The CINC grew increasingly angry as Horner briefed the sequential nature of the air plan. Fearing that the shooting war might end prematurely, the CINC wanted a simultaneous campaign. He wanted to hurt Saddam’s military power across the board so that should Saddam withdraw from Kuwait, at least a portion of his army would be crippled by air power. Schwarzkopf wanted the KTO and the Republican Guard to be hit from the beginning of the operation—forcing a major change just two days before the operation was to begin. It was only the first of a series of last-minute changes.

Other conflicts arose between the Army and Air Force over the conduct of missions in support of the ground tactical plan. The sources of these conflicts included not only philosophical differences, but also a shortage of tactical reconnaissance aircraft and differences over targeting methods and priorities. On 18 January, the second day of Desert Storm, another factor arose: the need to destroy Iraqi Scud intermediate-range ballistic missiles.

In retaliation for coalition air attacks, the Iraqis launched the first of 86 modified Scuds against targets in Israel and Saudi Arabia. The next day eight missiles fell on Israel, injuring 47 people and causing extensive damage to civilian property.

The 11th Air Defense Artillery (ADA) Brigade was responsible for air defense of Saudi ports and airfields. Its commander integrated the air

defense capabilities of all U.S. forces into his air defense plan, and coordinated it with the air forces of U.S. and coalition allies. On the night of 20 January, the Patriot missile crews of Batteries A and B, 2-7th Air Defense Artillery, engaged four Iraqi Scuds inbound over Saudi airspace. Not as well made as their Soviet counterparts, as the Scuds reentered the atmosphere far above the earth at speeds between 4,400 and 5,000 miles per hour, they began to break apart. This deficiency actually made it harder for the Patriots to intercept the warheads, as the Scuds in effect produced their own radar “decoys” as the missile fragments cluttered the radar of the Patriots. Three of the missiles were intercepted and destroyed, and the fourth Scud fired at Dhalran that night missed the target altogether.

The success of the American Patriot batteries in defending Saudi Arabia raised eyebrows in Israel. Although Israel had bought its own Patriots, the crews were still in training at the U.S. Army Air Defense School at Fort Bliss, Texas, when the war began. The Israeli government had rejected an offer of American-manned Patriots to fill the void. However, with Saddam’s missiles falling on their territory, the Israelis soon changed their minds and invited the United States to deploy Patriots there. The 10th Air Defense Brigade from Darmstadt, Germany, quickly responded and, using a combination of U.S. Air Force and El Al Airlines commercial jets, began arriving on 19 January. Three days later, they intercepted their first Scuds inbound over Israel. The Patriot tactical missile had served as a key political tool to keep Israel out of the war—Israel’s involvement could have been a disastrous blow to the fragile coalition, which included Syrian and other Arab units. But Patriots were purely defensive weapons, and the United States had to do more than merely parry Iraqi blows.

The key to ending the Scud threat was to destroy the launchers. The fixed launch sites, all in western Iraq, were relatively easy to identify and neutralize or destroy. But Scuds were also launched from Soviet-made tractors or locally produced trucks with trailers. Loading a missile on its launcher and preparing it for firing could be done in a hidden position, allowing the crew to drive to a surveyed launch position, set up, and fire with minimum exposure. They also used decoy trucks with large pipes mounted to resemble missiles.

Due to their potentially disastrous strategic impact, Scuds quickly became CENTCOM’s priority target, and air sorties were diverted

accordingly. By 24 January, 40 percent of all air sorties had been dedicated to “Scud hunting,” and important intelligence assets such as JSTARS and satellites were redirected to search for the launchers. National intelligence agencies focused their resources on suspected launch areas and, in consonance with local Army electronic warfare units, targeted Iraqi strategic communications with available jammers.

To find and kill Scuds, U.S. Special Operations Command (SOCOM) created a special 877-man Joint Special Operations Task Force (JSOTF) of aviation and ground forces and placed them directly under CENTCOM control, working with British special forces. The Iraqis had scattered their Scud support over a huge area to hide and secure it, so the JSOTF area of operations, AO Eagle, was likewise extended over several hundred square miles.

Beginning on 7 February, special operations forces infiltrated deeply into Iraq to destroy communication sites, ambush mobile launchers, and direct armed helicopter strikes against fixed facilities associated with Scud launchings. In one instance, a reinforced Ranger platoon carried in by special operations helicopters raided a strategic communications facility near the Jordanian border. The Rangers toppled the 350-foot microwave tower, destroyed the communications site, and returned safely.

Combining the eyes of Special Forces (SF) soldiers on the ground with Air Force firepower proved most effective. In the early morning hours of 21 February, a Special Forces reconnaissance team deep in Iraq, using its sophisticated night-vision equipment, spotted an Iraqi convoy almost a mile from their position. Within minutes, the team called in an airstrike, but enemy antiaircraft fire disrupted the first pilot’s attack. Still determined, the team called in a second F-15E to destroy the target. This Strike Eagle did not miss, and the team saw the convoy disappear in a huge fireball followed by several secondary explosions. Meanwhile, the first F-15E pilot used his on-board radar to locate more Scud support vehicles, and AWACS continued to vector in additional F-15Es until all the Iraqi vehicles were destroyed. To be safe, the ground SF team moved to a new hide site to radio each battle damage assessment (BDA). Even after the raids were completed, the enemy apparently never realized that they were being watched from the ground.

As a result of this concerted, joint effort, Scud attacks dropped dramatically in frequency and accuracy. Of the 86 Scuds launched, 29 were

launched in the first 19 days, but after the support sites in the western Iraq desert had been located and attacked, Iraq launched only 11 missiles, two of them falling harmlessly in the open desert.

The effort to blunt the Scud threat succeeded, but only by reallocating intelligence, special operations forces, and Army and Air Force air assets from their original missions to shape the battlefield. Ultimately, the Scud hunt meant that Army targeting goals would not be reached before the beginning of the ground war.

Preparing for Battle

Once in their assembly areas, units rushed to complete last-minute training before moving to jump-off points. Having just arrived, VII Corps faced a major task of acclimatization in addition to other necessary preparations. Fortunately, the longer-than-expected air campaign allowed enough time for the corps to learn something of desert warfare and conduct multiechelon training on the missions they were about to undertake. The 1st Infantry Division, which would spearhead the attack, concentrated on training for breaching operations, often with the British 1st Armoured Division.

In contrast to VII Corps, XVIII Airborne Corps had enjoyed plenty of time to prepare. Except for combined training with the French 6th Light Armored Division in close air support and recognition of each other's equipment, most of the corps' training consisted of rehearsals, sand table exercises, and measures to sustain existing skills. Farther south, at King Khalid Military City, the 22d Support Command was equipping squads and crews from Army units outside the theater and training them to serve as replacements for the coming offensive.

At the border, fighting had already started. The 1st Cavalry Division and the 2d Armored Cavalry Regiment patrolled the area west of the Wadi al Batin to screen VII Corps' buildup from enemy reconnaissance scouts. The flat, open plain provided little concealment except for the wadis, into which an unwary Bradley fighting vehicle crew could plummet in the dark. To the north, cavalry patrols could see flashes and hear rumbling along the border as the Air Force pounded Iraqi positions. Occasionally, they picked up Iraqi deserters or destroyed enemy observation posts. As G-Day (the beginning of the ground phase of the campaign) grew closer, they clashed with Iraqi scouts conducting reconnaissance missions of their own.



Army Patriot missiles and their crews not only protected critical coalition forces and locations from Scud attacks, but also had a strategic impact by frustrating Iraqi attempts to provoke Israel.

On 22 January, in XVIII Corps' sector near the boundary with VII Corps, the 3d Armored Cavalry Regiment took part in the first ground encounter of the campaign. A squad exchanged fire with an Iraqi force of undetermined size, possibly from the border police. Two Iraqis were killed and six captured at the cost of two American wounded. On the extreme left, patrols of the 82d Airborne, 101st Airborne and French 6th Light Armored Divisions screened XVIII Corps' front near Rafha, manning listening posts and conducting reconnaissance into the barren wastes. They encountered fewer Iraqi scouts this far west, but clashes nevertheless occurred.

To discover what lay behind the border berms to the north, CENTCOM relied partly on Army special operations forces. During the early days

of the crisis, Green Berets of the 5th Special Forces Group (Airborne), in cooperation with Saudi paratroopers, manned observation posts and patrolled the Kuwaiti border to provide early warning of an Iraqi attack. Since September, almost the entire 5th Group had become involved in liaison work and combined training, and CENTCOM used a battalion of the 3d Special Forces Group (Airborne) to carry out long-range patrols north of the border. In all, Special Forces soldiers conducted twelve such operations.

Special operations personnel also conducted extensive psychological operations (PSYOPS). To induce large numbers of enemy soldiers to desert, radio and television broadcasts, leaflets and loudspeakers proclaimed the themes of Arab brotherhood, the omnipotence of allied air power, and the utter political and economic isolation of Iraq. In other special operations, Army helicopters cooperated with those of the Air Force to rescue downed pilots, and civil affairs officers worked closely with the Kuwaiti government in its reconstruction planning. Although Desert Storm proved to be primarily a conventional campaign, special operations played important parts in the final victory.

To the west, as the air war entered its fifth week, VII Corps moved to jump-off attack positions near the Iraqi border. The 1st Cavalry Division had already shifted to the corps' right flank to cover the Wadi al Batin, and from 11 to 17 February, the 2d Armored Cavalry Regiment, 1st Infantry Division, 1st Armored Division, 3d Armored Division and British 1st Armoured Division all moved up as well. By 17 February VII Corps had assembled over 1,500 tanks, 1,500 armored fighting vehicles and 650 artillery pieces at the border.

During the next week the VII and XVIII Corps completed their preparations while stepping up artillery bombardments and patrols. Because of the great range of the Iraqi artillery and its deployment 11 to 18 kilometers behind the border, allied gunners initially confined themselves to "shoot-and-scoot" artillery raids, penetrating well within the Iraqi range to unleash a few salvos and then changing their position. When it became clear that the Iraqis could not find them, allied batteries stayed in position and even closed the range to deliver fires against enemy forward positions. Gunners hit command posts, artillery emplacements, air defense facilities and supply depots. Rockets from the multiple launch rocket system, dubbed "steel rain" by the Iraqis, shattered materiel and morale. One Iraqi division

lost 97 of its 100 guns to a bombardment from 300 rocket pods and two battalions of eight-inch (203mm) howitzers.

Generally, the Iraqi response to this fire was negligible. At times, allied gunners even tried to bait Iraqi artillery to pinpoint positions for counterbattery fire. As allied artillery and air power systematically eliminated the Iraqi artillery threat, allied cross-border patrols were winning the battle for "no-man's-land." On VII Corps' front, long-range surveillance units with the 2d Armored Cavalry Regiment observed Iraqi dispositions and fortifications. Using holes cut in the border berm by engineers, other patrols ventured into Iraqi territory to reconnoiter positions, set ambushes, capture prisoners, and call in air and artillery fire against tanks, armored personnel carriers, command posts and radar stations.

On the left flank XVIII Airborne Corps conducted mounted and aerial raids deep into Iraqi territory to hit armor, artillery, bunkers and observation posts. In one armed reconnaissance mission by the 101st Airborne Division on 20 February, a helicopter with a loudspeaker induced 476 frightened Iraqis to surrender after fifteen of their bunkers were destroyed by air and tube-launched, optically tracked, wire-guided antitank (TOW) missile fire. The cross-border operations were not without cost, but Iraqi resistance was generally so weak that by 22 February helicopters of the 82d Airborne Division were penetrating deep into enemy territory with impunity in daylight.

The unprecedented ranges of new weapons combined with the featureless nature of the desert and the lack of combat experience of most of the coalition forces to produce a number of friendly-fire casualties, or "fratricide." Eight marines were killed by friendly fire in the first week of February. On 17 February, two soldiers of the 2d Armored Division were killed and six wounded when a Hellfire missile, launched by an Apache to suppress Iraqi fire, crashed into their Bradley. The mixing of friend and foe in the enemy's rear, characteristic of American battle doctrine, as well as the deadliness of modern weapons beyond the range of easy identification, had created a situation in which friendly-fire casualties were likely without appropriate countermeasures. To correct the situation, VII Corps experimented with glint and thermal tape, strobe and chemical lights, illuminated paint and panels in an attempt to find a material that could easily identify a friendly vehicle at night without giving its position away to the enemy. Considering the number of friendly units

in disputed areas, the number of incidents remained remarkably low, but the problem clearly would demand attention in the future.

However menacing allied air power occasionally could be to friendly troops, it inflicted infinitely more punishment on the Iraqis. By G-Day, intelligence indicated that the Iraqis had lost 53 percent of their artillery and 42 percent of their tanks in ARCENT's sector. Air attacks had reduced frontline units to less than 50 percent and reserves to 50 to 75 percent of their strength. Nearly 1,000 Iraqis, hungry and tired of the incessant bombing, had already given up to American troops. Unknown to the coalition at the time, thousands more apparently had deserted north. When an Iraqi reconnaissance in force hit Was al Khafji in late January, it was repulsed by Arab and Marine forces; American commanders interpreted the foray as a desperate Iraqi attempt to boost morale.

American generals had other reasons to be optimistic. Intelligence indicated that the Iraqis did not have many troops or defenses west of the triborder area. Although Iraqi strength in the Kuwaiti theater had risen from 27 to 43 divisions since November, most of the new troops had joined the forces inside Kuwait. Only seven weak Iraqi infantry divisions, backed by an armored division, manned improvised works on VII Corps' front, while three widely dispersed infantry divisions faced XVIII Airborne Corps.

The Army and the Air War

For the most part, the Army played a minor role in the air war, but since the timing of the ground offensive depended on reduction of Iraqi forces to a certain level, the Army had a major voice in the assessment of bomb damage. ARCENT planners assumed that the proper level of attrition was roughly 50 percent of the Iraqi armor and artillery, including 90 percent of the tanks and guns at the breach sites. ARCENT was supposed to keep track of bomb damage assessments and decide on the proper timing of the ground offensive. The stakes in bomb damage assessment were high. An incorrect evaluation could result in



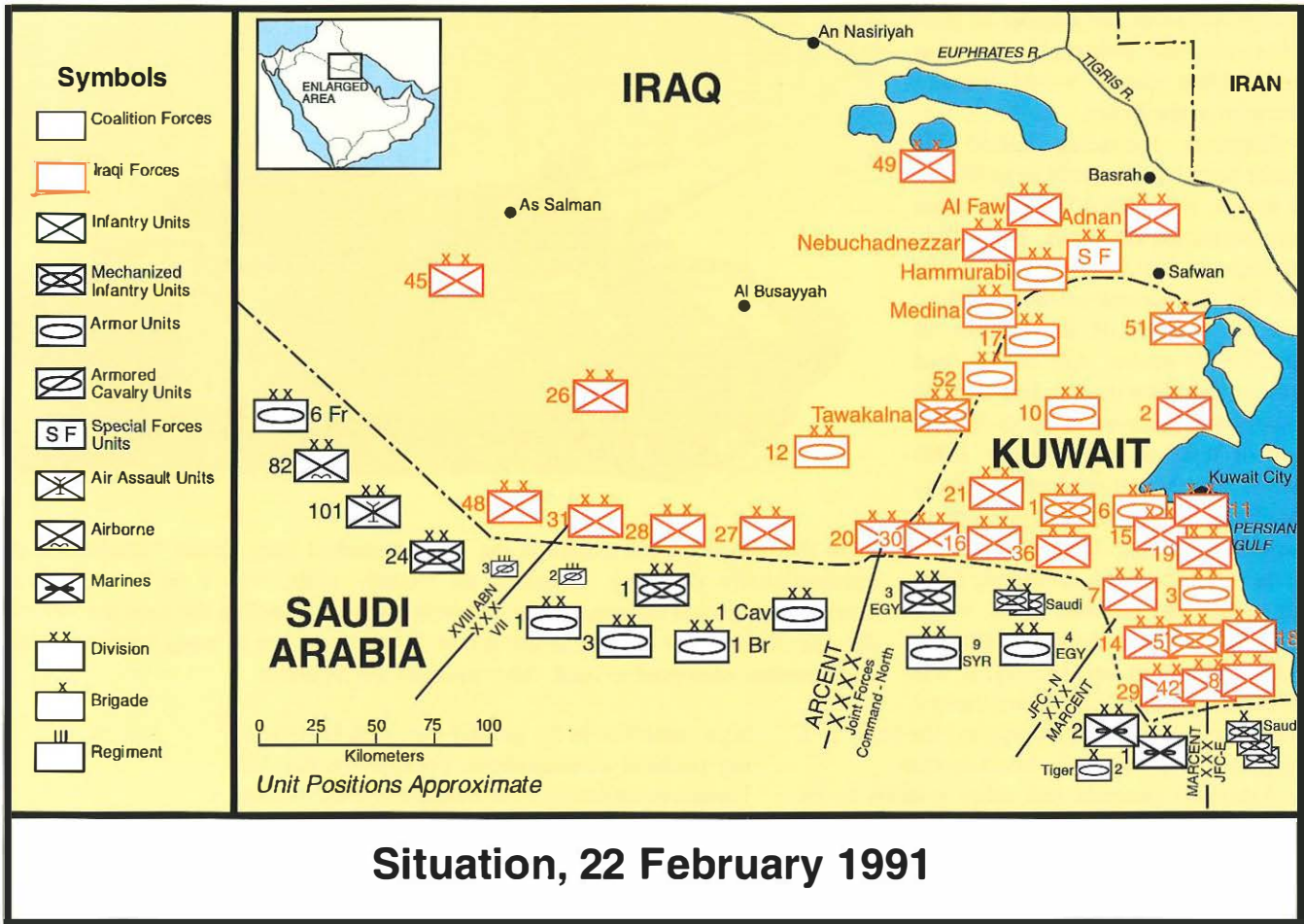
In the fast-paced operations in the vast, unmarked Iraqi desert, “fratricide,” or unintentionally inflicting casualties on friendly units, was a serious concern. Universally-recognizable markings on combat vehicles, such as the inverted “V” on the side skirts of this Bradley fighting vehicle, were just one of many ways coalition commanders attempted to limit “blue-on-blue” engagement.

high casualties in the ground war, with far-reaching political consequences. Fortunately, the Air Force was inflicting more damage to Iraqi morale and materiel than even the assessments indicated.

On 9 February CENTCOM and ARCENT planners reported that they were planning on fourteen more days to “shape the battlefield,” but they did not specify a date to initiate the ground offensive. Another two weeks passed, as staffs kept a close watch over bomb damage assessments. On 21 February, ARCENT notified its subordinate units to be ready to move at any time. Later that day, G-Day and H-Hour were set for 24 February at 0300.

Final Preparations

One final flurry of diplomatic activity occurred as Iraq sought to salvage something from a rapidly deteriorating situation. Amid belated and inconclusive Soviet attempts to broker a deal, President Bush immediately rejected the Soviet-Iraqi proposal and warned Baghdad to begin an unconditional withdrawal from Kuwait by noon on 23 February or face the consequences. The ultimatum came as the Iraqis were setting fire to oil wells and otherwise inflicting as much damage as possible on Kuwait. Apparently intended to hide their defensive positions in Kuwait and southern Iraq from allied aerial observation, this ecological and commercial atrocity came too late



Situation, 22 February 1991

to matter. Instead, torching the wells became a liability to Iraqi field operations in ensuing days and to Iraq's longer-term interests as well. In any case, as the deadline passed without an Iraqi response, a ground war seemed inevitable.

From Was al Khafji to Rafha, American troops braced for what the experts predicted would be a bloody confrontation. In Riyadh, the ARCENT commander, General Yeosock, who had just returned from surgery in Germany, outlined his vision of the coming battle. The 1st Cavalry Division, in theater reserve, prepared for its feint up the Wadi al Batin. To the left, a patrol of the 1st Infantry Division engaged 20 Iraqi tanks, destroying 14. Two squadrons of the 2d Armored Cavalry Regiment penetrated almost 16 kilometers into Iraq to protect engineers cutting a passage through the border berm. On the evening of 23 February, XVIII Airborne Corps dispatched long-range surveillance detachments into enemy territory. In a battalion of the 24th Infantry Division, in a Pattonesque admonition to his men, a sergeant major announced that "the only way home is through Iraq." Rumors had already

spread among the troops that 500 fillers were waiting to take the places of those who were killed and wounded. As the main forces waited, artillery bombardments and helicopter raids continued along the line. At 0100 on the morning of 24 February, the word came from Central Command: "EXECUTE ORDER FOR GROUND OFFENSIVE OPERATIONS (PHASE IV)."

The Ground Operation Begins

On 24 February—"G-Day"—coalition forces were poised along a line that stretched from the Persian Gulf westward 480 kilometers into the desert. The XVIII Airborne Corps 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. Between them these two corps covered about two-thirds of the line occupied by the multinational force.

Three commands held the eastern one-third of the front. Joint Forces Command North, consisting of formations from Egypt, Syria and Saudi Arabia, held the portion of the line east of VII Corps. To the right of these allied forces stood I Marine Expeditionary Force, which included 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.

After 38 days of continuous air attacks on targets in Iraq and Kuwait, President Bush directed CENTCOM to proceed with the ground offensive. In the far west the 101st Airborne and French 6th Light Armored Divisions commenced the massive single envelopment with a ground assault to secure the allied left flank and an air assault to establish forward support bases deep in Iraqi territory. In the approximate center of the allied line, along the Wadi al Batin, the 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, the 1st and 2d 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 Iraq by dispersing its combat power and logistical capability.

G-Day: 24 February 1991

The attack began in the XVIII Airborne Corps zone along the left flank. At 0100, the French 6th Light Armored Division sent scouts into Iraq on the extreme western end of the XVIII Airborne Corps zone. Three hours later the French main

body attacked through a light rain. Their objective was As Salman, little more than a crossroads with an airfield about 144 kilometers inside Iraq. Reinforced by the 2d Brigade, 82d Airborne Division, the French crossed the border unopposed and raced north into the darkness.

Before they reached As Salman, the French surprised outposts of the Iraqi 45th Infantry Division. General Bernard Janvier, the French division commander, 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 coalition air attacks and psychological operations—an assessment soon confirmed by its soldiers' feeble resistance. After a brief battle that cost them two dead and twenty-five wounded, the French took 2,500 prisoners and controlled the enemy division area. The French pushed on to As Salman, which they took without opposition. The French consolidated in anticipation of an Iraqi counterattack that never came. The allied left flank was secure.

The 82d Airborne Division, minus its brigade attached to the French 6th Light Armored Division, trailed the advance and cleared a two-lane highway into southern Iraq—main supply route (MSR) Texas—for the troops, equipment and supplies supporting the advance north.

The XVIII Airborne Corps' main attack, led by the 101st Airborne Division (Air Assault), 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 artillery fire missions. Corps artillery and rocket launchers poured fire on objectives and approach routes. At 0705, the "Screaming Eagles" of the 101st attacked. Screened by Apache and Cobra gunships, 60 Black Hawk and 40 Chinook helicopters of 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 176 kilometers into Iraq. A total of 300 helicopters ferried the 101st's troops and equipment into the objective area in one of the largest helicopter-borne operations in military history.

Practically all of the attacks of the 101st surprised the scattered and disorganized foe. By mid-afternoon, masses of stunned prisoners were accumulating. FOB Cobra expanded into a major refueling point 32 kilometers across to support subsequent operations. To turn Cobra into a major base, Chinooks brought in artillery and



Helicopters like this CH-47 Chinook helped the ground maneuver elements of the 101st Airborne Division (Air Assault) make its dramatic leaps deep into Iraqi territory.

other heavy weapons, as well as fueling equipment and building materials. From the Saudi border, XVIII Airborne Corps support command units drove 700 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 FOB Cobra and refueled the helicopters, it continued its aerial advance north. By the evening of G-Day, its units had cut Highway 8, about 270 kilometers into Iraq. The Screaming Eagles had now closed the first of several roads connecting Iraqi forces in Kuwait with Baghdad.

Elsewhere, lead units advanced much faster than expected. To keep the momentum of the corps intact, General Luck granted subordinate commanders wider freedom of movement, and pushed supplies forward to enable their progress. However, combat support elements had trouble keeping up with the torrid pace of the advance. In response, artillery battalions leapfrogged forward; although this cut down the fires available at any one moment, the weak Iraqi opposition justified the risk.

As the 101st and French 6th Armored surged forward, the 24th Infantry Division attacked to accomplish its mission of blocking the Euphrates River valley to prevent the escape of Iraqi forces in Kuwait. Once that task was performed, the

“Victory Division” was to attack east in coordination with VII Corps to defeat the mechanized and armored divisions of the Republican Guard.

At 0900 the 24th Infantry Division’s cavalry squadron (24th Cavalry) crossed the border to reconnoiter north along the two combat trails that the division would use. The reconnaissance turned up little evidence of the enemy, and the three maneuver brigades jumped off at 1500, attacking on line. The rapid progress of the division verified the scouts’ reports as the 24th drove about 120 kilometers into Iraq, virtually at will, and by midnight reached positions roughly adjacent to Objective White in the

French zone, and just short of FOB Cobra in the 101st’s.

The mission of destroying the Republican Guard divisions fell to VII Corps, the robust ground maneuver elements of which were heavily supported by the 42d, 75th, 142d and 210th Field Artillery Brigades and the 11th Aviation Brigade. The plan of advance for VII Corps paralleled that of XVIII Airborne Corps to the west: a thrust north into Iraq, a massive turn to the right, and then an assault to the east into Kuwait. Although VII Corps had less distance to cover than XVIII Airborne Corps, its soldiers faced a denser concentration of enemy units and prepared defenses.

Once the turn to the right was complete, both corps would coordinate their attacks east to trap Republican Guard divisions between them and then press the offensive forward until Iraq’s elite units either surrendered or were destroyed.

General Schwarzkopf originally had planned the VII Corps attack to commence on 25 February, but XVIII Corps advanced so rapidly against such weak opposition that he ordered VII Corps’ attack to commence fourteen hours ahead of schedule to maintain the momentum of the operation. Within his own sector General Franks planned a feint and envelopment much like the larger overall strategy. On VII Corps’ right, along



Other than in the Republican Guard units, strong barrages of Army artillery, attack helicopter assaults, and psychological operations were often enough to persuade Iraqi units to surrender. Ultimately, coalition forces took about 60,000 prisoners.

overran several small outposts. Concerned that his two armored divisions were too far from the 1st Infantry Division to provide mutual support, General Franks halted the advance of both armored divisions only 32 kilometers into Iraq. For the day, VII Corps captured about 1,300 prisoners.

In the east, Marine Central Command (MARCENT) began its attack at 0400. Lieutenant General Walt Boomer's I Marine Expeditionary Force aimed directly at its ultimate objective, Kuwait City. The Army's Tiger Brigade, 2d Armored Division, and the 1st and 2d Marine Divisions did not have as far to go to reach their objective as did Army units to the west, but they faced more elaborate defenses and a tighter concentration of the enemy. The 1st Marine Division led from a position in the vicinity of the elbow of the southern Kuwait border, and immediately began breaching berms and obstacle belts. Its tanks and TOW-equipped light vehicles, supported by heavy artillery, proved effective against Iraqi T-55 and T-62 tanks. After the Marines destroyed two tanks in only a few minutes, 3,000 Iraqis surrendered.

At 0530 the 2d Marine Division, with the Tiger Brigade on its west flank, attacked in the western part of the Marine Central Command zone. The first opposition came from a berm line and two mine belts. Marine M60A1 tanks with dozer 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 1615 the Tiger Brigade had passed through 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 allied Arab forces.

Moving ahead, the 2d Marine Division captured the entire Iraqi 9th Tank Battalion with 35 T-55 tanks and more than 5,000 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 21 tanks, another 3,000 Iraqis surrendered. By the end of the day, I Marine Expeditionary Force had worked its way about 32 kilometers into Kuwait and taken nearly 10,000 Iraqi prisoners.

G + 1: 25 February 1991

The XVIII Airborne Corps continued the drive into Iraq with the 82d Airborne Division beginning its first sustained movement of the war, following the French 6th Light Armored Division to As Salman. Simultaneously, the 101st Airborne Division (Air Assault) sent its 3d Brigade from

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 placed the 1st Cavalry Division next to coalition units and gave the division the mission of conducting holding attacks while 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 allied line. Central Command notified the 2d Armored Cavalry Regiment to prepare to assist the 1st Cavalry Division in taking over the advance east of the Wadi al Batin.

But the line could not be frozen indefinitely. The 1st and 3d Armored Divisions resumed their advance north shortly after daybreak. The 1st Armored ("Old Ironsides") Division made contact first, attacking outpost units of the Iraqi 26th Infantry Division. With the 1st Armored Division main body still about 45 to 65 kilometers away from its objective, close air support strikes began, followed by attack helicopter missions. As the division closed to about 16 to 24 kilometers, artillery, rocket launchers and tactical missile

batteries delivered preparatory fires. As the division's lead elements came into visual range of the enemy, 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 at any given objective. Only once did the Iraqis mount an attack after a broadcast, and in that instance a 1st Armored Division brigade destroyed at least 40 tanks and armored personnel carriers in ten minutes at a range of 2,000 meters.

By late morning of 25 February, Joint Forces Command North had made enough progress to allow 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 breach and captured two enemy brigade command posts and the 26th Infantry Division command post, with a brigadier general and his entire staff. Behind them, the British 1st Armoured Division made good progress through the breach and prepared to turn right and attack the Iraqi 52d Armored Division.

With the allied advance well under way all along the line, a U.S. Navy amphibious force made its final effort to convince the Iraqi command

authority that CENTCOM would launch a major over-the-beach 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 45 kilometers south of the Kuwaiti border. 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.



Depleted-uranium armor-piercing rounds from Army tank main guns often caused catastrophic kills of Iraqi tanks, usually from ranges beyond which the enemy could effectively return fire.

At daybreak on 25 February, Iraqi units made their first counterattack in the Marine sector, hitting the 2d Marine Division. While Marine regiments fought off an effort that they named the "Reveille Counterattack," troops of the Tiger Brigade raced north on the left flank. 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 commander of the Iraqi 116th Brigade among a total of 1,100 prisoners of war for the day.

By the end of operations on 25 February, significant gains had been achieved across the entire front. Nevertheless, enemy forces could still inflict damage, and in surprising ways and places. The Iraqis continued their puzzling policy of setting oil fires—well over 200 now blazed out of control—as well as their strategy of punishing Saudi Arabia and trying to provoke Israel. They launched four Scuds, one of which slammed into a building housing American troops in Dhahran. That single missile killed 28 and wounded more than 100, causing the highest one-day casualty total for American forces in a war of surprisingly low losses.

G + 2:

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 western and northern flanks, the 24th Division spearheaded the corps attack into the valley. The first obstacle was the weather. A storm kicked up thick clouds of swirling dust that promised to challenge the effectiveness of thermal-imaging equipment throughout the day.

After refueling in the morning, all three brigades of the 24th moved out at 1400 toward the Iraqi airfields at Jalibah and Tallil. Meanwhile, the 3d Armored Cavalry Regiment screened to the east along the division's southern flank.

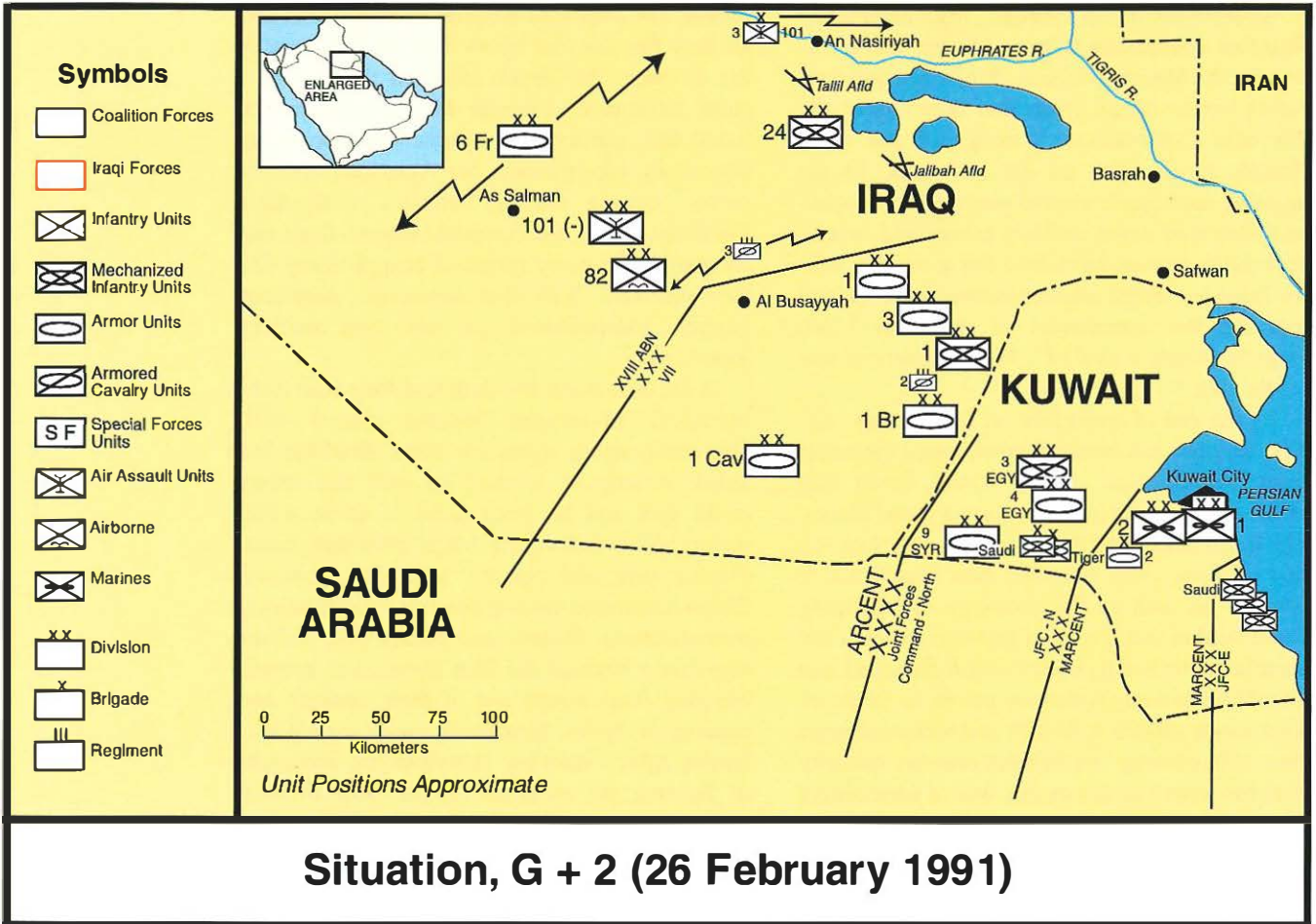
In these attacks the 24th encountered the heaviest resistance of the war. The Iraqi 47th and 49th Infantry Divisions, the Nebuchadnezzar Division of the Republican Guard, and the 26th Commando Brigade took heavy fire but stood and

fought. The 24th's 1st Brigade sustained tank and artillery fire for four hours. For the first time in the advance, the terrain afforded the enemy a clear advantage. General McCaffrey's troops found Iraqi artillery and automatic weapons dug into rocky escarpments, but American artillery crews located enemy batteries with their Firefinder radars and returned between three and six rounds for every round of Iraqi artillery fire they received. With that advantage, American gunners exterminated 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 4,000 meters, often before the Iraqis even saw them. Precise tank and Apache helicopter gunnery, 25mm automatic cannon fire from the Bradleys, overwhelming artillery and rocket fire, and air supremacy enabled the 24th Division to prevail, bringing Iraqi troops out of their bunkers and vehicles in droves, their hands raised high in surrender. After a hard but victorious day and night of fighting, all elements of the 24th Infantry Division were on their objectives by dawn.

In the VII Corps' sector, the 1st Armored Division fired heavy artillery and rocket preparatory fires into Al Buayyah shortly after sunrise, and by noon had advanced through a sandstorm to overrun the small town. In the process, the 1st Armored troops completed the destruction of the Iraqi 26th Infantry Division and, once in the objective area, discovered they had taken the enemy 7th Corps headquarters and a corps logistical base as well. More than 100 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, the 1st Armored mounted a night attack on the elite enemy unit and, in fighting that continued into the next day, destroyed 30 to 35 tanks and 10 to 15 other vehicles.

The 3d Armored Division attacked just after daylight to seize Objective Collins, east of Al Busayyah. Through the evening the division fought its toughest battles in defeating elements of the Tawakalna Division. From there, the division turned east and assaulted Republican Guard strongholds in conjunction with the 1st Armored Division, 1st Infantry Division and 2d Armored Cavalry Regiment. Further south, the British 1st



Armoured Division cleared the mine breach and advanced on the right. At 0930, the 1st Cavalry Division was released from theater reserve to join the VII Corps attack.

In the early afternoon, the 2d Armored Cavalry Regiment advanced east through a dust storm. Screening in front of 1st Infantry Division, the cavalymen had only a general idea of the enemy's positions. The Iraqis had long expected the American attack to come from the south and east and were now frantically turning to meet the onslaught from the west, and their units' locations were changing almost by the minute. As the 2d Armored Cavalry Regiment advanced, one of its armored cavalry troops received fire from a building on the 69 Easting, a north-south grid line on the topographical maps of the area. The cavalymen returned fire and continued east. The enemy fire increased, and just after 1600, the cavalymen encountered T-72 tanks in prepared positions along the 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 from those the Americans had fought so far. The destruction of the first tanks did not precipitate the surrender of hundreds of Iraqi soldiers. This time, the tanks kept coming and crews kept fighting.

The reason for the unusually determined enemy fire and large number of tanks soon became clear: The cavalymen had found two Iraqi divisions willing to put up a hard fight, the 12th Armored Division and the Tawakalna Division. The 2d ACR quickly found the boundary 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 Infantry 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, the crews of the 2d ACR destroyed tanks and armored personnel carriers

while attack helicopters knocked out artillery batteries. When the battle of 73 Easting ended at 1715, the 2d Armored Cavalry Regiment had destroyed at least 29 tanks and 24 armored personnel carriers, as well as numerous other vehicles and bunkers, and had taken 1,300 prisoners. That night, the 1st Infantry Division passed through the cavalrymen and continued the attack east.

Farther to the south, the British 1st Armoured Division attacked eastward through the Iraqi 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 40 tanks and captured an Iraqi division commander.

To the east, the Marine advance resumed on the 26th 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 continued driving directly north, while the 1st Marine Division turned northeast toward Kuwait International Airport. The Army tankers headed toward Mutla Ridge, a ridge only about 25 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 breach. On the move again, the brigade discovered enemy bunker complexes and dug-in armored units. Iraqi tanks, almost all T-55s, 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 tankers 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 1,600 prisoners, even more than had been taken the day before.

The Tiger Brigade now controlled the highest point for hundreds of miles in any direction. When the troops looked down on the highways

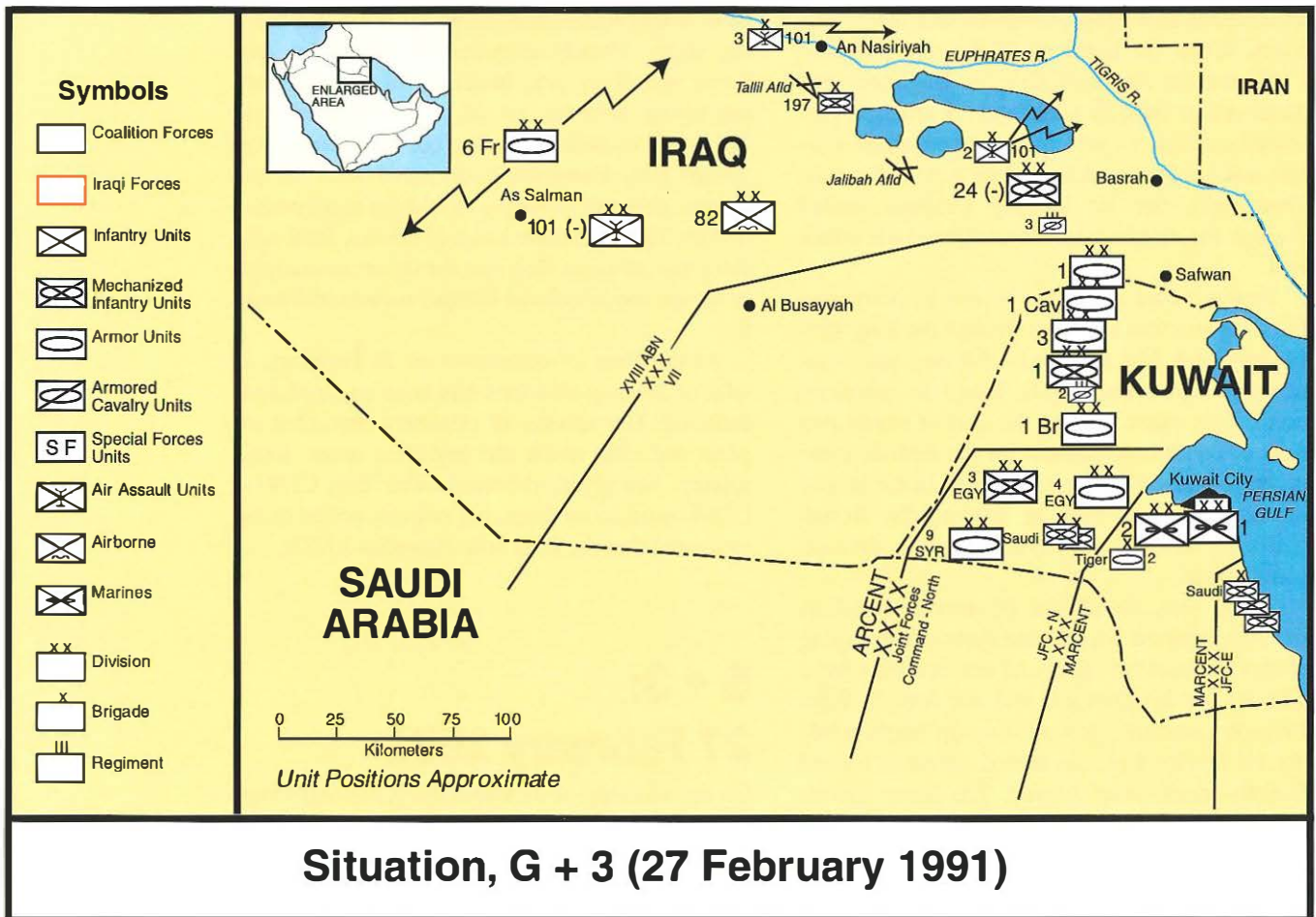
from Mutla Ridge, they came upon a breathtaking sight: Already subjected to attack by Air Force and Navy jets, hundreds of burning and exploding vehicles of all types littered the "Highway of Death" leading out of Kuwait City toward Iraq. Hundreds more raced west out of Kuwait City unknowingly to join the deadly traffic jam. Here and there knots of drivers, Iraqi soldiers and refugees fled into the desert to attempt to escape the inferno of bombs, rockets and tank fire.

At the close of operations on 26 February, a total of 24 Iraqi divisions had been engaged and defeated. The volume of prisoners continued to grow and clog roads and logistical areas. Iraqi soldiers literally surrendered faster than CENTCOM could count them, but military police units estimated that the total now exceeded 30,000.

G + 3: 27 February 1991

On the morning of 27 February, XVIII Airborne Corps prepared to continue its advance east toward Al Basrah. Before the corps could resume the offensive, the 24th Infantry Division had to secure its positions in the Euphrates River valley by seizing the two airfields toward which it had been moving. The task of assaulting the airfields went to the units that had ended the previous day in positions closest to them. While the 1st Brigade would conduct an attack toward the Jalibah airfield, the 2d Brigade planned to move east about 40 kilometers and turn north against the same objective. Moving north, the 197th Infantry Brigade would take Tallil.

Following a four-hour rest, the 2d Brigade attacked at midnight, secured a position just south of Jalibah by 0200, 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. The 2d Brigade resumed the attack, and despite a heavy artillery preparation by five battalions of XVIII Corps' 212th Field Artillery Brigade, the Iraqi defenders were still quite willing to fight. Most Iraqi fire was ineffectual, 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 200 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, after heavy artillery and rocket launcher preparations, followed by 28 close air sorties, the 197th Infantry Brigade attacked and seized the Tallil airfield against significant, but less tenacious, resistance than that encountered by the rest of the division at Jalibah.

As the 197th Infantry Brigade assaulted Tallil, other 24th Infantry Division units continued the attack east, centered on Highway 8. The run down the highway showed more clearly than any other episode the weaknesses of Iraqi field forces and the one-sidedness of conflict. Through the afternoon and night of 27 February, the tankers, Bradley gunners, helicopter crews and artillerymen of the 1st and 4th Battalions, 64th Armor, 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 raced randomly across the desert or west on Highway 8 only to run into the 24th Division's fires. 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, General McCaffrey concentrated the fire of nine artillery battalions and an Apache battalion on the elite enemy force. At dawn the next day, 28 February, hundreds of Iraqi vehicles lay crumpled and smoking on Highway 8 and at scattered points across the desert.

The 24th Division's valley battles of 25 to 27 February rendered ineffective all Iraqi units

encountered in the division sector and trapped most of the Republican Guard divisions to the south while VII Corps bore into them from the west, destroying or capturing the defenders.

As the VII Corps assault gained momentum, General Franks committed his corps' full combat power. The 1st Cavalry Division made good progress through the 1st Infantry Division breach and up the left side of VII Corps' sector. By mid-afternoon, after a high-speed 190-mile move north, the First Team's units had caught up to the rear of the 1st Armored Division, tying in with the 24th Infantry Division across the corps boundary. Now VII Corps could employ five full heavy divisions and a separate armored cavalry regiment against the Republican Guard.

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 inexorably east through Iraqi positions. To Iraqi soldiers, depleted and demoralized by 41 days of continuous air attack, VII Corps' advance appeared irresistible.

About 80 kilometers east of Al Busayyah, the 1st and 3d Armored Divisions tore into remnants of the Tawakalna, 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 the attacking artillery batteries, but also 61 tanks and 34 armored personnel carriers of the Medina Division in less than one hour. The 1st Infantry Division overran the Iraqi 12th Armored Division and scattered the 10th Armored Division into retreat. On the southern flank the British 1st Armoured Division erased the Iraqi 52d Armored Division, then overran three infantry divisions. To finish destroying the Republican Guard Forces Command, VII Corps conducted an envelopment using 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 retreat. The only setback for 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, the VII Corps commander informed his divisions of an imminent theater-wide cease-fire but pressed the attack farther east. An hour later, elements of the 1st Infantry Division established a blocking position on the highway connecting Al Basrah to Kuwait City. The next morning, corps artillery units fired an enormous preparation involving all long-range weapons: 155mm and eight-inch (203mm) 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 just inside Kuwait.

In 90 hours of continuous movement and combat, VII Corps had achieved impressive results against the best units of the Iraqi military. VII Corps 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 captured nearly 22,000 men. At the



Hellfire missiles from AH-64 Apache attack helicopters devastated Iraqi armor, like this T-72. When used at night—taking advantage of state-of-the-art night-vision devices—the Hellfire missiles often impacted before the Iraqi crews realized they had been fired.

same time, the best Iraqi divisions destroyed only seven M1A1 Abrams tanks, 15 Bradleys, two armored personnel carriers, and a single Apache helicopter. The toll to VII Corps had been 22 soldiers killed in action.

In the Marine Central Command's sector, on 27 February the 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 the Marines' zone from west to east and go on to liberate Kuwait City. At 0550, Tiger Brigade troops made contact with Egyptian units, and four hours later Joint Forces Command North columns passed through the 2d Marine Division. During the rest of the day, Tiger Brigade troops cleared bunker complexes, the 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 until the cease-fire went into effect at 0800 on 28 February. Prisoner interrogation during and after combat operations revealed that the Tiger Brigade advance had split the boundary between the Iraqi 3d and 4th 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 forces destroyed or captured 181 tanks, 148 armored personnel carriers, 40 artillery pieces and 27 anti-aircraft systems while killing an estimated 263 enemy and capturing 4,051 prisoners of war, all at a cost of two killed and five wounded.

Cease-Fire

When the cease-fire ordered by President Bush took effect, coalition forces faced the beaten remnants of a foe thought formidable by prewar standards. The U.S. Army had contributed the overwhelming bulk of the ground combat power that defeated and practically destroyed the Iraqi army. 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. No more than seven of their 43 divisions remained capable of offensive operations. While the number of Iraqi soldiers killed or wounded will never be known, an estimated 60,000 surrendered.

These impressive results were achieved at the cost of 148 Americans killed in action. While the loss of American lives is never a cause for rejoicing, the cost could have been much higher. Many "experts," in and out of the military, had predicted losses of 20,000 or more casualties of all types.

In just 100 hours of ground combat operations, coalition forces achieved one of the most dramatic victories in history. While ground- and sea-based air power were indispensable, it was ground combat that was decisive in liberating Kuwait, destroying Iraqi offensive capabilities, and achieving coalition strategic goals. In the best traditions forged during more than two centuries, from Saratoga to the Meuse-Argonne to Normandy, it was the U.S. Army that led them.





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