

### *Supporting the Move North*

In early January, the MarCent area of operations was significantly expanded north to include the port and airfield of Mishab (Ras Al Mishab), 50 kilometers southeast of the Kuwait border. The Arab forces of the Joint Forces Command-East began assembling in the sector to the north for their attack into Kuwait along the coastal main supply route. Moroccan troops provided additional external security for the Safaniyah area. To the west of Mishab, the MarCent area extended over 125 kilometers and included the western half and all of the north-south portions of the Kuwait border along the heel.\*

Brigadier General Krulak established the Direct Support Command at Combat Service Support Area 1 behind earthen blastwall berms on an otherwise featureless desert about 57 kilometers west of the coast highway at Mishab. This base quickly became known as Kibrit after Abraq al Kibrit, a tiny Bedouin settlement with a few trees and ramshackle houses about 20 kilometers further west. Significantly the base was only 52 kilometers south of the border and ahead of both divisions for the moment, so Krulak had most of the billets and workspaces put in underground revetments. Within a few weeks, Kibrit had a 470-bed hospital, 1.8 million gallons of fuel storage, and 15,800 tons of ammunition. Marine engineers and SeaBees widened the dirt track leading past it to eight lanes and improved a disused 6,500-foot dirt airstrip to accept turbo-prop Lockheed C-130 Hercules transports. Under normal circumstances, the Kibrit Main Supply Route was a hardpacked marl road, but with heavy use, traffic on it produced either choking clouds of talcum-like dust or small seas of sticking mud in low areas known as *sabkha*'s that presented challenges to driver and engineer alike.

The winter rains had now begun. Even though the area's annual average was about four inches, as was typical in the desert, it arrived either nearly all at once or not at all. The winter of 1990-91 was much wetter than normal, possibly exacerbated by the oil well and refinery fires the Iraqis began setting in February. During one storm in early January, 3.6 inches fell on Safaniyah which flooded out excavations for fortifications and the Direct Air Support Center. The low lying *sabkha* dry lake areas that dotted the area became treacherous and untrafficable.

Of particular importance to General Boomer's offensive plan was the granting of rights to use the Mishab Royal Saudi Naval Force port and its adjacent airfield. The I MEF staff believed that port could accept AMSEA-class cargo ships of the Maritime Pre-Positioning Squadron despite its tight channel and turning basin. There were also mine and missile threats along the circuitous route around the Safaniyah offshore oil fields, so the Navy, and the civilian crews of the MPS, were understandably reluctant to attempt it.

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\*During the period, there were many references to the "Elbow" of the heel of Kuwait, but there was never any consistency as to its location; i.e., the southwest corner of the heel or the bend near Al Manaqish. Therefore all reference to the Elbow is omitted herein.

The commander of the Military Sealift Command Southwest Asia, Commodore Richard A. Crooks, was ultimately successful in developing a satisfactory shipping route into the port by having ships thread their way through the oil field. The movement of a large ship along the dangerous route into the port required a great deal of coordination: NavCent had to provide escort ships and the Royal Saudi Naval Force tug boats. On 26 January the first ship to reach Mishab was MV *Mallory Lykes*, carrying 500 containers of MarCent sustainment. It was unloaded and turned around in less than 24 hours. In early February, humble and ubiquitous Army coastal craft known as LCU-2000s also began hauling much waterborne support on regular shuttles between Dammam, Jubayl, and Mishab.

The concept of logistics support involved the pre-positioning of material at the port of Mishab and at the Direct Support Center at Kibrit. This required theater support in the form of U.S. Army and commercial line haul equipment, a tactical petroleum terminal, a fuel truck company, an offshore petroleum dispensing system, reverse osmosis water purification units (ROWPUs), and various watercraft such as the LCU-2000.

Airfields for helicopters and forward staging of McDonnell Douglas AV-8B Harrier vertical takeoff and landing jets were another issue in January. General Boomer needed Mishab's jet-capable airfield for one of 3d Marine Aircraft Wing's helicopter groups, Marine Aircraft Group 26, commanded by Colonel Michael J. Williams. Although the airfield could accommodate a helicopter group after the SeaBees had enlarged the ramp, the ground campaign required both wing helicopter groups to be forward. The only other appropriate site was Aramco's jet-capable airfield at Tanajib (At Tanaqib) 14 kilometers south of Safaniyah. Aramco, the world's largest petroleum production enterprise, was Saudi-owned, American-managed, and at times to the I MEF staff, seemed like a sovereign entity unto itself. The company refused the Marines permission to use Tanajib even though its own operations there had scaled down considerably with the threat of war. After persistent and lengthy negotiations and with time running out, General Boomer made a direct request for help to Prince Khalid, the Saudi Minister of Defense and Aviation and commander of the joint Arab forces. Prince Khalid promptly instructed that Marines be accommodated. Despite this, Aramco still declined to cooperate and commandeering the site was considered. This proved not to be necessary, and the second helicopter group, Marine Aircraft Group 16, commanded by Colonel Larry T. Garrett, moved north to Tanajib on 8 January.

### *Cementing the Alliance*

As I Marine Expeditionary Force moved north and west, its units continued to train with the 2nd Brigade of the Saudi Arabian National Guard, the Royal Saudi Marine Corps, and, increasingly, the 8th and 10th Brigades of the Royal Saudi Land Forces with, a view toward improving interoperability. Because the 1st Marine Division occupied MarCent's right flank, its 3d Marines,



*The Iraqi III Corps expended much effort in beach defenses against amphibious landings. This beach near the northern tip of Kuwait City was typical. It included tripwire mines at water's edge and the 14.5mm four-barrel ZPU-4 weapon seen here on 1 March 1991.*

commanded by Colonel John H. Admire, conducted much of this cross-training. By doing this at the company level, Admire found that Marines and Saudi soldiers alike were able to make friendships, overcome cultural barriers, and reach understandings that would reap dividends in the campaign ahead.<sup>31</sup>

Other key relationships came via the 1st Surveillance, Reconnaissance, and Intelligence Group. Colonel Michael V. Brock, its commander, attached teams from his Force Reconnaissance companies and 1st Air and Naval Gunfire Liaison Company to the Joint Forces Command-East which was commanded by Saudi Major General Sultan. This multinational Arab command included elements of Saudi, Qatari, Omani, and United Arab Emirate forces who were on the immediate right flank of MarCent during the assault into Kuwait.\* Few of General Sultan's disparate units had practiced supporting arms coordination to any extent before the arrival of the ANGLICO teams in the fall of 1990. These teams were responsible for coordinating and controlling supporting air and naval gunfire missions including many missions flown by Marines. After overcoming initial Saudi reluctance, 1st SRIG teams also began occupying eight observation posts along the 130-kilometer length of the heel portion of the Saudi-Kuwait border on 30 December.

At the command level, the shift from defensive to offensive operations required a more durable and effective relationship with Saudi military authorities. This led to the establishment of a host nation joint liaison team in

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\*The regional Saudi components were the Eastern Province Area Command (EPAC) and Northern Province Area Command (NPAC). The joint Arab components were also known as the Eastern Area Command (EAC) and the Northern Area Command (NAC).

early January with Lieutenant Colonel Ernest G. Beinhart III and Commander Ghazi Asleiten, RSNF, as the senior members. The successful effort by Marines of the force to assist in the training of the Royal Saudi Naval Forces Marine Corps led to approval by Headquarters Marine Corps to establish a permanent Saudi Advisory Group.

### *Refining the Plan*

On 6 January, representatives of staff of the force's major units came to the Safaniyah headquarters to discuss and wargame USMarCent Operations Plan Desert Storm. General Boomer encouraged them to critically analyze all aspects of his plan so that it might be refined. Two days later, Lieutenant General Calvin A. H. Waller, USA, General Schwarzkopf's Deputy Commander-in-Chief, visited for a briefing on General Boomer's concept of operations and to present the CentCom perspective. These events resulted in pivotal meetings on 13 and 15 January when Boomer and his staff conducted map exercises and wargames of the execution phase of the plan with the commanders of the major subordinate units and their key staff. During the exercises, the 1st Marine Division commander, Major General Myatt, raised concerns about the coordination and space required for both MarCent and the Joint Forces Command-East to carry out their plans.

Like General Boomer, Myatt was in the habit of conducting round table discussions with his commanders and staff. In the course of one of these, his operations officer, Colonel James A. Fulks, who would later lead an infantry task force through the obstacle belts, argued convincingly that under the existing plan, too many enemy forces were positioned in MarCent's avenue of approach, thus potentially compromising the penetration and exploitation phases. Fulks wanted to revisit an earlier course of action that involved a MarCent breach between the Al Wafrah and Umm Gudair (South) oil fields in the southwest portion of the heel of Kuwait. Fulks felt that this avenue of approach was not only less defended--it bypassed the bulk of the defenders in southern Kuwait--but it also was more difficult for the Iraqis to reinforce, since only one main supply route serviced the area. It permitted rapid engagement of the operational reserve and was close to General Boomer's objective at the Al Jahra intersection chokepoint. Another factor was the Iraqi command and control system. Many officers studied it and concluded that Iraqi forces above the brigade level were not well versed in coordination with other units for political reasons. They thought Saddam Hussein viewed that as a threat to his power. Therefore, by penetrating along divisional and brigade boundaries, confusion might be sown to the benefit of Marines in the assault. General Boomer was receptive, even though logistically it was far more difficult. The clinching argument was General Schwarzkopf's continuing disapproval of an amphibious operation for reasons not yet clear. It gradually became quietly known that the commander-in-chief wanted to use the two Marine brigades afloat as part of a grand deception strategy. (These were the 4th Marine Expeditionary Brigade

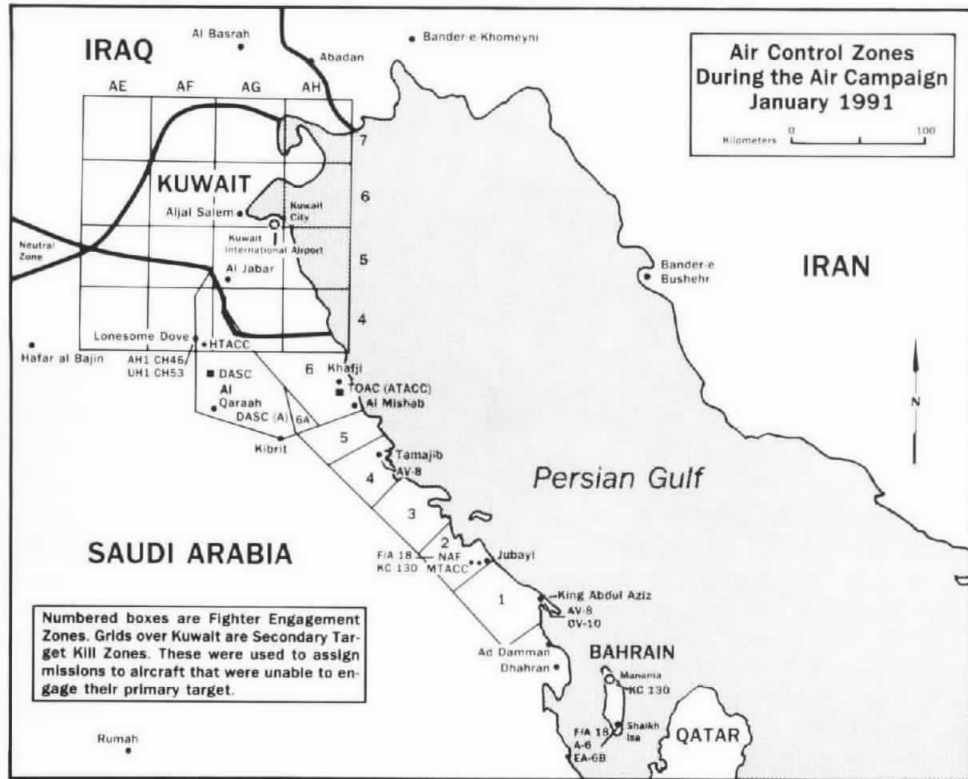


*The Iraqi beach defenses looking seaward from a mortar emplacement. Striped rods are aiming stakes. There are three lines of barbed wire entanglements: one is in chest-deep water near top of picture and two more are at the edge of the water, with mines in between. In the middle is part of an interlocking trenchline network built with concrete blocks and highway K-rail. Adjacent bunkers contained antitank rockets and grenade launchers.*

and the recently arrived 5th Marine Expeditionary Brigade under command of Major General Peter J. Rowe). This eliminated the need for a link-up with amphibious forces. General Boomer approved the change to his plan on 16 January, the day before the start of Operation Desert Storm's air campaign, discussed later.

As noted earlier, there was no established doctrine for corps-size Marine forces with two or more maneuvering divisions. Because he envisioned a fast-moving ground campaign, General Boomer decided to have supporting arms be coordinated at the lowest possible levels to save time. The senior and final coordinating authority was the I MEF fire support coordination center under Colonel William H. Schopf III. Each division retained its own fire support coordination center primarily for its artillery and air strikes. Both division centers were linked by voice and wide-area data networks. The fire support coordination center located at the I MEF command post assumed a "deconfliction" role to coordinate and sequence supporting arms fires on given targets and to prevent friendly fire incidents.

In air support, the plan assigned Bell AH-1 Sea Cobra attack helicopters to be in general support of the divisions for close-in fire support. The plan had Cobras on strip alert for immediate employment from forward landing zones. The control of fixed-wing aircraft within the MarCent high-density air control zones (HIDACZs) was through a single direct air support center located at the force command post or aboard a Lockheed KC-130 Hercules aircraft. The concept for fixed-wing employment involved two stacks of attack aircraft which



*Combat art team head Col H. Avery Chenoweth, USMCR, put some perspective between himself and the "moated" headquarters of "1 MEF (Rear), Al Jubail," located in a former police station and neighboring a mosque and its minaret. The headquarters building has manned bunkers on its roof.*



were pushed through to forward air controllers (airborne) in F/A-18D aircraft (FastFACs). Each FastFAC was to run four aircraft about every fifteen minutes through his sector to attack targets just ahead of the close-in fire support helicopters. Deep air support, well beyond the maneuver area of the ground units, was under the control of the Joint Forces Air Component Commander's airborne command and control center. As will be seen, it would be Marine controllers aboard the ABCCC who did the actual controlling during the ground campaign.<sup>32</sup>

### *D-Day: The Air Campaign Begins*

After Saddam Hussein of Iraq rejected a series of ultimatums from the United Nations to depart Kuwait, President George H. W. Bush, acting in accordance with resolutions passed by the Security Council of the United Nations, directed General Schwarzkopf to commence offensive operations effective at 2400 on 16 January 1991. Immediately thereafter, General Schwarzkopf and Lieutenant General Prince Khalid jointly ordered the execution of the Combined Operations Plan for Offensive Operations to eject Iraqi forces from Kuwait.

The first Marine offensive action of the war commenced at 0400 on 17 January. Marine Aircraft Group 11 conducted a coordinated night air strike against strategic targets in southern Iraq.\* This strike was the largest flown by Marines since World War II and involved about 48 Marine aircraft operating from Shaikh Isa Air Base and Bahrain International Airport, plus about 20 other allied aircraft. The attackers flew dual role McDonnell Douglas F/A-18A and -C Hornets and Grumman A-6E Intruder aircraft equipped with high-resolution radar and forward-looking infrared systems. British Royal Air Force Panavia GR-1 Tornado jets also flew low-level attacks at the same time. Supporting the attackers were other F/A-18s which provided fighter coverage, tactical air launched decoys, and AGM-88 high-speed antiradiation missiles. Assisting them also were Grumman EA-6B Prowlers electronic support aircraft and U.S. Air Force McDonnell Douglas F-4G Phantom Wild Weasel radar suppression aircraft. Marine Lockheed KC-130 Hercules aerial tankers refueled the "strike packages" over the northern Gulf. The Marines struck airfields and Scud missile shelters at Tallil and Qurna, the air base at Shaibah, and a thermal power plant at An Nasiriyah. All Marine aircraft returned safely.

Beginning at dawn on 17 January, Marine Aircraft Group 13 (Forward) joined in with AV-8B Harriers and Rockwell OV-10 Broncos observation aircraft from King Abdul Aziz Naval Base near Jubayl to strike MarCent targets in southern Kuwait. The 3d Marine Aircraft Wing went on to fly 144 combat sorties that day over Iraq and Kuwait, the first of more than 18,000 it flew

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\*Marine aviation operations are more fully discussed in a forthcoming monograph by the author entitled "U.S. Marines in the Persian Gulf, 1990-1991: With the 3d Marine Aircraft Wing in Desert Shield and Desert Storm," to be published by the Marine Corps Historical Center in 1993.



*A McDonnell Douglas F/A-18C Hornet of Marine Fighter Attack Squadron 212 and two Grumman A-6E Intruders of Marine Attack Squadron (All Weather) 533 wait at Shaikh Isa Air Base, Bahrain, in February 1991. All are part of Marine Aircraft Group 11. The ramp they are standing on was constructed by construction battalions ("Seabee's"), later designated the 3d Naval Construction Regiment, of the U.S. Pacific Fleet.*

during the campaign. The pilots and aircrews of these two aircraft groups had the longest stretch of sustained combat of any Marines in the force; most of them flew daily over the next 43 days. General Moore, the wing commander, flew a dozen missions himself during the air campaign.

As noted, MarCent's aviation forces were under the command of Major General Royal Moore, Commanding General, 3d Marine Aircraft Wing. Under procedures ironed out in August 1990, the wing received taskings from two commanders. All missions outside of the MarCent area of operations were tasked by CentCom's designated Joint Forces Air Component Commander (JFACC), Lieutenant General Charles A. Horner, USAF, who was concurrently Commander, U.S. Air Forces Central Command. Missions flown by Marine aircraft in the MarCent area of operations, which included southeastern Kuwait, were tasked by General Boomer as commander of MarCent. Other forces that flew missions within the MarCent area of operations were tasked by JFACC but controlled by MarCent.

A daily air tasking order coordinated all in-theater missions except helicopters.\* While JFACC common theater taskings were known 48 hours in advance, MarCent did not issue its fragmentary order until the night before in order to give the ground combat element commanders maximum flexibility. In practice, the wing's operations staff constructed the wing's own schedule using a set-aside for "JFACC sorties." The balance went to the force. Nearly all of the missions flown by Marines in theater support involved targets in southern

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\*The size of the Air Tasking Order was immense. The ATO for 17Jan91 ran to well over 700 pages. Unfortunately JFACC transmitted it with "Flash" precedence across normal military message circuits which blocked other traffic to the force for six hours. Colonel R. Glenn Hill, the MarCent/I MEF G-6 for communications and computers, neatly solved the problem by having subsequent ATOs sent via computer wide-area network.



Iraq and the Kuwait Theater of Operations. If General Boomer needed the JFACC sorties however, General Moore did not hesitate to use them or go into a "surge operation" to provide them.

As it developed, during the Phase I strategic air campaign, most of MarCent's offensive missions were flown in support of JFACC while the smaller fraction went to I MEF. The latter were mainly AV-8B Harrier sorties in southeast Kuwait. In Phases II and III, the ratios gradually reversed so that by the commencement of the ground assault on 24 February, "G-Day," nearly 100 percent of the wing's missions were in support of MarCent.

The three phases of the air campaign overlapped in execution and continued until the conclusion of the ground campaign 43 days later. As the first strikes were being flown, Iraq replied by launching a number of Scud ballistic missiles at area targets in Saudi Arabia and shortly at Israel as well. Marines were also on the receiving end of the large Frog rockets as well; three impacted on Mishab early on 17 January followed by 16 more the next night. They caused little damage but their spectacular detonations could be heard at Safaniyah 20 kilometers away. Although these weapons were rarely destructive, the Scuds had a certain terrorizing effect on civilians. To mitigate this threat, Central Command dedicated considerably more assets than planned for the prosecution



*Scene of the death of a corps commander? This crater and ruins of a structure mark the impact of a laser-guided GBU-10 2,000-pound bomb delivered by a Grumman A-6E Intruder of Marine Aircraft Group 11 at about 1925 on the evening of 31 January 1991 during the Khafji actions. A flight of two night/all-weather attack Intruders were scrambled from Shaikh Isa Air Base, Bahrain, to attack a command and control site at a former Kuwaiti military base about 22 kilometers southeast of Al Ahmadi. The Kuwaiti Resistance had reported a high-level meeting was in progress there. Shortly after this, intelligence reports indicated the Iraqi III Corps commander had been killed in a bombing attack.*

of Phase I in an effort to destroy Iraq's ballistic missile capability. This came mostly at the expense of Phase III, battlefield preparation, which was intended to "shape the battlefield" for ground operations. Although General Boomer understood the political necessity of hunting down and striking the Scud systems, he could not afford to let the battlefield shaping operation be compromised. Accordingly, as G-Day approached, he directed the 3d MAW to fly an increasing amount of offensive sorties against selected targets in southeastern Kuwait.

In the area of targeting, under the air tasking order system, Lieutenant General Horner as JFACC coordinated all missions in the Kuwait Theater of Operations. General Boomer's targeting cell selected targets to be struck in the MarCent sector and then arranged them on a priority basis. These primarily were enemy command and control nodes and indirect fire weapon systems such as artillery, multiple rocket launchers, and Frog surface-to-surface rockets in southeastern Kuwait. General Boomer believed these presented the greatest threats to the force in the assault. He directed that the order in which these targets were to be struck be varied so that the Iraqis would have difficulty in determining the likely penetration points and avenues of approach of Marine forces. As part of the overall theater air campaign, MarCent target nominations competed with others presented to JFACC. If MarCent targets were not attacked due to operational priorities of CentCom, General Boomer had the discretionary authority to task MarCent aircraft to attack MEF-designated targets and often did so.<sup>33</sup>

One significant example of this occurred during the Khafji actions on the evening of 31 January. The I MEF all-source fusion center for intelligence received a report from the Kuwaiti Resistance that a high-level meeting of Iraqi military officers was occurring at a former Kuwaiti military base about 11 kilometers south of Ash Shuaybah near the coast. The Resistance was able to identify the specific site, a small building in a park. The force relayed the information to the wing which launched two Marine all weather attack A-6E Intruders from Shaikh Isa Air Base to attack the site. The aircrews located the building in the dark with their forward-looking infrared sensors, designated it with laser guidance, and then struck the building at about 1925 with laser seeking GBU-10 2,000-pound bombs. Their attack apparently caused the death of the commander of the *Iraqi III Corps* who was Lieutenant General Boomer's opposite number.<sup>34</sup>

After the air campaign began, an important targeting issue from General Boomer's perspective was bomb damage assessment (BDA). Both force and wing intelligence officers found it difficult to ascertain actual results due to the scarcity of MarCent-controlled overhead imagery systems and usable aircraft sensor video recordings. Moreover, there was a lack of trained target analysts. As mentioned, the Marine Corps' last high-speed imagery platform, the McDonnell RF-4B Phantom photo and radar reconnaissance aircraft, had been decommissioned in August 1990. This placed the force at the mercy of national and other services' assets for good quality imagery. These agencies were themselves saturated with requests and generally were unable to get imagery



*Marine Pioneer remotely piloted vehicles operated from Al Mishab Airfield in early February 1991. Overhead imagery of the I MEF's future operating area was scarce, and the Marines sorely missed their last organic manned photo-reconnaissance platform, the McDonnell-Douglas RF-4 Phantom II, which had been decommissioned in August 1990. All of the Marine Corps' RPV fleet was thus ordered into the theater and pressed to maximum use. Each of the tiny craft could carry a day or night sensor package.*

products to the force in less than 72 hours. When it did arrive, the Marine intelligence analysts were disappointed in the quality; it seemed to them they were getting third- and fourth-generation copies.<sup>35</sup>

At first, the force's principal organic systems for BDA within southeastern Kuwait were Pioneer remotely piloted vehicles and Rockwell OV-10 Bronco observation aircraft. The former had real-time imaging although it was of grainy quality. The latter had forward-looking infrared for night observation but were vulnerable to visually fired surface-to-air heat-seeking missiles during daylight. This led to the first casualties of the war on 18 January when Lieutenant Colonel Clifford M. Acree, the commanding officer of Marine Observation Squadron 2, and his observer, Chief Warrant Officer-4 Guy L. Hunter, Jr., were brought down by a missile over southern Kuwait.\*

Aerial reconnaissance assets that were available to the force were few. Therefore damage assessments were often delayed, which in turn stretched out the targeting process. Sometimes the delays resulted in targets being unnecessarily struck a second time. Later on, General Moore was able to help by short-circuiting the photo collection process. He informally attached photo imagery interpreters to the U.S. Air Force's 35th Tactical Fighter Wing, which included the Nevada Air National Guard's 192d Tactical Reconnaissance Squadron. This unit conducted reconnaissance over southern Kuwait and was

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\*LtCol Acree and CWO-4 Hunter ejected with minor injuries, were captured, and subsequently put on display in the Iraqi capital at Baghdad. They were repatriated after the conflict.

conveniently based at Shaikh Isa Air Base next to Marine Aircraft Group 11.\* The Marine imagery interpreters selected and printed desired photographs. Then they delivered the prints to a waiting Marine Beechcraft C-12 Super King liaison aircraft which flew them to the force command post.

Other aerial intelligence assets arrived in-theater 13-15 January to fill the gap. To provide battlefield intelligence and fast-moving forward air controllers (FastFACs), Marine All Weather Fighter Attack Squadron 121 was snatched out of its initial operational workup at El Toro and ordered to Bahrain in its new two-seat F/A-18D Hornets. The squadron arrived just in time to render golden service during the air and ground campaigns. The force gained a signals intelligence platform known as Senior Warrior in the form of two specially configured Lockheed KC-130T Hercules refueler-transporters of Marine Air Refueling/Transport Squadron 452, a Reserve unit from Newburgh, New York. A valuable theater asset in targeting was Grumman's prototype Joint Target Attack Radar System (JSTARS). This multi-mode, phased-array radar was carried aloft in a converted Boeing 707 transport and sensed vehicle movements over a wide area.

### *Double Breaches and Logistical Headaches*

At the beginning of February, additional breaching equipment arrived in-theater following a remarkable acquisition effort by the Research, Development, and Acquisition Command at Quantico. At the same time the 2d Marine Division commander, Major General Keys, concluded that his division was sufficiently trained to engage in separate breaching operations. On 1 February Keys and his operations officer, Colonel Ronald G. Richard, approached General Boomer and argued for a second set of breaches, one per division. They felt that separate breaches offered certain advantages such as mutual support and the elimination of the complex passage of divisions with its correspondingly high concentration of attacking forces at the area of penetration. They also believed that double sets of breaches would make it harder for enemy commanders to assess what was happening on the battlefield and therefore to respond effectively with supporting arms. However, the concept required a major effort to reposition combat service support and to move 2d Marine Division into new tactical assembly areas. General Boomer weighed the issues including the minimal time available; he knew that the ground campaign could begin as soon as as 20 February. Boomer told Keys to develop the concept and then put the I MEF staff to work on it.

Although the two-breach course offered more tactical advantages, Colonel Raymond A. List, the force logistics officer was aghast at the requirements to support it. Not since the Korean War, if even then, had the Marine Corps faced such a difficult overland logistics challenge. To support both divisions,

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\*The commander of the 192d TRS was happy to oblige. LtCol Anthony H. Scheuller had served as a Marine fighter attack pilot in Vietnam.



*Commanding general and principal staff of 1 Marine Expeditionary Force are photographed at the Safaniyah main command post on 13 February 1991, shortly before displacing to Al Khanjar. From left are: Col Raymond A. List (G-4 Logistics), Col Robert K. Redlin (G-1 Manpower/Personnel), Col Eric E. Hastings (Chief of Staff), LtGen Walter E. Boomer (CG 1 MEF), MajGen Richard D. Hearney (DCG 1 MEF), Col Billy C. Steed (G-3 Operations), Col Forest L. Lucy (G-2 Intelligence), and Col Robert G. "Glenn" Hill (G-6 Communications/Electronics and Information Systems Management).*

the Direct Support Command had to move its main combat service support area northwest from Kibrit along secure but as yet unimproved main supply routes. In addition, there were no airfields in the area for casualty evacuation or aerial resupply. Nonetheless, after discussions with his staff and subordinate commanders over the next five days, Boomer felt that these obstacles could be overcome in the time remaining. List calculated that 15 days of supplies would be needed to support the ground campaign.<sup>7</sup> He initially allocated these to three sites: seven days' worth would remain at Kibrit and two would be staged at the port of Mishab. The remainder plus 15 days of ammunition, the most difficult part, would have to be moved to a combat service support area known so far simply as "Alpha." Soon after List's planners realized how far this was from the ports, about 170 road kilometers from Mishab and about 355 kilometers from Jubayl, they raised the stock objectives at the new base in fuel, water, and ammunition to 15 days.

General Krulak at the Direct Support Command dispatched an engineering team under Colonel Gary S. McKissock to a remote part of the desert to the west and north of Kibrit to begin surveying sites. He also placed all of the command's earthmoving equipment on alert. As soon as General Boomer settled on the new breach plan about 1130 on 6 February, he gave Krulak the go-ahead to build the new combat service support area. Within minutes, the 7th and 8th

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<sup>7</sup>In many areas of stock objectives, there was never unanimity of what actually constituted a "DOS" for this type of campaign. List and his staff spent a lot of time trying to get agreement among the commands. For example, the water requirement was reduced from 10 to about 4-1/2 gallons per person per day.



*Part of the five-million-gallon bulk fuel farm in the southwest corner of the Direct Support Command's large combat service support base, 165 kilometers by dirt road west northwest of Al Mishab, photographed on 21 February 1991. The DSC built the vast base in seven days and it was enclosed by 42 kilometers of blastwall berm, a portion of which can be seen near the top of the photograph. The remote area had no place name so the DSC dubbed it "Al Khanjar," Arabic for a type of short sword.*

Engineer Support Battalions (Reinforced) departed Kibrit westbound to begin construction of a huge support base located about 35 kilometers southwest of the corner of the heel of Kuwait. The battalions' many feats of construction over the next 14 days included 38 kilometers of blastwall berm which contained among other things the Marine Corps' largest-ever ammunition supply point, 151 cells in 768 acres, a five-million-gallon fuel farm, and a naval hospital with 14 operating rooms. The complex also included two 5,700-foot dirt airstrips capable of handling C-130 turboprop transports. The area was so remote from any settlement or feature that it had no name or designation on maps except "gravel plain." General Krulak's staff dubbed the place "Al Khanjar," Arabic for a type of short sword, to the delight of Arab officers attached to the force. By 12 February Al Khanjar was providing combat service support to the divisions.

A few kilometers west of the base was Landing Zone Lonesome Dove, the new home for the helicopters of Marine Aircraft Group 26 and a forward command post for the wing. Because of the distance from 3d Marine Aircraft

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<sup>1</sup>In fact, the gravel was quite fine, ranging from sand grains to pea-sized pebbles. They were too heavy or dense to be blown into dunes by the wind.



*Aerial view was taken on 21 February 1991, of a portion of Marine Aircraft Group 26's Landing Zone "Lonesome Dove," located near the southwest corner of the Al Khanjar Combat Service Support Base. Sikorsky CH-53D Sea Stallion and Boeing-Vertol CH-46E Sea Knight helicopters occupy the aluminum matting hardstands.*

Wing headquarters at Jubayl, Major General Moore sent his assistant wing commander, Brigadier General Granville R. "Granny" Amos, to Lonesome Dove to set up a helicopter Tactical Air Command Center.

The 1st Force Service Support Group stepped up an immense flow of material to Khanjar from its ports at Jubayl and Mishab. Shipping activity in the Commercial Port of Jubayl reached its high point the previous month in January 1991 when 88 vessels passed through the port followed by 51 in February.\*

The overland "line haul" operation from the ports to combat service support areas became known as the "Baghdad Express" and it operated more than 10,000 round trips. With adoption of the double breach plan, General Brabham immediately began to build up Saudi Motors from the 450 civilian trucks on hand in early February to more than 1,400. Some trucks came from as far away as Qatar and the United Arab Emirates. These mainly hauled ammunition and the Baghdad Express moved 15 days' worth in a total of 3,755 runs in only 10 days. The roads took a terrible toll on Saudi Motors, however, and at one point more than 575 contract trucks were out of action. Most of them lay strewn along the Kibrit-Khanjar route.

At the other end of the reliability spectrum was the force's organic tactical motor transportation operation built around the workhorse logistical vehicle system (LVS) of the Direct Support Command's composite 8th Motor Transport Battalion. During the shift westwards and in the assault, the battalion logged

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\*By user and nationality they were: Jan91 (88 total); MarCent (33), British (33), ArCent (20), Polish (2). Feb91 (51 total); MarCent (24), NavCent (2), ArCent (4), British (1), Polish (4), and Canadian (1).

more than 1,000,000 miles, most of it on unpaved desert roads. The versatile LVSs could be configured in flatbed, low boy, tanker, and wrecker modules and the engines of their Mk 48 tractors were kept running continuously during this time. Despite conditions of alternating dust and mud, the LVS turned in a remarkable 93% serviceability rate.

As the ground campaign approached, it was increasingly difficult to persuade civilian drivers of the Baghdad Express to make the run to Khanjar. The more worldly British competed by offering cash bonuses. To keep the wheels turning, the Marines matched the money and also threw in gas masks and *kung fu* martial arts videos. A total of about 350 drivers, mostly Filipinos, stayed the course. Even these were not enough. General Brabham sent out a call for Marines who could drive, or thought they could drive, a civilian tractor trailer rig. These individuals eventually numbered 900 and included Brabham's own driver and even some Navy dental technicians. Each went through an *ad hoc* half-day driving course at Jubail which concentrated on clutching and gear shifting before going on their first run. (U.S. equipment had gone to automatic transmissions some years earlier.)

Fortunately the transportation of fuel was less trying for the Marines thanks to a superb effort by the U.S. Army 240th Quartermaster Battalion that CentCom had sent to help. Calling themselves the "Trucks from Hell," the unit made many more than 5,000 runs and hauled most of the fuel that went to Khanjar. Land transportation was not enough by itself, and U.S. Air Force and Marine C-130 Hercules transports flew 540 missions of high priority cargo such



*Marine KC-130R Hercules of Marine Aerial Refueling Transport Squadron 352 delivers last-minute breaching equipment to "Al Khanjar International" on 23 February 1991. Marine combat engineers built two 5,700-foot-long airstrips in only a few days near the Direct Support Command's giant combat service support base. Most of the 540 aerial supply missions to Al Khanjar were flown by Air Force and Air National Guard C-130s. Almost all the Marine Hercules aircraft were employed in the aerial refueling of Marine jets during the campaign.*



as breaching gear directly into "Khanjar International," the two dirt airstrips next to the support base. To overcome a scarcity of tank transporters, the Saudi military loaned a number of its double-winch, 60-ton heavy equipment transporters (HETs) to move some of 2d Marine Division's M1A1 tanks forward.

The SeaBees finished up major airfield expansions at Mishab and Tanajib in January after overcoming delays in some of its projects because of material shortages and sluggish delivery, especially at sites in the north. Central Command and host nation policies regarding acquisition of materials were slow and complicated and the limitations on the numbers of available line haul vehicles didn't help matters. Recently redesignated as the Third Naval Construction Regiment, with Captain Mike Johnson as its commander, SeaBee units moved west with the force to engage in the repair and maintenance of the Kibrit main supply route and to undertake parts of the construction effort at Khanjar including its airstrips. They also built an enemy prisoner of war camp at Kibrit to accommodate 40,000 personnel.

One logistical problem at Khanjar was water. Drinking water sustained life, but almost as importantly, it was the medium for decontaminating personnel and equipment from chemical attacks. The SeaBees began drilling a well at Khanjar, but an around-the-clock operation failed to yield water. Reverse osmosis water purification units (ROWPUs) at Mishab converted sea water from the Gulf to fresh water. These worked well despite the presence of blobs of oil from a large oil spill created by the Iraqis. The 170-kilometer one-way run from Mishab to Khanjar put an immense strain on the available water trucks, however. A lucky discovery on the gravel plain solved part of the problem. While Marine engineers were building a road northwest from Khanjar to the 2d Marine Division tactical assembly area, they came across a mysterious pipe and valve sticking out of the desert. It turned out to be a water well, or perhaps a failed oil well, and it yielded about 4,000 gallons per hour. General Krulak named it the "Miracle Well."

To bring medical support closer to the battlefield, one of the two fleet hospitals at Mishab displaced to Khanjar. Its 14 operating rooms made it the third largest surgical organization in the service. The unpleasant prospect of mass casualties from both conventional and chemical weapons was the major concern of the I MEF Surgeon, Captain Jerry R. Crim, USN. To maximize the number of medical caregivers, the dentists and technicians of the force's dental detachments under command of Captain Thomas Carlsen, USN, trained in triage procedures, anesthesiology, and intensive care of patients. To counter a threat of biological warfare, specifically, anthrax, Crim initiated preventive measures throughout the force. To mitigate the possible effects of nerve agents, all members of the force began taking tablets of pyridostigmine three times daily in mid-February.

On the spiritual side, the force's senior chaplain, Captain H. Thomas Hiers, welcomed I MEF's first female chaplain, Lieutenant Pamela E. Davis, USN, into theater on 12 December. She was followed in January by Lieutenant John Cutler, who may have been the first rabbi to minister in the kingdom in many

years. As ground combat neared, attendance at services rose correspondingly in Hiers' tent which a sign identified as "The Chapel of the Breach."

### *Ground Actions Before D-Day*

During the air campaign, I MEF engaged in both offensive and defensive ground combat actions. The former included a series of night combined artillery and air raids along the Kuwait border. Battery F, 2d Battalion, 12th Marines, attached to 1st Battalion, 12th Marines, conducted the first such artillery raid with its M198 155-millimeter howitzers about 30 kilometers inland from the coast against Iraqi rocket positions at 0315 on 21 January. The raid provoked inaccurate return artillery fire from the Iraqis, as was the case in many of the other raids later on. Some of the eight principal Marine observation posts along the Berm were the objects of probing engagements as well as artillery and rocket attacks during the air campaign. These posts were also points of surrender for defecting Iraqi troops. By 1 February, I MEF had gathered 137 enemy prisoners of war, most of them taken at these forward observation posts. By 15 February, the force had taken another 101 Iraqis.<sup>36</sup>

The first major defensive combat actions commenced on the evening of 29 January when Iraqi armored/mechanized forces penetrated into Saudi Arabia in four locations along the heel of Kuwait. The easternmost of these occurred in the Joint Forces Command-East area in and about the coastal city of Al Khafji which lay 15 kilometers southeast of the main border crossing point. Two Iraqi armored/mechanized brigades crossed the lightly defended border. By 2315 they were in the city.\* Two observation posts and a forward operating base manned by detachments from 1st Surveillance, Reconnaissance, and Intelligence Group under command of the SRIG executive officer, Lieutenant Colonel Richard M. Barry, were shelled and then isolated. The Marines were able to escape in the early hours of the 30th to a "safe house" inside the city of Al Khafji until the town was retaken by Saudi and Qatari units two days later. During the time that they remained hidden, the teams directed air strikes of Marine Harrier jets and Cobra helicopters plus other service aircraft onto Iraqi targets.

There were three attacks into the MarCent area of operations to the west of Al Khafji on the same night of 29-30 September. One was a company-sized diversion that came out of the Al Wafrah sector. The main attack was a brigade-sized force that attempted to cross the Berm near the southwest corner of the border about 80-90 kilometers west of Al Khafji. The general outpost (GOP) unit for I MEF at this time was 1st Marine Division's Task Force Shepherd, a reinforced battalion-sized force of light armored infantry commanded by Lieutenant Colonel Clifford O. Myers. After receiving initial reports of the Iraqi assault from Observation Post #4 at 1926, Company D of Shepherd

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\*These actions are generally known as the Battle of Khafji. In fact the main engagement involving Marines occurred about 80 kilometers west of the city of Al Khafji.

moved from its nearby screen line to evacuate the reconnaissance team in their light armored vehicles (LAVs) and then worked to disrupt the Iraqi attack. They operated agile and fast, up to 100 kph, LAVs in two main variants; one carried infantry and a 25 millimeter cannon, the other TOW anti-armor missiles.<sup>7</sup> In a confused night action that continued until after dawn, Shepherd in conjunction with Marine and U.S. Air Force fighter/attack aircraft defeated the Iraqi forces, some of which retreated back into Kuwait. The last action involved a smaller Iraqi force which took over Observation Post #6 located about 15 kilometers south of Al Manaqish, Kuwait. This most northern of the Marine OPs was then unoccupied. Marine Division LAVs and artillery assisted by air strikes drove them out in short order.<sup>8</sup>

Although the reasons for the Iraqi incursions were not clear to General Boomer and his staff, the MEF commander was pleased with the prompt and effective response of the Marine screening forces. Boomer also believed that the resolute retaking of Al Khafji on 1 February despite casualties of 15 killed-in-action and 28 wounded was a watershed event for the coalition allies. The courageous conduct of the Saudis and Qataris who captured 642 Iraqi troops during the action, eliminated any doubts about the fighting spirit of Arab units on I MEF's right flank.

The Khafji actions also tested the force's combat operations center (COC), the nerve center and focus of activity at the Safaniyah command post. The COC was a traditional set-up with large map boards of various scales, overlaid with clear plastic. The current situation was displayed by grease pencil lines and symbols. Facing the boards was an arena of field desks with representatives of the staff sections, major subordinate commands, and other component forces, all of whom were linked to the outside by "secure" voice telephone. A desk in the center was reserved for the commanding general or his deputy. In an adjacent space was the fire support coordination center (FSCC). The direct air support center was nearby in its own tactical vans. Toward the rear and to one side of the COC was a bank of hissing radio speakers and their attendant operators. The noise level during operations was high, which made normal conversation difficult at times. Except for a single word processor for the journal, there were few high technology devices in the COC, and indeed, there was little to distinguish it from a Marine amphibious corps COC of World War II for that matter. Despite the inelegance and relatively low level of technical sophistication, it worked.

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<sup>7</sup>The BGM-71 TOW missile was a Tube launched, Optically tracked, Wire guided weapon weighing about 18 kilograms with a maximum range of 3,750 meters. Other LAV variants: 81mm mortar carrier, command/communication, logistics, and electronics warfare.

<sup>8</sup>For a more complete account of these actions, see LtCol Charles H. Cureton, USMCR, "U.S. Marines in the Persian Gulf, 1990-1991: With the 1st Marine Division in Desert Shield and Desert Storm," a companion monograph of this series in manuscript form and scheduled to be published by the Marine Corps History and Museums Division.

As discussed earlier, the philosophy of maneuver warfare left more discretion in the hands of subordinate commanders. Colonels Bill Steed and Chuck Lohman, plus a booming-voiced chain-smoking ground operations officer, Colonel Emil J. "Buck" Bedard, were the action officers during operations. Although each situation was tracked as carefully as possible, they took pains not to micro-manage situations. They did, however, take special care in coordinating and deconflicting actions, and efficiently supplying support where it was needed.

Unfortunately, during the Khafji actions there were three fratricide incidents that caused the deaths of 12 Marines in combat; i.e., all the Marine fatalities of the period. These events were of grave concern to General Boomer.

### *Fratricide*

Beginning in late January, Marines of I MEF came under a series of air attacks by friendly forces. These were known variously as "fratricide," "Blue on Blue," or "friendly fire" incidents. The first of these occurred on 23 January when a flight of two U.S. Air Force A-10s strafed Marine reconnaissance vehicles south of the border after being cleared by JFACC's airborne command and control center to strike a small convoy in southern Kuwait. As a result, General Boomer ordered the fire support coordination line, south of which all air strikes had to be coordinated with I MEF's FSCC, to be moved five kilometers north. As a practical matter, that meant that all strikes below the line were to be under MarCent forward air controllers.

The most serious incident of the campaign came on the night of 29-30 January as Task Force Shepherd engaged Iraqi forces near the southwest corner of the heel of Kuwait. During the action, a U.S. Air Force Fairchild A-10A Thunderbolt II close-support jet under control of a ground-based Marine forward air controller, released an infrared Maverick missile that struck a Marine LAV-25 light armored vehicle, resulting in the deaths of seven Marines and the destruction of the vehicle. An investigation determined that the LAV was about 6,000 meters from the A-10 pilot's intended target. About an hour earlier near the same location, a Marine unit fired a TOW missile which struck a another Marine vehicle, killing four Marines.\*

As a result of the A-10 incidents, the procedures for assigning JFACC air strikes by the airborne command and control center were informally changed for the rest of the campaign. Each ABCCC crew contained a Marine liaison officer who was also a qualified forward air controller. They were given control over four contiguous "kill boxes" bounded by Latitudes N28-30 to N29-30 and Longitudes E47-30 to E48-30. This area included the heel of Kuwait and

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\*The Marines killed in action during these two incidents were: LCpl Frank C. Allen, Cpl Stephen E. Bentzlin, Cpl Ismael Cotto, LCpl Thomas A. Jenkins, LCpl Michael E. Linderman, Jr., LCpl James H. Lumplins, Sgt Garrett A. Mongrella, PFC Scott A. Schroeder, LCpl David T. Snyder, LCpl Dion J. Stephenson, and LCpl Daniel B. Walker.

Kuwait City, i.e., all of MarCent's future area of operations. Henceforth, as a general practice, only Marine aircraft would attack targets in the vicinity of Marine ground forces.

Notwithstanding this measure, on the night of 1-2 February, a Marine Grumman A-6E Intruder night/all-weather attack jet was cleared by a Marine controller on the ABCCC to attack moving targets that its crew had detected in southern Kuwait. The ABCCC was not equipped with radar to monitor the flight independently and the Intruder crew failed to check its position. They attacked a 1st Marine Division convoy south of the border with cluster munitions, killing one Marine\* and seriously injuring two more.

As a result of these incidents, General Boomer became gravely concerned and formed what he termed a Tiger Team of six officers and one civilian scientist under Colonel Gene D. Hendrickson to analyze the issue and make recommendations. The team determined that the incidents arose from three problems: (1) a lack of situation awareness by commanders, aircrew, and controllers; (2) the lack of a battlefield system for identification of friend and foe (IFF), and (3) the lack of visually defined cues on the night battlefield by which pilots could orient themselves.

The Tiger Team made a number of recommendations that could be implemented in the near term. At the same time, General Schwarzkopf put forth proposals to mark vehicles distinctively with inverted "V" symbols, distinctive orange panels, chemical lights, and thermal tape. The team felt these measures would be of little value for air-ground identification, but might be of some use for ground-to-ground situations. The first two were implemented generally throughout the theater within days. In addition to the informal steps taken aboard the airborne command and control center noted above, the team's recommendations included:

- Increased use of the Hughes Position Locating and Reporting System (PLRS) so that commanders and controllers would have real-time depictions of the actual locations of their units. For manually plotted combat operations centers and other controlling agencies, i.e., virtually all those of I MEF except for air defense, it recommended more frequent plotting of friendly positions.
- Improved situational awareness at the direct air support center by importing the TADIL-A visual air display. However, this could not be done in the time available.

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\*LCpl Eliseo C. Felix.

- Implementation of fire support coordination lines that could take advantage of the accuracies of aircraft inertial navigation systems and the installation of a Tacan radio beacon near the border to provide pilots cross references to their positions.
- A general tightening up of the criteria to be met before delivering aerial ordnance near friendly troops including reporting in and out (RIO) procedures, the use of check points to force up pilot and controller situation awareness, and positive marking of targets.
- Implementation of vehicle markings, infrared and visible light strobes for vehicles, and installation of British Beta long-lasting night low-light marking systems. Markings were placed on all vehicles, and many were equipped with the strobes.
- Marking the night battlefield with artillery rounds filled with chemical light material so that pilots would have visual cues to mark locations on the ground. In a superb effort, the Edgewood Arsenal in Maryland developed, tested, transported, and fielded to I MEF 68 155mm rounds using chemical-type shells in less than two weeks.<sup>37</sup>

### *Force Deception and Reserve*

The detachment of British forces in January reduced the I MEF maneuver elements to two large divisions without a reserve. As the 2d Marine Division moved west and north out of its positions below Al Wafrah to its assembly areas in mid-February, the Kibrit combat service support area and main supply route were exposed to enemy attack. To convince the Iraqis that the former 2d Marine Division positions were still occupied, I MEF deployed a tiny deception force that was the brainchild of the assistant commander of the 1st Marine Division, Brigadier General Thomas V. Draude. Task Force "Troy" covered a front of 29 kilometers and consisted of about 110 Reserve Marines, mostly from 3d Air and Naval Gunfire Liaison Company. These Marines engaged in a series of noisy combined arms raids against Iraqi positions in the Al Wafrah sector every day beginning 18 February. Their efforts paid off. Interrogations

of opposing Iraqi officers later indicated their belief that the Marine land attack would come from Troy's area.

Despite Task Force Troy's good efforts in tying up the Iraqi *5th Mechanized Division*, its tissue-thin screen could give no significant defense of the area south of Al Wafrah toward Kibrit. To beef up the defense and provide a force reserve, General Boomer requested that CentCom attach the ground combat element of NavCent's 5th Marine Expeditionary Brigade (5th MEB) commanded by Major General Peter J. Rowe. Both the 4th and 5th MEBs were part of General Schwarzkopf's strategic amphibious deception effort, however. Thus Regimental Landing Team 5, under command of Colonel Randolph A. Gangle, and its aviation combat element partner, Marine Aircraft Group 50 under Colonel Randall L. West, could not come ashore until G-Day itself.

The 5th MEB was the last large Marine Corps unit to arrive in the theater. It contained the highest percentage of Reserve units after the all-Reserve 24th Marines. Colonel Gangle's first concern was to successfully integrate his Reserve units, which was accomplished in a series of intense training exercises beginning at Twentynine Palms in November just prior to embarking on ships. As 5th MEB sailed westwards, it engaged in continuous wargaming at sea and then conducted exercises in the Philippines, Oman, and the United Arab Emirates. By the time the brigade reached its station in the northern Gulf, it was at a high state of readiness and Gangle could find no difference between regular and Reserve units. Shipping problems complicated the picture, however. The regimental landing team had to shift its command element and other units from USS *Tripoli* (LPH 10) on 18 January after that vessel struck a mine and was seriously damaged. After receiving relatively short notice of the 5th MEB's new mission, General Rowe discovered that his brigade's primary follow-on echelon vessels, MVs *Flickertail State* and *Cape Girardeau*, could not be unloaded at Al Mishab's small port. Instead they had to sail another 100 nautical miles southeast to Al Jubayl. The 1st FSSG, assisted by the brigade's own understrength Brigade Service Support Group 5, began offloading Regimental Landing Team 5's sustainment on 23 February, the day before G-Day.

### *Marines and Civilians*

As offensive operations neared, the 3d Civil Affairs Group detachment was reinforced on 12 January by its own main body, many of whom had been sent home earlier in September, plus the 4th Civil Affairs Group. Redesignated 3d Civil Affairs Group (Rein), the unit's abilities were tested when Iraqi Scud missiles began to fall into the rear area at Jubayl after 17 January. (Ironically, Scud attacks never came near most of the main body of the force). The Scud and chemical weapon threat deeply affected both the Saudi and the expatriate communities, and the group spent much time meeting with local petrochemical plant executives and workers plus local citizens' and business groups. As part of its liaison operation, it maintained a presence at the Jubayl Saudi civil police

station and linked the rear area operations center (RAOC) with the Saudi emergency coordination center for civil defense. The group developed evacuation procedures for refinery personnel and coordinated the security arrangements for Marine units at the Aramco complexes at Safaniyah and Tanajib.

Another important activity of 3d CAG in support of military operations was its role in the Kuwaiti Augmentation Program. The acute shortage of Arabic linguists within the force led to a program to integrate Kuwaitis into Marine ground units. These exiled Kuwaiti volunteers, mostly military and police officers plus some students of whom the most senior was Colonel Fahad al Qahtani, KAF, provided translator services, advice on geography and terrain, and assisted in enemy prisoner of war (EPW) handling. Group personnel also completed a comprehensive civilian resources survey that encompassed each neighborhood of Kuwait City. All of this marked a shift in CAG activities. Previously, operations were directed primarily at issues within Saudi Arabia. Civil affairs personnel began shifting into the divisions and brigades afloat as well as into psychological operations teams as G-Day approached.

### *Coalition Forces on the Left and Right Flanks*

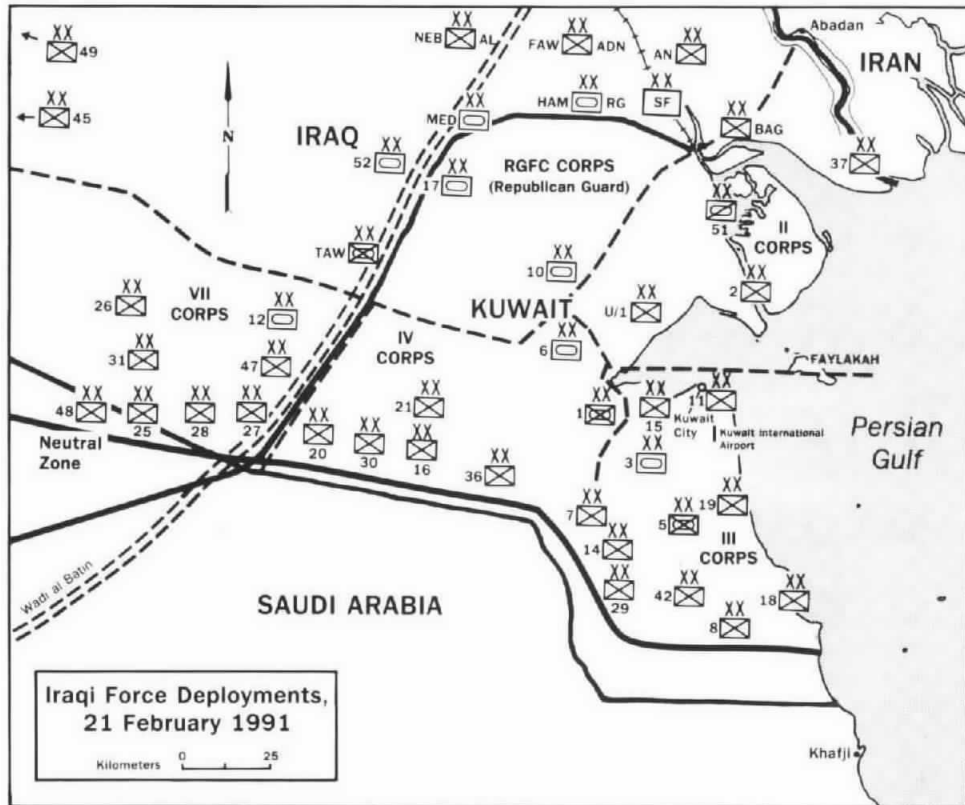
After the commencement of hostilities, the most significant relationships with Coalition Forces were in the areas of reconnaissance and supporting arms coordination. Force Reconnaissance teams accompanied command and forward elements of the Joint Forces Command-East on MarCent's right flank. This command included elements of Saudi, Qatari, Omani, and United Arab Emirate forces. Accompanying them were 1st ANGLICO supporting arms liaison and fire control teams to control Marine and other service air strikes and naval gunfire in support of JFC-E during the ground campaign. On the left flank, MarCent liaison teams were also attached to the Joint Forces Command-North/Northern Area Command comprised mainly of Egyptian and Syrian forces.

The teams with JFC-E were responsible for reporting movements of their Coalition units to I MEF for purposes of coordination. Reconnaissance teams were also to secure the American Embassy in Kuwait City if the opportunity arose. Additionally, some teams performed pathfinding operations on behalf of their JFC-E units. As noted earlier, some JFC-E units were unpracticed in combined operations and relied heavily on MarCent teams with their integrated communications nets to help coordinate their movements and operations.

### *Deception Operations*

The I MEF deception effort was integral with that of CinCCent's. General Schwarzkopf ordered coordinated "surge" theater deception operations on 20-21 February, i.e., the Wednesday and Thursday before the Islamic weekend, to desensitize enemy decision makers. His intention was to deceive Iraqi





Members of the combat art team traveled widely to visit Marine units on the Saudi Arabia-Kuwait-Iraq frontiers. Still figures of Marines facing an unseen enemy made compelling subjects. Col H. Avery Chenoweth used watercolor to record "Sentry Post, I MEF Compound, Desert Storm, 18 Jan 91."



commanders into believing that the main effort would come into Kuwait only and that the supporting attacks would come through western Kuwait and from an amphibious assault.

In concert with General Schwarzkopf's plan, General Boomer's deception objectives included causing the enemy to concentrate assets to prevent a breach in the vicinity of the III/IV Corps boundary near the bend of the border at Al Manaqish, convincing the enemy of I MEF's preoccupation with the defense of Saudi oil fields and its own lines of communication, and finally, to simply overload the enemy with excessive bogus and misleading inputs. Based upon Iraqi dispositions and conduct on G-Day and beyond, the deception program appeared to be successful. Specific measures included:

- The formation of the deception task force, Troy, noted earlier.
- An electronic ruse to perpetuate the radio emission signature of the I MEF command post after it had displaced to the vicinity of Al Khanjar on 15 February.
- The employment of General Boomer's command vehicles with a two-star impostor at the border near Manaqish on January 16th. In addition there were other operations nearby such as artillery raids, leaflet drops, berm cuts, and the like on a continuing basis to demonstrate intent to penetrate in that vicinity.
- The use of mock artillery pieces and tanks west of Al Qaraah near a fake combat service support area beginning 17 January to mask ArCent and MarCent movements.
- Special Operations Command reconnaissances and other actions along the coast of Kuwait to promote a belief that amphibious operations would be undertaken between Mina Saud and Ras Al Qulayah.

### *I MEF Moves Forward*

On 14-15 February, General Boomer relocated his command post about 180 kilometers west northwest over dusty roads from Safaniyah. He originally intended to relocate near Kibrit, but after the adoption of the second breach, the force's senior communicator, Colonel "Glenn" Hill, realized that Kibrit



wouldn't do. Hill, who by now had almost gotten used to the constant juggling of his assets, informed Boomer that in order to have adequate communications with both divisions, he would have to move his command post somewhere near Al Khanjar. At a site eight kilometers south of the Al Khanjar combat service support area, the I MEF Headquarters Company under command of Major Gary R. Ing established an austere tent camp inside a series of concentric berms. It was set within a slight undulation of desert with the effect that the camp was practically invisible two kilometers away. The rains earlier had brought forth a fuzzy carpet of thin grass and the trafficability of the desert in this area was excellent. The nights were bitter, however, with temperatures often below freezing.

At a formation on 15 February, Boomer thanked the officers and troops of his command element for pulling off a "minor miracle" in the latest move and for all their hard work in the past. Most of them had been with Boomer for



*LtGen Boomer addresses the 1 MEF command element on 15 February 1991 at the force's new main command post located eight kilometers south of Al Khanjar.*



*Aerial view photographed looking east on 21 February 1991, of the I MEF main command post located about eight kilometers south of the Al Khanjar Combat Service Support Base. Concentric design of blastwall berms was for ease of defense by the command element's small security force. The site was located within a slight undulation of the terrain and could not be seen on foot beyond about two kilometers. The CP's radio antennas were removed away from the site.*

nearly six months now and chances for gatherings like this were rare. He then informed them that the "next stop is Kuwait" and that "We're going to go fast and go violently" which brought forth a loud roar of approval.<sup>38</sup>

The combat operations center at Al Khanjar was established in a large quonset style tent. Due to its high noise level, General Boomer was persuaded by his staff to establish a command center adjacent to the COC which would be a quiet area for himself, General Hearney, and his senior operations staff to discuss matters. Alongside a few maps, a computer was set up on a plywood table whose monitor displayed a map with the decoded symbols of position locating and reporting system-equipped units. This had come about as a result of a recommendation of the Tiger Team's antifratricide report. The team discovered that PLRS was being used more as a navigation device than as a command and control tool. Within a week of the team's report, the manufacturer's PLRS expert, a retired Marine major by the name of John P. O'Connor, had arrived and tapped into both divisions' PLRS networks. For the first time in combat, a Marine force commander would be able to track in real time the progress of his units on the battlefield.\*

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\*O'Connor had intended to use a spare Master Station display unit which could display up to 999 stations simultaneously to depict both divisions' situations. However, there wasn't enough time. Instead, he used a receiver repeater unit attached to a computer to display 64 selected units of each division, one division at a time. The MEF continued to receive the division's PLRS networks until the final day of the ground campaign when they ran out of range.

### *Manpower Issues*

The number of Marines and attached personnel of the force had grown from 50,395 as of 1 January to 72,233 on 17 January (D-Day), then to 79,751 on 24 February (G-Day), finally rising to a peak strength of 84,515 persons with the subsequent movement of Regimental Landing Team 5 ashore. As the major subordinate commands moved into their tactical assembly areas, manning shortfalls in tank and amphibious assault vehicle specialties cropped up. The Combat Replacement Regiment was able to provide these specialists who were then attached to combat engineer units. Some engineers also cross-trained to act as crewmen.

The integration of Marine Reservists into the force went very well. Apart from Colonel Germann's 24th Marines, most Reservists deployed as battalions, squadrons, and companies, or as reinforcement detachments. A smaller number were Individual Ready Reservists. As noted, the response rate to the callup was nearly 99 percent and reflected a high level of morale. The state of their readiness also was quite high, especially at the small unit level. A number of units achieved outstanding successes in combat. On the eve of G-Day, 11,703 Marine Reservists were in I MEF out of more than 31,000 called up.

There also were also 1,335 female Marines in I MEF, including 10 who were forward with the MEF command post. Most women Marines served with aviation or combat service support organizations. Operation Desert Storm witnessed the greatest participation ever of women Marines in a combat operation. Apart from a lack of privacy at times, the presence of female Marines was not an issue within the force itself.

The Combat Replacement Regiment under Colonel Jack A. Davis, a Reserve law enforcement official from North Carolina, was set up on 22 January in response to the CNA casualty analysis that indicated that the force could suffer as many as 10,552 casualties in the first week of a ground war. Headquarters Marine Corps identified replacements in critical specialties and formed them into companies for further training. The first 10 of a planned 20 companies, about 2,500 Marines, were flown in with full personal equipment and based at a camp near Jubayl.

Another concern of commanders at all levels was tracking the location and status of each member of their units who was hospitalized. The force established MarCent hospital liaison teams in all hospitals in Southwest Asia, at military hospitals in Europe, and in the United States. On 10 February, Casual Company was added to the Combat Replacement Regiment. Previously, if an outpatient was not fit for duty within seven days of release from the hospital, he was evacuated to the United States until fully recovered. Very few, if any, such evacuees returned to their original units. The creation of Casual Company allowed I MEF greater ability to retain its in-theater manpower assets. Marines were only sent to the company if they were expected to be fit for unrestricted duty within 14 days.

Finally, on 11 February, procedures for next of kin notification were clarified. For example, Camp Pendleton assigned to teams of five Marines each to the base adjutant. These teams formed the base casualty coordination center. If the rear element of a deployed unit received a casualty report, the procedure was to notify the center which in turn would inform the Marine's next of kin. Many of the casualty assistance officers in the U.S. were retired Reserve officers recalled to active duty.

American forces were the object of intense interest by the media. The force public affairs officer, Colonel John M. Shotwell, received requests from hundreds of media representatives to visit Marine units. Only a fraction of these could be accommodated during the campaign itself, so the public affairs section established "press pools" to provide coverage as done elsewhere in the theater. Pool members got to experience the spartan existence of Marines in the field. General Boomer personally set a high priority on making himself and members of the force accessible to the pools, and he spent many occasions with them in candid interviews. Because deception was absolutely vital to the success of the campaign, CentCom policy circumscribed reporters in certain areas of their coverage such as location, size, and identification of units. Although this chafed some pool members, cooperation overall was excellent. There was one exception that caused great concern. After being denied permission to travel to the Kuwait border due to the hazards involved, a CBS television crew drove themselves unescorted to a Saudi-controlled border area west of Al Khafji in January. They strayed out of friendly territory, and Iraqi troops subsequently apprehended and incarcerated them until after the conflict was over. Besides ministering to its media charges, the I MEF Public Affairs Office had its own enterprise as well, a newssheet entitled *Brown Side Out* that was published for the Marines of I MEF. It went to tabloid format on 9 January. The office also produced 80 external news releases in January and February at the height of the campaign.

### *The Eve of G-Day*

General Schwarzkopf directed the execution of ground offensive operations, Phase IV of Operation Desert Storm, to commence at 0400 local time on 24 February. Central Command forces in coordination with Coalition Forces were ordered to neutralize the Iraqi national command authority, eject Iraqi armed forces from Kuwait, destroy the Republican Guard, destroy Iraq's ballistic missile, nuclear, biological, and chemical warfare capabilities, and to assist in the restoration of the legitimate government of Kuwait. Some of these tasks were part of the air campaign already underway.

The MarCent mission was to conduct a supporting attack to penetrate Iraqi defenses, destroy Iraqi forces in its zone of action, and secure key objectives to prevent reinforcement of Iraqi forces facing the Joint Forces Command-North/Northern Area Command. Once this was achieved, I MEF was to establish blocking positions to halt the northerly retreat of Iraqi forces from

southeastern Kuwait and Kuwait City and to assist passage of Coalition Forces into Kuwait City. The force was to be prepared to assist in securing and defending Kuwait City as well as securing the U.S. Embassy. Additional tasks were the conduct of deception operations, the collection and control of enemy prisoners of war, the protection and direction of refugees and displaced civilians, and coordination with other commanders. MarCent executed its ground campaign in three stages. These deviated very little from the final version of MarCent Operation Plan Desert Storm.

In the plan, General Boomer stated his intent. This was to penetrate the Iraqi forward defenses with two divisions between the Al Wafrah and Al Manaqish oil fields. He also intended to deceive the enemy as to the location of his main effort. Marine air assets were to be massed or "surged" to suppress enemy indirect fire weapons that covered the area of penetration. As part of the theater deception plan, NavCent was to conduct amphibious deception operations in the form of a feint or demonstration to fix enemy forces north and east of the Burqan Oilfield. Central Command and MarCent airpower was to attack Iraqi forces that might blunt the penetration north of a line running through Al Ahmadi (Latitude 29-05 North). Iraqi mobile forces were to be destroyed in-zone while by-passing forces east of the Burqan oil field. Al Jaber Airfield was to be seized if it interfered with a fast advance which was focused on enemy forces, rather than terrain. Rapid integration of I MEF supporting arms was to speed the advance, although care was to be taken not to outrun logistics support and supply lines. Finally, although Coalition Forces were to capture Kuwait City, I MEF forces were to be prepared to conduct operations in urban terrain.

General Boomer crafted his concept of operations in coordination with the Combined Operation Plan Desert Storm. The Marine plan incorporated the same four phases as General Schwarzkopf's. The first three Phases were tied to the air campaign noted earlier: the strategic air offensive, the suppression of air defenses in the Kuwait Theater, and battlefield preparation. Phase IV was a three-stage ground offensive with MarCent conducting a CentCom supporting attack. Its aim was to fix and destroy Iraqi forces in zone, prevent reinforcement of Iraqi forces facing the Joint Forces Command-North/Northern Area Command on MarCent's left flank, and to preclude retreat of Iraqi forces from southeastern Kuwait. The final MarCent plan also had three stages: penetration, exploitation, and consolidation. Lieutenant General Boomer approved the last changes to Operation Order Desert Storm on 14 February 1991. The force executed this plan on G-Day, 24 February 1991. In order that every commander in the force would understand the plan clearly, Colonel Steed dispatched briefing teams under Colonel Chuck Lohman to every sector of the MarCent area of operations the week before G-Day.

As G-Day approached and the forces of I MEF moved into their tactical assembly areas, the 3d Naval Construction Regiment opened gaps through the Berm. To preserve deception, they also made cuts in the Berm at the bend of the border near Al Manaqish. Combat engineers of the Direct Support Command constructed roads up to the Berm on the night of 23 February. The



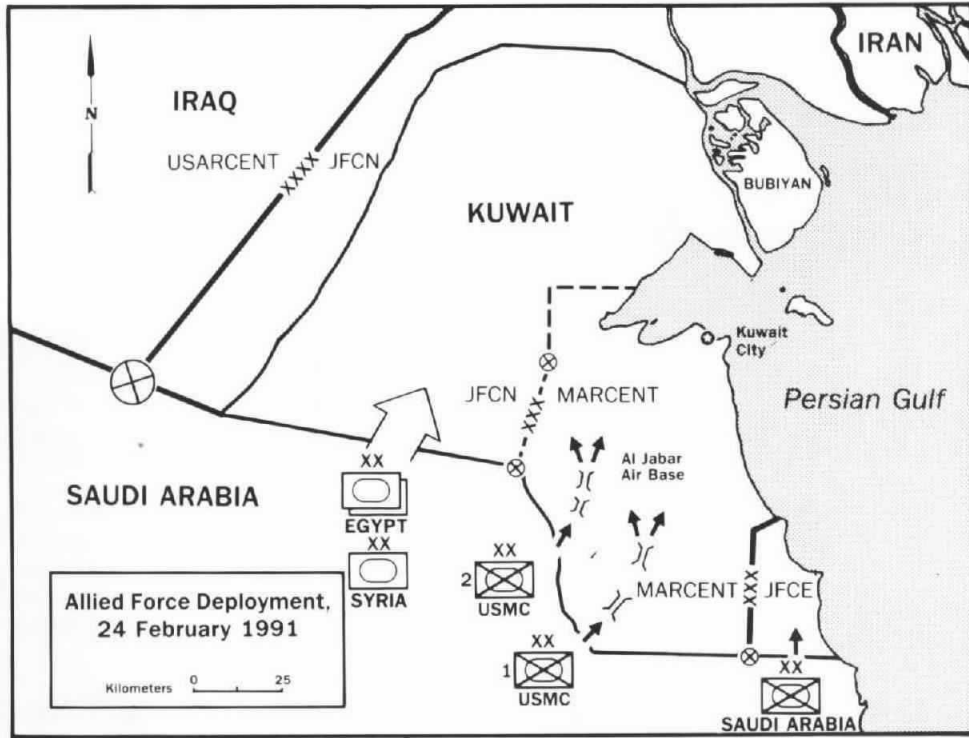


*At the entrance to one of the 2d Marine Division's six outer breaches a blue banner with the numeral "3" indicates that it is Lane Blue 3. The route leading up to it was marked successively with blue plastic garbage pails with "3s" spray-painted by Marine pathfinders who navigated by use of very accurate satellite-referenced global positioning system receivers. The blue pail just below the left banner is marked "PL" for phase line. Small red flags stuck in the edges of the breach lane indicate unexploded mines.*

one that ran from the combat service support area forward to the 2d Marine Division was nicknamed the "Khanjar Expressway" and became the force's main supply route. The previous day, 22 February, a force of 2d Marine Division light armored vehicles was operating up near the Manaqish bend in the border as part of the deception effort, when it was engaged by a sizable Iraqi armored/mechanized force. The Marines were so effective in the ensuing action that Baghdad Radio reported that the ground war had already started. Boomer's remark to his staff that night was: "That was just my 2d LAI. Wait until he sees the rest . . . ." <sup>39</sup>

### *The Liberation of Kuwait: The Breach*

At about 0400 on 24 February 1991, the 1st Marine Division began its penetration of the twin obstacle belts between the Umm Gudair (South) and Al Wafrah oilfields as the I MEF supporting attack. Major General Myatt employed two infantry regiment task forces to infiltrate the obstacle belts by foot between the Iraqi 29th and 42d Infantry Divisions: Grizzly, commanded by Colonel Jim Fulks, and Taro, under Colonel John H. Admire. Grizzly had actually moved about 20 kilometers into the no man's land between the Saudi Berm and the first belt beginning on 21 February. This action constituted the first retaking of Kuwaiti territory by the allied forces. Task Forces Grizzly and Taro secured the flanks for the main attack by 1st Marine Division's two mechanized units, Task Force Ripper, under command of Colonel Carlton W. Fulford Jr., and Task Force Papa Bear, under Colonel Richard W. Hodory. Four of the five battalions of the division's artillery regiment, the 11th Marines,



*Among benefits of the art team's portrayals of Marines in Desert Storm is an accurate record of how uniforms and protective gear were worn and used. Col Chenoweth looked variously at the personality of a "Marine Gunner," his characteristic dress, and the hellish setting of burning oil wells.*



comanded by Colonel Patrick G. Howard, had moved up to positions about four kilometers south of the first breach to provide support by 2200 the previous night. The division encountered light resistance during the breach, mostly in the form of artillery fire and a few tanks.

Despite a CentCom forecast\* for 72 hours of relatively clear weather, light, and at times moderate, rain began falling about 0300, as indeed it would every day of the ground campaign. The rain was accompanied by reduced visibility, low cloud ceilings of 2,000-4,000 feet, and wind from the southeast. The wind fortuitously blew dense smoke from the burning Wafrah and Burqan oilfields across the force's avenues of approach, partially masking the movement of the 2d Marine Division attackers. Masking of an electronic variety came from the Grumman EA-6B Prowler jets of Marine Attack/Electronic Warfare Squadron 2. The Prowlers' electronic countermeasures officers jammed Iraqi RASIT battlefield surveillance radars just as effectively as they had done earlier to Iraqi air defense radar and missiles in the air campaign. Joining them in the arcane electronic arena was the ground-based 1st Radio Battalion. Sadly, the electronic battlefield also witnessed a fratricide incident: at about 1900 on 23 February, an AGM-88 high-speed antiradiation missile launched from an aircraft struck



*Members of 2d Marine Division's Breach Control Party are led by LtCol Howard P. Shores II, second from right in woodland anti-chemical suit, who selected the breach points and helped implement the division's assault, modeled upon an amphibious landing.*

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\*LtGen Boomer's own forecasters disagreed with CentCom's but were outvoted. The I MEF weather specialists observed a weak mid-latitude front from the North Atlantic picking up moisture from the sub-tropical jet-stream and correctly predicted it would intersect another weak cold front then crossing Turkey. The ensuing cyclogenesis or "pseudo-occlusion" over the northern Gulf produced the characteristic rain and wind conditions of the ground campaign. (Source: CWO3 A. R. Davis).



*A Direct Support Command armored D-7 Caterpillar was disabled by a mine while attempting to widen Lane Blue 3 of the 2d Marine Division's breach. The division's greatest equipment losses occurred during the breaching operation and included seven M60 and one M1A1 tanks equipped with track-width mine plows, plus three assault amphibious vehicles.*

AN/TPQ-36 counterbattery radar of the 11th Marines, killing one Marine and wounding another.”

At 0530, 2d Marine Division, reinforced by the U.S. Army Tiger Brigade, commenced the I MEF main attack, penetrating between the Umm Gudair (South) and Al Manaqish oilfields about 25 kilometers northwest of the 1st Marine Division assault. The 6th Marines, under command of Colonel Lawrence H. Livingston, conducted the division's breaching assault which punched through the middle of the Iraqi *14th Infantry Division*. Later its flanking units, Tiger Brigade and 8th Marines, penetrated seams between the *7th* and *14th Infantry Divisions* and the *14th* and *29th Divisions* respectively. During the night, most of the 10th Marines under command of Colonel Leslie M. Palm, crossed the Berm and set up their M198 howitzers on both sides of the routes to the first obstacle belt to support breaching operations. Reinforcing the division's artillery were 10 M270 Multiple Launch Rocket Systems from Tiger Brigade.

The division's breaching plan was elegantly simple, a factor that helped overcome the lack of time for planning and training. Major General Keys and his staff used an amphibious assault as a model, even though this particular assault was going to be conducted on land. Combat engineers laid out six lanes

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\*The Marine was Sgt A. A. Pack of 1st MarDiv.



*A T54B/T55 series tank is located just inside the inner barrier, about five kilometers west of Al Jaber Air Base. Older tanks such as these were dug in as part of the primary Iraqi defenses. Many did not sortie out during the assault and were struck in their holes by various Marine weapons. The crew of this one only managed to fire its machine gun before being overrun and captured mid-morning on 24 February 1991. Newer T62 and T72 tanks were part of the Iraqi operational reserve which conducted counterattacks the next morning.*

from six departure/penetration points that went through the Berm along a 12 kilometer front. These were named like beaches: from left to right ran Red 1, Red 2, Blue 3, Blue 4, Green 5, and Green 6. The 1st Marine Division's liaison officer, Lieutenant Colonel Howard P. Shores II, who was familiar with the terrain and the obstacles, suggested the location of breaches. Each lane was marked about every kilometer by appropriately colored plastic garbage pails, spray-painted with lane numbers and phase lines. The lanes converged down to a four-kilometer front at the first obstacle belt, and then continued in parallel until past the second belt.

As the divisions approached the obstacle belts, the flat, thinly grassed desert gave way to slightly undulating sandy terrain interspersed with small, low-lying salt flats (*sabkha*'s) that had become difficult with the rains but were traffica-ble. Although oil-filled trenches were burning in the area, the divisions had picked their breach points well; none of them obstructed the force. At the obstacle belts, combat engineers launched single and triple-shot line charges across the belts that created more or less continuous V-shaped trenches about a meter deep. Into these cuts went combat engineers and tank crews in M60A1 tanks configured with track-width mine plows and mine rakes. Despite casualties to the equipment, the Marines were able to open up 5-1/2 meter-wide lanes to permit waiting armor and mechanized forces to pour through.

There were many examples of courage and innovation during breaching. About a third of the line charges failed to detonate. When this happened, tank plow crews pressed on anyway. At some locations Marines went on foot into

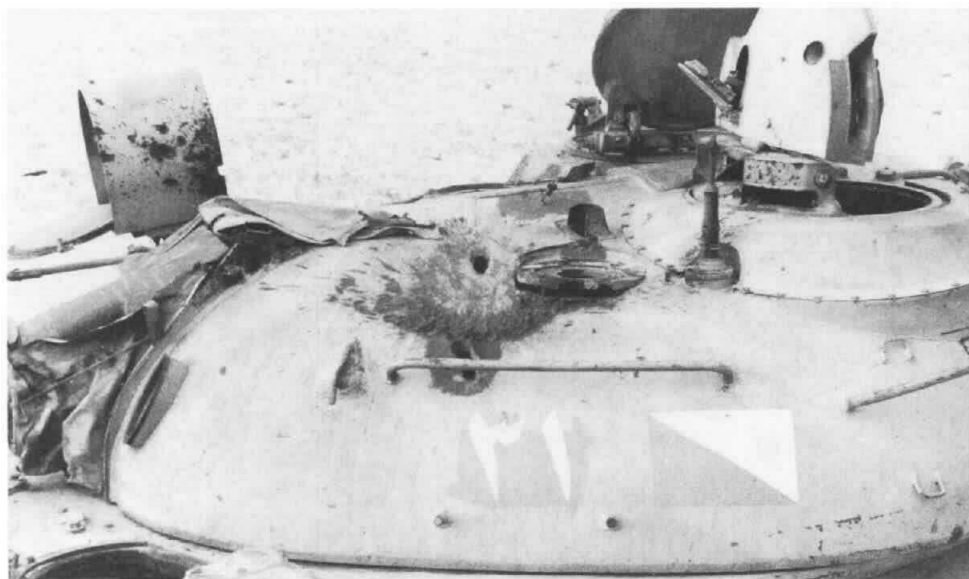
the minefields and set detonators to explode the line charges that failed to go off. Others retrieved unexploded mines by hand and carried them out of the way. Infiltrating task forces at 1st Marine Division proofed their passages by manually probing and disarming mines they located. When the penetration in the 2d Marine Division's Green Lanes bogged down due to breaching equipment casualties, some units made short connector lanes over to other lanes to permit faster passage. To improve traffic flows after the penetrations, Direct Support Command engineers used armored D7 Caterpillar tractors equipped with plows and flails to widen the lanes.

After emerging from the second barrier belt, 2d Marine Division fanned out northwest of Al Jaber Air Base. The 6th Marines remained in the center to protect the breaches. Tiger Brigade passed through the breaches next during the afternoon of 24 February. It anchored the force's left flank by enveloping the Iraqi *7th Infantry Division*. During the night, the 8th Marines, under command of Colonel Larry S. Schmidt, came through the breaches to become the division's right flank. They rolled along the seam dividing the Iraqi *14th* and *29th Infantry Divisions*. The 2d Marine Division received continuous light opposition, mostly from artillery and tanks during its assault. The division suffered two killed in action that day, a Marine and a soldier from Tiger Brigade. Shelling by Iraqi artillery was intermittent, but the barrages were



*Results of a Marine air attack with Mk 20 Rockeye cluster bomb munitions are evident on an Iraqi D20 152mm artillery emplacement. This was one of a brigade of 56 howitzers, located in and about the "Emir's Farm." The Iraqi ammunition bunkers were covered only with corrugated sheet metal and a thin layer of sand and were easy targets for Marine Hornet and Harrier jets. Rapid response air strikes and counterbattery fire effectively thwarted the large amount of Iraqi artillery during and after the breaching assault.*





*Precision weaponry disabled the turret of this Iraqi T54B/T55 series tank near the inner breach of 1st Marine Division's Task Force Ripper on 24 February 1991, about 14 kilometers southeast of Al Jarber Air Base. The holes were probably caused by 105mm sabot armor-piercing, fin-stabilized depleted uranium rounds fired from Ripper's M60A1 tanks.*

small and ill-directed. In no way did they reflect the large numbers of artillery pieces in the area or the high-volume Soviet-style tactics heretofore practiced by the Iraqis. Enemy artillery fire continued in diminishing amounts until the night of 25-26 February. By comparison, this was a small fraction of what Marine artillery was sending in return. To the southeast, the 1st Marine Division mechanized task forces, Ripper and Papa Bear, moved north out of their second barrier to drive abreast of the southwest corner of the intensely burning Burqan Oilfield.

A few thousand meters ahead of the forward line of troops, Marine Bell AH-1J and -1S Sea Cobra attack helicopters provided close in fire support using TOW and laser-guided Hellfire missiles respectively. Ahead of the Sea Cobras, Marine aircrews aloft in F/A-18D two-seater Hornets acted as forward air controllers ("FastFACs"), directing two streams of Marine F/A-18 Hornet and AV-8 Harrier jets onto targets. The Hornet aircrews also radioed down their observations to the divisions concerning Iraqi dispositions ahead of the force. The primary targets of the Marine jets were Iraqi artillery and armor. Although spates of bad weather and poor visibility hampered operations at times, the pilots' attacks with MK20 Rockeye cluster munitions plus MK82 500- and MK83 1,000-pound conventional high-explosive bombs disabled Iraqi guns and detonated their ammunition bunkers. The devastating effects of the attacks terrorized the Iraqi artillerymen, many of whom became afraid to man their weapons as the day wore on. Some of the Iraqi tanks along the primary lines



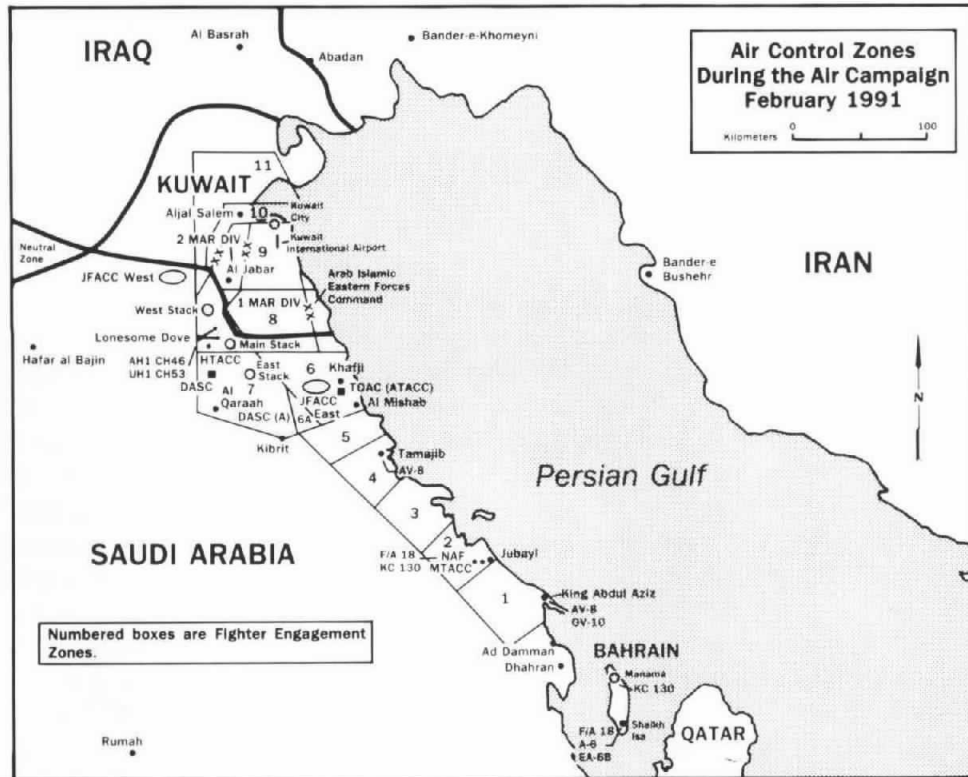
of defense did not sortie from their emplacements and became easy prey for supporting Marine aircraft.

Farther north near Kuwait City, U.S. Air Force A-10 Thunderbolt II and F-16 General Dynamics Falcon jets attacked tanks and armored vehicles under the control of Marine and Air Force officers in an airborne command and control center installed on board a U.S. Air Force Lockheed EC-130 Hercules transport. As I MEF advanced in the attack, planned high density air control zones were successively activated so that all air strikes in the vicinity of Marines came under positive control of the Marine Corps air command and control system. The 3d Marine Aircraft Wing flew 671 sorties in a surge effort during the first 24 hours of the attack, fixed wing aircraft averaging 2.36 sorties each.

Accompanying each battalion in the assault were teams from 2d and 3d Low Altitude Air Defense Battalions equipped with Stinger heat-seeking missiles. Near the border, 2d and 3d Light Anti-Aircraft Missile Battalions provided medium range air defense with radar-guided Improved Hawk missiles. Both organizations were part of Marine Air Control Group 38, commanded by Colonel Joseph Dellacourt. Rounding out the Marine air defenses were the F/A-18 Hornets of Marine Aircraft Group 11. Even though virtually all the Hornets were now flying attack missions in support of I MEF, each was armed with Sidewinder and Sparrow missiles that could be instantly brought to bear against intruding aircraft. Providing a radar umbrella over the force were the TPS-32 and TPS-59 radars from Marine air control squadrons. These radars were connected by data link with other radars of the U.S. Air Force and Navy to mutually provide a complete picture of all aircraft operating in the theater.



*The MarCent commander, LtGen Walter E. Boomer, was photographed on the evening of 24 February 1991.*



*Col Chenoweth was on hand for a "First Casualty" at the 1st Marine Division command post aid station, where a Corpsman dressed a wound as Chenoweth sketched. The art team was encouraged to visit all members of the command, from outpost troops to the command center.*





*One of a battery of Iraqi 57mm anti-aircraft artillery pieces about eight kilometers east of the Al Jaber Air Base seen on 3 March 1991. In the background are burning wellheads of the Burqan Oil Field and treelines of the "Emir's Farm." Iraqi tanks counterattacked the 1st Marine Division out of this area early on 25 February 1991.*

Although Iraqi pilots had flown more than a hundred tactical aircraft to dubious sanctuary in Iran and others had been shot down or destroyed on the ground during the air campaign, the Iraqi Air Force was still capable of delivering conventional and chemical weapons.

Like air support, fire support went according to plan. Since coordination occurred at the lowest possible levels, the I MEF fire support coordination center needed to perform relatively little "deconfliction". Perhaps the most serious incident in this area arose at 1st Marine Division around dawn during the initial assault on 24 February. A unit of Task Force Ripper mistook an infiltrating element of Task Force Grizzly as Iraqi, and fired upon it, killing one Marine before the situation clarified and the center was able to get word out to cease firing. These were the last fratricide fatalities involving Marines of the campaign. Division boundaries and fire support coordination lines were generally shifted promptly as the need arose. There were instances later, however, of Marine units attacking the enemy across division boundaries without coordination when the tactical situations required immediate responses. Both divisions' artillery regiments, the 10th and 11th Marines, employed three main types of ammunition in roughly equal proportions. Against armor and secondary personnel, they fired dual purpose improved conventional munition rounds containing 80 armor-piercing bomblets. The standard anti-personnel round was high explosive. Long-range targets out to 30,000 meters were engaged with rocket assisted projectiles. Augmenting the force's standard M198 155mm howitzers were a dozen larger self-propelled M110A2 8-inch (203mm) howitzers.

The Marine artillery regiments effectively employed AN/TPQ-36C/37 counterbattery radar out to ranges of 32,000 meters. Rapid-response counter-



*Col Billy C. Steed, left, force operations officer, and LtGen Boomer receive briefing shortly before departing the 1 MEF main command post near Al Khanjar for Kuwait at 0645 on 25 February 1991.*

battery fire against Iraqi artillery and 120-millimeter mortars had the highest priority followed by antiarmor and antipersonnel missions. To preserve the momentum of the assault, the 11th Marines of 1st Marine Division contrived to use the targeting information it got from their radars in a novel manner. For targets within about 24,600 meters, the regiment used standard "quick fire" tactics. Targets beyond that range were given to an aviator assigned to the unit to pass to the FastFAC flying overhead the division in an F/A-18D jet. Of their first 42 counterbattery targets on 24 February, 11th Marines passed 17 to Marine air. Although this short-circuited air control doctrine, the exceptionally short time required to get aerial or artillery munitions on target was unprecedented.<sup>40</sup>

During the initial stages of the assault, the force's divisions were beyond maximum range of the 2,700-pound projectiles of the 16-inch guns of battleships USS *Missouri* (BB 63) and USS *Wisconsin* (BB 64) offshore. However, these immense guns were put to good use in support of the Joint Forces Command-East along the coast and were controlled by teams from 1st Air and Naval Gunfire Liaison Company.

The strong southeast wind and rain reduced the opportunity for the Iraqis to effectively launch chemical weapons from indirect fire systems. Nonetheless, all personnel in the assault wore chemical protective suits and boots at level 2 of Mission Oriented Protective Posture (MOPP 2) and were prepared to immediately don masks and gloves. At 0656 a vehicle from the 2d Marine Division's 2d Assault Amphibian Battalion attached to 6th Marines encountered a chemical mine in Lane Red 1. Two Marines were slow in getting masks and gloves on

and received minor chemical burns from a mustard-type blister agent. A nearby German-supplied Fuchs chemical warning vehicle, dubbed Fox by the Marines, detected a "possible nerve/mustard agent" at the same time and transmitted a warning to the force. The warnings were taken seriously and both divisions went to maximum protection MOPP Level 4 and donned chemical protective gloves and masks.<sup>41</sup>

For a time, it seemed that the worst fears of every Marine in the force about Iraqi chemical weapons were being realized. As it turned out, however, all further chemical warning reports during the Marines' ground campaign proved to be false. The sensitive gear on board the Fox vehicles did detect slight traces of toxic chemicals, but these may have come from residues from the numerous burning oil wells. Another worry had been potentially dangerous levels of hydrogen sulfide gas from the Umm Gudair Oilfield. This did not materialize. Combat engineers found the gas being harmlessly torched off. In any case, it took technicians in the vehicles about six hours to accomplish confirmation tests which served to prolong the suspense. To add to the problem, at 1116 the U.S. Army reported a "positive anthrax sample from lab" and "dead sheep" in the area of King Khalid Military City in the ArCent area of operations.<sup>42</sup> Even though Marines encountered no more active chemical or biological weapons, there were a series of warnings from the sensitive detecting devices. Marines in the attack stayed in their MOPP suits for the next 24 to 72 hours depending on unit and location. Thanks to relatively cool temperatures (it was never over about 70 degrees during the battle), the suffocatingly close garments were marginally bearable, although their charcoal liners left a black residue on exposed skin that gave the wearers coal miner visages.



*The two command-and-control variant light armored vehicles of LtGen Boomer's mobile command post ("jump CP") are seen on 25 February 1991. These same vehicles were used in a deception operation earlier at the border near Al Manaqish, complete with a major general impostor to convince the Iraqis an attack would come from that corner.*

At the I MEF command center, Generals Boomer and Hearney closely tracked the progress of the assault on the position locating and reporting system display on Jack O'Connor's computer. After the earlier alarming chemical report, messages on carbon paper flimsies called "yellow canaries" began to flow in that indicated that the assault was going very well indeed. From 2d Marine Division's General Keys at 0801: "Progressing (in) smooth, timely manner."<sup>43</sup> At 0815, General Myatt at 1st Marine Division: "Things going well."<sup>44</sup> A few minutes later, reports came in concerning the capture of the first significant batches of enemy prisoners: about 100 by 6th Marines and more by Task Force Grizzly. By 0930, Grizzly was through the second mine belt. By mid-afternoon, the bulk of both divisions were through the second breach and were beginning to take more prisoners. To General Boomer's relief, there were few casualty reports. Although the MEF command operations center continued to receive sporadic reports of chemical weapons, these weapons didn't seem to be having much effect on the progress of the operation which was going faster than anyone had hoped.

In the early afternoon, Lieutenant General Boomer received a call from General Schwarzkopf concerning the allied main attack with VII Corps and the Joint Forces Command-North immediately to MarCent's left. The Combined Operations Plan called for the main attack to commence the following morning. The Marines' speedy progress caused Schwarzkopf to worry aloud to Boomer about possible exposure of I MEF's left flank once they came abreast of Manaqish where the border turned due west. General Schwarzkopf wanted to get the main attack going and sought Boomer's opinion. The left flank was a concern of Boomer too, who also felt that the Iraqis might try to retreat through northern Kuwait. General Boomer recommended that the main attack begin as soon as possible. Shortly after this conversation, General Schwarzkopf ordered the main attack to commence. Although ArCent's VII Corps crossed its line of departure at 1500, the Joint Forces Command-North attack on MarCent's left flank was delayed until after 1800. It stopped just inside their breach for the night.

To the east, General Myatt at 1st Marine Division wanted to launch a heliborne assault over the mine belts using battalion-sized Task Force X-ray at 1700. The I MEF air officer, Colonel John F. Amend, Jr., gave the go-ahead if the landing zone was secure. It wasn't; the Iraqi infrared heat-seeking missile threat had not been suppressed. A Marine AV-8 Harrier and an OV-10 Bronco were lost nearby on the next day to these weapons with one aircrew killed in action and one captured.\* The mission was scrubbed for the day at 1945 after an aborted liftoff at 1745.

In the meantime at 1753, Task Force Ripper consolidated its position around the eastern side of MEF Objective A, the Al Jaber Air Base. However, it was

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\*Capt D. M. Spellacy of VMO-2 was killed in action. The other OV-10 crewmember, Major J. J. Small, was captured. Capt J. S. Walsh ejected from his crippled AV-8 and was rescued by Marines on the ground.



*An Iraqi tank decoy is one of three a few kilometers north of Al Jaber Air Base.*



*The same decoy unmasked later.*

nearly dark by then and it was not practical to begin clearing the airfield until the next day. If the base was suitable, General Boomer intended to use it as the next main command post for I MEF. General Moore also wanted to use the airfield as a forward aerial resupply point (FARP) and to push out I MEF's air defense umbrella by placing Hawk missiles there. Further east, on the other side of the Burqan Oilfield, the Joint Forces Command-East was making fine progress until it ran into the Iraqi *18th Infantry Division* occupying positions in the built-up areas along the coast north of Ras az Zawr.

The Marines conducted their breaching rapidly. As I MEF forces emerged out of the second obstacle belt, the first significant numbers of Iraqi troops began to surrender. The estimated number of enemy prisoners of war (EPWs) taken on G-Day was more than 8,000. Most of them were infantry who suddenly found themselves surrounded by Marines. In this regard, deception and the speed of the Marine attack worked as well as General Boomer had hoped. However, the EPWs became a logistical problem that threatened to slow the advance. The rapid reversal of fortunes stunned many Iraqi troops, but in general, the prisoners were orderly and cooperative. Late the next day, 25 February, Brigadier General Krulak at the Direct Support Command was able to gather up some transport to evacuate the EPWs by using empty returning logistics support vehicles and Saudi buses.\* The Marine drivers somehow squeezed their buses through the breach lanes which still had mines remaining in their sand wind-rows. Most of the prisoners spent a cool and wet night or two huddled in the open before the DSC could move them in stages to the main EPW compound at Kibrit. They were given the same water and food rations as Marines.

To support the force in the attack, the Direct Support Command used a "push" system. To eliminate the inherent lag of processing resupply requests, General Krulak and his staff selected items of resupply they believed would be most requested by the attacking units. The command brought these forward through the breaches the night of 24-25 February to place them immediately next to combat units. The first women Marines through the breaches were drivers of resupply vehicles. To keep up the pace of resupply through the breaches, Marine combat engineers continually improved the main supply route from Al Khanjar. Engineers and Navy SeaBees accompanied the two artillery regiments for quick construction of emplacements between the obstacle belts. Other SeaBees improved the main supply route from Qaraah through the 1st Marine Division breaches to eventually connect with a paved road about five kilometers southeast of Al Jaber Airfield.

As I MEF moved toward the barriers early on 24 February, amphibious ships carrying the 5th Marine Expeditionary Brigade steamed closer to Mishab in order to launch its ground and aviation combat elements ashore as the force reserve. The commander of Regimental Landing Team 5, Colonel Randolph A.

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\*The buses had been configured for mass casualty medical evacuation with up to 60 litters each for use in areas where helicopters could not operate because of air defense threats.



"Gangster" Gangle, informed his officers of their new, and heretofore closely held, mission by announcing simply: "Gentlemen, the enemy is northwest. That's where we're going. Move out."<sup>45</sup> The brigade's Marine Aircraft Group 50 commanded by Colonel Randall L. "Grit" West flew the brigade's heliborne assault unit, Battalion Landing Team 3/1, to positions occupied by Task Force Troy, the deception unit located south of Al Wafrah. The next day the team conducted a raid towards Al Wafrah to keep up the deception, taking 13 prisoners in the process. The rest of the regimental team and its equipment came ashore in LCAC air-cushioned landing vehicles in the first such landing ever conducted during a combat operation. After unloading on the narrow beach at the port of Mishab, the remaining three battalions embarked on a 70-kilometer road march to blocking positions north of Kibrit. Marine Aircraft Group 50 based itself at Tanajib Airfield while Brigade Service Support Group 5 worked to unload sustainment and equipment at Jubayl and Mishab respectively.

At the I MEF evening brief, the reactions of the force commander and the staff were muted. General Boomer told his staff that he thought the attack "was going too well" and counseled that it "can't continue. You need to prepare for that. Keep 'worst-casing' it."<sup>46</sup> It was much too early for anything like exultation and Boomer worried aloud that there could be surprises ahead.

### *Counterattack and Exploitation*

During the night of 24-25 February, both divisions assumed defensive postures. There were only 1,100 sets of night vision goggles available in the force and apart from Tiger Brigade neither unit was particularly well equipped for night fighting. General Myatt established the 1st Marine Division forward command post at the southwest edge of the Burqan Oilfield next to a large tract of tamarind groves nicknamed the "Emir's Farm." The trees were interspersed with burning oil wells, some of which shot out roaring flames more than a hundred feet high. General Keys set up 2d Marine Division's forward command post a few miles northwest of Al Jaber Airfield. That night there were many electronic sensor warnings that indicated vehicle movements north of the 2d Marine Division. Before they could be checked out, two precious pioneer remotely piloted vehicles crashed around midnight during landing in difficult weather. The accidents ruined their night reconnaissance equipment.

At 0400, the I MEF Marine all-source fusion center for intelligence reported that the Iraqi *3d Armored Brigade* and *8th Mechanized Brigade* were on the move in the southern Burqan Oilfield near Myatt's CP and also moving south along the division boundary north of Al Jaber Air Field. At about 0415 elements of an Iraqi counterattack encountered forces on the left flank of 1st Marine Division. Then the main Iraqi counterattack, obscured by smoke and fog, blundered into the right flank of the division. Shortly after that, a second Iraqi force came in contact with the division's center.



*Men of Company G, 2d Battalion, 7th Marines, prepare to clear trenchlines and bunkers at the southern perimeter of Al Jaber Air Field on 26 February 1991.*

At 0555, just at first light, Company B of the 4th Tank Battalion, a Reserve unit from Yakima, Washington, attached to the 8th Marines, 2d Marine Division, detected a column of T72 tanks. The Iraqi armor force was moving south just inside the 1st Marine Division's sector. There was no time for the company's commander, Captain Ralph F. Parkison, to buck the information up the chain of command. After reconfirming what he saw in his thermal sights, he ordered his company of M1A1 tanks to engage. The battalion that the company was supporting immediately joined in with combined arms. After a brief and intense anti-armor engagement, 34 out of 35 enemy tanks were out of action.\*

At 0835, a 1st Marine Division forward air controller spotted tanks that he tentatively identified as T72s about 5,000 meters east of General Myatt's command post and directed AH-1 Sea Cobras to attack them. About 50 minutes later, 1st Marine Division reported "enemy tanks and troops flushed from Burqan area. Much confusion."<sup>47</sup> Myatt and his staff were convinced that the burning oilfields were much too inhospitable to support Iraqi operations and the direction of the attack came as a surprise. By 1008, the command group itself was in the thick of a melee, and its security force knocked out several vehicles. The 11th Marines massed their fires against the attackers from their positions on either side of the second barrier. Due to the obscuring smoke, the engagements occurred at relatively short ranges. In one instance a few hours later, a M198

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\*Company B left its older M60A1 tanks at its home armory in Yakima. After 23 days of training on M1A1 tanks at Twentynine Palms, California, the unit flew to Jubayl to draw the 13 new M1A1s they took into combat.

155mm howitzer battery near the Emir's Farm successfully engaged an Iraqi multiple rocket launcher system with direct fire only 800 meters away in the center of what turned out to be a brigade of D20 152mm howitzers.

The discovery of the counterattack, and the Marines' prompt response to it, disrupted the Iraqis who were defeated by antitank fire, tank main guns, and air attack in a series of actions lasting until the middle of the day. Although at a seeming disadvantage in their older Chrysler M60A1 tanks equipped with a 105mm gun, 1st Marine Division tankers achieved high rates of success with armor-piercing discarding-Sabot, fin-stabilized depleted uranium rounds. The tank engagements that day were the largest in Marine Corps history.

While the counterattacks were being dealt with, a command group of 48 Marines including Lieutenant General Boomer, Colonel Steed, and a news correspondent mounted two command variant light armored vehicles and some utility vehicles. They departed the I MEF main command post at 0650 to join Major General Keys at 2nd Marine Division. Major General Hearney ran the main command post in Boomer's absence, assisted by Colonels Lohman and Bedard. By 0806, Boomer's group had crossed through the breaches and was discussing plans with Keys for an attack further north. The purpose was to seize a built-up area of concrete block corrals and buildings laid out in a pattern that looked on a map like an ice tray of a refrigerator, which is how it became known. The Ice Tray dominated the area between Al Jaber Air Base and the



*Col James A. Fulks, commander of Task Force Grizzly, was photographed on 26 February 1991 during clearing operations at Al Jaber Air Base. As operations officer of the 1st Marine Division, he had earlier argued successfully to move the site of the force's penetration points to less well defended areas.*

western part of Kuwait City and was the main operating area of the Iraqi *3d Armored Division*. However, 1st Marine Division was fully occupied with the counterattack, so General Boomer and the two division commanders agreed to postpone the attack. The shifting of the axis of the attack from northeast to north meant that 1st Marine Division had to come left and move north about another about 10 kilometers to get abreast of 2d Marine Division.

This delay didn't bother higher headquarters; I MEF was now far ahead of the Coalition Forces on each flank. At midday, Colonel Bedard at the I MEF Combat Operations Center received a call from Major General Burton Moore, USAF, General Schwarzkopf's operations officer. He asked if I MEF would agree to holding up at Phase Line Red, an east-west road about 10 kilometers north of Al Jaber Air Base, while the allies caught up. This was acceptable and Phase Line Red became the next jumping-off line in the attack.

During the day, Task Force Grizzly moved up from its breach to clear Al Jaber Air Base. Grizzly's commander, Colonel Jim Fulks, requested to use a riot agent (tear gas), but General Hearney at the MEF command center turned him down. The Iraqis were still holding off on chemical attacks, and Hearney didn't want the Marines to be the first to use any type, even a non-lethal irritant. A half hour later, the direct air support center got a message from Tiger Brigade saying that they had captured an artillery brigade commander who said his unit had no chemical weapons. Interrogations of other Iraqi officers later indicated that all artillery-delivered chemical weapons were stored at *III Corps* headquarters in the vicinity of Kuwait City. Because of the Marines' rapid advance and their control of the main Iraqi resupply routes by air, it is not likely that the Iraqis would have had either time or the ability to move chemical munitions down to their associated weapons systems. However, there was no evidence that a decision to use them was made in the first place.

By noon on 25 February, the Iraqi counterattack was petering out. Both divisions reached Phase Line Red and began preparations to attack and seize two MEF objectives designated B and C. The 2d Marine Division on the west was to seize Objective B, the area around the main supply route intersections near Al Jahra, about 33 kilometers west of Kuwait City. The 1st Marine Division on the east was assigned Objective C, Kuwait International Airport about 15 kilometers south of Kuwait City on the southern edge of the city's built-up area.

By 1341, all of 2d Marine Division's assault elements had crossed the line of departure at Phase Line Red to begin the attack on the Ice Tray. This feature and a 25-kilometer-square walled enclosure immediately northeast of it containing Kuwait's radio and television transmitters dominated the terrain ahead. The 6th Marines in the center of 2d Marine Division had the task of seizing the Ice Tray. The preparatory artillery fires of 10th Marines' M198 batteries prompted a number of Iraqis to come forward to surrender. Within an hour, the division was reporting numerous tanks destroyed and even more EPWs from the Ice Tray area. Throughout this period, the division received artillery fire in return, but it was neither well-directed nor in much quantity. By mid-afternoon, the division reported 8,000 EPWs in custody.

General Boomer felt the situation was well enough in hand for him to shift his mobile command group ("jump CP") to the southwest corner of the Ice Tray later that evening. That afternoon about 25 kilometers east southeast of the Ice Tray, 1st Marine Division consolidated its positions to the north and east of Al Jaber Air Base in the wake of the counterattack.

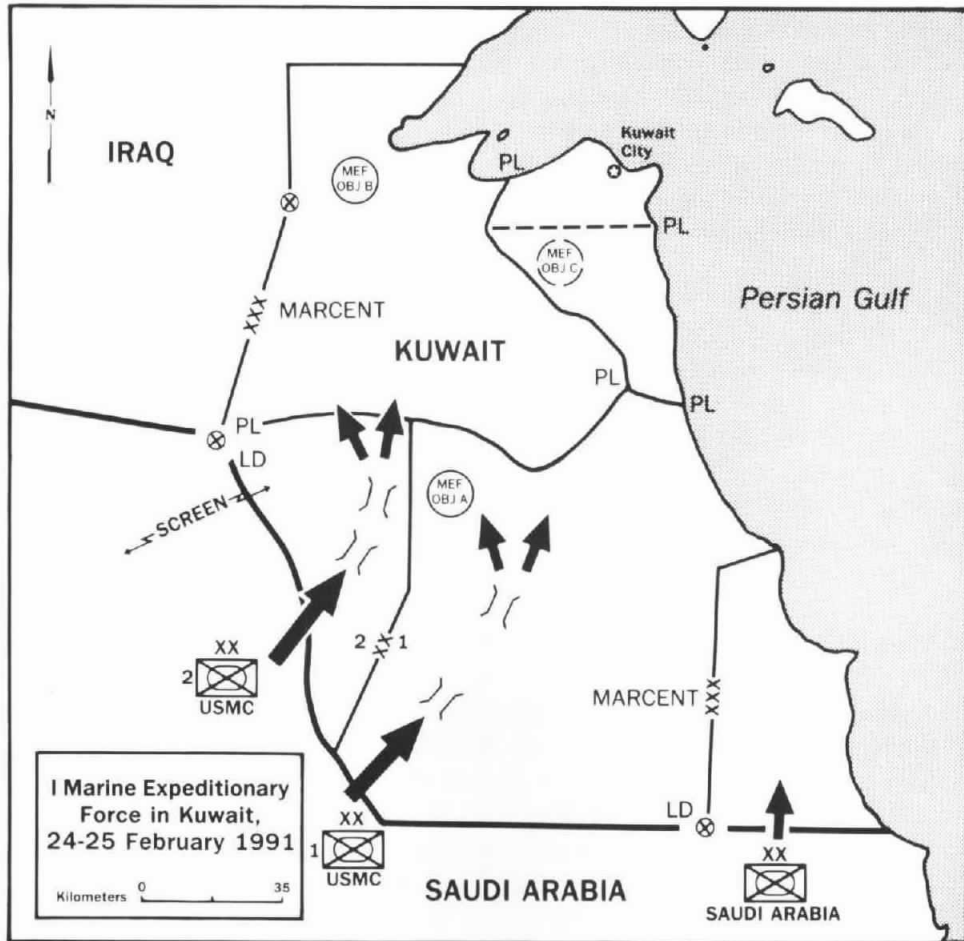
As darkness descended, Marine forces once again set up defenses for the night. The divisions were in a staggered formation with 2d Marine Division at Phase Line Horse, an east-west line running immediately north of the Ice Tray. The divisions' advance had now taken them far enough north that they were within the fan of USS *Missouri's* 16-inch guns. At 1815 Boomer asked the I MEF fire support coordination center if the ship could fire safely into the MarCent area of operations. Colonel Bill Schopfel radioed back that there were no spotters available, human or remotely piloted vehicle, to control fires near the force. However, he could and did clear the ship to fire at targets at Kuwait International Airport, the final objective of the 1st Marine Division. In turn General Myatt radioed to General Boomer that 1st Marine Division's attack toward the airport would begin at first light but no earlier than 0600, weather permitting. Myatt also requested Cobras and the heliborne PsyOps team for the next day since the division would be moving into built-up areas. At the 2d Marine Division, General Keys' planners worked through the night to develop a plan for the attack on the Al Jahra chokepoints. During the night, both artillery regiments moved their artillery forward by echelons. The poor visibility caused by dense smoke from the Burqan Oilfield hampered their progress to their new sites and caused General Boomer to worry about the potential for fratricide incidents.

By 2218, General Boomer established his forward command post about five kilometers southwest of the Ice Tray, just south of an east-west berm. The area was not completely secure, and:

. . . the command convoy was suddenly surrounded by armed Iraqis. Confused radiomen screamed warnings about "dismounted infantry!" Some Iraqis appeared ready to surrender, others remained prone behind sand berms with rifles pointed toward the convoy. It turned out that the Iraqis were indeed surrendering, but the convoy was immobilized for three hours while the Marines rounded them up.<sup>48</sup>

Boomer, as all of his commanding generals, had positioned himself where he thought he could get the best awareness of the situation.

At the I MEF main command post beginning about 1950 that evening, seismic intrusion devices from 1st SRIG's Sensor Control and Management Platoon (SCAMP) and moving target indicator radars on board Marine A-6E Intruder aircraft began picking up vehicle movements near the Ali Al Salem Air Base, located to the north of Tiger Brigade. As the night progressed, there were other intelligence reports indicating movements, but none of the reports



*Col Chenoweth saw that, as point vehicles engaged the enemy, following troops often were called upon to mop-up by-passed Iraqis. In "Flank Threat," Marines have sprung into action from a LAV to secure the flank as enemy are spotted. The terrain is littered with knocked-out enemy vehicles.*



gave enough detail to form a picture apart from a conclusion that the amount of the activity seemed to be increasing as time passed.\*

At about 0136 on 26 February 1991, both I MEF and CentCom sensors began detecting very large amounts of vehicle movements in the vicinity of Kuwait City. At the I MEF combat operations center, the night air officer, Colonel James L. Whitlow, and the senior watch officer, Lieutenant Colonel John A. Keenan, compared reports. They became concerned that an Iraqi counterattack might be developing. Within an hour, reports from the prototype Joint Target Attack Radar System (JSTARS) aloft made it obvious that all this activity was a major retreat by the Iraqis.\*\* The Kuwaiti Resistance soon confirmed the electronic reports. General Boomer decided that it was time to slam the door shut on the escape route.

General Boomer directed Whitlow to launch as many aircraft capable of night attack as possible. The weather turned sour again with rain and poor visibility which restricted the attack to all-weather A-6E Intruders, which had moving target indicators and forward looking infrared (FLIR), and FLIR-equipped F/A-18 Hornets from Marine Aircraft Group 11 at Bahrain. After sunrise, they were reinforced by more Hornets. Joining in also were AV-8B Harriers from Marine Aircraft Group (Forward) 13 staging from King Abdul Aziz Naval Base, Jubayl, and Tanajib. None of the attack pilots had ever seen anything like it.

The first Intruder attacks bottled up the main route with CBU-78 Gator aerially delivered mines that forced many of the Iraqi convoys off the superhighway onto the desert. Immediately following this, the Marine flyers attacked the vehicles continuously with 500- and 1,000-pound bombs and MK20 Rockeye cluster bombs. The attacks continued into the evening of 26 January. Marine Aircraft Group 11 flew 298 combat sorties that day, and during the peak, its commander, Colonel Manfred A. "Fokker" Rietsch, personally directed the attacks from an F/A-18D, completing his 66th and final combat mission of the operation.\*\*\* Despite the weather, hundreds if not thousands of vehicles were destroyed, damaged, or abandoned along the main supply route from Kuwait City to Safwan, Iraq. The section of highway into and out of Al Jahra, later dubbed the "Highway to Hell," was choked with burning Iraqi vehicles. Along the grade leading up the Mutla Ridge, the Marine attacks left vehicles

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\*Along with these reports came several others concerning Scud launches at targets in Saudi Arabia. One Scud impacted a billet in Dhahran, killing 28 American National Guardsmen and wounding 98 others.

\*\*The prototype JSTARS radar could detect movement over a wide area. However its accuracy degraded over time, and the coded-text reports it transmitted took time to decipher. Nonetheless, officers of the force were highly impressed with the potential of the system.

\*\*\*Colonel Rietsch's total of 66 combat missions was the highest number flown by any Marine during the campaign and is believed to be the highest flown by any pilot in the theater. The total excludes 118 combat air patrols flown over the northern Gulf, 24Aug90-15Jan91. Rietsch also flew 653 combat missions in F-4B Phantoms in Vietnam, bringing his career total to 719.

strewn like jackstraws for hundreds of meters on both sides. Also attacking the retreating Iraqis were other aircraft from CentCom's air arsenal.

At 0400 on 26 February 1991, General Boomer ordered the 2d Marine Division to attack and seize blocking positions astride the Mutla Ridge and around the Al Jahra superhighway intersections. The boundary between the two divisions was adjusted to give the 8th Marines a bit more room on the right flank. The 8th Marines' objective was an area of orchards and covered water reservoirs that would anchor 1st Marine Division's Task Force Ripper's left flank. The 2d Marine Division attack jumped off after 1st Marine Division's in order to give the 1st Marine Division time to move more forces abreast of the 2d Marine Division. After sunrise, General Boomer moved the I MEF "jump" command post up to a point 28 kilometers due south of the Al Jahra intersections.

To the east, Task Force Ripper crossed the line of departure east of Al Jaber Air Base with M60A1 tanks and LVTP-7A1 assault amphibious vehicles at 0700 and began working their way north toward the intersection of the Sixth and Seventh Ring Road freeways, 10 kilometers west of Kuwait International Airport. Unfortunately the southeast wind persisted in blowing a dense pall of smoke from the Burqan Oilfield across Ripper's avenue of advance. The smoke reduced visibility in places to less than 100 meters and was so thick it blotted out the sunlight completely. Marines encountering the smoke zone nicknamed it the "Land of Darkness." Close-in fire support and forward scouting by Sea Cobras appeared to be impossible. Disregarding the appalling conditions, Lieutenant Colonel Michael M. Kurth, the commander of Marine Light Helicopter Attack Squadron 369, led a flight of five Sea Cobras up from Landing Zone Lonesome Dove to a spot just outside Al Jaber Air Base. Leaving his wingmen there, Kurth flew singly up to the smoke zone in a Bell UH-1N Huey utility helicopter with jury-rigged laser designation equipment on board. Then with his landing skids nearly touching the ground, he flew along the road north of Al Jaber, at times actually flying underneath high tension wires, until he located Ripper. Retracing his tracks, he brought his wingman back through the smoke. Ripper got its Cobra support that day.\*

By mid-morning, mechanized task forces of 1st Marine Division were advancing well, and they began encountering large numbers of surrendering Iraqi troops and abandoned vehicles. Marines quickly disarmed the Iraqis and then passed them through the lines to keep up the momentum of the attack. Although Al Jaber Air Base was virtually secure, Task Force Grizzly could not fully clear it until afternoon because of the large amount of unexploded aerial munitions scattered about. Grizzly gathered in several hundred prisoners, and 3d Marine Aircraft Wing support units began setting up a forward replenishment point so its Sea Cobras could support the final push north. The wing also emplaced Hawk missiles that evening near the airfield.

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\*LtCol Kurth was awarded the Navy Cross for his actions. He also was presented the Marine Corps Aviation Association's Alfred A. Cunningham Award as Aviator of the Year.





*Grisly humor is displayed at Al Jaber Air Base. During the advance toward Kuwait City, livestock got loose from a dairy farm about 30 kilometers north of the base. This cow, along with a horse and a number of camels, attempted to forage on vegetation that had been contaminated by droplets of oil from the smoke of hundreds of burning wellheads from the nearby Burqan Oil Field. None of the animals survived the ecological disaster in this area.*

At 1200, General Keys launched the 2d Marine Division's final attack. To the west, Tiger Brigade under command of Colonel John Sylvester raced north over generally open desert in its Abrams M1A1 main battle tanks and M2A2 Bradley fighting vehicles. At about 1320 the brigade engaged 20 tanks about 17 kilometers south southwest of the Al Jahra intersection. After capturing 500 prisoners there, it charged northeast along the Mutla Ridge, passing through some unanticipated minefields, anti-aircraft artillery sites, and armored defenders along the ridge. At the intersection of the ridge with the Kuwait-Iraq main highway, it engaged tanks attempting to move through the area, destroying some and forcing crews of others to surrender. By about 1930 Tiger Brigade had seized and sealed off the two major highway intersections north of Al Jahra overlooking the smoking clutter of *III Corps* vehicles.

The 6th Marines in the center of the division proceeded on its way north from the Ice Tray toward two parallel east-west freeways that intersected at Al Jahra. They passed through quarries, dumping grounds, automobile junk yards, industrial areas, and other uninviting terrain to straddle the lower freeway southeast of the town of Al Jahra. The regiment encountered little resistance and took many prisoners. All the Marines were astounded at the numbers of destroyed and abandoned Iraqi vehicles. Each seemed to have loot from Kuwaiti

homes spilling out of it. The 8th Marines also reached its objective, a wooded area at As Sulaybiyah seven kilometers north of the Kuwait television and radio transmitter site it had taken earlier.

To the west of 2d Marine Division, Egyptian forces moved steadily in set-piece fashion toward their objective, Ali Al Salem Air Base. By 1955 they were within 4,000 meters of it, but a skirmish held them up and prevented them from taking the airfield until the next morning.

To the east at about 1336, 1st Marine Division formed a line with Ripper, Papa Bear, and Shepherd 14 kilometers south of the Sixth Ring Road. Ahead of them were eight Sea Cobras providing close in fire support. Shortly afterwards, Task Force Papa Bear wheeled right to cross the northwest part of the Al Magwa Oilfield to point itself at Kuwait International Airport. Reports throughout the morning indicated little activity at the airport after the previous night's pounding by USS *Missouri's* 16-inch rifles. Task Force Ripper continued north towards the key intersection of the Six and Seventh Ring Roads while Task Force Shepherd arced well to the east to screen the division with its light armored vehicles. The mission was not made any easier in the late afternoon, when a powerful southeast wind rose with gusts to 36 knots. The wind kicked up sand and oil smoke alike into a thick brown-black obscuration that reduced forward visibility to less than 100 meters at times.

At 1647 1st Marine Division reported that Task Force Ripper was engaged with a "tank division" just inside the loop of the Seventh Ring Road where it turned north to intersect the Six Ring Road. A call went out for more Cobras. After a series of engagements that evening, Ripper moved north to seize the intersection which was bordered to the north by a blacked-out residential area. (All Kuwait City had been without power or water since 17 February, when the Iraqis began destroying public utilities.)



*Trucks hauling artillerymen and M198 howitzers of the 5th Marine Expeditionary Brigade, 1 MEF's reserve force, negotiate the half-meter-deep mud of a sabkha (salt flat) near the 2d Marine Division's outer breaches on the morning of 27 February 1991. They are near the end of an all-night road march from blocking positions south of Al Wafrah. Iraqi combat engineers located their minefield barrier just inside areas of sabkha's to further obstruct attackers, but in general, trafficability on the battlefield was good.*

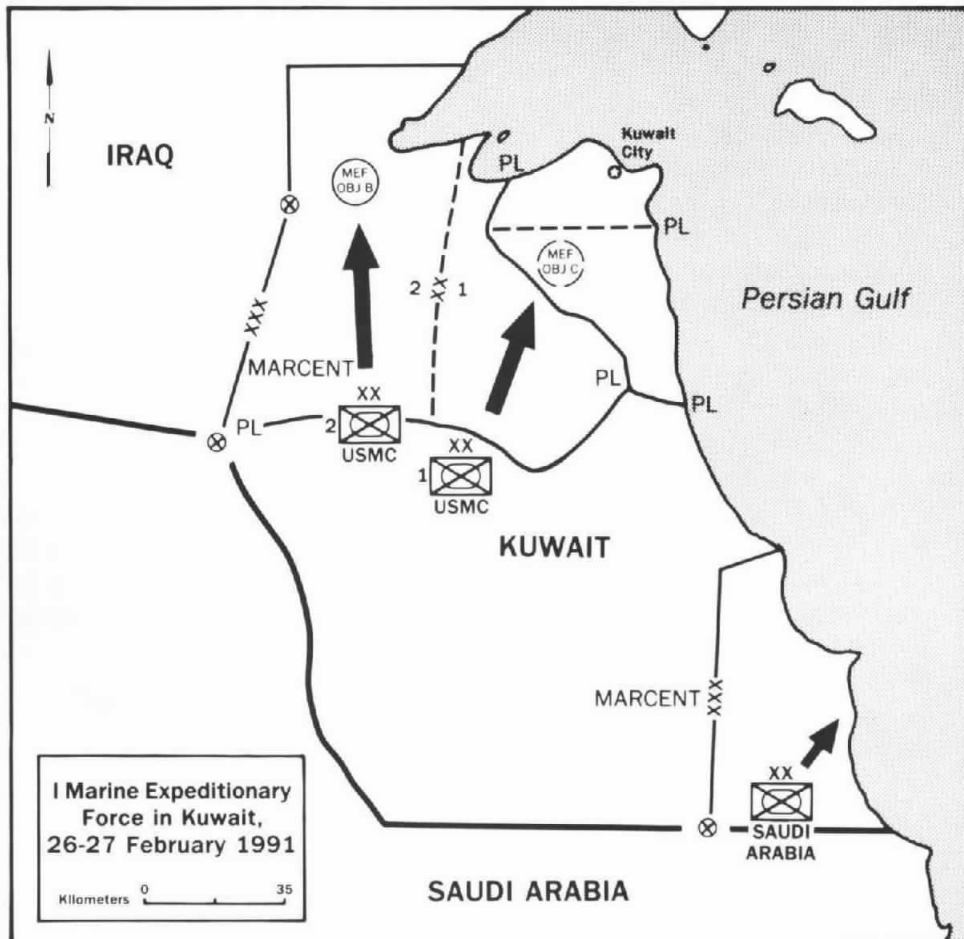
Further east, Task Force Papa Bear threaded its way through the northern edge of the Magwa Oilfield just south of Kuwait International Airport. Screening it to the east was Shepherd, which managed to move along the east side of the airport and occupy parts of it by 2040 that night. A little earlier, at 2012, General Myatt had radioed that "all of Kuwait City is in friendly hands to include (main supply routes), police station, and airport."<sup>49</sup> This report did not mean the fighting was over. Shortly afterwards, an Iraqi mechanized force ran into elements of Task Force Papa Bear along the Seventh Ring Road freeway near the airport's southern perimeter. A brisk firefight ensued. Following this action, General Myatt shifted Shepherd from its blocking position to the east to conduct the final assault on the airport. By dawn on 27 February, the airfield was occupied by 1st Marine Division and Task Force Taro was brought forward to clear it.

During the afternoon of 26 January, General Hearney ordered up the force reserve, Regimental Landing Team 5, through the breaches to handle the increasingly large numbers of prisoners and to protect main supply routes inside Kuwait. For the EPW mission, he attached Battalion Landing Team 3/1 to the 2d Marine Division. Marine Aircraft Group 50 helolifted them directly to the Ice Tray. Meanwhile the rest of Regimental Landing Team 5 had only just arrived in its blocking positions north of Kibrit from its landing at Mishab when it received orders to continue in trace of the force's divisions to provide security for the main supply routes. Battalion Landing Teams 2/5 and 3/5 and their supporting artillery unit, 2d Battalion, 11th Marines, began a bone-jarring 200 kilometer road march toward Al Jaber Air Base that lasted all day and all night. Assisting in the EPW and route security missions was the Marine Corps Reserve's 2d Battalion, 24th Marines.

That same day General Krulak at the Direct Support Command ordered the establishment of a forward logistics transfer area along the western perimeter of Al Jaber Air Base. This location was the junction of the Kuwaiti road network with the 76-kilometer-long "Al Khanjar Expressway" that went via 2d Marine Division's breaches. Although Marine combat engineers labored constantly to maintain the four-lane dirt "expressway" main supply route, the daily rainstorms turned a few portions of the route near the breaches into quagmires.

Marine assault helicopters flew high priority resupply items over these difficult areas from Landing Zone Lonesome Dove and Al Khanjar to division supply points. To thwart the heat-seeking missile threat, the pilots flew at only one or two hundred feet altitude along secure routes. The six heavy transport Sikorsky CH-53D and -E Sea Stallion squadrons of Marine Aircraft Groups 16 and 26 flew most of the tonnage. The groups' five squadrons of Boeing Vertol CH-46E Sea Knights assisted them and flew virtually all of the medical evacuation flights of Marines and Iraqi prisoners as well.

To provide the divisions' ready support, the Direct Support Command stocked two days' supply of water, fuel, and ammunition at Combat Service Support Detachment "Jaber" and built storage for 300,000 gallons of water and 600,000 gallons of fuel. Combat engineers also put a 120,000-gallon-per-day water well into operation, which freed up transportation assets. From this point,



*Marine in helmet and flak jacket clears his weapon before entering the I MEF headquarters compound. Col Chenoweth's "Scorecard" will remind Marines who were there of the six-step procedure for emptying small arms into similar constructions.*





*Arab Coalition troops from the Joint Forces Command-East celebrate the liberation of Kuwait City below the city's landmark water towers on 1 March 1991. This was accompanied by much firing of weapons, to the distress of their American Marine allies.*

about 388 kilometers from the port at Jubayl, the DSC supported both divisions by use of the 40-kilometer-long hard-surface road that connected Al Jaber to the Sixth and Seventh Ring Roads.

To the east of I MEF late on the afternoon of 26 January, the Joint Forces Command-East broke out and rolled north along the coastal freeway. Marine reconnaissance pathfinder teams were in the lead. The way to the American Embassy seemed clear, and in accordance with the Combined Operations Plan, one team, under 1st Lieutenant Brian G. Knowles, made a dash for it in conjunction with Saudi teams headed for their own embassy nearby. At last light, the team entered the compound where Knowles found a tattered American flag still flying. The team then carried out a careful clearing operation in the dark and then declared the embassy secure at about 2210. Satisfied that Iraqi resistance within the city was nearly finished, General Boomer moved his forward command post next to 2d Marine Division's amidst junk yards about seven kilometers south of Al Jahra.

### *Consolidation and Victory*

During the night of 26-27 January 1991, General Hearney and the I MEF staff worked to coordinate a tricky passage of lines by Coalition forces. At about 0400, General Sultan sent a Joint Forces Command-East composite battalion of commanders and troops from Saudi Arabia, the United Arab Emirates, Qatar, Oman, Bahrain, and Free Kuwait to enter Kuwait City through Task Force Shepherd's positions east of Kuwait International Airport. To the west at the same time, Egyptian and Syrian units linked up with 2d Marine

Division on the road just east of Ali Al Salem Air Base. Later that day the two Arab forces joined in the center of Kuwait City near its landmark water towers. The original plan called for 2d Marine Division's assault units to go all the way to Kuwait Bay. However, by dawn on 27 January, organized Iraqi resistance ceased within the city. The division's forces consolidated at its objectives, roughly 5,000 meters south of the bay. All MEF objectives were seized. The primary goal became the facilitation of the link-up of Joint Forces Commands-East and -West for a formal liberation of Kuwait City.

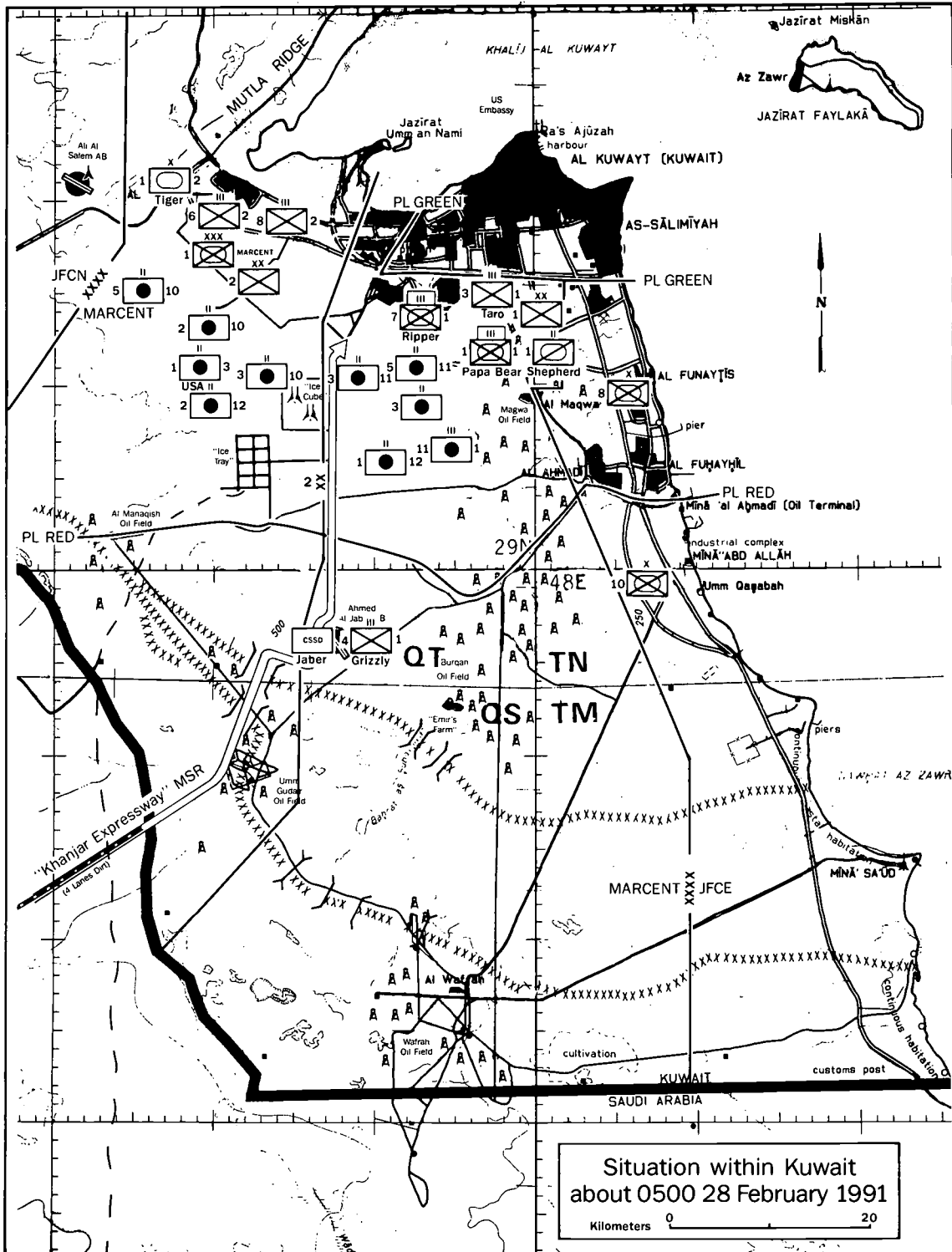
The liberation of Kuwait City had always been the mission of the Coalition Forces, but that is not to say that Marines were not participants. All forward lines of I MEF were now in, or adjacent to, built-up areas. The MarCent area of responsibility went from slightly east of Kuwait International Airport, west along the Sixth Ring Road about 50 kilometers, to the eastern edge of Ali Al Salem Air Base. General Boomer and the command group entered Kuwait City from the west and drove to the American Embassy. They joined Lieutenant Knowles' team there at 1421 to become the second group of Marines to enter the central part of the city. Boomer's party, as all Marine units on the front lines of the force during the afternoon of 27 January, became the objects of adulation by Kuwaiti citizens who approached them repeating in English "Thank you" and in Arabic *Allahu Akbar* (God is great). The Marines were unprepared for the depth of the emotional thanks they received. Their chief concern shifted from the Iraqi threat to the increasing numbers of assorted firearms that the exuberant Kuwaitis began firing into the air.

Combat operations did not end for I MEF, however. Fixed-wing aircraft of 3d Marine Aircraft Wing continued to attack Iraqi units in northern Kuwait. Southwest of Al Jaber Air Base, units of Regimental Landing Team 5 turned south toward Al Wafrah to begin a five-day clearing operation of that bypassed area. That night, there were no ground combat actions except for some 120mm mortar round impacts near Kuwait International Airport and on the road to Al Jaber.\*

The focus of ground combat action shifted to northern Kuwait and southern Iraq so the I MEF staff worked on plans to shift the main command post. The move never happened. The campaign had gone so swiftly that General Boomer decided the best location for it was back in Jubayl. Shortly before 0500 on 28 February 1991, Major General Hearney gathered the staff around a shortwave radio in the combat operations center. They heard President Bush on the World Service of the British Broadcasting Corporation order the cessation of hostilities to be effective at 0800 on 28 February 1991. After receiving confirming instructions from General Schwarzkopf's headquarters, General Hearney transmitted over the command frequency:

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\*The source of these remained a mystery. The ones along the Al Jaber road 29 kilometers north of the air base set off a long series of secondary explosions.



Situation within Kuwait  
about 0500 28 February 1991  
Kilometers 0 20

"Cease all offensive operations effective 280500Z 0800C. Remain in current positions and assume defensive posture. Wartime rules of engagement remain in effect. Be prepared to resume offensive operations. Forces are allowed to defend themselves."<sup>50</sup>

Although the Gulf conflict was over for most Marines, Regimental Landing Team 5 continued clearing operations through difficult terrain around Al Wafrah. Adopting "low-intensity conflict" tactics, the team's battalions worked their way through oilfields and tree lines of the Al Wafrah "National Forest." They engaged in a series of 15 actions through 3 March 1991, but encountered virtually no resistance. Supporting the team was Marine Aircraft Group 50 which flew 234 sorties during the period, including 150 close-in fire support missions. These were the final combat actions of Marines in Operation Desert Storm.

### *The Cost*

The human cost of the Marines' most spectacular victory in two generations had been 24 killed in action and 92 wounded in action. Two soldiers of Tiger Brigade died in action while serving with I MEF. Five Marine officers, all of them aviators or flight officers from 3d Marine Aircraft Wing, became prisoners of war and all were returned to U.S. control after the conflict. There were 24 non-battle deaths from 1 January through 22 March and 46 non-battle injuries that required more than one day's hospitalization.

The force took approximately 22,308 enemy prisoners of war. On 6 March Marines handed over the last of the EPWs to ArCent's 800th Military Police



*Light armored vehicles of Company D, 3d Light Armored Infantry Battalion, attached to Task Force Ripper, screen the 1st Marine Division near the Sixth and Seventh Ring Road intersection in Kuwait City at mid-day on 27 February 1991.*



Brigade, which transported them to custody facilities in the rear. Recovered enemy dead were normally transferred to appropriate Saudi authorities unless immediate burial was indicated. Information on enemy deceased was documented according to guidelines specified in the Geneva Convention and this information was forwarded to the host nation with a copy sent through mortuary channels to General Schwarzkopf's headquarters. The 1st Force Service Support Group graves registration team handled a total of about 85 remains, including those of Marines but excluding those remains turned over to Saudi authorities.

Equipment casualties during combat were very light. The 3d Marine Aircraft Wing, which proportionately was in direct combat over a longer period, incurred the greatest losses. These were all the result of passive-guidance, heat-seeking missiles. A total of 11 Marine aircraft were struck by such missiles: two OV-10 Broncos, four AV-8B Harriers (including one from NavCent), and five F/A-18 Hornets. All of the Broncos and Harriers were brought down. Most of their crews were killed or captured.\* The twin-engine Hornets managed to return to home base and all were repaired within 36 hours. Innovative tactics and electronic jamming by Marine fliers effectively thwarted Iraqi radar missiles and conventional antiaircraft artillery; these were the main reasons overall aircraft losses were low.

### *Retrograde*

The final stage of Operation Desert Storm was the retrograde or return of American forces to their pre-conflict status. This effort was informally known as "Desert Calm." In the same manner that they deployed to Southwest Asia, the goal was for Marine units to return as elements of deployable Marine air-ground task forces, rather than by individual rotation. Units that had trained, deployed, supported, and fought together during Operations Desert Shield and Desert Storm stayed together. The purpose was to keep active duty personnel in stable, deployable, combat-ready units and to return mobilized Reservists with their units in order to ensure that the Marine Corps could meet its worldwide contingency commitments. The effect of keeping personnel together during the retrograde was synergistic. The result was a redeployment of Marines that was executed smoothly, rapidly, and on a scale not seen since World War II. The wisdom of this policy was reinforced by the ongoing uncertainty of the world situation at the time. Among the problems were revolts by Kurdish and Shiite populations in Iraq, the failure of Iraq to live up to terms of the ceasefire, an impending non-combatant evacuation operation in Ethiopia, and humanitarian relief operations in northern Iraq and Bangladesh.

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\*18Jan91: LtCol C. M. Acree (POW)/CWO-4 G. L. Hunter (POW), VMO-2 OV-10. 28Jan91: Capt M. C. Berryman (POW), VMA-311. 9Feb91: Capt R. A. C. Sanforn (POW), VMA-231 AV-8B. 25Feb91: Capt J. S. Walsh (rescued), VMA-542 AV-8B. 25Feb91: Maj J. J. Small (POW)/Capt D. M. Spellacy (KIA), VMO-1 OV-10. 27Feb91: Capt R. C. Underwood (KIA), VMA-331, MAG-40 (NavCent), AV-8B.



*Marines of the 1st Marine Division at mid-day on 27 February 1991, after securing the intersection of the Sixth and Seventh Ring Roads in Kuwait City. They remained at Mission Oriented Protective Posture Level 2 (MOPP 2) in their woodland pattern anti-chemical suits until 1615 that afternoon. The cardboard tube on the right rear part of their vehicle shields an anti-fratricide infrared light beacon. In the distance across the Sixth Ring Road, local inhabitants have unfurled a Kuwaiti flag and are beginning to emerge from their homes. Shortly after this picture was taken, children of a Kuwaiti family came up and sprinkled homemade paper flowers on the Marines. It was one of the first of many spontaneous demonstrations of gratitude.*

The defeat of Iraqi forces within the Marines' area of operation was utterly total. Despite the warm welcome of its citizens, there was no pressing reason to keep two Marine divisions in Kuwait. The retrograde operation was conducted in conjunction with defense of Kuwait; as 1st Marine Division departed the Persian Gulf area, 2d Marine Division took over the defense of the force's area of operations. The 2d Marine Division remained in a blocking position south of Al Jahra. General Keys' command group maintained the division command post in the "Junk Yard" area until 30 March when they departed for Saudi Arabia with the 6th Marines. The Tiger Brigade was detached on 23 March.\* This left the 8th Marines remaining in Kuwait to continue the defensive mission.

During the retrograde from Kuwait, all elements of I MEF maintained unit integrity. All unit movements were tactical, conducted by echelon, and strictly controlled. Combat readiness and mission preparedness remained high during

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\*In accordance with Army regulations, Tiger Brigade members were now entitled to wear the patch of the 2d Marine Division on their right shoulder, signifying that they had served in combat as part of that unit.

the flow of forces out of the Gulf. During the realignment of I MEF, the first priority was the reconstitution of operational forces, particularly strategic contingency units, followed by rotation home of units and individuals on a "first in, first out" basis. The first retrograde of I MEF units to Saudi Arabia began on 4 March, when General Myatt shifted 1st Marine Division's command post from Kuwait International Airport back to the old division support area at Manifah Bay. General Boomer reestablished his command post at the "Police Station" back in the industrial city of Jubayl on 5 March. Shortly afterwards, engineers razed the berms of the I MEF compound near Al Khanjar.

General Boomer declared 10 March 1990 to be R-Day, the date the first I MEF units departed from Saudi Arabia. The units "first out" were from I MEF's spearhead formation, the 7th Marine Expeditionary Brigade. Not since 1945 had such a large number of Marines been moved homewards in such a short time. The force's personnel strength went from about 84,498 on 28 February to 19,743 by 16 April.

On 4 March, units of the 5th Marine Expeditionary Brigade began reembarking onto its ships. On 10 March it was relieved of its mission as force reserve and returned to the operational control of Vice Admiral Arthur. The brigade again displayed its versatility during its passage home when it was diverted to Bangladesh to provide humanitarian relief in the aftermath of a disastrous typhoon. The 24th Marine Expeditionary Unit conducted a separate display of force and humanitarian relief effort in Dohuk Province in northern Iraq under control of the Commander-in-Chief, U.S. Forces Europe. The 4th Marine Expeditionary Brigade departed the Gulf region on 13 March.

In addition to defending Kuwait, the force was involved in the restoration of civilian control and humanitarian relief through the activities of 3d Civil Affairs



*Iraqi prisoners-of-war being transported to holding facilities in Saudi Arabia on returning logistical vehicle systems (LVSs) of the Direct Support Command's 8th Motor Transport Battalion. The workhorse LVSs logged over one million miles and turned in a remarkable 93 percent serviceability rate.*

Group. After handling wounded civilians and wounded EPWs during the campaign, the group augmented the Kuwait relief effort, designated as Task Force Freedom, through civil work projects, local police and security assistance, and convoy support. The force transferred military supplies that could not be returned to the United States to the Kuwait defense forces. The force also cleaned more than 20,000 blankets used by EPWs and gave them to the inhabitants of Kuwait. Volunteers from 3d CAG even helped clean wildlife that had been fouled by the huge oil spill perpetrated by the Iraqis.

Approximately 60 percent of the Marine Corps' ammunition stocks worth \$200-\$300 million were in theater at the conclusion of combat operations. The safe and orderly reembarking of these assets became a high priority of General Boomer. He also placed great stress on personal safety. The force adopted the motto "Not One More Life" to remind themselves that safety was paramount. The main areas of concern were traffic safety, antiterrorism, material-handling safety, and control of souvenir hunting in Kuwait. Finally all Marines went through a program to prepare them for their return home. Each received a pamphlet which gave counsel on such areas as integration back into family life, drinking, and even sex.

The 1st Service Support Group continued to have responsibility for the Jubayl Vital Area, resupply of forward units, forward recovery operations, and organization for the retrograde. The group reloaded Maritime Pre-Position Squadrons 1 and 3. The Direct Support Command was responsible for moving personnel and equipment from Kuwait, the exploitation of water points northwest of Al Jaber Airfield and Al Khanjar, and the destruction of enemy ammunition, bunkers, and weapons. As part of the last task, the command also recovered dozens of large enemy weapons systems such as artillery pieces, tanks, antiaircraft weapons, and vehicles for intelligence, training, and historical artifact purposes. On 20 March, the Direct Support Command dissolved and reorganized as the 2d Force Service Support Group. General Krulak moved his command post about five kilometers southwest of Mishab on 27 March. The Al Khanjar Combat Service Support Area was abandoned three days later, its seven kilometer-long blastwall berms the sole monument to one of the greatest logistics feats in the history of the Corps. That same day, nomadic groups of Bedouin with herds of sheep, goats, and camels reclaimed their traditional grazing areas nearby. With good highways available along the coast of Kuwait, there was no longer any need of a 241-kilometer sand and dirt main supply route.

Before any item of equipment could be embarked, U.S. Department of Agriculture regulations required that it undergo a rigorous cleaning and inspection. The side roads of the commercial port and the industrial city of Jubayl soon became clogged with lines of vehicles and equipment waiting their turns at wash-down points. After completing this tedious operation, most personnel departed on chartered airliners and transports of the Military Airlift Command from the Jubayl Naval Air Facility. The 1st Marine Division command group departed Jubayl on 29 March and by the end of the month only 8,788 members of the division were still in theater.

The 3d Marine Aircraft Wing performed a stand-down for maintenance on 1 March after its surge effort of the previous six weeks. Four F/A-18 Hornets remained on strip alert for air defense at all times. Teams from Marine Air Control Group 38 took over the operation of Kuwait International Airport until civilian authorities took it over a month later. Eight squadrons returned to the U.S. during March, followed by most of the others in April. General Moore personally flew a Hornet back across the Atlantic, landing at the wing's home base at El Toro, California, on 4 April. The last two line squadrons departed from Shaikh Isa Air Base, Bahrain, on 17 May 1991.

The I MEF headquarters staff also began preparations to return home to Camp Pendleton in California, but not before its commander and major subordinate commanders reported to General Schwarzkopf in person. During a debrief at Jubayl on 21 March, General Schwarzkopf was generous in praise of his Marines. "(Y)ou absolutely executed superbly. You did everything I thought you were going to do, and more." By assigning I MEF the supporting attack, he had given them "the toughest mission on the battlefield." "(W)e had to throw somebody in against the toughest barriers. We had to throw somebody in where the enemy thought we were coming, because that's the only way we could pin the enemy." He thought the breach operation was "a classic job" that would be studied for years to come. On a personal level, he told them "how very, very proud you've made me to be your commander."<sup>51</sup> The feeling was undeniably mutual.

The first I MEF advance parties from the G-1 manpower section departed Saudi Arabia on 26 March. The force's combat replacement regiment transferred more than 1,000 Marines to subordinate commands and then dissolved on 21 March. Its members also assisted the Marine Corps Combat Development Command's battle assessment team under Colonel Clifford L. Stanley from Quantico during its post-combat data gathering activities. This information was processed into the Marine Corps Lessons Learned System.

Lieutenant General Boomer and most of his principal staff left Saudi Arabia on 16 April 1991 via a Marine C-9 aircraft for Camp Pendleton. Returning during the same period were General Brabham and the 1st Force Service Support Group. The 2d FSSG then assumed all combat service support functions for the force. On 21 April 1990 the remnant of I MEF in theater was succeeded by a new entity called Marine Forces, Southwest Asia (MarForSWA), commanded by Major General Norman E. Ehlert, the former deputy MarCent commander in Riyadh. Brigadier General Krulak succeeded him on 31 May. The last units from 2d Marine Division departed on 10 June 1991. Marine combat power in the Gulf was now afloat in the form of expeditionary units that were capable of special operations. Beginning in March, the 13th, 11th, 15th, and 22d MEU(SOC)s successively maintained a presence there during the rest of 1991.

The final phase of the retrograde was the reconstitution of Maritime Pre-Positioning Squadron 2 on 28 July. It became the "ready" squadron to support another Marine expeditionary brigade. Marine Forces, Southwest Asia, itself dissolved on 10 October 1991, as the last Marine combat service support unit departed Saudi Arabia.

After the last Marines were gone from Saudi Arabia, observers noted that the presence of half a million Americans left the Kingdom "remarkably untouched."<sup>52</sup> That would not be the case back in the United States. Without television and with only a few newspapers to inform them of the tremendous amount of popular support of them at home during the conflict, few Marines were prepared for the extraordinary welcoming they received upon their return. For most Marines, that homecoming was the greatest honor bestowed upon them for their service in the Gulf conflict.

## Notes

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This monograph is one of a series entitled *U.S. Marines in the Persian Gulf, 1990-1991*. For more detailed information concerning major subordinate units of I MEF, the reader is referred to companion monographs by LtCol Charles H. Cureton, -----: *With 1st Marine Division*; LtCol Dennis P. Mroczkowski, -----: *With 2d Marine Division*; and LtCol Ronald G. Brown, -----: *With Task Force Provide Comfort* and -----: *With Marine Forces Afloat*, all to be published by the History and Museums Division, Headquarters Marine Corps. Future monographs also will cover the 3d Marine Aircraft Wing and combat service support elements. For readers who may not have access to the official sources noted above, the author has included selected endnote references of articles in professional journals such as *Marine Corps Gazette* and *U.S. Naval Institute Proceedings*.

1. Benis M. Frank, *U.S. Marines in Lebanon, 1982-1984* (Washington: Hist&MusDiv, HQMC, 1987), pp. 70-105.
2. CG I MEF msg to I MEF dtd 120116Z Aug90.
3. Donald McFarlan, ed., *The Guinness World Book of Records* (New York: Bantam, 1991), p. 218.
4. Department of the Army, *Corps Operations, FM 100-15* (Washington, 13Sep89).
5. See Combined Plan Operation Desert Storm, dtd 16Jan91, for a breakdown of the force relationships.
6. Gen H. Norman Schwarzkopf, USA, and LtGen Walter E. Boomer, USMC, remarks to I MEF commanders and staff during MarCent debriefing to CinCUS-CentCom at Jubayl, Saudi Arabia, dtd 21Mar91 (unpublished transcript in LtGen Boomer's possession), hereafter ComUSMarCent Debriefing to CinCUS-CentCom, dtd 21Mar91. See also John G. Miller and Brendan M. Greeley, Jr., "Desert Storm: The Marine Commanders," *U.S. Naval Institute Proceedings*, Nov91, pp. 47-80 for interviews with senior I MEF commanders.
7. MajGen Jeremiah E. Pearson III intvw w/author dtd 16Dec90 at Riyadh, Saudi Arabia.
8. Ibid.
9. Melissa Healy and Stanley Meisler, "Perils of Search-and-Destroy Mission in Iraq," *Los Angeles Times*, 22Nov91.

10. The air defense of the force will be more fully discussed in a forthcoming monograph concerning 3d Marine Aircraft Wing in the Persian Gulf.
11. ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91.
12. Col James D. Majchrzak intvw dtd Jan91. Col. Majchrzak was then senior I MEF plans officer and head of the Battle Staff Planning Group.
13. MCRSC, *Statistical Summary of Marine Corps Pretrained Individual Manpower Mobilization for Operation Desert Storm*, Final Report dtd 10May91. An additional 727 individuals received orders but were cancelled by HQMC prior to report date.
14. LtCol Mark F. Cancian, "Marine Corps Reserve Forces in Southwest Asia," *Marine Corps Gazette*, Sep91, pp. 35-37.
15. LtCol Ronald G. Brown, "The 24th Marines in the Persian Gulf, 1991" (ms, MCHC, Washington, D.C., Sep91).
16. Quoted in I MEF ComdC, Nov90.
17. See BGen Paul K. Van Riper, "Observations During Operation Desert Storm," *Marine Corps Gazette*, Jun91, pp. 54-61, for an analysis of the process.
18. Col Terrence R. Dake intvw dtd 28Nov91, hereafter Dake intw. Col Dake was Asst C/S G-3 Operations, 3d MAW.
19. Col Robert G. Hill intwvs dtd 30Nov90 and 11Jul91. Also Col Charles J. Quilter, "Communications in I MEF, Dec90," (ms, MCHC, Washington, D.C., 1991).
20. CG 1st FSSG ltr to CG I MEF (G-4 Supply), Subj: 1st FSSG Statistical Data from Op Desert Shield and Desert Storm as Requested by the GAO, dtd 13May91 (I MEF files, MCB Camp Pendleton, California). Also information supplied by I MEF G-4 Supply Officer, LtCol T. M. Taylor, 16May91.
21. USCentCom and Joint Forces Theater of Operations, Combined Operation Desert Storm (Combined OPlan), dtd 17Jan91.
22. I MEF (G-2 and Battle Staff Planning Group), briefing chart for CMC brief, dtd 23Dec90.
23. HQMC, *Warfighting, FMFM 1* (Washington, 6Mar89), p. 28.
24. *Ibid*, p. 29.



25. Author's note taken 15Feb91.
26. ComUSMarCent, USMarCent Operation Plan Desert Storm, dtd 1Jan91.
27. Department of the Army, *Combined Arms Breaching Operations, FM 90-13-1* (Washington, Sep90), outlines the tactics in use up to the time.
28. I MEF (G-2 and Battle Staff Planning Group), briefing chart for CMC brief, dtd 23Dec90.
29. LtCol Franklin D. Lane memo for the record, Subj: Deception Planning, nd, ca. Mar91.
30. ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91, p. 15.
31. BGen John H. Admire, "The 3d Marines in Desert Shield," *Marine Corps Gazette*, Aug91, pp. 82-84.
32. 3d MAW Oplan Desert Storm, dtd 15Jan91, Anx N, Air Ops.
33. Dake intvw. The 3d MAW Oplan Desert Storm gives the operational concepts.
34. Video interview and cockpit video recording with the crew on Mission #7171K of 31Jan91 by the author on 12Feb91. For security reasons, their names are omitted. I MEF intelligence officers believed that the III Corps commander was at the meeting, and his death was mentioned in a number of intelligence reports shortly afterwards.
35. Comment by MajGen James M. Myatt at ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91. Criticism of the quality of imagery was nearly universal with Marines, although the laser reproduction process used may have been responsible for apparent graininess.
36. See Capt Robert A. Jones, USMC, "Firefight at Hamaltyat," *Marine Corps Gazette*, Jun91, pp. 30-32 for an account of one such engagement.
37. I MEF, Tiger Team Staff Study: Tiger Team Anti-Fratricide Report (U), dtd 10Feb91.
38. Author's notes.
39. Ibid.

40. LtCol Lynn A. Stuart intvw dtd 29Jan92. LtCol Stuart was then OpsO, 11th Marines. See also LtCol Andrew F. Mazzara, "Artillery in the Desert, 1991, Report #2," *Marine Corps Gazette*, Jun91, pp. 35-36.
41. I MEF, COC Jnl entry #3726 dtd 24Feb91, recd at 0735 from 1/6. Times of events in this narrative are from originator's message. The actual times of events may have been somewhat earlier.
42. I MEF, COC Jnl entry #3801 dtd 24Feb91, recd at 1116 from 513 Bde.
43. I MEF, COC Jnl entry #3736, recd at 0818 from 2nd MarDiv.
44. I MEF, COC Jnl entry #3745, recd at 0900 from 1st MarDiv.
45. Col Randolph A. Gangle intvw dtd 11Jul91.
46. Author's notes.
47. I MEF, COC Jnl entry #4247, recd at 1015 from 1st MarDiv.
48. Molly Moore, "Storming the Desert with the Generals," *Washington Post*, dtd 14Apr91.
49. I MEF, COC Jnl entry #4572, recd at 2041 from 1st MarDiv via DASC.
50. I MEF COC entry #4710. Entry is for a 5th MEB msg, but was identical to that transmitted by I MEF.
51. ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91 p. 40-42.
52. Rone Tempest, "Thousands of Strangers Barely Touched Saudi Culture," *Los Angeles Times*, 3Sep91. Other information concerning retrograde operations furnished by Maj John R. Miles, Current Operations Section, HQMC (Code POC), dtd 20Feb92.

# Appendix A

## I Marine Expeditionary Force

### Organization, Personnel, and Major Equipment

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I Marine Expeditionary Force  
3 September 1990 to 16 April 1991

Commanding General, I Marine  
Marine Expeditionary Force and  
Commander, U.S. Marine Forces  
Central Command

LtGen Walter E. Boomer  
3Sep90-16Apr91

Deputy Commanding General,  
I Marine Expeditionary Force

MajGen John I. Hopkins  
3Sep90-7Jan91

MajGen Richard D. Hearney  
8Jan91-16Apr91

Commanding General,  
I Marine Expeditionary Force  
(Rear)

MajGen John I. Hopkins  
8Jan91-16Apr91

Deputy Commander,  
U.S. Marine Forces  
Central Command

MajGen Jeremiah W. Pearson III  
4Sep90-17Jan91

MajGen Norman E. Ehlert  
18Jan91-16Apr91

Commander, U.S. Marine Forces  
Central Command (Forward)

MajGen John J. Sheehan  
8Jan91-16Apr91

#### I MEF STAFF

Chief of Staff

Col Eric E. Hastings  
3Sep90-16Apr91

AC/S G-1

Col Alice B. Marshall  
3Sep90-7Oct90

Col Robert K. Redlin  
8Oct90-26Mar91

Maj Randolph S. Lenac  
27Mar91-16Apr91

AC/S G-2	LtCol Bruce E. Brunn 3Sep91-24Dec91
	Col Forest L. Lucy 25Dec90-16Apr91
AC/S G-3	Col Charles M. Lohman 3Sep90-13Dec90
	Col Billy C. Steed 14Dec90-16Apr91
AC\S G-4	Col Raymond A. List 3Sep90-16Apr91
AC\S G-6	Col Robert G. Hill 3Sep90-16Apr91

#### SUBORDINATE COMMANDERS

1st Marine Division	MajGen James M. Myatt 6Sep90-16Apr91
2d Marine Division	MajGen William M. Keys 14Dec90-16Apr91
3d Marine Aircraft Wing	MajGen Royal N. Moore, Jr. 3Sep90-16Apr91
1st Force Service Support Group	BGen James A. Brabham 3Sep90-16Apr91
Direct Support Command	BGen Charles C. Krulak 22Dec90-16Apr91
1st Surveillance, Recon- naissance and Intelligence Group	Col Michael V. Brock 3Sep90-16Apr91
24th Marine Regiment	Col George E. Germann 9Jan91-16Apr91

3d Naval Construction Regiment      Capt Michael R. Johnson, USN  
3Sep90-Apr91

1st Radio Battalion                      LtCol Thomas A. Flaherty  
3Sep90-16Apr91

Headquarters and Service  
Company                                      Maj Gary R. Ing  
3Sep90-7Mar91

Maj Glenn Honeycutt  
8Mar91-16Apr91

## Appendix B

### Total I MEF Effective Personnel Strength

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	1Dec90	1Jan91	7Jan91	24Feb91	28Feb91
I MEF CE	477	685	842	1,165	1,162
24TH MAR	---	---	---	1,678	1,679
CBT REPL REGT	---	---	---	1,792	1,703
1ST MARDIV	14,183	14,692	17,824	19,515	19,513
2D MARDIV	---	10,575	15,476	16,087	16,078
RLT-5	---	---	---	---	4,747
1ST BDE, 2D AR DIV	---	---	3,939est	4,229	4,226
7th ARMOUR BDE (United Kingdom)	10,275	10,275est	---	---	---
1ST FSSG (+DSC)	4,682	8,386	13,840	13,892	13,866
3D MAW	7,889	10,937	14,559	15,517	15,655
1ST SRIG	1,567	2,336	3,141	3,268	3,267
3D NCR	2,301	2,648	2,612	2,613	2,602
TOTAL IN COUNTRY	41,374	60,534	72,233	79,751	84,498
Total Female Personnel (included in above)	274	678	1,044	1,335	1,332
Total Reserves (included in above)	16	N/A	3,277est	11,703	11,860

## Appendix C Major Equipment

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<u>Aviation Total</u>	<u>1Dec90</u>	<u>1Jan91</u>	<u>17Jan91</u>	<u>24Feb91</u>	<u>28Feb91</u>
AH-1J/W	28	28	34	38	44
UH-1N	18	18	30	29	29
CH-46E	24	24	60	59	59
CH-53D	20	20	26	26	26
RH-53D	--	6	6	6	6
CH-53E	15	15	22	24	24
AV-8B	40	40	60	63	62
A-6E	10	20	20	20	20
EA-6B	12	12	12	12	12
FA-18A/C	48	72	72	72	72
FA-18D	0	0	5	12	12
KC-130F/R/T	8	12	15	20	20
OV-10A/D	8	8	8	19	18
UC-12B	1	1	2	2	2
<u>Ground Total</u>	<u>1Dec90</u>	<u>1Jan91</u>	<u>17Jan91</u>	<u>24Feb91</u>	<u>28Feb91</u>
HOW, M109A3	6	12	12	24	24
HOW, M109 (USA)	--	--	24	24	24
HOW, M198	68	100	100	180	180
HOW, M110A2	6	12	12	12	12
GUN, 155MM (UK)	72	72	--	--	--
AAVC7A1	20	40	40	40	40
AAVP7A1	244	463	463	473	473
AAVR7A1	8	17	17	19	19
LAV-AT	22	28	28	48	48
LAV-25	73	101	101	150	150
LAV-R	8	11	11	18	18
LAV-CC	11	18	18	25	25
LAV-L	15	22	22	38	38
LAV-M	10	14	14	22	22
VTR, M88A1	11	16	16	30	30
VTR, M88 (USA)	--	--	21est	21	21
M60A1/A3 TANK	126	195	195	194	192
M60 W/M9	7	13	13	17	17
M1A1 TANK	--	--	58	74	72
M1A1 TANK (USA)	--	--	118est	118	118

CHALLENGER	170	170	--	--	--
TK (UK)					
M2A2 BRADLEY (USA)	--	--	67est	67	67
M3A2 CAV BRDLY (USA)	--	--	67est	6	6
M113 W/4.2 MTR (USA)	--	--	18est	18	18
M113 C2 CP VEH (USA)	--	--	42est	42	42
M113 W/TOW (USA)	--	--	12est	12	12
M113 APC (USA)	--	--	53est	53	53
M270 MLRS (USA)	--	--	10est	10	10
TOW SYSTEM	218	473	473	525	525
ROWPU	87	132	132	175	175
M9 ARM CBT EXCVTR	--	12	12	30	30

## Notes:

"est" means estimated data

UK denotes equipment of the British 7th Armoured Bde

USA denotes equipment of the 2nd Bde, 1st Armored Div, USA.



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