

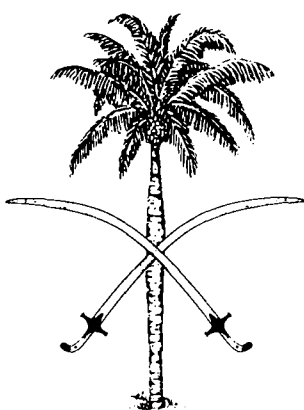
U.S. MARINES IN THE PERSIAN GULF,
1990-1991: WITH THE
I MARINE EXPEDITIONARY FORCE IN
DESERT SHIELD AND DESERT STORM



HISTORY AND MUSEUMS DIVISION
HEADQUARTERS, U.S. MARINE CORPS
WASHINGTON, D.C.

*COVER: 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.*

U.S. Marines in the Persian Gulf, 1990-1991
WITH THE I MARINE EXPEDITIONARY
FORCE IN DESERT SHIELD
AND DESERT STORM



by
Colonel Charles J. Quilter II
U.S. Marine Corps Reserve

HISTORY AND MUSEUMS DIVISION
HEADQUARTERS, U.S. MARINE CORPS
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Operation Provide Comfort:

U.S. Marine Corps Humanitarian Relief Operations in Northern Iraq, 1991

Foreword

With I Marine Expeditionary Force in Desert Shield and Desert Storm is the work of one historian who viewed the conflict from the perspective of I MEF headquarters. We invite comment, amplification, and correction.

This monograph is a preliminary accounting of the role of the U.S. Marine Corps' senior command in the Persian Gulf conflict from 8 August 1990 to 16 April 1991. It is one of a series covering the operations of the 1st Marine Division; the 2d Marine Division; the 3d Marine Aircraft Wing; Combat Service Support Element, comprised of 1st and 2d Force Service Support Groups units; Marines afloat in Desert Shield and Desert Storm; and humanitarian relief operations in northern Iraq and Turkey.

When the History and Museums Division began the historical collection effort concerning Marine activities in the Persian Gulf area, it called upon the members of Mobilization Training Unit (History) DC-7, which Colonel Charles J. Quilter II, USMCR, has commanded since 1989. This small organization of Individual Ready Reserve officers is the only Marine Corps unit that provides historians, combat artists, archivists, and museum specialists in support of History and Museums Division programs. Most of its members have classical military specialties and have subsequently gained in their civilian pursuits the additional qualifications necessary to serve in the unit. About half of these officers served in Vietnam. During the Persian Gulf conflict, seven of MTU DC-7's officers were on active duty and five served in the Gulf.

The first Marine Reserve historians to arrive in theater were Colonel Quilter and Lieutenant Colonel Charles H. Cureton, who landed in Saudi Arabia on 9 November 1990. Colonel Quilter was immediately designated Command Historian of I Marine Expeditionary Force by its commander, Lieutenant General Walter E. Boomer. Over the next five months, he crisscrossed the I MEF area of operations, witnessing events from the launching of the first Marine air strikes against Iraq on 17 January 1991 to the liberation of Kuwait City on 27 February 1991. During the process, he nursed an elderly laptop computer and assorted camera gear while putting more than 22,000 miles on several vehicles.

Colonel Quilter enlisted in the Marine Corps Reserve in 1960. After studying in Japan, he graduated from the University of California, Berkeley, having majored in East Asian history. He was commissioned in 1964. Designated an aviator in 1965, he served primarily as a F-4B Phantom pilot over the next four years. In Vietnam he flew 252 combat missions and became a flight commander. Other assignments included duties as a squadron operations officer, adversary pilot, and air combat intelligence officer

specializing in electronic warfare. After release from active duty, he served in the Selected and Individual Ready Reserve as a staff officer and pilot, flying OV-10 Broncos and A-4 Skyhawks. He also completed a number of service schools including the Command and Staff College and the National Defense University's National Security Management Program. Colonel Quilter commanded Marine Fighter Attack Squadron 134 at MCAS El Toro, California, in the mid-1980s. He joined MTU (Hist) DC-7 in 1986 when he wrote a soon-to-be published history of Marine Fighter Attack Squadron 531, the Corps' pioneer nightfighter unit. His current project is a monograph in this series about the 3d Marine Aircraft Wing in the Persian Gulf conflict. In civilian life, he is a captain for Delta Airlines. The author wishes to thank Lieutenant Colonels Cureton, Ronald G. Brown, and Dennis P. Mroczkowski for their assistance in Southwest Asia and in the preparation of this work.

Unless otherwise noted, the material in this monograph is based upon the command chronologies of I Marine Expeditionary Force, 1 August 1990-30 April 1991 (hereafter cited as I MEF ComdC), which are located in the Archives Section, Marine Corps Historical Center, Washington Navy Yard, Washington, D.C. 20374. Other primary sources include the I MEF Combat Operations Center journal, situation reports, transcripts and transparencies of the I MEF daily staff briefings, as well as notes taken and oral history interviews conducted by the author in his capacity as Command Historian, I MEF, 9 November 1990-8 April 1991. All such material is located in the I MEF file held at the Marine Corps Historical Center.



E. H. SIMMONS
Brigadier General
U.S. Marine Corps (Retired)
Director of Marine Corps History and Museums

Preface

On 2 August 1990, the date that Iraq invaded Kuwait, I happened to be camping with my family in a remote area in northern California. Emerging out of the wilderness a few days later, I learned of this event and sensed that involvement by Marines was imminent. Because the unit I commanded was the Corps' only unit of historians, I thought it likely we would be called upon as well. I contacted our operational sponsor, Brigadier General E. H. Simmons, Director of Marine Corps History and Museums. Although operational security was extremely tight, he averred that it might be a good idea to pack my seabag.

At that time the Corps had a policy of not using reserves in the first 60 days of a contingency operation, so my deputy, Lieutenant Colonel Charles H. Cureton, and I remained at home until 15 October 1990 while I MEF made its historic deployment to the Persian Gulf. Just before leaving my civilian job, one of my co-workers and a fellow Vietnam veteran, former Marine sergeant Jim Stephenson, asked me to look up his two sons, both of whom were Marines in theater. I promised to do my best.

My instructions from General Simmons were to oversee the overall historical collection effort, conduct oral history interviews, and ensure the quality of the various units' Command Chronologies. The last is one of the primary sources for the writing of Marine Corps history. As the unit's only aviator, I was also given the task of covering the 3d Marine Aircraft Wing. My own instructions to the members of my detachment were: (1) to be as self-supporting as possible and (2) to carry out our tasks on a non-interfering basis.

We finally arrived in theater on 9 November 1990 in a C-5 Galaxy via Dhahran, Saudi Arabia. We carried an assortment of begged and borrowed laptop and ancient "portable" computers plus photo and video equipment. Upon arrival at the I MEF command post, then at the Commercial Port of Jubayl, Lieutenant General Walter E. Boomer designated me Command Historian of the force. Among my tasks was the writing of the I MEF Command Chronology. This along with my journal notes and oral interviews became the principal source for this work.

My initial orders to active duty authorized a rental car for the two of us although the intention was probably for domestic use rather than overseas. Transport within the theater was at a premium, however, and after some searching I was able to rent a sub-compact car. The Saudi government replaced this shortly with a sedan which, I must say, possessed remarkable off-road handling abilities. This in turn was swapped for a camouflaged Jeep Cherokee just before the ground campaign. Altogether we put some 30,000 miles on these vehicles as we crisscrossed the I MEF area of operations to witness events from the launching of first Marine air strikes on Iraq on 17 January 1991 to the liberation of Kuwait City on 27 February 1991.

In December I attached Charlie Cureton to the 1st Marine Division. In mid-January 1991, Lieutenant Colonel Dennis P. Mroczkowski arrived and I

placed him with 2d Marine Division just as it moved forward. During the ground campaign, the unit's executive officer, Lieutenant Colonel Ronald J. Brown, and our museum specialist, Lieutenant Colonel Frank V. Sturgeon, arrived to handle the onerous job of collecting and cataloging a myriad of documents and artifacts. Ron Brown later accompanied a humanitarian relief joint task force to northern Iraq in Operation Provide Comfort.

During the air campaign of Operation Desert Storm I alternated locations with the I MEF command post at Safaniyah, Saudi Arabia, and with air groups of the 3d Marine Aircraft Wing. During the ground campaign I was either with the I MEF command post near "Al Khanjar" or forward with the divisions.

This monograph was written from mid-1991 to February 1992 and consists of events and issues from the perspective of the I MEF commander, Lieutenant General Boomer, who incidentally made the historians' job infinitely easier by recording all of his staff meetings. At the time it was written, the reports of the Marine Corps' Battle Assessment Team under Colonel Clifford L. Stanley were not yet completed. When future historians write the final history of this epoch, they will benefit greatly from the detailed analyses of this group.

I wish to thank Lieutenant Colonels Cureton, Brown, and Mroczkowski for their unstinting assistance in the Persian Gulf and in the preparation of the manuscript. This work is dedicated to the memory of Lance Corporal Dion J. Stephenson, USMC, killed in action near the southwest corner of the Kuwait--Saudi Arabia border on 29 January 1991.



C. J. QUILTER II
Colonel, U.S. Marine Corps Reserve

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U.S. Marines in the Persian Gulf, 1990-1991

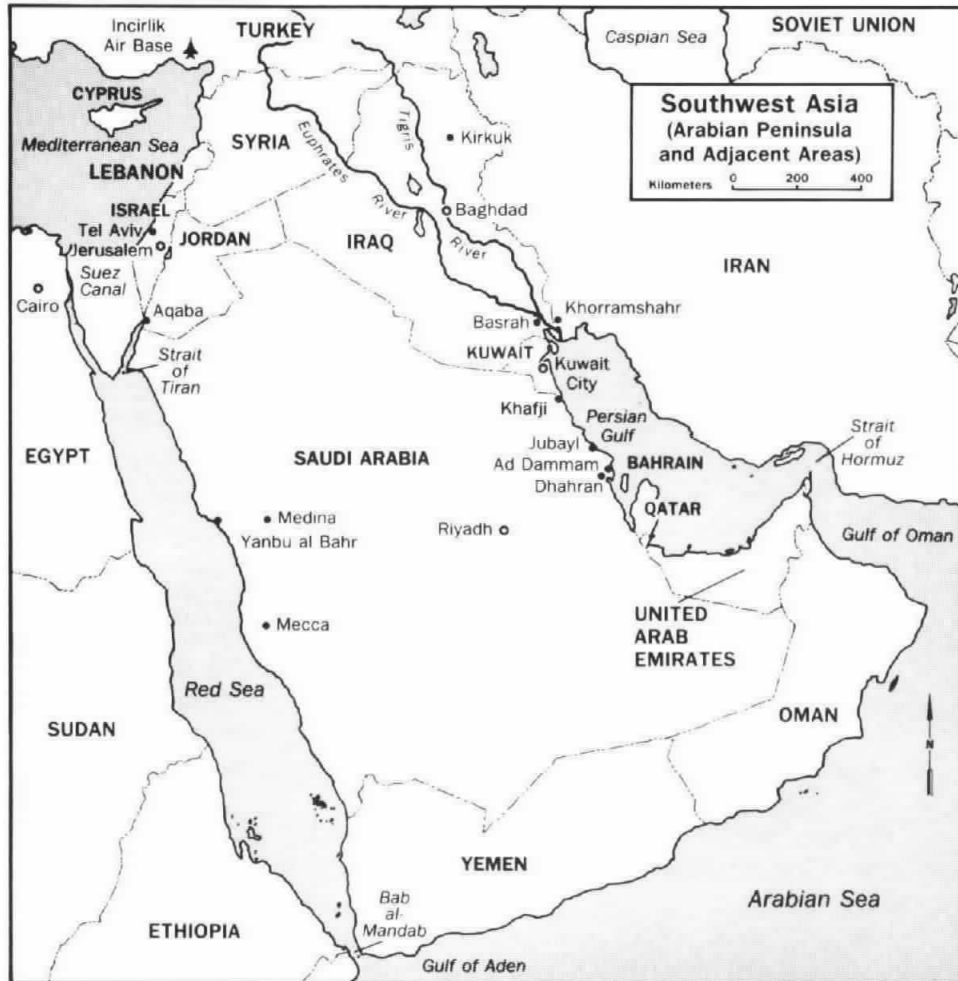
With the I Marine Expeditionary Force in Desert Shield and Desert Storm

On 8 August 1990, a long-planned change of command ceremony took place at Camp Pendleton, California. Walter E. Boomer pinned on the third star of a lieutenant general of Marines and then assumed command of I Marine Expeditionary Force and Marine Corps Base, Camp Pendleton. The lean officer with the soft Tidewater accents of his native Rich Square, North Carolina, was not quite 52 years old. He had been educated at the Randolph Macon Academy, followed by Duke University, where he had been cadet battalion commander of the Naval Reserve Officer Training Corps. In his 30 years of service, he had two combat tours in Vietnam where he was awarded two Silver Stars and two Bronze Stars for gallantry. He had commanded platoons, a company, a battalion, and a division. His instructor and staff assignments in Washington and elsewhere included a term as Director of Public Affairs at Headquarters Marine Corps. Subordinates found him intelligent, well-read in military history, an approachable and good listener with a nonmercurial personality. He was respected for an uncanny sense of danger and an ability to bring people together for a common purpose. General Boomer would command the largest force of Marines to go into combat in a generation and lead them to the Corps' most stunning victory in 40 years.

A major, and unanticipated, crisis had occurred in the Middle East and Boomer found the staff hard at work under his Chief of Staff, Colonel Eric E. Hastings, a former commander of an attack squadron, aircraft group, and expeditionary unit. Many of the staff had recently joined I MEF in the annual summer turnover of assignments. The crisis facing I MEF and the western world as a whole was the Iraqi invasion and occupation of Kuwait on 2 August. President George Bush, with Congressional approval, had decided to send American forces to the Gulf to defend Kuwait's neighbors to the south from further invasion by Iraq's brutal and unpredictable Baathist dictator, Saddam Hussein.

Most vulnerable was Saudi Arabia with its large area and relatively small armed forces. Also at risk were the other members of the Gulf Cooperation Council, the smaller nation-emirates of Bahrain, Qatar, Oman, and the United Arab Emirates. If proposed economic and political sanctions against Iraq failed, the President was prepared to employ American forces as part of a multinational effort to eject Saddam's forces from Kuwait. To this end, the Islamic kingdom of Saudi Arabia permitted the stationing of foreign troops on its soil for the first

*Most maps in the English language refer to the body of water in the middle of the world's greatest petroleum producing region as the Persian Gulf. In Arabic speaking countries, it is known as the Arabian Gulf. This account will adopt the English usage or simply "the Gulf."



WO (then-Sgt) Charles G. Grow, USMC, a member of the combat art team sent to cover Desert Shield and Desert Storm, used watercolors to record U.S. naval construction personnel "digging in" the 1 MEF forward headquarters at Safaniya, Saudi Arabia, in January 1991. Sgt Grow was the team's "studio manager" and a prolific contributor in many mediate its total output.



time in its 58-year history. Although Marines had been deployed to the region a number of times since World War II, in later years they found operations there to be frustrating, inconclusive, and at times, tragic. Memories of many Marines were still fresh with the 444-day Iranian hostage crisis of 1979-81 and the ill-fated attempt to rescue them. More searing was the 1983 disaster at Beirut, Lebanon, where 241 Marines and sailors were killed in a terrorist suicide attack while on a peace-keeping mission.¹

By coincidence, some of the members of the staff had recently returned from Florida where they were involved in a U.S. Central Command exercise known as Operation Internal Look. Its scenario was remarkably similar to the one now unfolding in the Gulf. During the course of the problem, Marine forces were assigned to defend the port and industrial complexes around Jubayl (Al Jubayl)* in Saudi Arabia's eastern province.

Central Command was the unified command that had evolved from the Rapid Deployment Joint Task Force. Its primary responsibility involved contingencies in the Middle East. It was normally headquartered at MacDill Air Force Base in Tampa, Florida, and the billet of its Commander-in-Chief (CinC) alternated between an Army and a Marine general. The current CinC was General H. Norman Schwarzkopf, USA, a Vietnam war hero who later served alongside Marines as during Operation Urgent Fury on Grenada in 1983.

7th Marine Expeditionary Brigade Deploys

Central Command's spearhead Marine Corps formation was the 7th Marine Expeditionary Brigade based at the Marine Corps Air-Ground Combat Center at Twentynine Palms in California's Mojave Desert. Its leader was Major General John I. Hopkins, a craggy, highly decorated veteran of 34 years service with a raspy Brooklyn-accented voice. The ground combat element (GCE) of this Marine Air-Ground Task Force was Seventh Marines (Reinforced), commanded by Colonel Carlton W. Fulford, Jr.^{**} Although his team specialized in combined arms in a desert environment, nearly all of the Marines of the Fleet Marine Force, Pacific, had experienced some form of desert warfare training.

¹There is little standardization in the transliteration of Arabic names and places. Thus, Jubail, Al Jubayl, and Jubaul are all the same place. The article in front of place names such as Al Mishab, Ar Riyadh, Ad Dammam, and Ash Shu'aybah is usually omitted in English as is Ras (point or headland) in the names of coastal places; e.g., Ras Al Mishab becomes simply Mishab. Hereafter, place names will be referred to by their common English spellings. If their formal map transliterations differ, they will be placed within parentheses in the first usage; e.g., Safaniyah (Ra's as Saffaniyah) and Kibrit (Abraq al Kibrit).

^{**}Marine formations deploy as integrated Marine Air-Ground Task Forces (MAGTFs) of various sizes: Marine Expeditionary Unit (MEU) commanded by a colonel, Marine Expeditionary Brigade (MEB) commanded by a brigadier or major general, and Marine Expeditionary Force (MEF) commanded by a lieutenant general. Each has a Command Element (CE), a Ground Combat Element (GCE), an Aviation Combat Element (ACE), and Combat Service Support Element (CSSE).

The brigade's aviation combat element was Marine Aircraft Group 70 under command of Colonel Manfred A. Rietsch, who also commanded Marine Aircraft Group 11, a fighter-attack group at MCAS El Toro, California. His group included fixed wing, helicopter, and air defense missile units. Colonel Alexander W. Powell's Brigade Service Support Group 7 handled the combat service support tasks.

General Hopkins' operations officer, Colonel Charles M. Lohman, was awakened at 0130 on 4 August and ordered to Tampa where he participated in 72 hours of non-stop planning. To save time, General Schwarzkopf's planners used Internal Look as a model for future theater operations for the crisis. Lieutenant Colonel Timothy E. Donovan, a tanker who had learned the plans trade during a joint tour in Korea, worked up the brigade plan.

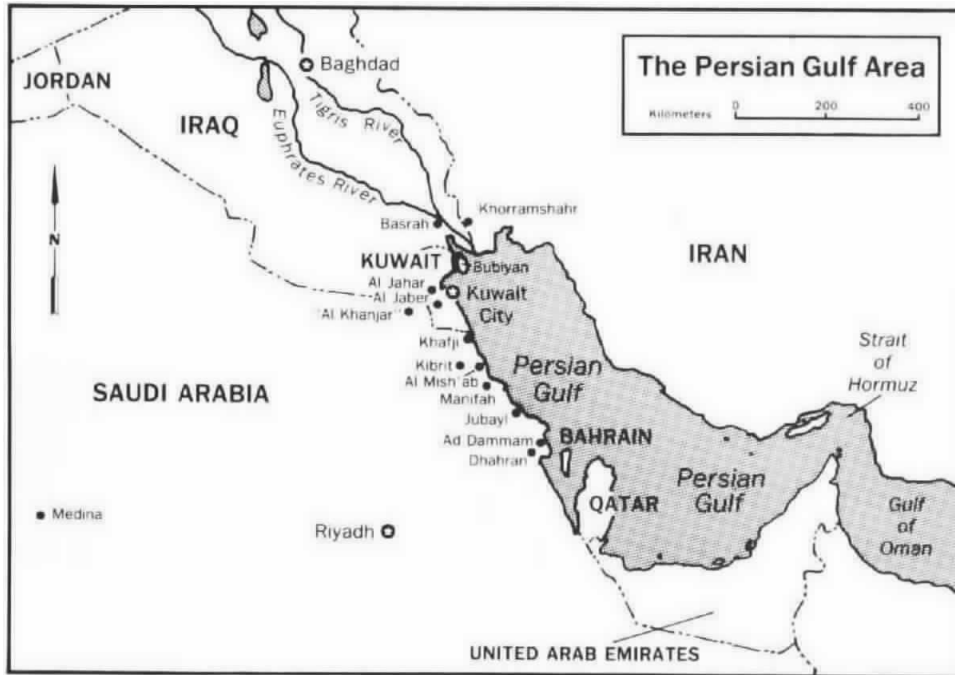
Among the planning issues for immediate attention was communications. Boomer's G-6¹ in charge of communications, electronics, and computers at I MEF was Colonel Robert G. Hill, one of the Corps' most experienced communicators. The Marine Corps was in a transition period in communications equipment, and the switchboard gear on hand was not fully interoperable with Central Command. General Schwarzkopf promptly lent a hand by attaching a joint communications support element with TTC-39 switching equipment to improve the force's "connectivity."

The Joint Chiefs of Staff designated 1700 Greenwich time as L-Hour and 7 August as C-Day for the commencement of operations, i.e., the day before Boomer assumed command. The code name given to the operation was "Desert Shield." The Marines of I Marine Expeditionary Force began to deploy to the Gulf in four phases over the next 40 days.

The mission of U.S. Marine Forces Central Command, MarCent, as the Marine component of Central Command was known, was to protect the critical oil and port facilities of Jubayl, Ju'aymah, and Ras Tannurah (Ra's at Tanura)² in Saudi Arabia, plus the island emirate state of Bahrain by destroying or delaying enemy forces as far north as possible. In addition to operations in support of Marine forces, MarCent aviation was to conduct theater counterair, close air support, and interdiction operations. As a contingency, MarCent was to be prepared to reembark its forces for amphibious operations. In a further contingency, if enemy forces occupied Saudi Arabia, MarCent was to be prepared to eject them and restore the territorial integrity of that nation. General

¹Marine Corps principal staff functions generally followed joint U.S. military practice. At I Marine Expeditionary Force during this time, section heads were normally colonels, titled Assistant Chief of Staff with the following responsibilities: G-1 Manpower/Personnel, G-2 Intelligence, G-3 Operations, G-4 Logistics, and G-6 Communications/Electronics and Information Systems Management. G-3 assumed the contingency and future operations planning functions of the G-5 section during the campaign.

²The defense of the Ras Tannurah sector south of Jubayl was later assigned to U.S. Army Forces, Central Command (ArCent).



Col H. Avery Chenoweth, USMCR, at age 62, was the head of the I MEF combat art team, and present for both Desert Shield and Desert Storm. From the Desert Shield period he painted "Call Waiting," picturing patient Marines at one of many telephone facilities set up near U.S. compounds.



Boomer intended that the force be ready to fight when the first battalion and squadron was on the ground.²

Within 96 hours, the 7th Marine Expeditionary Brigade combined arms task began embarking from air bases in southern California at San Bernardino and El Toro as the first echelon of I Marine Expeditionary Force to deploy. The Air Force's Military Airlift Command flew a total of 259 missions to transport the members of the brigade to Saudi Arabia. As they flew, ships of Maritime Pre-Positioning Squadron 2 began steaming north to Jubayl, Saudi Arabia. The squadron carried the brigade's equipment that had been previously staged at Diego Garcia, an island in the Chagos Group in the Indian Ocean, for such contingencies.*

The first troops landed at Dhahran, Saudi Arabia, on 14 August. Uncertain of the security of Saudi ports and airfields, General Hopkins loaded some of the initial flights of his brigade with combat-ready troops. At Dhahran, they disembarked from their aircraft with weapons at the ready. This display alarmed Saudi officials who were attempting to calm the local people, most of whom realized that the Iraqis were only a half day's road march away from the densely populated tri-city area of Dammam (Ad Dammam), Al Khober, and Dhahran. The Marines then shifted 100 kilometers north to billets in warehouses at the commercial port of Jubayl to marry up with their equipment.

The twin commercial and industrial ports of Jubayl were built during the 1970s at the direction of the Royal Saudi Commission for Jubayl and Yanbu. Nearly all of the force's equipment would pass through the commercial port which was large enough to handle the simultaneous offloading of an entire squadron of the Maritime Pre-Positioning Force. The nearby Jubayl naval air facility soon became the main aerial port of entry for Marines.

Getting the troops and equipment of the 7th Marine Expeditionary Brigade out of the port itself was another matter, however. The brigade arrived so quickly that the local Saudi government and military authorities were taken by surprise. At first they refused to let the Marines deploy tactically away from the port. General Hopkins was unused to the more languid pace of business that was customary in the Middle East and he fumed as his troops sweltered in the 120-degree heat of the port's huge and unsanitary metal warehouses, unable to leave.

Within Saudi Arabia there was a sizable element of conservative and deeply religious citizens for whom the notion of allowing non-believing foreign troops

*The 7th MEB would be the first force to use the Maritime Pre-Positioning Force in a combat situation. The concept was implemented in 1979 and became operational in 1984-86 as part of the Military Sealift Command. In the summer of 1990, three maritime pre-positioning squadrons (MPSRon-1, -2, -3) of large cargo ships were in service, each named posthumously after Marine holders of the Medal of Honor. Civilians crewed the ships and each squadron was loaded with the equipment of a Marine Expeditionary Brigade. The ships of MPSRon-2 were MV *Cpl Louis J. Hauge Jr.* (T-AK3000), MV *PFC William B. Baugh Jr.* (T-AK3001), MV *1st Lt Alexander Bonnyman Jr.* (T-AK3003), MV *Pvt Harry Fisher* (T-AK3004), and MV *PFC James Anderson Jr.* (T-AK3002).



LtGen Walter E. Boomer, left, commanding general of I Marine Expeditionary Force, and his deputy, MajGen John I. Hopkins, receive a briefing on the Iraqi threat at the I MEF command post at the Commercial Port of Jubayl on 26 November 1990. Gen Hopkins led I MEF's spearhead formation, the 7th Marine Expeditionary Brigade, to the Gulf in mid-August 1990. He later commanded the defense of the Jubayl Vital Area during Operation Desert Storm.

on the same soil as the two holy shrines of Islam at Mecca (Makkah) and Medina was anathema. Others had concerns whether Americans could operate in such a fundamentally different cultural environment. To assuage Saudi sensibilities, General Schwarzkopf issued Central Command General Order No. 1 which imposed a complete prohibition on alcohol within the theater. General Boomer in turn prohibited all forms of liberty for his force except those in the rear at Riyadh.* The Saudi religious code of laws known as *shariah* prohibited public religious services other than Islamic, so for a time, chaplains in the force were known euphemistically as "morale officers." American flags were not flown officially at any Marine installation. The 3d Civil Affairs Group, a Marine Reserve unit of specialists commanded by Colonel John M. Kaheny, a San Diego city attorney, handled the necessary relations with the civilian community.

By 20 August General Hopkins had successfully addressed Saudi concerns, and the brigade began moving into tactical positions northwest of the port. He declared the brigade "combat ready" on 25 August. To provide a base for the

*One unexpected byproduct of the no-drinking and no-liberty policies was a dramatic drop in disciplinary rates.

growing force that offered both access and security, a number of camps were leased in the adjacent 250,705-acre industrial city of Jubayl. The camps had been set up in the 1970s for some of the 52,000 workers who built the petro-industrial complex that Guinness would later term as "the world's largest public works project of modern times."³

In the meantime, follow-on Marine forces afloat and ashore also began deploying to the Gulf. From the east coast another brigade, the 4th Marine Expeditionary Brigade, commanded by Major General Harry W. Jenkins Jr., departed on 17 August. It became a floating reserve along with the smaller 13th Marine Expeditionary Unit (Special Operations Capable) (MEU[SOC]). The 1st Marine Expeditionary Brigade, less its command element, flew out of its Hawaii base on 25 August. The next day, the lead elements joined their equipment which had just arrived at Jubayl in the ships of Maritime Pre-Positioning Squadron 3 out of Guam. The remainder of the 3d Marine Aircraft Wing from southern California also deployed along with two specialized aviation logistics support ships, USS *Curtiss* (T-AVB 4) and USS *Wright* (T-AVB 3).

Establishing the Force

Lieutenant General Boomer flew to Riyadh, the Saudi political capital and prospective headquarters for Central Command, to establish relations with its staff on about 20 August. On 3 September 1991, he set up his command post at an unused administration building at the commercial port of Jubayl. The initial mission assigned U.S. Marine Forces Central Command was: "Defend in sector to protect vital facilities in the vicinity of Jubayl; on order, conduct passage of lines with Royal Saudi Land Forces and Gulf Cooperation Council forces." This defensive task would remain unchanged throughout the force's deployment to the Gulf. The initial area of operations assigned to the Marines was a 40 by 100 kilometer strip along the coast centering on Jubayl.

Nearly a generation had passed since the Marine Corps had conducted corps-sized operations in combat. It had been 45 years since a Marine officer had commanded a corps-size unit with two or more maneuvering divisions.⁴ In recent years, the prospect of corps-level operations seemed so remote that it was scarcely mentioned at all in the curriculum at the Marine Corps' Command and Staff College. Although the U.S. Army did have a manual on the subject, it was oriented to an European land campaign rather than the desert expeditionary situation now at hand.⁴

During the campaign, Lieutenant General Boomer was both Commander, U.S. Marine Forces Central Command and Commanding General, I Marine

⁴Lieutenant General Roy S. Geiger commanded III Amphibious Corps at Okinawa in 1945. The divisions of III Marine Amphibious Force in Vietnam occupied generally fixed areas and did not maneuver relative to each other.



BGen James M. Myatt, Commanding General, 1st Marine Division

Expeditionary Force.* As ComUSMarCent, he was a component commander of the U.S. Central Command. CentCom's other components were: U.S. Army Forces Central Command, U.S. Air Forces Central Command, U.S. Naval Forces Central Command, and U.S. Special Operations Central Command.**

*During the campaign, "MarCent" and "I MEF" were used interchangeably since the Marine Corps component of Central Command and the I Marine Expeditionary Force were virtually identical. In this account, the term the "force" is used in this collective sense. When a distinction is necessary, "MarCent" and "I MEF" is used. It should be noted that forces afloat were part of NavCent.

**These were usually abbreviated as MarCent, ArCent, CentAF, NavCent, and SOCCent, respectively. General Schwarzkopf's command was CentCom, and he was referred to as CinCCent or simply "the CinC."

The I MEF Marine Air-Ground Task Force was MarCent's operational command. Marine forces afloat, principally the 4th, and later the 5th, Marine expeditionary brigades were under the operational control of Commander, U.S. Naval Forces Central Command, Vice Admiral Henry H. Mauz, USN, and after December by Vice Admiral Stanley R. Arthur.

The Joint Forces and Theater of Operations was commanded by a prince of the Saudi royal family. His Royal Highness Lieutenant General Khalid bin Sultan bin Abdul Aziz, or more simply, Prince Khalid, coordinated all Arab coalition force operations. There were no formal "host nation" or "status of forces" agreements normally associated with the deployment of American forces overseas. General Boomer placed a high priority on effective relations with Arab allies and ordered the establishment of liaison and combined training teams to work with the Saudi forces in the area. There were two Saudi ground forces in the kingdom: the Royal Saudi Land Forces under the Minister of Defense and Aviation (MODA) and a separate elite force, the Saudi Arabian National Guard (SANG). In the campaign to follow, brigades of both forces would be on the Marines' right flank. For the moment, however, the closest was the 2d SANG Brigade to the north in the sector between the Marines and southeast Kuwait. In addition, the Saudis were in the process of establishing a Marine Corps as part of the Royal Saudi Naval Force at a coastal base near Mishab (Ras Al Mishab). A U.S. Marine training team went there as well.⁵

With respect to relations between Central Command and its Marine component, both Generals Schwarzkopf and Boomer later characterized them as close, constant, and effective. When the issue of a separate Marine component



MajGen Royal N. Moore, Jr., Commanding General, 3d Marine Aircraft Wing



BGen James A. Brabham, Commanding General, 1st Force Service Support Group

commander arose in late December, both felt that it was too late to interpose another lieutenant general between themselves.⁶ General Boomer's deputy commander and personal representative for Marine Forces Central Command in Riyadh was Major General Jeremiah W. "Digger" Pearson III. Pearson had completed a tour as Central Command's inspector general a year earlier, was familiar with its staff, and spoke Arabic.

The first and perhaps knottiest issue at the joint level arose even before General Boomer's arrival: control of air power. Lieutenant General Charles A. Horner, USAF, the commander of U.S. Air Forces Central Command, proposed that Marine aviation come under a single theater manager for air known as the

Joint Forces Air Component Commander. The presence of four U.S. aviation forces, host-nation, and numerous other allied air forces within the theater was daunting. It was obvious that some form of overall control was necessary. Doctrinal differences aside, the main concern from the Marines' perspective was that their unique team of air-ground forces not be broken up.⁷

General Pearson enjoyed a close friendship with General Horner; both men were active fighter/attack pilots with much combat experience. Pearson was also a graduate of the U.S. Air Force's Air War College. With recently arrived Major General Royal M. Moore, commander of the I MEF's aviation combat element, the 3d Marine Aircraft Wing, they hammered out the agreements for employment of Marine aviation by mid-September. It was during this early period that most of the basic details of the offensive air campaign were decided, well over four months before they were actually executed.

Under the system worked out, General Horner as Joint Forces Air Component Commander (JFACC) would issue a daily Air Tasking Order to coordinate all theater air operations. Marine air would continue to support its organic forces and also provide a percentage of fixed wing sorties, primarily F/A-18 Hornets and, later, A-6E Intruders plus EA-6B Prowlers for electronic support, to Central Command for theater missions. In turn, JFACC sorties would strike deeper targets nominated by MarCent's targeting cell, whose members were known as "targeteers." General Boomer's highest priority targets were, and would remain, Iraqi command and control nodes and indirect fire weapons.



MajGen Jeremiah W. Pearson III was Deputy Commander, Marine Forces, Central Command. Assigned on temporary duty to CentCom Headquarters in Riyadh, he was the senior Marine present during the planning phases and buildup for Desert Storm.

To provide its ground forces with traditional Marine close air support, Pearson and Colonel Joseph W. Robben, Jr., one of the Corps' senior air controllers, negotiated an arrangement whereby MarCent would control all offensive air missions within its area of operations by use of a series of high density air control zones, fire support coordination lines, and restricted fire areas.

Another issue was air bases. Virtually every square inch of ramp space in Saudi Arabia had already been taken or spoken for. Central Command assigned Marines two small airfields in the Jubayl area: Jubayl Naval Air Facility and King Abdul Aziz Naval Base. Even with these, there was no room for most of 3d Marine Aircraft Wing's fighter and attack aircraft. General Pearson approached an old friend, Shaikh Khalifa bin Ahmad Al Khalifa, minister of the Bahrain Amiri Defense Forces. The Shaikh immediately offered use of a base nearing completion of construction, Shaikh Isa Air Base, plus space at the already crowded Bahrain International Airport.⁸ The lack of ramp space required the services of another traditional partner of Marines in combat: the SeaBees. Captain Michael R. Johnson, USN, commanded the four naval mobile construction battalions that were forward deployed from the U.S. Pacific Fleet. One of the first of their many engineering feats was the enlargement of ramps at Jubayl Naval Air Facility and King Abdul Aziz Naval Base and at Shaikh Isa Air Base on Bahrain.

By the last week of September, I Marine Expeditionary Force had grown to more than 30,000 Marines, close to General Schwarzkopf's initial cap of 42,500 including forces afloat. The historic offloading of two squadrons of the Maritime Pre-Positioning Force had gone well overall. Early problems of tracking equipment flow and a shortage of combat service support personnel to offload the vessels were overcome by an all-hands effort and Jubayl's superb port facilities. As experience was gained, each offload became smoother and more efficient. One key to the success of the deployment was the use of time phased force deployment data.⁹ When this data was coupled with the automated tracking scanners and computers of the Marine air-ground task force decision support system (MDSS), the process achieved high degrees of accuracy and speed. The result was that I Marine Expeditionary Force was the first American force to get ashore with a sustained combat capability.

On 3 September, the 1st Force Support Group commanded by Brigadier General James A. Brabham, Jr., assumed the combat service support role for the force. Brabham had 29 years of service as a combat engineer and logistician, and also had recently completed a tour with Central Command. After flying to Riyadh on 10 August, and spending three weeks coordinating logistics, he established the group's command post in a tent compound on the Jubayl pier.

⁹TPFDD was the joint doctrine for moving units and their equipment developed in the early 1980s to promote flows and optimize use of the transportation assets of the Military Sealift and Military Airlift Commands.

The group also handled the rear area security mission until this was taken over by the 24th Marines in January.

The I MEF ground combat element was formed under the 1st Marine Division on 6 September by "compositing" (fusing) elements of the 1st and 7th Marine Expeditionary Brigades, already in country, and other units newly arrived from the division's home base at Camp Pendleton. Its commander was Brigadier General James M. "Mike" Myatt, an infantryman with a background in special operations. Myatt set aside conventional organization in favor of mechanized and armored task forces with names like Ripper and Shepherd to meet the challenges posed by a mobile threat. A mobile threat required a mobile defense. Myatt deployed his task forces in an assigned operating area that went north from Jubayl nearly to Manifah Bay (Dawhat Manifah). At the northernmost point of the division's area, Myatt placed a single battalion as a screen: 3d Battalion, 9th Marines. These exposed fighters cynically nicknamed themselves "The Speed Bump."

To provide another maneuver element, the British Army's 7th Armored Brigade, famed in World War II as the "Desert Rats," was placed under the tactical control⁷ of the 1st Marine Division. From the start, Brigadier Patrick Cordingley's brigade was a happy marriage of British Tommy and American Marine. The British were to bring 170 Challenger tanks and 72 155mm guns which significantly increased the combat power of the force. Brabham's 1st Force Support Group logistically supported the brigade in food, fuel, and water. The British in turn brought welcome expertise in intelligence, particularly in analysis capability, to the I MEF command element.

Also on 3 September, Major General Royal N. Moore established the 3d Marine Aircraft Wing in theater as the force's aviation combat element, initially placing his flag at Shaikh Isa Air Base on Bahrain. Marine Aircraft Group (MAG) 70 now split into fixed wing and helicopter groups. Moore, the wing commander, had actually been in theater since mid-August with a skeleton staff to wrestle with air command and control issues. He was a veteran pilot with 37 years of service and 287 combat missions. He had commanded successively a squadron, an air group, and a wing and had flown fighter, reconnaissance, and electronic warfare jets as well as assault helicopters. Shaikh Isa remained the site of the wing headquarters until it moved to Jubayl in January 1991.

With the dissolution of 7th Marine Expeditionary Brigade, Major General Hopkins moved to I Marine Expeditionary Force as deputy commanding general and his staff joined the MEF command element. As originally envisioned, after the "compositing" of staffs was complete, a number of staff personnel would be sent home as being redundant. This did not happen. The pace of staff operations was so intense that senior field grade officers slept by their desks so as to be available around the clock. The wartime Table of Organization for a Marine Expeditionary Force did not account for the fact that combat operations

⁷The term "tactical control" is used in combined operations and is essentially synonymous with "operational control" except for the power to relieve commanders.

centers and sensitive compartmented intelligence facilities required 24-hour staffing. Virtually no one went home.

Assessing the Threat

As soon as the Iraqi forces occupied Kuwait, the combat engineers of Iraqi *III Corps* began the construction of a double band of barriers, minefields, and primary defense fortifications that looped through southeastern Kuwait (the "Heel") from the Gulf to west of the Manaqish oil field. Although the terrain was generally flat, it was not perfectly so. The Iraqis located their minefield/obstacle belts for optimum surveillance from higher terrain inside. The barriers paralleled the Saudi border about 5-15 kilometers inside Kuwait and were separated by an open area 3 to 18 kilometers wide, dubbed "No Man's Land." Along the Saudi side of the border itself, the Saudis had constructed a five-meter-high earth barrier for security purposes years earlier. "The Berm," as it was commonly known, had police posts about every 15 kilometers which became Saudi forward observation posts. The Iraqis also built defenses along the entire coastline of Kuwait. These included interlocking trenchworks, bunkers, waterline barbed wire obstacles, direct fire weapons, and mines. The *III Corps* area of operations included the heel of Kuwait and its western boundary ran roughly from Al Jahra to the Manaqish bend of the border.

The first active *III Corps* defenses were just inside the second obstacle belt and consisted of infantry antiarmor weapons, and Soviet-manufactured T54B, T55, and T62 tanks. Five infantry divisions eventually comprised the primary defenses opposite I MEF; from Manaqish to Wafrah they were the Iraqi *7th, 14th, 29th, 42d, and 8th Infantry Divisions*. The operational reserves consisted of the *5th Mechanized Division* located near the Burqan oil field and the *3d Armored Division*, located about 20 kilometers north of the Al Jaber air base. This unit was armed with Iraq's newest main battle tank, the Soviet T72. Defending the vital Al Jahra road intersections and the adjacent Mutla Ridge were *IV Corps' 1st Mechanized Division* and the *6th Armored Division*. Four other *III Corps* infantry divisions manned defenses along the coast from Al Jahra to the Saudi border. The Iraqi artillery brigades of *III Corps* were equipped primarily with D20 152mm howitzers. The brigades were deployed so that the obstacle belts were located at mid-range of the D20 in order to provide overlapping coverage of the last 5,000 to 10,000 meters of the approaches to the outer belt. They were augmented by Brazilian-made Astro multiple rocket launcher systems and Soviet-designed Frog (free-rocket-over-ground) unguided missiles.

General Boomer believed that these indirect fire weapons were the greatest threat to an attacking force because of the sheer numbers involved and their capability to deliver chemical fires. The Iraqis were the most experienced force in the world in the use of chemical weapons, and Boomer and his staff firmly believed that chemicals would be used against an attacking force. The Iraqi use of chemicals against the Iranians in the 1980-88 war was *prima facie* evidence



The head of the 1 MEF combat art team, Col H. Avery Chenoweth, USMCR, driving about in his sand-colored, four-wheel-drive Jeep Cherokee sketched a large number of individual Marines participating in Operation Desert Storm. At right, he records the face of Sgt Serena Reid, USMC, a combat videographer for 1 MEF, as he saw her on 21 January 1991.



that Saddam Hussein would be predisposed to order their use in this instance. A further worry was biological warfare. The intelligence community believed that Iraq had the capability to manufacture the virulent and lethal anthrax toxin.⁹

The Iraqis also deployed to the heel of Kuwait an extensive integrated air defense system of six divisions and brigades that used a French-supplied command, control, and communication system named Kari. Like the ground arms, the weapons were mostly Soviet-manufactured and included radar and heat-seeking missiles, plus large numbers of anti-aircraft guns ranging in caliber from 14.5 to 130 millimeters. The Iraqis also used the direct fire anti-aircraft guns as anti-personnel weapons in their primary barrier and beach defenses.

To form a picture of enemy defenses, capabilities, and intentions within his area of operations, General Boomer directed his G-2 for Intelligence, Lieutenant Colonel Bruce E. Brunn, to implement an intelligence collection plan. He also ordered an Intelligence Preparation of the Battlefield (IPB) for the defense of Saudi Arabia. Brunn, working with Colonel Charles M. "Chuck" Lohman, who had moved up from the brigade to become the force operations officer (G-3), made a series of map overlays and graphics to visually depict key decision points and areas on the battlefield. The process gave General Boomer and his commanders an easily understood matrix to facilitate their decision making. The same system was used for the assault into Kuwait later.

The force's organic collector of ground intelligence was Colonel Michael V. Brock's 1st Surveillance, Reconnaissance, and Intelligence Group (1st SRIG). Brock was an infantry and intelligence officer with previous tours in Vietnam, with the Defense Intelligence Agency, and in the Intelligence Division, Headquarters Marine Corps. The concept of a SRIG was a recent organizational innovation to improve Marine intelligence operations. It combined the personnel and equipment of previously independent intelligence collection agencies into a "type" command. Marine doctrine called for the SRIG to gather information as tasked in Brunn's collection plan for analysis, production, and dissemination. To further the effort, the analysts of Brock's units were attached to Brunn's G-2 section. In addition, some SRIG assets such as the Marine All-source Fusion Center, Fleet Imagery Intelligence Unit, and Topographic Platoon produced

⁹The concerns were justified. By mid-November 1991, postwar inspections by the United Nations Special Commission on Iraq had inventoried 46,000 artillery rounds, bombs, and missiles, including Scud ballistic missiles, capable of delivering chemical and biological agents. The chemicals were mustard gas and sarin, a nerve agent. The Commission also recovered samples of the botulism and anthrax toxins. Further, the Commission concluded that Iraq was within 12-18 months of producing a nuclear weapon.

finished intelligence on their own.* Finally, Colonel Brock also assumed the duties as area commander for the force's headquarters camp at Camp Gray, named in honor of the Commandant and formerly Camp 5 or *Haii 5*, in the industrial city of Jubayl. His headquarters company provided a wide variety of housekeeping services to the multinational forces assembled there besides those of his own widely scattered SRIG.

Intelligence about the Iraqi dispositions and defenses in southeast Kuwait was one of the most frustrating issues during this period. There was inadequate detailed photographic imagery of the area. The Marine Corps had decommissioned its last organic overhead photo platform, the RF-4B Phantom II, in August 1990, and the reconnaissance pods for its McDonnell Douglas F/A-18 fighter/attack jets were not yet in service. Requests by MarCent for theater and national assets imagery competed with those of CentCom's other components. The result was generally unsatisfactory, usually a case of too little and too late. To fill in the gap, all three Marine remotely piloted vehicle (RPV) companies were in the theater and being employed to the limit. The Marine Corps had acquired small Israeli-developed Pioneer aerial vehicles as well as about 60 Exdrone unmanned aerial vehicles. They looked much like giant model airplanes.[™] The vehicles offered advantages of relatively long time-on-station, difficulty of detection, and low cost. Perhaps most important of all, they were owned by MarCent. Although their imagery product was grainy, monochrome video, it had the advantage of being rendered in real time.

There were difficulties with human intelligence as well. After lengthy negotiations, Brunn won access to the Kuwaiti refugee center at Al Khafji, an invaluable source for information about conditions in Kuwait. On 22 November, Central Command canceled access to the center at the request of Special Operations Command. Despite this discouraging development, Brunn pressed on with contacts in the exiled expatriate community for help about conditions in Kuwait. On the military side, political concerns of the Saudis would prevent force reconnaissance teams from deploying along the border area until December 30th.

*With later reinforcements, 1st SRIG's units included Headquarters Company; the 1st Radio Battalion (Reinforced); the 8th and 9th Communications Battalions reinforced by the Reserve 6th Communications Battalion; the 1st, 2d, and 3d Remotely Piloted Vehicle Companies; the 1st Air and Naval Gunfire Company (ANGLICO) reinforced by Reserve units of 3d ANGLICO; 1st Intelligence Company; and the 1st and 2d Force Reconnaissance Companies reinforced by the Reserve's 3d and 4th Companies. Maximum strength on 24 February 1991 was 3,168 personnel total.

[™]Like remote-controlled model airplanes, RPVs were controlled by a Marine on the ground who used a computer joystick to maneuver the craft while looking at a television monitor. During landings, an outside pilot visually guided the craft to an arrested landing by use of a hook and cables stretched across the runway, that was often just a patch of aluminum matting. The RPVs used video and forward-looking infrared radar for day and night intelligence-gathering, respectively.

Meeting the Threat from the Air

In mid-August, the Joint Forces Air Component Commander, Lieutenant General Horner, parceled out theater air defense tasks. He assigned defense of the MarCent area of operations, the northernmost portions of the Gulf, and, together with the two-squadron air force of the Bahrain Amiri Defense Force, the island of Bahrain to the 3d Marine Aircraft Wing. A complicating issue was that MarCent's area of operations overlapped air defense zones within Saudi Arabia. Therefore, final authority to engage targets in these areas rested with the Eastern Province Area Commander, Major General Saleh.

For close-in and medium-range air threats, General Moore deployed agile, light-weight, shoulder-fired FIM-92 Stinger heat-seeking missiles and radar-guided, semi-active homing MIM-23 Improved Hawk missiles. The Marine Corps possessed neither airborne early warning radar nor an effective defense against ballistic missiles. To expand its radar coverage, the force's tactical air operations center imported radar data from both the Saudi and U.S. Air Force airborne warning and control system aircraft (AWACS) and U.S. Navy ships in the Gulf. Central Command assigned U.S. Army Patriot missile batteries to counter Iraq's Scud ballistic missile threat in MarCent's vital areas.¹⁰

Iraq possessed about 405 fighter interceptors, 397 strike aircraft, and 136 attack helicopters, roughly three times the number of comparable Marine aircraft in theater. Many fighters were deployed around the Iraqi capital of Baghdad. Others were based in southern Iraq, within comfortable striking distance of Kuwait and the Eastern Province of Saudi Arabia. There were three large airfields in Kuwait: Ahmed Al Jaber Air Base (Al Jaber) in the middle of the heel, Kuwait International Airport near Kuwait City, and Ali Al Salem Air Base to the west. (The first two later became force objectives.) However, the Iraqis chose not to deploy any tactical jets to Kuwait, possibly because their own airfields in southern Iraq were close enough as it was.

During the Iran-Iraq War of 1980-88, the Iraqi Air Force did not display any particular capability in close air support. However it did successfully deliver chemical weapons against attacking Iranians. It also carried out long-range conventional attacks against oil facilities on Larak Island in the Strait of Hormuz and severely damaged USS *Stark* (FFG 31) with an Exocet anti-shiping missile.

To meet this threat, F/A-18 Hornet jets* of Marine Aircraft Group 70[™] commenced around-the-clock combat air patrols over the northern Gulf on 18 August. From then until the onset of hostilities, the group's pilots constituted

*The McDonnell-Douglas F/A-18A and F/A18C were single seat, supersonic twin engine fighter attack aircraft equipped with a Hughes APG-65 "look-down" pulse doppler radar and heads-up display. In the Gulf its air-to-air weapons were AIM-7M semi-active radar homing missiles, AIM-9M heat-seeking Sidewinder missiles, and an M61A1 high speed 20 millimeter cannon.

[™]MAG-11 after 30 September 1990.

the primary airborne defense of the most forward deployed U.S. Navy surface vessels. There were a number of near engagements during 1990. Typically, numbers of Iraqi fighters overflew northeast Kuwait near Bubiyan Island to penetrate airspace over the Gulf. Marine Hornets countered each Iraqi flight. However, the Marine pilots were not allowed to fire at the Iraqis under the rules of engagement then in effect unless they were directly threatened. On several occasions, the Marines closed to 10 miles--well within radar missile range--and were preparing to open fire when the Iraqi intruders turned abruptly away. Although the pilots were frustrated that they could not engage the Iraqis with weapons, these incidents demonstrated how effective their barrier was. No allied force or vessel was ever threatened by Iraqi aircraft during the 152-day period in which Marines defended the northern Gulf area.

Shifting to the Offense

In early October, General Boomer's assessment was that the Iraqi opportunity to successfully invade Saudi Arabia had passed. The I Marine Expeditionary Force staff began planning future offensive operations concurrently with initiatives by General Schwarzkopf. To develop a plan, Schwarzkopf brought in a team from the Army Command and General Staff College. Colonel Lohman, the Force operations officer, got inklings of their initial concept from the I MEF plans officer, Colonel James D. Majchrzak, who went to Riyadh on 3 November for an exchange of views with CentCom's planning staff. The Marines became concerned.

It seemed that the CentCom planners were developing a concept of operations that treated I MEF as if it were an Army corps. Much of the 3d Marine Aircraft Wing's offensive air assets might be used in theater support of non-Marine units. (Unknown to the Marines at the time, General Schwarzkopf was resisting pressure to appoint a single "ground force commander" for future offensive operations.)¹¹ Upon hearing of these developments, General Boomer directed his battle staff planning group under Majchrzak not only to develop MarCent plans, but also to provide prompt and appropriate inputs to General Schwarzkopf's planners as well.

Majchrzak snagged the former 7th MEB planning expert, Lieutenant Colonel Tim Donovan, into the group which went into a surge planning cycle to develop alternative concepts that ensured MarCent's use in a more appropriate manner. On 14 November, at Riyadh, General Boomer briefed General Schwarzkopf on the force's proposed concept of operations, the CinCCent was pleased to learn that his Marine forces could be more effectively employed. He approved Boomer's concept for continued planning and refinement of the plans. Although the CentCom staff provided no specific written guidance, Majchrzak stated the MarCent mission as:

When directed by USCinCCent, USMarCent conducts USCentCom supporting attack to fix and destroy Iraqi operational reserves in southeastern Kuwait to preclude their employment against USCentCom main attack in the west; isolate Kuwait City for EPAC [Eastern Province Area Command]/multinational MOUT [military operations in urban terrain] operations. Be prepared to continue the attack north to support USCentCom offensive operations.¹²

In fact, this was precisely the mission assigned to MarCent. During the second week of November, the battle staff planning group began to develop courses of action and rough estimates of their supportability. Most of these involved a penetration of the heel of Kuwait and link-up with an amphibious assault somewhere along the Kuwaiti coast by the 4th Marine Expeditionary Brigade under command of Major General Harry W. Jenkins, Jr. The MEF planners briefed and consulted with Jenkins and his operational commander, Vice Admiral Henry H. Mauz, Commander, U.S. Naval Forces Central Command (NavCent), as the concepts evolved.

Manning the Force

In early November 1990, General Schwarzkopf asked his component commanders to determine what numbers and types of forces they would need to prevail in an offensive scenario. General Boomer instructed Lohman, Majchrzak, and his G-1 for manpower, Colonel Robert K. Redlin, to work up an appropriate force list to achieve sufficient force ratios for an assault into southeast Kuwait. On 8 November President Bush announced the impending reinforcement of Central Command by 200,000 American personnel which included a large number of Reserve units.

The reinforcement of I MEF committed nearly all of East Coast-based II Marine Expeditionary Force, including the 2d Marine Division, the 2d Force Service Support Group, and nearly all of the 2d Marine Aircraft Wing. Smaller units would come from III MEF in the Western Pacific. When this happened, I MEF became the largest Marine force assembled since the Vietnam War, approximating three-fourths of the regular Fleet Marine Forces. Plans in mid-November called for the flow of about 25,000 reinforcement personnel to begin about 10 December at the rate of 1,000 Marines per day. To house the reinforcements, SeaBee battalions began construction of six 2,500-man tent camps. In Washington, Headquarters Marine Corps established a manpower stop-loss program: Marines who would be in permanent change-of-station status or released from the service from November 1990 to May 1991 were retained in their stations. This included many already with I MEF.

A major additional reinforcement under Boomer's tactical control was to be the British Army of the Rhine's 1st Armoured Division, commanded by Major

General Rupert Smith. This division was to absorb Brigadier Cordingley's 7th Armoured Brigade already in place with the force.*

Headquarters Marine Corps also activated 80 units of the Selected Marine Corps Reserve, or about 54.7 percent of 4th Division-Wing team personnel. This was the first significant call-up of Marine Reservists since the 1950-53 Korean War and the first deployment of Reserve units individually since World War II. In addition, a total of 7,058 Individual Ready Reservists and 537 Retired Reservists received orders to active duty.¹³ Unlike other services, the Marine Corps adhered to a policy of not mobilizing Reserves for the first 60 days of a contingency.^{***} Even so, some 64 volunteer Reservists--mainly members of the 3d Civil Affairs Group and MEF staff individual mobilization augmentees (IMAs)--deployed to the theater in August, although most were ordered home after a month or so. By 1 December, there were only 16 Marine Reservists in Saudi Arabia. Within another 60 days, more than 31,000 Marine Reserves would be activated and one out of every eight Marines who participated in the liberation of Kuwait were Reserves.^{***} Other Reserve units filled in slots of the Unit Deployment Program afloat and overseas. On 6 November, the first round of 800 Reservists in 21 different units was activated.

The Reserves responded enthusiastically; over 99.5 percent reported in after call-up. Virtually all were trained, fit, and able to go to war. About 12,000 participated in all echelons of Marine forces in the Gulf. As will be seen, there were many outstanding performances in combat by Reserve units and individuals. The integration of Reserve with Regular forces went quite smoothly. A postwar study indicated that Regular commanders found Reserves to be competent, bright, highly motivated, pragmatic, and oriented toward problem solving. At first, however, there were minor problems. The transition from the Reserve Manpower and Management Pay System (REMMPS) to the Joint Uniform Military Pay System (JUMPS) was unsatisfactory and caused financial hardships for many Reserve Marines. Battalion and regimental staffs had not trained in depth together. Some aviators were not proficient in use of night vision equipment although their overall flying experience exceeded that of Regular pilots on average.¹⁴

The largest of the Reserve units mobilized was the 24th Marines, headquartered in Kansas City, which assumed the rear area security mission for the

*Administratively, all British forces were under control of the Commander, British Forces Middle East, Lieutenant General Sir Peter de la Billiere.

**A small number of Marine Corps Reserve personnel assigned to the CentCom staff were activated in August 1990 and deployed with General Schwarzkopf to Riyadh. They are not included in the I MEF/MarCent total.

***The call-up totals by category were: Selected Marine Corps Reserve, 23,791 (4th MarDiv, 15,616; 4th MAW, 4,176; 4th FSSG, 3,999) and Individual Ready Reserve, 8,322 (IRR, 6,243; Retired, 615; Preassigned IRR, 1,464). Of these, 11,860 were assigned to I MEF on 28Feb91.

force in January. The story of their deployment was typical of the Marine Reserve experience in the Gulf.

The regiment mustered about 1,716 personnel and consisted of a headquarters company and three rifle battalions spread throughout drill sites in the mid-west. Its commander was Colonel George E. Germann, a regular officer and graduate of the U.S. Military Academy with a devotion toward physical fitness. The battalions received their activation orders on 13 November and most of the officers reported on 22 November. The enlisted personnel--many of them college students--arrived by 29 November. Some members of the regular inspector-instructor staff deployed with the unit, some reported to combat replacement companies, and others remained at their stateside posts. The regiment's 1st Battalion deployed to Okinawa where it filled a vacated slot as part of the unit deployment program. After administrative and medical screening at 14 local training centers in places like Danville, Illinois, and Johnson City, Tennessee, the remaining companies drew their equipment and flew to Camp Lejeune during the first week in December. There, they formed into their usual battalions, the 2d under the command of Lieutenant Colonel Francis A. Johnson, and the 3d under Lieutenant Colonel Ronald G. Guwilliams. After a brief training cycle that included weapon firing and chemical warfare training, the regiment flew into Jubayl on 1-3 January 1991.¹⁵

Expanding the Area of Operations

General Boomer moved his command post out of the commercial port to an unused auxiliary police post in the industrial city of Jubayl on 27-29 November. The "police station" was a short walk from Camp Gray. The terrible heat of August and September had broken, and the living was as good as it would ever get at I MEF. This was the first of four moves that the force headquarters would make over the next three months.

As the planning evolution and buildup proceeded, the force operating area for both training and maneuver space became increasingly constricted. From the beginning, there had been no live fire ranges available to Marines and therefore no way the 1st Marine Division could zero in its weapons, especially the ones that had come off the ships of the Maritime Pre-Positioning Force. The subject seemed to be a particularly delicate one for the Saudis who at first were nervous with the idea of any foreign weapons being fired within the kingdom at all. Eventually, the Saudis realized the importance of the ranges and a mobile training team from the Marine Air-Ground Combat Center at Twentynine Palms, California, under Colonel John W. Moffett, commissioned the first sites in November. Moffett's range organization was good, and the Saudis were sufficiently impressed to soon become the sites' second-best customers.

Another concern of this period was corps boundaries. To the west the U.S. Army Forces Central Command (ArCent) area of operations compressed Marine forces into a 30-kilometer-wide band along the coast to Manifah Bay. The ArCent commander, Lieutenant General John G. Yeosock, USA, did not yet

have the logistical capability to move his forces any further west. The issue reached a critical stage as preparations began for a three-division Marine Expeditionary Force. General Boomer--as ComUSMarCent--met with General Yeosock at Jubayl in late November to discuss the expansion of the MarCent area of responsibility. Yeosock was sympathetic, but without the benefit of Maritime Pre-Positioning Force shipping, his forces could not match the initial logistics flow rate of the Marines. The Army's VII Corps, scheduled to conduct the ArCent main attack from bases near Hafar al Batin, more than 500 kilometers from its main port at Dammam. The XVIII Airborne Corps' tactical assembly areas were to be even further west. As it was, VII Corps was just beginning to get substantial amounts of equipment in-theater and could not be expected to displace soon.

To the north, relations with the Saudi and other Arab allies were still in a delicate and evolving state through November. Talks with the Saudis revealed two issues. First was the political necessity of positioning Saudi forces between the Iraqis and the Marines for the time being. Second, the Saudis were unable to move much further north without coming within range of Iraqi supporting arms. This contrasted with the triple pressures on General Boomer: to place Marine forces near offensive assembly areas, to gain space to accommodate large numbers of reinforcements, and to position the logistics support for offensive operations forward.

To solidify relations with the Arab allies, General Boomer stepped up the force's cross-training program. From October through December, company-sized units from the 1st Marine Division plus reconnaissance and ANGLICO teams from the 1st Surveillance, Reconnaissance and Intelligence Group (SRIG) conducted continual cross-training with Arab units to the north of the force. The bonds formed between Marines and Arab soldiers during this time contributed greatly to building mutual confidence and later success in combat.

Operation Imminent Thunder

Central Command conducted a five-phase combined exercise known as Operation Imminent Thunder from 15 to 21 November 1990. General Schwarzkopf wanted to provide "an environment within which joint/combined operational issues c(ould) be identified, analyzed, and resolved" by faithfully simulating theater situations and conditions in a defensive scenario.¹⁶ It was the first major joint and combined force exercise in-theater to have fully integrated air, ground, and naval activity. For their part, Marine forces conducted fire support coordination and linkup operations with the 2d Brigade of the Saudi Arabian National Guard and an amphibious landing force of the 4th Marine Expeditionary Brigade. General Boomer also used the exercise as an opportunity to shakedown his staff in command, control, communications, computers, intelligence, and interoperability (C4I2). Unlike his subordinate units which had been stable in personnel for months, Boomer needed an event like this to weld his "composited" staff into a warfighting headquarters.¹⁷

The proximity of Iraqi forces in Kuwait added an element of unpredictability that gave Imminent Thunder actual as well as simulated combat conditions. General Boomer told his command that he wanted clear thinking from them. He warned it not to let any Iraqi misstep "snowball out of control." He wanted to ensure that the allies, not Saddam Hussein, controlled the future agenda. Central Command was concerned as well. To remove any possibility of provocation and to reduce the exposure of amphibious shipping to missile threats, General Schwarzkopf moved the proposed landing site at Ras Al Mishab (Mishab), located 50 kilometers south of the Kuwait border, a further 97 kilometers southeast to Ras Al Ghar.*

Imminent Thunder was a five-phased CentCom-sponsored event. Marine forces participated in each phase. During Phase I, the focus for I MEF was the 3d Marine Aircraft Wing's support of the D-Day air tasking order (ATO). Objectives were to validate the air tasking order while using the Airborne Command and Control Center (ABCCC) on board a Lockheed EC-130E Hercules aircraft. This included exercising the interface with the Marine Air Command and Control System (MACCS) and its Direct Air Support Center (DASC) which coordinated all offensive air operations within the MarCent area of operations.

Phase II involved amphibious operations for the purpose of testing fire support coordination "deconfliction" procedures within the amphibious objective area and MarCent sectors during the assault. At the same time, MarCent's ability to provide air support to NavCent during pre-assault and amphibious assault operations was evaluated. Unfortunately, Vice Admiral Mauz was forced to cancel most of the amphibious portions of the exercise for safety reasons because of high seas.

Phase III concentrated on linkup and reinforcement operations. MarCent forces participated fully and the many training goals reflected both current and future operations. They included fire support coordination, particularly close air support procedures, combined training with Saudi forces, exercise of the MEF defense plan including rear area security, employment of surge air operations, mass casualty evacuation, linkup and passage of lines, Direct Air Support Center coordination with the Airborne Command and Control Center, and integration and "deconfliction" of combined arms in the defense.

During Phase III there was also a historic employment of Marine aviation as a maneuver element using a concentration of Bell AH-1W Sea Cobra attack helicopters dubbed Task Force Cunningham. From General Boomer's perspective, the employment of attack helicopters as a maneuver element was an experiment. The concept had been put forth by the assistant wing commander, Brigadier General Granville "Granny" R. Amos, who had led the Marine air assault at Grenada in 1983, and Lieutenant Colonel Michael M. Kurth, the commanding officer of Marine Light Helicopter Attack Squadron 369. Both had

*This location is not to be confused with the site of the Ras Al Ghar desalinization plants south of Jubayl.

been impressed by the U.S. Army's use of teams of laser-designating Bell OH-58 Kiowa scout and Hughes AH-64 Apache attack helicopters as independent maneuver elements against armored and mechanized forces in training. Airborne laser designation for the force's Hellfire anti-armor missiles was not yet a Marine Corps capability.

Although Task Force Cunningham demonstrated a new concept, it was difficult to move the unit around in the defense during the exercise, and even more so on the offense. The added command element complicated air tasking procedures as well, especially for the control of fixed wing aircraft. In the end, the consensus of commanders and staff was that the scheme limited the amount of air support that ground commanders could draw upon, and that it was better to keep helicopter assets in general support for more flexibility. On the other hand, Kurth was later inspired to place ground laser designation gear aboard some of 3d Marine Aircraft Wing's Bell UH-1N Huey helicopters to give his Hellfire-equipped Sea Cobras added capability.¹⁸

Phase IV was primarily NavCent cross training and Phase V was a critique and discussion of lessons learned. Imminent Thunder's main issues centered on air and communications issues. In the joint air control arena, there was a need for closer coordination and refinement of aircraft control and use. Some of these lessons would not be fully appreciated until after the commencement of hostilities two months later.

Imminent Thunder also revealed the difficult and complex state of communications. As fortune would have it, 1990 was a transition year for Marine Corps communications. For I MEF's chief communicator, Colonel Robert G. Hill, the assistant chief of staff G-6 for communications and computers, the exercise, and indeed the entire Gulf operation, was a constant scramble to balance scarce equipment against the needs of a force spread far beyond the distances specified in doctrine. For example, although computer-compatible, high-speed digital switching equipment was replacing older analog switching gear, both types were still in service. This complicated the interface or "connectivity" of the two systems both internally and with the outside. Within the force, there was great reliance on voice communications conducted via venerable workhorse high (HF) and very high frequency (VHF) radio. High frequency suffered from its traditional problems of fading and noise while VHF was limited to line-of-site ranges. Digital secure voice telephones (DSVT-68) were in use, but demand exceeded supplies. Some of Hill's enterprising subordinates partially made up the shortfall by stripping secure executive telephones, General Electric STU IIIs, from offices in the U.S. and wiring them into the Saudi international telephone system. The clarity of this secure secondary network was actually better than the primary military Autovon link.

The exercise also proved the worth of the latest technology. The linkup of computers through local and wide area networks, man-pack AN/LST-5 satellite communication (SatCom), and encrypted facsimile (secure FAX) all functioned well. To solve the problem of navigating on a featureless desert, the hand-held Hughes Position Locating and Reporting System (PLRS) gave users a precise

location. The set also transmitted their position and messages back to the division command post, as long as their antenna was within line-of-sight of a master or repeater station. To supplement PLRS, the force acquired a batch of 128 Trimpack Global Positioning System (GPS) AN/PSN-10(V) navigation receivers. These small, 4.2-pound commercial devices used the course acquisition signals from constellations of navigation satellites to locate the user within 25 meters. To boost intratheater communications, CentCom assigned six super-high-frequency, digital, multi-channel TRC-170 teams from the U.S. Army Europe's 11th Air Defense Signals Battalion.

Even so, during Imminent Thunder the lack of full coordination of communication requirements and frequency assignments led to crossed channels and at times prevented communication between some units and organizations. While the coordination problems could, and would be, ironed out, it was clear to General Boomer and Colonel Hill that the limitations of communication equipment were a major challenge for the expanded force.¹⁹

Host Nation Cultural Issues

As the Saudis adjusted to the presence of Marines in the Eastern Province and Jubayl, the 3d Civil Affairs Group, soon to be reinforced by the Army Reserve's 403d Civil Affairs group from Syracuse, New York, stepped up contacts with government, business, and law enforcement officials. The group was able to reduce one potentially lethal danger to the force during missile or air attack by convincing manufacturers to limit the manufacture and storage of hazardous chemicals like chlorine and anhydrous ammonia in the industrial city of Jubayl. The group also made plans with ArCent's XVIII Airborne Corps for the handling of up to 120,000 civilians who might be displaced from the northern part of the Eastern Province.

In general, relations with the host nation steadily improved as time passed. Marines at all levels seemed genuinely respectful of the rigorous tenets of Islamic culture whenever they met Muslims.* As an example, the 215th Marine Corps birthday was celebrated on 10 November, but without the traditional toasts. Strict no-drinking, no-liberty policies no doubt helped relations, but the isolation of most Marines in remote forward areas or in camps was also a factor. A lack of diversions underscored the situation. There was no television for most Marines and few newspapers. To provide a modicum of relief, the command opened a recreation center with a pool, snack bar, and weight-lifting equipment donated by Mr. Arnold Schwarzenegger, a popular film actor and

*Islam, meaning "surrender to God's will," is one of the world's great religions. Its sacred scripture is the Koran (Quran) which was first revealed by the Prophet Mohammed (ca. 570-632). Muslims believe in one God, in angels, in the revealed books, in the prophets, and in a Day of Judgment. Islam has obligatory duties known as the Five Pillars: the profession of faith, praying five times daily, paying of alms (*zakat*), fasting at certain times, and pilgrimage to Mecca (*hajj*). Islam is a total way of life and a body of religious law, the *shariah*, governs all conduct. In Saudi Arabia *shariah* is the basis for civil law.

world-class body builder, in one of the Jubayl Camps on 4 November. It was used by slightly over 1,000 Marine and British patrons a day until the force moved north for the offensive. Many American families in the expatriate housing compounds at Jubayl and Ras Tannurah also opened their homes to Marine troops for a shower and dinner in "Operation Scrub and Grub." A lucky few got to go on board a cruise ship, the *Gulf Princess*, docked at Bahrain. For most Marines, however, an occasional pick-up ball game or video movie was the extent of recreation in Saudi Arabia.

Perhaps the most difficult area of Saudi-U.S. relations was the clash of driving cultures and resulting traffic accidents. The Saudi road network along the coast was excellent, but Marines were frightened by the fatalistic habits of the local drivers, some of whom were unlicensed and inexperienced. Marines saw numerous examples of speeding and passing two abreast on two lane roads. Inevitably, there were tragic accidents that resulted in the deaths of Saudis and Marines.

The only formal protest ever made about Marine conduct developed as a result of a Cable News Network broadcast. Although it was illegal to receive the network in the kingdom, the Eastern Province Area Commander raised his concern to Lieutenant General Boomer of possible Iraqi propagandist exploitation of one of its broadcasts. A clip showed a touch football game, lightheartedly named the "Scud Bowl," between Marine and Navy females at an enclosed Marine area. The players wore typical American physical recreation clothing, shorts and T-shirts, and were being observed by male Marines. By contrast, Saudi law and custom required that women appear in public clad in head-to-foot attire accompanied by a male family member.

Logistics: the Birth of 'Saudi Motors'

Colonel Raymond A. List was General Boomer's assistant chief of staff for logistics with 30 years of service as an artillery, communications, and logistics officer. As the force began its expansion, one of List's greatest concerns was overland transportation. Doctrinally, the Marine Corps planned for moving support no more than about 50-80 kilometers from a beachhead port. Faced with double and triple these distances, and this was only the beginning, List and Brigadier General Brabham, commander of the 1st Force Service Support Group, found themselves with an acute shortage of "line haul" surface transport. To make matters worse, the mileage being put on tactical vehicles was rapidly increasing. They now resorted to a series of practical if somewhat unconventional actions to solve the problem.

The most orthodox form of help came from the CentCom itself. The assistant chief of staff for logistics, Lieutenant General William "Gus" Pagonis, USA, directed ArCent to supply MarCent with the first of an eventual total of 246 trucks, mainly 5,000-gallon tankers. Next, List appointed the I MEF Supply Officer, Lieutenant Colonel Timothy "Trucks" M. Taylor, as the force's truck "czar." Taylor began leasing as many civilian trucks as he could find.

As reinforcements began to flow in and displace northwards, virtually every truck in the kingdom was thrown into some kind of use regardless of its age or mechanical condition. By February, Taylor had managed to obtain 1,414 assorted trucks, although at any given time only 30-50 percent of these were operational. While most were tractor-trailer combinations, there were also some 50 colorfully decorated 10-ton lorries which the Marines dubbed "circus trucks." To transport unit personnel, the Saudi government commandeered on behalf of the force the first of 214 city and interurban buses belonging to the Saudi Public Transport Corporation. To minimize wear and tear on tactical vehicles, 105 rental cars were eventually put in service in the rear areas. As part of the allied effort, the governments of Japan and Germany also donated a number of four-wheel-drive passenger vehicles in the form of Toyota Landcruisers, Mitsubishi's, and Jeep Cherokees, some of which would see service in combat. The MarCent share was 465 and I MEF received its first allotments of these in November. The whole civilian vehicle operation itself was generically termed "Saudi Motors." Fortunately, fuel supplies were good. There were plentiful supplies of locally refined kerosene-based Jet A1 fuel, normally used in commercial airliners, which powered aircraft and vehicles alike.²⁰

Another logistics issue arising during the buildup was ammunition. To speed in-country stockpiling during November, ammunition was off-loaded from four ships including three vessels assigned in support of the 4th Marine Expeditionary Brigade. General Schwarzkopf's established goal was 60 days of ammunition for offensive operations. By 22 November, the force had attained 30 days of ammunition. To maintain flexibility for future operations, the practice of ammunition container "unstuffing," the breaking down of loads, ceased. To manage competing requests for ammunition, Colonel List established a single point of contact in the office of the I MEF ammunition officer. Finally, additional forward ammunition storage points were built by SeaBees in the northern MarCent area to sustain future offensive operations. Each was intended to provide Marine forces with ten days of ammunition.

Among other duties, the I MEF comptroller, Colonel Robert W. Hansen, oversaw the complicated tasks of leasing of vehicles and facilities. Nothing in his training or background prepared him for the methods of doing business in the Middle East. For a start, Hansen felt that Saudi businessmen did not really seem to understand the concept of leasing equipment. Instead, they preferred to buy items with a single cash payment. Marine Corps regulations prohibited the purchase of major items of equipment with Operations and Maintenance funds, and the duration of the force's stay in-country could not be properly estimated. Initially, there were few alternatives to expensive leases whereby the entire cost of items, principally vehicles, were amortized over rather short terms of 90 to 180 days. Hansen soon brought over contracting officers who initiated competitive bidding which greatly reduced leasing costs.

On 1 November 1990, the Government of Saudi Arabia assumed all financial obligations incurred by MarCent for in-country facilities, fuel, food, domestic transportation, and water. Further, the Saudis directly reimbursed the U.S. Treasury the \$10-12 million spent in October in these areas, mainly for leases



Ships of Maritime Pre-Positioning Squadron 2 unload at the Commercial Port of Jubayl in late November 1990. The 1st Force Service Support Group operated the port during the campaign. All ships of the Maritime Pre-Positioning Force were named after Marine holders of the Medal of Honor. In the foreground is MV 1stLt Alex Bonnyman (T-AK 3003). The MPF ships invariably used their own cranes to unload; the port's crane operators had all been sent down to the port at Damman to offload U.S. Army shipping.

of facilities. While Hansen welcomed relief from these burdens, several issues arose due to the transition. Procurement actions and payment schedules from the Saudi government were unclear, which caused difficulties for some contractors. Moreover, because of the rapid buildup, scarcities of supplies and materials of all sorts arose as the inventories of local sources diminished.

A Presidential Visit

Just before the arrival of I MEF's reinforcements, Lieutenant General Boomer and his Marines hosted the President of the United States and Mrs. George Bush during a Thanksgiving Day visit on 22 November 1990. General Boomer escorted the couple to the 1st Marine Division forward command post where the President made a speech reiterating his commitment to defend Saudi Arabia and remove Iraqi forces from Kuwait. The presidential party then dined there with individual troops of the force. To the delight of Marines about her at the austere site, Mrs. Bush took her meal seated on a pile of sandbags.

Reinforcements Arrive

On 10 December 1990, the main bodies of I MEF's reinforcement began arriving at Jubayl Naval Air Facility at the rate of about 1,000 troops per day. They flew in via aircraft of the U.S. Civil Reserve Air Fleet, the Military Airlift Command, and other chartered transports. Also arriving at Jubayl were British reinforcements, many of whom came on Soviet Aeroflot Airlines charters. More than one Marine noted the heretofore unthinkable sight of British troops disembarking from Soviet aircraft at a Marine base in Saudi Arabia. On 13 December, Maritime Pre-Positioning Squadron 1 docked at the Commercial Port of Jubayl carrying equipment for another Marine Expeditionary Brigade. To prevent backlog at the port, Marine, British, and ArCent units used a streamline plan developed by 1st Force Service Support Group to efficiently move their equipment directly to the field. By 15 January 1991, all of the reinforcement personnel and their equipment were in-theater.

The force's second maneuver element was the 2d Marine Division from Marine Corps Base Camp Lejeune, North Carolina, under the command of Major General William M. Keys. A bluff infantryman with a bulldog look, Keys had commanded a company, battalion, and regiment over a 30-year career. He held the nation's second and third highest awards for gallantry, the Navy Cross and Silver Star Medal, respectively. General Keys temporarily established his command post at a workers' camp on the outskirts of Jubayl that had previously been used by the 1st Marine Division. By 28 December units of the division had deployed to the "Triangle," a 600-square-kilometer area north of Abu Hadriyah and An Nuayriyah.

At the same time, most of the East-Coast-based 2d Marine Aircraft Wing arrived in-theater to reinforce Major General Moore's 3d Marine Aircraft Wing. The wing now had 32 aircraft squadrons and was nearly as large as the 1st Marine Aircraft Wing "superwing" of Vietnam of the 1966-70 era.

To accommodate his offensive scheme of maneuver, General Boomer organized combat service support into task organizations at the force level. The 1st Force Service Support Group commanded by General Brabham assumed the general support role for the force from port to combat service support area. The newly arrived 2d Force Service Support Group under command of Brigadier General Charles C. Krulak was organized as the Direct Support Command (DSC). This command was responsible for direct support of each division and forward aviation unit from the combat service support area to the battlefield. To meet the requirements of each mission, there was a certain amount of asset exchange; for example, the DSC swapped much of its line haul capability with 1st FSSG for its combat engineer assets which would be needed for breaching and supply route preparation.

The 1st Surveillance, Reconnaissance, and Intelligence Group also received reinforcements from the 2d SRIG from Camp Lejeune and the Reserve. For the first time in its history, a major Marine force had non-U.S. military corps-sized units on both its flanks. Providing the Arab allies with fire control and support-



Col John A. Woodhead III, Chief of Staff, 2d Force Service Support Group, left, and BGen Charles C. Krulak, Commanding General, Direct Support Command

ing arms liaison teams was the mission of the 1st Air and Naval Gunfire Liaison Company (ANGLICO), commanded by Lieutenant Colonel William C. Grubb, Jr. Most teams went to the Joint Forces Command, East on the force's right flank under command of Major General Sultan Adi (Al-Mutairi). Reinforcing the company were five teams from the Reserve 3d Air and Naval Gunfire Liaison Company based at Naval Base Long Beach, California.

Another of the SRIG units was the 1st Radio Battalion under command of Lieutenant Colonel Thomas J. Flaherty. It now contained nearly all of the radio combat assets of the Marine Corps. In the campaign ahead, the battalion would render invaluable if unheralded service. Finally, all of the analysts of the various SRIG units, plus individuals brought from elsewhere, joined the force's

intelligence section, now under Colonel Forest L. Lucy, to help develop the essential elements of information required for the intelligence preparation of the battlefield.

General Schwarzkopf's original strategy placed the British 1st Armour Division under the tactical control of General Boomer as a third maneuver element. This heavy British force was to constitute more than a third of MarCent's combat power, particularly in main battle tanks and artillery. As noted earlier, the integration of the British 7th Armour Brigade with 1st Marine Division had gone exceedingly well. It was therefore a disappointment to General Boomer and the staff when General Schwarzkopf notified him on 17 December that CentCom was withdrawing the British division from MarCent control and placing it with the main Central Command attack. The transfer of British forces was completed in stages by 10 January.

To partially compensate for the transfer of the British division, General Schwarzkopf ordered the 1st Brigade of the U.S. 2d Armored Division to MarCent on 10 January. The soldiers of "Tiger" Brigade, commanded by Colonel John B. Sylvester, USA, had trained together in a desert environment for about two years and brought a wealth of night vision equipment and experience as well. However, the brigade had significantly less combat power than the British forces; 116 General Dynamics M1A1 Abrams main battle tanks replaced approximately 170 British Challenger tanks and 24 M109 self-propelled 155mm guns replaced 72 British 155mm guns. Both the M1A1 and M109 were essentially similar to the Marine models. The Abrams tank featured 120mm smooth-bore guns and computerized sight and thermal target imaging systems. Even so, given this smaller force, General Boomer had to reduce I MEF to two reinforced division maneuver elements. He left the issue of an operational reserve in abeyance for the moment. Boomer placed the Tiger Brigade with the 2d Marine Division which would conduct MarCent's main attack. This reinforcement increased that unit's total of tanks to about 257; thus, General Keys commanded the heaviest Marine division ever to take the field.

Several logistical complications came with the transfer. Whereas the British forces had been essentially self-supporting, apart from food, fuel, and water, the Tiger Brigade had no similar logistic support. Neither could the brigade bring with it the equivalent of a third of a division's communications and intelligence assets since these could not be task organized. Mitigating the situation was the commonality of Tiger Brigade's main weapons systems with those of the 2d Marine Division. The issues were pragmatically resolved at a series of conferences where it was decided that ArCent would "cross-support" Tiger Brigade in clothing, organizational equipment, and ammunition, while MarCent would provide food, fuel, personal items, and general medical support. The Marines also supplied all repair parts and components except for Army-unique items.

These communications and logistics issues led to a dispute over the command and control of the brigade, however. General Schwarzkopf proposed in late December that the brigade be placed under Lieutenant General Boomer's operational control, but be supported by ArCent. As this was being discussed



MajGen William M. Keys, left, commanding general of the 2d Marine Division, confers with Col John B. Sylvester, U.S. Army, commander of 1st Brigade, 2d Armored Division. The "Tiger Brigade" reinforced the Division and seized the vital road intersection chokepoint above Al Jahra on the evening of 26 November 1991. It was not the first time units of the two divisions had fought together; 73 years earlier, the 6th Marines had reinforced the Army's 2d Division in France during World War I.

by the CentCom and MarCent staffs, Lieutenant General Yeosock, the commander for U.S. Army Forces Central Command, became concerned that MarCent might violate Tiger Brigade's unit integrity. General Yeosock therefore requested that MarCent's control be tactical rather than operational. Although these concerns were misplaced, General Schwarzkopf eventually resolved the issue by placing the brigade under General Boomer's operational control.

The Beginning of Offensive Planning

The force continued in its defensive mission during the reinforcement period; i.e., the protection of the critical port and oil facilities of Jubayl and Bahrain. With offensive operations nearing certainty, General Schwarzkopf ordered MarCent to be prepared to transfer defense of its sector to Saudi-controlled forces if required. On 19 December, the force received General Schwarzkopf's written concept for offensive operations. Colonel James D. Majchrzak's battle staff planning group had stayed up with the CentCom planners, and they found that it contained no surprises. The MarCent planning group had been working

all along on the premise that I MEF would conduct a supporting attack in coordination with U.S. Central Command and the Arab Joint Forces/Theater of Operations forces." The code name of the operation to eject Iraqi forces from Kuwait was "Desert Storm."²¹

In its initial version, the force's plan involved a link-up with naval amphibious forces after it breached the Iraqi defenses in southeast Kuwait. To develop and coordinate these aspects, on 11 December and again on 3 January 1990, Lieutenant General Boomer met with Vice Admiral Stanley R. Arthur, who succeeded Vice Admiral Mauz as Commander, U.S. Naval Forces Central Command, and Major General Harry Jenkins, commanding general of 4th Marine Expeditionary Brigade.

Throughout the campaign, General Boomer met with his principal commanders weekly to develop and test out his concepts and plans in an informal, give-and-take atmosphere. At the meeting on 15 December, the generals discussed the various aspects of the draft plan prior to the election of a course of action. Each officer was acutely aware that Marine forces would be attacking into the densest concentrations and most heavily obstructive of the Iraqi defenses. As he had all along, General Boomer made it clear that his overriding concern was to prevail in the assault and liberation of Kuwait at the minimum cost of Marine casualties. The Center for Naval Analyses used a casualty prediction model (PRECAS) to estimate that a seven-day ground campaign would result in a total of 9,667 direct combat casualties and 10,552 overall.²² In the face of these statistics, General Boomer constantly sought to improve his scheme of maneuver. His initial plan was just that; it was liable to be changed at any time to meet his goal of minimizing casualties. General Boomer enjoyed the confidence of his operational commander who shared similar concerns. When the plan was subsequently changed not once but twice, General Schwarzkopf gave his full support. On the night of 31 December, the battle staff planning group completed Operation Plan Desert Storm for the commanding general's signature.

Warfighting and the Force

In the course of developing his plans for the offensive, Lieutenant General Boomer espoused a philosophy of warfighting known as maneuver warfare. It succeeded the more traditional form of attrition warfare whereby opposing forces pursued "victory through the cumulative destruction of the enemy's material assets by firepower and technology," often at the expense of large numbers of casualties.²³ Attrition warfare's other features included pitting strength against strength, massed and accurate fires, ponderous movement, and centralized

²¹There was never much standardization in references to the Arab allies. They were known in operations plans as Joint Forces/Theater of Operations, but this ponderous designation was usually supplanted by terms like Coalition Forces, Pan Arab Forces, multinational forces, or by their various commands, such as the Joint Forces Command-East (JFC-E).

control with an emphasis on procedures and control. General Boomer, all of his major subordinate commanders, and their principal staff officers had served in combat in Vietnam under that system.

As attrition warfare was superseded in the 1980s, there was much discussion within the Marine Corps as to what actually constituted maneuver warfare. Nonetheless, there was general agreement that its characteristics included attacking weak points by strength, a high tempo of operations, and decentralized control with the object "to shatter the enemy's cohesion, organization, command and psychological balance."²⁴ Further, maneuver warfare required a higher level of military judgment and was riskier than attrition warfare.

In the forthcoming campaign, General Boomer sought to shorten his own force's cycle of observation, orientation, decision, and action, the "OODA loop," to less than that of the Iraqis. The decision making vehicle for this was intelligence preparation of the battlefield. This system provided an easily grasped series of milestone decisions as the battle progressed. In addition, General Boomer wanted to deceive and confound the enemy's command and control system so that his opponents would not be able to form an accurate picture of what was happening on the battlefield. Accordingly, Boomer ordered the enemy's command and control nodes to be struck by air and electronically spooked, before and during the attack. By assaulting the enemy at his weakest points, General Boomer hoped to minimize his own casualties. By rapidly getting his own forces behind the enemy's first lines of defense, he hoped to create the conditions for making surrender or capture appear inevitable to the Iraqis. While he could not estimate with any accuracy the will of the enemy to fight, he would do all that he could to demonstrate to the enemy the futility of doing so. As he put it to his command element nine days before the ground campaign: "We will go quickly, we will go violently."²⁵

To accomplish this, General Boomer directed that every commander down to the lowest level understand exactly what his intent and objectives were. Each commander on the battlefield received "mission-type orders" that empowered him to make the necessary decisions to accomplish his mission. If unforeseen circumstances arose, such as a sudden opportunity or a counterattack, each commander was to deal with them immediately rather than buck a decision up the chain of command over tenuous means of communication. If necessary, commanders could even cross the boundary line of an adjacent unit or conflict with a supporting arm.

Paradoxically, it might seem that General Boomer's concept required that he give up some of his own discretion or power. In the fast-moving campaign he envisioned, this was inevitable. No command and control system then existed that could paint an instantaneous and accurate picture of what was happening on a rapidly changing battlefield. However, he had confidence in the good judgment of his commanders, just as General Schwarzkopf had in his own. As will be seen, General Boomer also exercised his own judgments and decisions that affected the conduct of the campaign.

The First Plan

On 1 January 1991, Lieutenant General Boomer signed USMarCent Operation Plan Desert Storm. In consonance with General Schwarzkopf's plan for Desert Storm, the I MEF plan consisted of four phases. The first three phases were a combined air campaign that primarily involved the 3d Marine Aircraft Wing, which received its theater air tasking orders from the Joint Force Air Component Commander. The air campaign included the striking of targets selected by MarCent in its assigned future area of operations in Kuwait. During this period, I MEF ground combat and combat service support elements were to move into forward assembly areas. The four phases of Operation Desert Storm were:

1. Phase I, a strategic air campaign to attain air supremacy, attack Iraq's warmaking capability with missiles and aircraft ordnance, cut its supply lines, and destroy the Republican Guard Forces Command. This phase was expected to last three to six days.
2. Phase II, the attainment of air supremacy in the Kuwait Theater; i.e., the suppression of the enemy's integrated air defense system sufficiently to permit tactical air and attack helicopter operations. This was planned to take two days.
3. Phase III, preparation of the battlefield to reduce the combat effectiveness of the enemy in the Kuwait Theater of Operations. The goal was to reduce tanks, artillery, tracked vehicles, and infantry in the breach area by 50 percent and reduce Frog missiles and multiple rocket launchers by 100 percent. This was to last eight days. The duration of each phase was notional, and General Boomer was informed on a "close-hold" basis that the air campaign would last at least 30 days before commencement of any ground campaign.
4. Phase IV, the ground offensive campaign. General Boomer's initial concept operations for the liberation of Kuwait comprised four stages: penetration, exploitation, pursuit, and consolidation.
 - a. Stage A was to be a rapid penetration of forward Iraqi defenses by the 1st Marine Division between the Al Wafrah Oilfield and the coastline, which was to hold open the shoulders of the breach while assisting forward passage of the 2d Marine Division.

b. In Stage B, 2d Marine Division was to pass through 1st Marine Division and effect a link-up with two brigades of Marines of a NavCent landing force whose first objective was to be the Kuwaiti port of Ash Shuaybah.

c. In Stage C, both divisions were to destroy Iraqi forces in-zone and seize two I MEF objectives: the area surrounding the Al Jahra main supply route intersections, plus another blocking position about 10 miles southwest of Al Jahra.

d. In Stage D, Marine forces were to prevent Iraqi withdrawal from southeastern Kuwait and to be prepared to assist forward passage of Arab forces to take Kuwait City.²⁶

The decision in favor a single-division breach was because of the limited engineering equipment available as well as the brief time available for 2d Marine Division to conduct training. To resolve the breaching gear issue, the Marine Corps Research, Acquisition, and Development Command at Quantico actively pursued additional breaching equipment but was frustrated by the long lead times required. As it turned out, by mid-February, enough breaching equipment was in-theater to permit a second set of breaches.

Forming a precise picture of the obstacle belts was a difficult task as General Boomer lacked detailed imagery and first-hand reconnaissance. The intelligence community believed that the barriers contained antipersonnel, antiarmor, and possibly chemical mines surrounded by barbed wire. Imagery revealed that substantial amounts of oilfield piping had been placed in trenches in front of parts of the first barrier. These were rigged to sources of crude oil that could be ignited to create a flaming barrier.

The techniques of breaching obstacles ranged from the conventional to untried schemes. Each received great scrutiny. In November, Marines tested aerial fuel/air explosive weapons (FAE) against mines on a nearby range. Unfortunately the overpressures generated were not high enough to reliably detonate mines and had little effect on wire obstacles. During the air campaign, U.S. Air Force Boeing B-52 Stratofortress heavy bombers made several strikes against sections of the obstacle belts, but they had little effect. Thus, aircraft delivered means would not be a major breaching aid.

This left a combination of single and triple-segment line charges flung across the belts by rockets, chain flails attached to armored Caterpillar D7 bulldozers, and track-width mine plows attached to M60A1 tanks and D7 bulldozers. In addition, there was the traditional and hazardous technique of manually probing and disarming mines. The line charges experienced a number of fuse failures

during testing. After taking steps to improve fuse reliability, Marine combat engineers retained them for use in the assault. However, the engineers were not able to adequately test the chain flail bulldozers which they nicknamed "Ninja Dozers." Every Marine understood the inherent dangers of the obstacle belts. While they believed they could handle mines, barbed wire, and even fiery trenches, the time required to do so meant that the assaulting forces would be vulnerable to the enemy's many indirect fire weapons.²⁷

Force ratios were another worry. Conventional planning normally required at least a 3:1 ratio of attackers to defenders to assure success. In a preliminary I MEF analysis made on 23 December, MarCent and NavCent amphibious forces would not attain parity with the Iraqis except in anti-tank weapons. The relative strengths of MarCent forces, including brigades afloat, compared to estimated Iraqi forces in both southeastern Kuwait and in the MarCent sector were:

Item	MarCent	SE Kuwait	MarCent Area
Personnel	85,000	202,355 (1: 2.4)	98,755 (1: 1.2)
Tanks	389	1,596 (1: 4.1)	1,137 (1: 2.9)
Artillery	264	1,206 (1: 4.6)	648 (1: 2.5)
APC	969	1,309 (1: 1.4)	922 (1: 1.1)
Antitank	725	324 (2.2: 1)	108 (6.7: 1)

For I MEF's assault to succeed, it was imperative that the force achieve overwhelming ratios locally at the breach points. At the same time, the force had to prevent Iraqi reinforcements from closing. One key to these requirements was the use of deception to prevent the Iraqi commanders from forming an accurate picture of the situation on the battlefield.²⁸

Deception and Psychological Warfare

Deception planning began in mid-December when the force received a draft of the CentCom deception plan. General Schwarzkopf wanted to deceive Iraqi forces as to his intentions and the actual location and identities of his units and their sectors. Colonel Charles M. Lohman, the force operations officer, formed a planning cell under Lieutenant Colonel Franklin D. Lane that included representatives of the principal staff, major subordinate commands, the psychological operations support element, the electronic warfare section, and the 1st Radio Battalion. The cell based its planning on several assumptions: that real assets would be used, that the enemy would be able to interpret the deception, that the main deception effort would have to occur prior to the first stage of the ground campaign, that there would be no more than a 24-hour advance notice of that stage, and that human resources and electronic intelligence were the main and secondary enemy collection capability. By 23 December, the cell had developed three deception courses of action: an attack along the Iraqi III and IV Corps boundary near Al Manaqish to seize objectives

near Al Jahra, an administrative backload of forces at Jubayl or Mishab for shore-to-shore operations on the southern Kuwait coast, a deliberate defense in-zone to anchor CentCom's main attack to the west; i.e., a hammer and anvil concept. General Boomer selected a combination of the first and third for further development.²⁹

The force's offensive planning also envisioned psychological operations. This need arose out of the desire to destabilize the Iraqi forces along the obstacle belts and to manage a civilian population, some of whom might be Palestinians who had allied themselves with the Iraqis. To accomplish this, on 5 January CentCom placed Element 9-1 of the U.S. Army's 8th Psychological Operations Task Force in general support of MarCent. The element commander, Major Thomas H. Gerblich, USA, had previously completed offensive planning in December and identified the need for additional assets to support MarCent operations. He formed 46 Army and 27 Marine personnel plus Kuwaiti linguists into 26 loudspeaker teams including one carried by helicopter. This represented about 40 per cent of the theater "PsyOps" assets. The MarCent share was the greatest, since the force would be attacking into the highest concentrations of enemy forces and into built-up areas. The teams deployed forward with the ground combat elements and used prerecorded tapes covering various situations as well as live broadcasts by Arabic linguists.

Moving to the Offense

On 5-6 January 1991, Lieutenant General Boomer moved his command post 166 road kilometers northwest. The new location of "MEF Main" was a few kilometers west of Aramco's Safaniyah (Ras As Saffiniyah) oil separation and water distillation plants on the coast, about 67 kilometers southeast of the Kuwait border. The site was a small workers' camp abandoned in 1984 and it required minimal preparation. Its placement on a slight rise favored line-of-sight communication. Certain staff functions including parts of G-1 and G-4, remained at Jubayl. Now for a brief time, the force headquarters was forward of its major subordinate commands.

The Jubayl command post at the "Police Station" became I Marine Expeditionary Force (Rear) under the command of Major General John Hopkins. To defend the sprawling Jubayl Vital Area and other key points from both conventional and terrorist attack, Boomer assigned the 24th Marines, the two-battalion Reserve regiment from Kansas City, which had just arrived from Camp Lejeune. Conventional doctrine called for rear area security to be drawn from supported units, and up to this point 1st Force Service Support Group had provided the troops for the mission. But now General Boomer wanted to dedicate that group's specialists solely to the tremendous task of shifting combat service support north for the offensive. The 24th Marines were a ready-made solution to the problem of providing security to many dispersed sites. Each of its companies was capable of independent duty and the companies were unusually cohesive, having trained together for years at local centers throughout

the mid-west. Colonel George E. Germann, the regimental commander, deployed units in platoon and company strength along a 200-mile chain of locations from Bahrain to Mishab, shifting them promptly as needs changed."

Major General Richard D. Hearney, who commanded the 2d Marine Aircraft Wing, most of which had just arrived in-theater, came to Safaniyah as the force Deputy Commanding General. Up to this time, General Boomer had not had the benefit of an aviator general officer on his staff. In Hearney, he not only had an experienced flyer--he had been one of the first Harrier pilots--but one with an extensive background in both aviation and ground command and control.

The commander of U.S. Marine Forces Central Command (Rear) remained at Riyadh and was responsible for direct relations with CentCom. Major General Norman E. Ehlert, also an aviator, succeeded Major General Pearson on 18 January.³⁰ Ehlert met daily with General Schwarzkopf and the CentCom to discuss strategy and issues. The arrangement suited General Schwarzkopf, who later remarked: "(W)e talked to each other so much I never made a single campaign decision that I didn't seek your [Pearson's and Ehlert's] views on . . . so I was very comfortable . . . that Walt (General Boomer) knew exactly how I planned to conduct the campaign" To coordinate amphibious planning, Major General John J. Sheehan assumed duties as Commander U.S. Marine Forces Central Command (Forward) on board Vice Admiral Arthur's flagship, USS *Blue Ridge* (LCC 19). As will be seen, Sheehan's publicized presence and provocative title later played a role in General Schwarzkopf's deception plan. Lastly, General Boomer redesignated force activities at Camp Pendleton, California as I MEF CONUS (Continental United States).

Both of the force's ground combat elements moved north in early January. General Myatt, newly "frocked"³¹ in the rank of major general, moved his 1st Marine Division command post from south of Manifah Bay westwards into the former ArCent area to positions 60 kilometers west of Mishab. General Keys

³⁰The initial dispositions of Col Germann's far-flung command were: Regimental Headquarters to the Rear Area Operations Center (RAOC) at the Commercial Port of Jubail. The 2d Bn (LtCol Johnson) deployed Co D to Ammunition Supply Point #1 west of Jubayl, Co E to the port at Mishab, and Co F to Safaniyah. Wpns Co and a provisional rifle company from H&S Co went to NAF Jubayl. The 3d Bn (LtCol Guwilliams) deployed H&S Co and Co I to the Ras Al Gahr desalinization plants, Co G to Shaikh Isa AB, Bahrain Co H to Kibrit (on 31Jan91), Co I to King Abdul Aziz NB, Jubayl, and Wpns Co to Camp Gray, Jubayl.

³¹MajGen Pearson's "temporary" assignment as ComUSMarCent (Rear) stretched over five months. Before he returned to resume charge of the Marine Corps Research, Acquisition, and Development Command at Quantico, he flew a number of combat air patrols over the northern Gulf which included one near engagement with Iraqi fighters near the Kuwait coast on 15 November. He also flew combat missions over Iraq on 17 January.

³²"Frocking" accorded an officer the honor and title of the next higher rank, but without its pay and allowances. This is often done if an officer was selected for promotion and serving in a billet for that rank when there was as yet no vacancy in that category on the Lineal List of Officers.

deployed the 2d Marine Division just to the northwest of them. Both divisions remained there until moving into their tactical assembly areas in mid-February. At the same time, General Moore moved his 3d Marine Aircraft Wing headquarters to NAF Jubayl. Moore also began displacing his two helicopter groups north, but not until going through some travail regarding airfields.

Even though the displacement of General Yeosock's ArCent units westward began in December, it was not completed for some time due to logistical constraints. A number of Army enclaves remained in the expanded MarCent area of operations near training areas and ranges. The main effect of this was to impinge on the ability of the 2d Marine Division to train. The last enclaves dissolved on 17 January.

Along with the generals there came a final influx of staff to flesh out the force headquarters staff. The first of these was Colonel Billy C. Steed, who arrived on 14 December. Steed cut short a tour as commanding officer of the 25th Marines at the personal request of his former commander, General Boomer. He was a ruddy-faced 34-year veteran with a Mississippi drawl who had attained the rare distinction of a battlefield commission in Vietnam as a sergeant. Boomer had valued his counsel in combat before and made Steed his assistant chief of staff for operations, G-3.

At Safaniyah, General Boomer instituted an evening operations briefing to supplement his morning staff meetings. The daily morning meetings began at 0800 with Boomer striding into the quonset-style briefing tent and giving his usual greeting: "Morning, folks, please sit down." Others present were his deputy, the principal and special staff members, liaison officers, senior staff, and the force's senior enlisted Marine, Sergeant Major Rafe J. Spencer. The group typically numbered 30 to 40 or more and was inclusive rather than exclusive. Contrary to a current trend of compartmentalizing and over-classifying information, Boomer wanted no pieces withheld from his staff that could help them in their duties. He also desired that the meetings help forge bonds within his staff which had at last reached its wartime strength.

Boomer's fastwitted and articulate chief of staff, Colonel Eric Hastings, conducted the meetings. Hastings was fully capable of either stimulating give-and-take exchanges among the staff or metaphorically yanking them up by their necks, depending on the situation. The unruffled and fluent senior watch officer of the combat operations center, Lieutenant Colonel Max A. Corley, invariably gave the current operations brief followed by principal and special staff reports. After this, Hastings offered the staff a final challenge: "Anymore Oh-by-the-ways?" and then turned it over to his commander. Lieutenant General Boomer talked in measured words that reflected his current state of mind and perspective. On occasion he could be sharp, but, mindful of the continual pressure on them all, more often he was solicitous. As mentioned earlier, General Boomer usually met at least once a week with his generals for frank discussions of issues affecting the command, particularly future operations. Out of meetings at Safaniyah over the next five weeks came fundamental decisions that changed the course of the force's campaign.