

Table: I MEF Logistics Support

Location/Supported Units	Supporting Units
Manifah Bay (FARP Foss)/1st MarDiv	CSSD-141
Abu Hadriyah & Cement Ridge/ 1st MarDiv	CSSD-111, CSSD-142 (FASP-1 & FASP-2)
Jubayl Naval Air Facility/MAG-16	MWSS-374, NMCB-5, CSSD-132
King Abdul Aziz Naval Air Station/ MAG-13 (Fwd)	MWSS-174, NMCB-4 Air Detachment, CSSD-132 (Annex)
Ras Al Ghar/MAG-16 & RCT-3 (Rear)	Det MWSS-174
Port of Jubayl & Industrial city/I MEF and 1st FSSG Headquarters and 1st MarDiv (Rear)	GSG-1, DSG-1, H & SG, COMCBPAC Foxtrot Delta CE, NMCB-40, and NMCB-4 (-)
Shaikh Isa/MAG-11, 3d MAW Headquarters	MWSS-373, CSSD-131, and NMCB-7

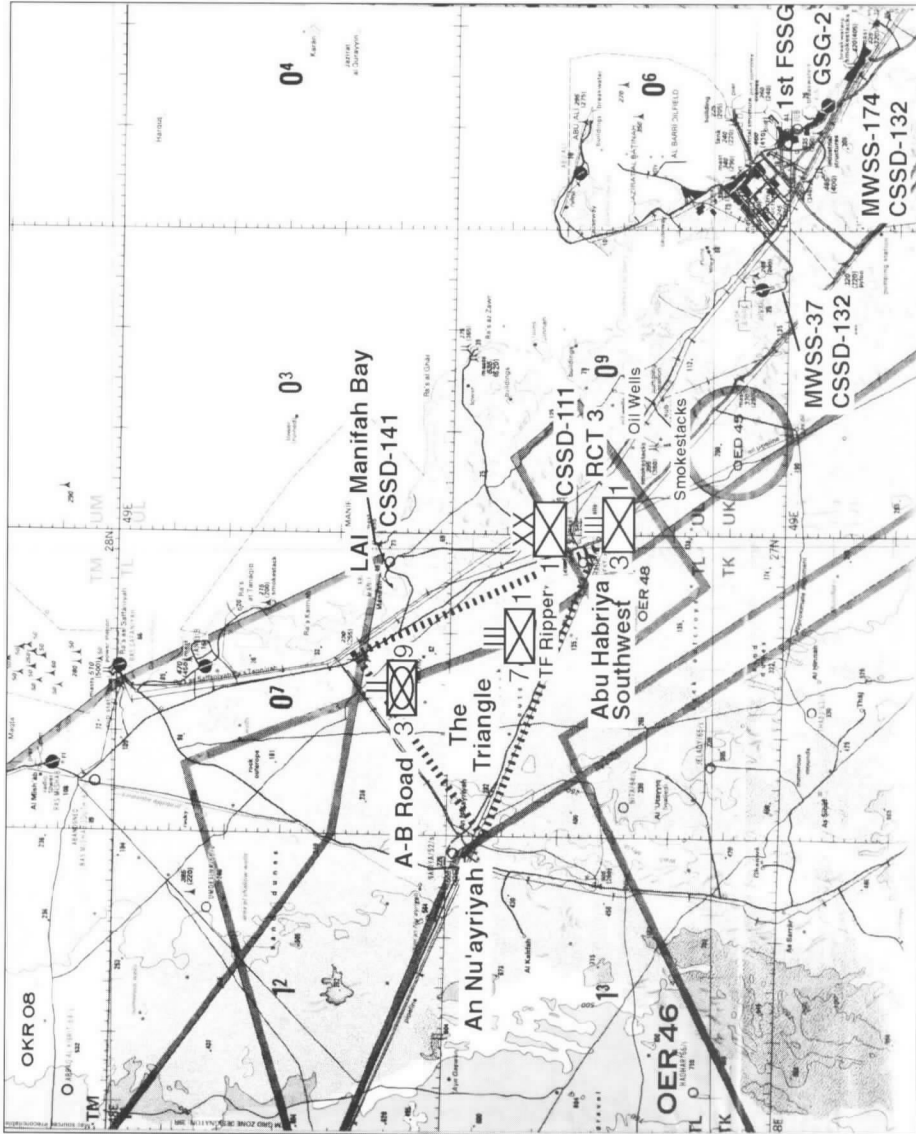
## Supporting the 1st Marine Division

*CSSDs were highly active in support of their forward deployed customers.*<sup>142</sup>

### *September: Supply Point Distribution*

During September, General Myatt organized the 1st Marine Division into two regimental combat teams, an artillery regiment, a screening force, and a mobile rapid-reaction force. RCT-7, redesignated as Task Force Ripper, moved 40 kilometers northwest of its August position at the Cement Factory Ridge and established defenses inside the Triangle. The headquarters of the 1st Marine Division, 11th Marines, and the 3d Amphibious Assault Battalion moved outside of the Triangle above the Abu Hadriyah intersection. South of the Triangle, RCT-3 set-up at the Cement Factory Ridge, prepared for helicopter operations, and guarded the coastal road below the Triangle. In the northeastern part of the Triangle, the 1st Light Armored Infantry Battalion, dubbed Task Force Shepherd, maintained its headquarters near the intersection of the coastal highway and the Manifah Bay road at the “Chicken Ranch” while its LAVs roamed north and west.<sup>143</sup> The mechanized 3d Battalion, 9th Marines, moved just below the northeast corner of the “Triangle” to serve as the division’s mobile rapid reaction force. Pundits called this battalion the “speed bump” in honor of its point position and presumed effect against an Iraqi attack. CSSD-141, located 20 kilometers east of the “speed bump” at Manifah Bay, supported I MEF’s northern forces.<sup>144</sup>

During the month of September CSSD-141, commanded by Captain Adrian W. Burke, grew to 208 Marines and sailors who provided supply point dis-



*1st MarDiv and 1st FSSG positions: September and October 1990*

tribution to 3,875 Marines of Task Force Shepherd; 3d Battalion, 9th Marines; 1st Reconnaissance Battalion; and a detachment of 3d MAW helicopters stationed at Manifah Bay. Additionally, CSSD-141 sustained force reconnaissance Marines and elements of the Naval Special Warfare Group located 70 kilometers north of Manifah Bay at the Port of Mishab.<sup>145</sup> Supply point distribution required that customers travel to the combat service support area to pickup supplies.<sup>146</sup> Delivery to the supported unit, or mobile resupply, was out of the question, since the CSSD lacked a motor transport capability until the last week of September.<sup>147\*</sup>

Burke's Marines and sailors provided fuel, repair parts, water, medical supplies, and MREs to its supported units. Eleven ROWPUs purified Persian Gulf water, which was stored in four 50,000-gallon bags for all units north of Jubayl Naval Air Facility, to include most division units supported by CSSD-111.<sup>148\*\*</sup> Captain Burke stocked 69 TOW and 32 Hellfire anti-armor missiles and provided security and logistics support for eight AH-1W tank-killing Super Cobras and their crews, four Bell AH-1 Hueys, and two Sikorski CH-46 Sea Knight medevac helicopters.<sup>149</sup> Helicopters parked on matting laid by both CSSD-141 and detachments from MWSS -174 and -374.<sup>150</sup> On 18 September, GSG-1 sent the CSSD a collecting and clearing company which provided resuscitative treatment, surgery, blood transfusions, and hospital recovery to its patients.<sup>151</sup> Navy Lieutenant Michael E. Eby led CSSD-141's medical detachment while Navy Captain John A. Ungersma supervised the Navy surgeons who ran a field hospital with one operating room and a ward of 40 cots.<sup>152</sup> Still the most northern Marine logistics unit in the Gulf region, CSSD-141 provided combat service support to I MEF's most forward units, while CSSD-111 sustained the main body of the division south of Manifah Bay.<sup>153</sup>

Lieutenant Colonel Richard L. Kelly began establishing CSSD-111 on 11 September near the Abu Hadriyah intersection of the Triangle. Close at hand were the headquarters of the 1st Marine Division, 11th Marines, and 3d Assault Amphibious Vehicle Battalion. Located north of CSSD-111 were Task Force Ripper, the 1st Tank Battalion, and two battalions of artillery. To shield CSSD-111 from enemy fire from the north, Kelly placed the CSSD behind a ridge line that ran from the southwest to the northeast.<sup>154</sup> To the south of CSSD-111 around the Cement Factory Ridge, RCT-3, the 1st Combat Engineer Battalion, and an artillery battalion set up positions. At the Cement Factory Ridge, Second Lieutenant David J. Eskelund commanded a small detachment of 50 Marines, called CSSD-111 (South), which remained at CSSD-72's old location and supported the division units.<sup>\*\*\*</sup> By the end of September, CSSD-111 with 419 logisticians, supported 5,410 Marines and sailors of the 1st Marine Division.<sup>155</sup>

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\*The doctrinally correct term for mobile resupply is unit distribution.(FMFM 4-1, p. 7-6).

\*\*CSSD-141 produced 4 million gallons of potable water between mid-September and December 1990. (Burke Comments).

\*\*\*In mid-October, CSSD-111 (South) deactivated and moved to Abu Hadriyah. (DSG-1, "Incorporation of Ammunition Company, Supply Detachment into Direct Support Group One," 6Oct90).

CSSD-111 used supply point distribution to provide MREs, repair parts, some construction materials, water, and fuel to the 1st Marine Division, as well as maintenance, helicopter support, vehicle recovery, and dental and medical services. CSSD-111 hauled water with both military and civilian trucks from Captain Burke's ROWPUs and the nearby Jubayl desalinization plant.<sup>156</sup> By the end of September, the CSSD stored up to 150,000 gallons of water and stocked 720,000 gallons of fuel.<sup>157</sup> On 21 September, GSG-1 delivered a supply block with 4,000 line items and 250 different kinds of secondary repairables. CSSD-111's new supply detachment, which was the supply detachment from CSSD-31 which arrived from Okinawa, managed the parts blocks.<sup>158</sup> The availability of repair parts helped the 1st Marine Division achieve an average monthly equipment readiness rate of 93 percent.<sup>159</sup> On 29 September, GSG-1 transferred a collecting and clearing company with two operating rooms and 64 cots to CSSD-111. On the last day of the month, Colonel Hampton sent Lieutenant Colonel Kelly a motor transport company giving CSSD-111 the ability to begin mobile resupply training with Task Force Ripper and RCT-3.<sup>160</sup>

Neither CSSD-111 nor CSSD-141 stored ammunition for the 1st Marine Division. GSG-1 supported the division until the Seabees established ammunition dumps and DSG-1 took over their operation. In early September, GSG-1 continued BSSG-7's push of two days of ammunition to the Cement Factory Ridge.<sup>161</sup> On 5 September, Seabees from NMCB -4, -5, and -40, together with engineers from GSG-1, began constructing Forward Ammunition Storage Point (FASP) 1, two kilometers from the coastal road near the Cement Factory Ridge. Navy and Marine Corps engineers constructed 540 ammunition modules and a system of

*1st Marine Division Marines work out with weights and relax at a recreational center in the Industrial City of Jubayl.*

Photo courtesy of LtGen James A. Brabham, Jr.



access roads. Each module was 32 feet wide by 70 feet long, surrounded on three sides by berms, and opened on the fourth side to an access road. A 10-foot-high security and blast berm surrounded the FASP. Upon completion of an ammunition module, GSG-1 ammunition specialists filled the cell with munitions from 546 containers brought in by truck convoys protected by MAG-16's Super Cobra helicopters. One hundred and forty ammunition technicians from GSG-1 operated FASP-1 which was the first of two ammunition supply points constructed near the Cement Factory Ridge.

On 29 September, NMCB-40 and GSG-1 engineers began scraping out FASP-2 from an abandoned quarry near Jabal Al Hadaruk, located 10 kilometers south of the Cement Factory Ridge. The Seabees used 350,000 yards of fill to build the perimeter and the ammunition storage modules and additionally constructed a helicopter pad and guard towers. The Seabees completed FASP-2 in November, but GSG-1 filled each module with ammunition as soon as it was built. The construction of FASPs -1 and -2, together with the deployment of CSSDs -111 and -141, gave the 1st Marine Division the wherewithal to counter any Iraqi forces bold enough to challenge the 3d MAW's aerial cover.<sup>162</sup>

Table: The 1st Marine Division's major weapons<sup>163</sup>

Weapon Category	Number (Type) Weapons
Artillery	68 M1 98 155mm Towed Howitzers 6 M109A3 155mm Towed Howitzers 6 M110A2 8" Self-Propelled Howitzers
Amphibious Assault Vehicles (LAVs)	212 AAVP7A1 (Personnel) 21 AAVC7A1 (Communications) 8 AAVR7A1 (Recovery)
Light Assault Vehicles (LAVs)	22 LAV-AT Antitank 60 LAV-25 (25mm Chain Gun) 10 LAV-L (Logistics) 10 LAV-M (Mortar) 8 LAV-CC (Communications) 5 LAV-R (Recovery)
Tank/Antitank	116 M60A1 Tank 7 M60 Tank with M9 Bulldozer Blade 11 M88A1 Tank Retriever 218 TOW Antitank missile launchers

### *October: Mobile Resupply*

During October, Central Command assigned the British 7th Armoured Brigade, more familiarly known as the "Desert Rats," to the 1st Marine Division which significantly increased the division's mobility and firepower. Brigadier General Patrick Cordingley commanded the brigade, which consisted of infantry, artillery, and engineer units, two tank battalions, and a reconnaissance squadron,

which were logistically supported by a brigade maintenance area.<sup>164</sup> General Myatt designated the British unit as the division's reserve and assigned it positions a few kilometers southwest of Jubayl Naval Air Facility along the coastal road.<sup>165</sup> The 1st FSSG helped to move the Desert Rats and gave them fuel, food, and water, until the British established their own supply lines.<sup>166</sup> With a strong ground defense in place and the likelihood of an Iraqi invasion receding, General Myatt rotated personnel from forward areas to camps in the Industrial City to rest, relax, and wash clothing, while DSG-1 remained in the field and expanded its support.\*

Table: The British 7th Armoured Brigade<sup>167</sup>

Unit Designation	Type/Size Unit
Queen's Royal Irish Hussars	Tank Battalion
Scots Dragoon Guards	Tank Battalion
Staffordshires	Infantry Battalion
40th Field Artillery	Artillery Battalion
21st Royal Engineers	Engineer Battalion
Queen's Dragoon Guards	Reconnaissance Squadron
Brigade Maintenance Area	Combat Service Support Detachment

During the month of October, Colonel Powell concentrated his efforts on improving support and consolidating his command. He remained at the port to campaign for the needs of the supported units and the CSSDs. His presence ensured that the 1st FSSG filled 94 percent of the support requests forwarded by DSG-1 during October. The DSG commander worked to gain control of personnel assignments by successfully urging the reinstatement of group special orders to transfer personnel within 1st FSSG commands and by establishing the use of DSG-1 orders to manage assignments within his command. The size of DSG-1 increased with the fleshing-out of CSSD-132 at Jubayl Naval Air Facility and the addition of CSSD-142.<sup>168</sup>

Control of ammunition for the 1st Marine Division became a problem which Colonel Powell worked to improve in early October. Ammunition technicians, who lacked forklifts to move ammunition and radios to talk to supported units, had implemented non-responsive peacetime paper-work-intensive requisition procedures at FASPs -1 and -2. The sole purpose of the FASPs, although under GSG-1's control, was to support the 1st Marine Division, which was

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\*The division's rotation policy was a sore point with many DSG-1 Marines, who remained in the field for the duration of the deployment. According to Maj Burke, "the CSSD's did not have the personnel to afford this luxury." (Burke comments).

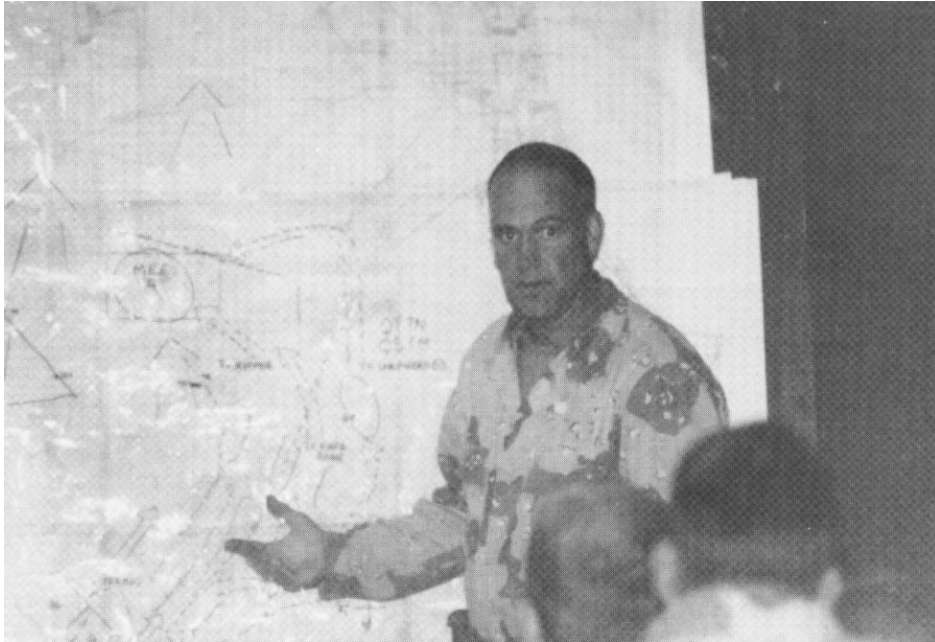


Photo courtesy of Col Alexander W. Powell

*Col Alexander W. Powell, Commanding Officer of BSSG-7 and DSG-1, briefs his plans.*

Colonel Powell's responsibility. To address these problems, Powell recommended and General Brabham approved the creation of CSSD-142 to operate the FASPs. On 17 October, Colonel Powell formed CSSD-142 by combining FASP-1 and FASP-2 under the command of First Lieutenant Nello E. Dachman, who immediately eliminated the onerous bureaucratic procedures while Colonel Powell obtained forklifts and radios for the new CSSD. Additionally, Powell asked the division to work with his CSSD commanders to identify unit munitions requirements. This effort resulted in CSSD-142 constructing helicopter-transportable emergency resupply blocks.\* After the creation of CSSD-142, division units could call for ammunition by radio and have their munitions quickly flown to them from FASP-2's helo-pad.<sup>169\*\*</sup>

At Jubayl Naval Air Facility, Colonel Powell expanded and extended CSSD-132's ability to support the 3d MAW and the 1st Marine Division. Captain Aidenbaum, the commanding officer of CSSD-132, received a landing support detachment from GSG-1, which gave DSG-1 the capability of delivering supplies by helicopter to the division. A further method of aerial resupply was added when Colonel Hampton transferred GSG-1's air delivery platoon to CSSD-132. On 17 October, the air-delivery Marines parachuted supplies to CSSD-141 for the first time. To improve support to the wing, on 19 October, CSSD-132 extended ser-

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\*The 3d Battalion, 9th Marines, and CSSD-141 collectively urged the creation of helicopter transportable ammunition packages. Both commands were the closest to the enemy and furthest from FASPs -1 and -2. (Burke comments)

\*\*To refine artillery ammunition resupply techniques, CSSD-111 reviewed each delivery with the battalions of the 11th Marines. (Powell comments).



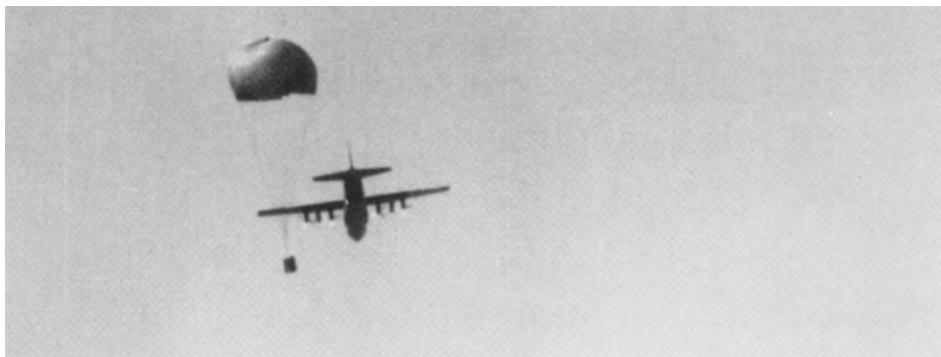


Photo courtesy of Maj Adrian W. Burke

*A Marine KC-130 Hercules cargo plane air-delivers supplies to CSSD-141 at Manifah Bay. The Air Delivery Platoon, CSSD-132, packed the parachute, and rigged the cargo for the drop.*

vices to King Abdul Aziz Naval Air Station by opening a satellite detachment. Although DSG-1 supported both the division and the wing, Colonel Powell increasingly focused on division operations, emphasizing responsiveness and tactical mobile resupply to the forward units.<sup>170</sup>

At Manifah Bay, CSSD-141, under Captain Burke, moved from supply point distribution to mobile resupply. Burke's landing support Marines conducted helicopter support team (HST) operations.\* His "Red Patch" Marines slung 500-gallon fuel pods under helicopters which flew them to refuel the far-ranging LAV's of Task Force Shepherd; practiced flying emergency resupply ammunition packages with the 3d Battalion, 9th Marines; rigged British vehicles for helo-lift; and trained with the 3d Marines for their helo-borne assault.<sup>171\*\*</sup> The new truck detachment received from GSG-1 at the end of September, allowed Captain Burke to begin night tactical resupply of the 3d Battalion, 9th Marines' Task Force Shepherd; and elements of RCT-3. Suffering from the lack of Global Prepositioning Systems (GPS) and night vision equipment, convoy leaders used maps, compasses, and intuition to drive their trucks by the dim glow of black-out lights to rendezvous points 30-40 kilometers from the CSSD. From there, a unit guide would lead the convoy to a supply point. Both the CSSD and the supported unit would set up perimeter security, prior to the unit moving through to obtain water, fuel, MREs, ammunition, and repair parts. Noise and light discipline were strictly maintained in order to practice the survival skills needed in combat. The resupply trucks were arranged in a line with fuel on one end and ammunition on the other. Refuelling was a problem because HMMWV's and 5-ton trucks had gas

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\*HST is a task organization formed and equipped in a landing zone to facilitate the landing and movement of the helicopter-borne troops, equipment, and supplies, and to evacuate selected casualties and prisoners of war. (FMFM 4-1 Combat Service Support).

\*\*Landing support Marines wear a distinctive red patch on the sides of their trousers at knee-level, and on their helmets for easy identification on a beach or in a landing zone. Accordingly, these Marines are commonly referred to as "Red Patchers." (Kelly comments).



tanks on different sides causing the CSSD either to reverse the flow of vehicles entering the refuelling area or to establish duplicate refuelling stations. In time, the Marines refined their procedures to refuel efficiently the LAVs, AAVs, HMMWVs, tanks, and 5-ton trucks.<sup>172</sup>

Near the bottom of the Triangle, CSSD-111 continued to support the main body of the 1st Marine Division and aggressively trained during the day and night. CSSD-111 improved its ability to provide maintenance contact teams, conduct tactical security operations, and defend against chemical and biological attacks. Like CSSD-141, Lieutenant Colonel Kelly trained the truck company, transferred from GSG-1 in September, to conduct mobile resupply with division units.<sup>173</sup> CSSD-111 obtained more efficiency from its truck fleet when it discovered an artesian well used by the local camel herders, six kilometers from Abu Hadriya. This discovery reduced the amount of water the motor transport detachment hauled from Manifah Bay and Jubayl and increased the availability of trucks to use for mobile resupply. In addition to supplying the 1st Marine Division, CSSD-111 gave water and fuel to U.S. Army units moving inland to defensive locations. The CSSD distributed 760,000 gallons of fuel to both Army and Marine units during October and established a positive long-term relation with the Army.<sup>174\*</sup> During the month, the unit's maintenance and supply operations helped keep the 1st Marine Division's equipment readiness rate at 96.3.<sup>175</sup> Finally, Lieutenant Colonel Kelly's 25 landing support Marines conducted helicopter support operations.<sup>176\*\*</sup>

### *General Support of the MEF*

*Logistics support for the MEF continues at a high tempo. Emphasis was placed on providing CSS to units forward at all costs.*<sup>177</sup>

Beginning in September and continuing into October, GSG-1 pushed hard to provide general support to a customer list consisting of I MEF, the U.S. Army, the British, the 4th MEB, and especially DSG-1. Colonel Hampton transferred personnel and equipment to DSG-1 and ensured that 77 percent of its requests were filled within 96 hours. GSG-1 shared the port with the U.S. Army and British Army and assisted the moves of both organizations to defensive positions. Colonel Hampton consolidated, improved, and extended supply, maintenance, medical, dental, engineer, landing support, and transportation services.<sup>178</sup>

### *Motor Transport*

From Jubayl, GSG-1's motor transport detachment hauled cargo, equipment, and passengers to the forward battle area and airfields, supported the British

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\*Additionally, CSSD-111 called for emergency helicopter services for the Army and allowed an Army military police platoon to operate from its camp. (Kelly comments).

\*\*According to Col Kelly, CSSD-111's commander, "helicopter resupply was a real disappointment. Rarely did they support us, despite our asking." (Kelly comments)



Photo courtesy of Major Adrian W. Burke

*A CH-53E Sea Stallion helicopter conducts helicopter support operations at Manifah Bay with CSSD-141.*

Army and the U.S. Army, and transferred trucks and people to DSG-1. In total, Lieutenant Colonel Smith's detachment moved 40,594 passengers and hauled 61,384 tons of cargo in 150 convoys during the two-month period. GSG-1's trucks carried 4,638 pallets and 24 containers of ammunition to FASPs -1 and -2 and AM2 matting to the 3d MAW air bases. In the later part of October, the detachment's trucks hauled 60 pallets of cargo to the British 7th Armoured Brigade, which also used the motor pool to operate 20 heavy transports. In addition, the motor transport detachment carried water for the Army's 3d Armored Cavalry Regiment (3d ACR).<sup>179</sup> At the end of September, Smith sent the 3d Platoon, Company A, to CSSD-141 at Manifah Bay and Company B to CSSD-111 at Abu Hadriyah, but partially made up for his losses on 27 October, when 50 LVS trailers and 299 sixcon fuel and water modules arrived from Camp Pendleton.<sup>180</sup>

### *Landing Support*

The landing support detachment unloaded ships and aircraft and conducted HSTs. During September, GSG-1's Red Patchers helped unload the MV *Baugh*, the last ship of MPSRon-3; the maintenance and aviation/support ships (TAVBs) *Wright* and *Curtiss*, which carried the intermediate maintenance capability for the 3d MAW's aircraft; and the MV *Maersk Constellation*, which carried AM2 matting. In October, the landing support detachment shared the port with the U.S. and British Armies and unloaded 38,353 pallets of cargo, 276 containers, and 532 vehicles from seven different ships.\* The arrival and departure air

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\* The seven ships were the USS *Dubuque* (RCT-4), MV *Greenridge*, (NMCB-4), MV *Cape Breton* (I MEF Ammunition), USS *Spartanburg County* (4th MEB), MV's *Alpha Challenger*, *Cape Borda*, and *Samsung Harbor* (I MEF sustainment).

groups at Jubayl Naval Air Station and Dhahran processed 351 flights carrying 11,481 tons of cargo and 8,553 passengers during September. The following month, Dhahran unloaded 555 vehicles and 184 pallets of cargo from 30 arriving aircraft. Lieutenant Colonel Beinhart used HSTs to resupply CSSD -111 and -141, trained with MAG-16's helicopters, transferred the air delivery platoon, and sent landing support specialists to DSG-1.<sup>181</sup> At the end of September, Captain Peter B. McMurrin replaced Lieutenant Colonel Beinhart as the commanding officer of the detachment.<sup>182</sup>

### *Medical and Dental*

The medical detachment worked from the Al Huwaylatt hospital, the port, and forward locations near the Kuwait border. During September and October, doctors and corpsmen treated 1,264 emergencies, snapped 2,586 X-Rays, filled 1,582 prescriptions, admitted 437 patients, and performed 65 surgical procedures. As part of I MEF's preventative medicine program, specialists tested the MEF's drinking water 304 times for biological impurities, performed 141 sanitation inspections, and conducted 172 vector control missions.\* Medical personnel practiced disaster drills, helicopter medevac procedures, assisted the U.S. Navy to investigate a diarrhea outbreak caused by bad bottled water and contaminated lettuce, and hosted a class on managing chemical casualties presented by the U.S. Army Chemical Corps.<sup>183</sup> The medical detachment sent Company A to CSSD-111, Company B to CSSD-141, and during October, Company E to the Saudi Naval Base at Ras Al Mishab, located 45 kilometers south of the Saudi-Kuwaiti border. Company E supported RCT-3's cross-training with the Saudi King Abdul Aziz Brigade and replaced CSSD-141 as the closest logistics unit to the Kuwaiti border.\*\* Company E joined forces with a Bangladeshi dressing station that served coalition forces screening the border and made contact with a Moroccan collecting and clearing company located 50 kilometers to the south at Ras Al-Safaniyah.<sup>184</sup>

By the end of October, the dental detachment operated 11 clinics and treated 5,213 patients of which 31 percent were emergencies. Patients came from I MEF, the 4th MEB, the U.S. Army, Air Force, and Navy as well as from Great Britain, Saudi Arabia, and Bahrain.<sup>185</sup> To extend service to forward bases without clinics, the dental detachment loaded dental equipment on a 5-ton truck, nicknamed it "Drills on Wheels," and sent it to forward units. On 30 October, a dentist and a dental technician from GSG-1 joined Company E at Ras Al Mishab and extended service to Marines working in the area.<sup>186</sup>

### *Supply*

During September and October, GSG-1's supply detachment gained control of I MEF's supplies, issued equipment, and established a myriad of capabili-

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\*Vectors are organisms, like flies and mosquitoes, that carry and spread disease.

\*\*I MEF's presence at Mishab began in September with visits by reconnaissance units and gradually increased in scope and size as I MEF expanded.

ties. The detachment issued equipment from 2,200 containers, warehoused 13,000 different kinds of repair parts, and established a maintenance float to swap functioning repair parts for broken, but repairable, items. The medical logistics section issued supplies to 48 units from its block of 800 line items and from its narcotic and controlled drug issue point. Ammunition company distributed munitions from 1,500 containers and the rations platoon warehoused 40,000 cases of MREs sent from the Marine supply depot at Albany, Georgia. The detachment's contracting officers purchased services and supplies for both the Marines and the U.S. Army.<sup>187</sup> On 17 October, the Marine Corps' automated supply support system (SASSY) became operational, which gave I MEF units the ability to account for and manage their equipment and supply requests. Additionally, SASSY gave the supply detachment the ability to requisition directly material from item managers in the United States without going through Camp Pendleton. A day later, the supply detachment released 1,427 parts, which were ordered in August and September, to the supported units. To manage and distribute material arriving in Saudi Arabia, a transportation management office was established in October. For items going in the reverse direction, the packing, preservation, and packaging section built shipping boxes and packed items, such as crashed helicopters, for transport to the United States.<sup>188</sup>

### *Maintenance*

Maintenance Detachment, which provided intermediate maintenance of ground equipment for I MEF, was established on 4 September. Intermediate maintenance consisted of repairing the entire item or component parts and returning it or them to either the owning unit or the supply system. In comparison, the owning unit conducted organizational maintenance which consisted of cleaning, servicing, inspecting, lubricating, adjusting, and completing minor repairs to equip-

*One of the huge warehouses located in the Port of Al Jubayl was operated by the Supply Detachment, GSG-1.*

Photo courtesy of LtGen James A. Brabham, Jr.





Photo courtesy of LtGen James A. Brabham, Jr.

*An M60 tank is prepared with applique mounts for the placement of armor panels.*

ment.<sup>189</sup> When the repair of an item exceeded the owning unit's capabilities, the item was sent to the maintenance battalion to be either fixed and returned or exchanged for a working item from the Quick Exchange Program. Lieutenant Colonel Leon S. Lusczynski organized the maintenance detachment into motor transportation, engineer, communications, ordnance, and general support maintenance companies.

After activation, the maintenance detachment focused on reducing the backlog of items requiring repair, modifying tanks, and supporting forward units. During September, the detachment completed 50 percent of the 2,879 equipment repair orders opened on I MEF equipment and during the following month increased the completion rate to 72 percent when SASSY came on line. Starting on 18 September, GSG-1's maintenance technicians, together with a civilian team from Albany, Georgia and CSSD-111 mechanics, began bolting applique armor panels to the hulls and turrets of M60A1 tanks in the field around Abu Hadriyah. When a high explosive antitank round (HEAT) struck a tank, the applique armor would explode and dissipate the chemical energy from the enemy round to protect the tank and its crew.<sup>190</sup> By the end of October, applique armor protected all the 1st Marine Division tanks. To support forward units, Lieutenant Colonel Lusczynski sent M88A1 tank and R-7 amphibious assault retrievers to CSSD-111 and dispatched contact teams to repair amphibious assault vehicle engines at CSSD-111 and refrigeration units at Manifah Bay and Abu Hadriyah.<sup>191</sup>

During October, Lieutenant Colonel Lusczynski ordered the maintenance detachment to recover all equipment abandoned during the first two months of the deployment and called this effort, "Operational Roundup." The detachment's recovery vehicles scoured the roads and compounds within a 75-mile radius of the



Photo courtesy of LtGen James A. Brabham, Jr.

*An M60 tank with applique armor panels attached is now ready for battle.*

port and recovered equipment that was either broken, lacked operators, not issued, or was unwanted cargo dumped by the unit which wanted the truck rather than the cargo. Luszczynski's Marines gathered, inventoried, and fixed the equipment at the port and created an operational readiness float (ORF).<sup>\*</sup> The maintenance detachment, which fixed broken items for both the maintenance float and the ORF, managed the ORF which was named the Quick Exchange Program (QEP) by Lieutenant Colonel Thomas A. Keene, the combat service support officer on General Brabham's staff. The 1st FSSG used the term "QEP" as opposed to the doctrinally prescribed and well-known acronym of "ORF," because a true ORF was an officially recognized entity by Headquarters Marine Corps and the QEP was an unofficial creation of 1st FSSG. Regardless of the name, the QEP became I MEF's equipment reserve in the Gulf region.<sup>192\*\*</sup>

### *Engineer Operations*

Major Sweeney's engineer detachment worked with the Seabees, the division, and the wing engineers to reduce I MEF's massive construction requirements. Operating from a quarry near Jubayl Naval Air Facility, the GSG-1 engineers dug marl for the apron expansion project at the air facility. Working with the Seabees and MWSS-174 Marines at King Abdul Aziz Naval Air Station, GSG-1

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<sup>\*</sup>An ORF is similar to a maintenance float operated by the supply detachment, in that a using unit exchanges a broken item for a functional one. The difference is that an ORF exchanges entire items, such as tanks, LAVs, TOWs, radios, and trucks while a maintenance float trades only component parts, like transmissions, circuit cards, and engines.

<sup>\*\*</sup>One of the criticisms often voiced against the 1st FSSG's organization in the Gulf was the use of non-doctrinal terms such as QEP, DSG, GSG, DSC, etc.





Photo courtesy of Col Thomas S. Woodson

*This command post tent is held to ground by some of the 5,500 concrete tent anchors constructed by GSG-1's engineer detachment.*

engineers built an ammunition storage point and dug fighting positions. For the 1st Marine Division, Sweeney's engineers constructed a mock Iraqi strongpoint for training, prepared a site for the new division's messhall, dug pits for artillery pieces, and excavated fighting holes for the 3d Battalion, 9th Marines.<sup>193</sup> The engineer attachment issued more than 5.2 million gallons of fuel, constructed 400 strongback tent frames, 5,500 concrete tent anchors, berms for assault amphibious fuel systems, and produced 7,800 gallons of water daily for the U.S. Army.<sup>194</sup>

### *Headquarters and Support Group*

The Headquarters and Support Group (H&SG) provided a variety of services to I MEF as well as coordinating security at the Port of Al Jubayl. Lieutenant Colonel Hayden extended military police patrols with the British to the city of Jubayl and tested the responsiveness of the Critical Facilities Operations Center to multiple threats to the port. On 20 September, the graves registration platoon led by Lieutenant Colonel John M. Cassidy, Jr., processed its first fatality, a soldier from the 82d Airborne Division killed in a traffic accident. The graves registration platoon gave I MEF the capability to search, recover, and identify bodies, as well as collecting the victim's personal property. The processing chain started at the victim's unit which sent remains to collection and clearing sections where graves registrations personnel processed the body and personal property for shipment to the next-of-kin.<sup>195</sup>

During October, the H&SG established the Interim Forward Automated Services Center (IFASC) which allowed I MEF to operate SASSY, the Marine Corps Integrated Maintenance Management System (MIMMS) used by maintenance personnel, and for the MEF's administrators and disbursers to access



Marine Corps personnel and pay systems. To improve service, Lieutenant Colonel Hayden established a Manpower Management Information Systems Office as the MEF's focal point for all unit diary transactions with the Marine Corps Finance Center, Kansas City, Missouri, and opened six branch disbursing offices to extend services in Saudi Arabia and Bahrain. During October, the post office processed 713 tons of mail which was collected and mailed twice daily; the legal service support section handled a small amount of courts martial, investigations, and payments for foreign claims; and the Marine Corps exchange opened nine outlet stores.<sup>196</sup>

### *Marine Forces Afloat*

*First, the short period available for loadout, from alert to sail, without a clearly defined mission, drove a load plan that we knew would have to be adjusted . . .*<sup>197</sup>—MajGen Harry W. Jenkins, Jr., CG, 4th MEB

As I MEF rushed to establish defensive positions, the 4th MEB and 13th MEU arrived in the region and used September and October to refine their plan and properly load the ships carrying the 4th MEB.\* On 7 September, the 13th MEU (SOC) arrived at the northern end of the Arabian Sea near the entrance to the Persian Gulf. Ten days later, all three transit groups carrying the 4th MEB reached the coast of Masirah Island in the Arabian Sea. The 4th MEB, commanded by Major General Harry W. Jenkins, Jr., a Californian who served as an infantry company commander during the Vietnam War, lacked a mission from NavCent as well as adequate means to command and control both amphibious entities.<sup>198</sup> To offset these problems, Jenkins developed 10 possible missions for 4th MEB and 13th MEU (SOC), which remained as an independent unit, but associated with the 4th MEB. The MEB's primary logistics problem was that the rapid embarkation of 4th MEB scattered equipment and supplies among the ships of the amphibious task force, especially the five Military Sealift Command (MSC) charters carrying the MEB's sustaining supplies. Consequently, the 4th MEB needed to repack its equipment and supplies.<sup>199</sup>

On 9 October, Saudi Arabia granted the 4th MEB diplomatic clearance to dock at the port of Jubayl and reconfigure the MSC ships, which were inadequate for amphibious warfare. The five ships could not unload supplies without a port and were not combat loaded so that different types of supplies could be easily reached and rapidly issued. Finally, three of the ships were under foreign registry which prevented their entry into a war zone. General Jenkins solved these problems by obtaining the MV *Baugh* and MV *Bonnyman* from MPSRon-2 and by reloading and reconfiguring 4th MEB's follow on shipping at the Port of Jubayl.<sup>200</sup>

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\*See LtCol Ronald J. Brown, USMCR (Ret), *U.S. Marines in the Persian Gulf, 1990-1991: With Marine Forces Afloat in Desert Shield and Desert Storm* for a comprehensive history of the activities of 4th MEB, 5th MEB, and 13th MEU during the Persian Gulf War.



Photo courtesy of LtGen James A. Brabham, Jr.  
*Marines sort mail in the interior of the Headquarters & Service Group post office facility in Saudi Arabia. Mail, as in all wars, was an important morale builder.*

General Jenkins assigned Lieutenant Colonel Robert C. Dickerson, Jr., the 4th MEB's assistant logistics officer, to lead the port operations group (POG) consisting of 397 Marines and sailors. The POG had the mission of reloading 4th MEB's sustaining supplies for combat, repairing equipment, and transferring material to I MEF. The group reached Jubayl on 13 October and began a partial offload of the USS *Spartanburg County*. Over the next seven weeks, the POG unloaded all five MSC ships; inventoried, repaired, and painted equipment; and reloaded the ships to support amphibious operations. The addition of the MV *Baugh* and MV *Bonnyman* gave the 4th MEB the ability to unload supplies and equipment in open water. Also, the POG transferred 6,083 short tons of ammunition, most of the MEB's construction material, communications gear, and morale and welfare materials to I MEF. The POG unloaded equipment for Battery B, 2d Light Antiair Missile Battalion and the 2d Remote Pilot Vehicle Company, which were units the 4th MEB transferred to I MEF.<sup>201</sup>

### *Three Months after the Invasion*

*In stabilizing and refining the force, the logistics focus remained on building sustainment, filling the throughput pipeline, and preparation for future operations.*<sup>202</sup>

September started with a sense of urgency as I MEF rushed to strengthen defenses and October ended with the Marines and sailors of I MEF contemplating rumors about Central Command's plan to rotate units in order to maintain a long-term defense.\* At the end of October, the size of I MEF increased to 31,391

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\*Central Command, faced with the possibility of a long-term presence in the Persian Gulf, began looking at the possibility of rotating units to-and-from theater in either 8- or 12-month cycles. (I MEF ComdC Oct90, Sec 2).

Marines and sailors of which 8,511 belonged to the 1st FSSG, COMCBPAC Foxtrot Delta, and the three MWSSs.<sup>203</sup> At the end of October, thoughts concerning future operations alternated between the possibility of a long-term presence in the Persian Gulf and the potential of a quick end to the crises by taking the war to Saddam Hussein. In early November, President Bush ended speculation about the future by opting for the latter course of action.

Table: I MEF logistics units and personnel strengths at the end of October 1990<sup>204</sup>

Logistics Unit	Number of Personnel
1st FSSG	4,680
COMCBPAC Foxtrot Delta	2,397
MWSS-174	498
MWSS-373	477
MWSS-374	459

## Switching to the Offense: November and December 1990

### *The Situation*

*On 8 November, President Bush announced that another 200,000 U.S. troops were on their way to the Gulf, and made their mission unmistakable: to ensure that the coalition has an adequate offensive military option.*<sup>205</sup>

The President's 8 November decision to reinforce Central Command gave General Schwarzkopf sufficient military strength to begin the preparations for the ejection of Iraq's 435,000 troops from Kuwait. Central Command received the Army's VII Corps and 1st Infantry Division; 400 Air Force aircraft; three Navy carrier battle groups; the 2d Marine Division; 164 Marine Corps aircraft; General Krulak's 2d FSSG from Camp Lejeune, North Carolina; MPSRon-1; and the 5th MEB. General Schwarzkopf planned a four-phase offensive of which the first three stages consisted of air campaigns against strategic targets in Iraq, enemy air power in Kuwait, and Iraqi ground forces in both countries. After completing the first three phases, Central Command intended to use ground forces to expel the Iraqis from Kuwait and to destroy the *Republican Guard*. Two U.S. Army corps would attack west of Kuwait and north into Iraq, wheel east, and destroy Iraqi forces south of the Euphrates River. Schwarzkopf ordered the Marines and coalition forces to launch supporting attacks into Kuwait to fix the Iraqi forces in place. The Coalition forces consisted of the Joint Force's

Command North (JFC-N), which would assault into the western third of Kuwait, and the Joint Force's Command East (JFC-E), which would attack along the coast towards Kuwait City. I MEF would launch its attack into central Kuwait between the coalition forces.<sup>206</sup>

The 3d MAW would participate in Central Command's three air offensive phases and then switch to supporting exclusively I MEF's ground attack. Reinforced with MAG-26, a helicopter group from Marine Corps Air Station Cherry Point, North Carolina, and 16 active duty and Reserve squadrons, General Moore, the 3d MAW commander, planned to push as far forward as possible. To provide helicopter support to the ground forces attacking Kuwait, the 3d MAW intended to move MAG-26 to Mishab and MAG-16 from Jubayl Naval Air Facility to Tanajib, which was located 30 kilometers south of Mishab. After the helicopters departed, General Moore aimed to base six KC-130 tankers, two squadrons of F-18 Hornets, and his headquarters at Jubayl Naval Air Facility. The expanded wing required additional combat service support. The general, tried and failed to obtain MWSS-274 from the 4th MEB, but did acquire the services of two MWSSs from II MEF.<sup>207</sup> To command and control the wing's five MWSSs, General Moore brought forward the Marine Wing Support Group 37 (MWSG-37) headquarters from MCAS El Toro, California.<sup>208</sup>

During Phase Four, General Boomer intended to fix and destroy Iraqi operational reserves in Kuwait, assist with the attack on Kuwait City, and, if ordered, continue the attack to the north.<sup>209</sup> To overcome Iraq's three-to-one superiority of tanks and artillery, General Schwarzkopf initially assigned the British 1st Armoured Division, commanded by Major General Rupert Smith to I MEF. But in early December, he replaced the British division with the U.S. Army's lighter 1st Brigade, 2d Armored Division, known as the Tiger Brigade.\* General Boomer assigned the Tiger Brigade to the 2d Marine Division, commanded by Major General William M. Keys, a veteran infantry officer with two combat tours in Vietnam.<sup>210</sup> The MEF commander planned to penetrate Iraq's defenses in Kuwait initially with the 1st Marine Division, followed closely by the 2d Marine Division, and then link up with the 4th and 5th MEBs which would conduct amphibious landings further north.<sup>211</sup> The 1st FSSG, reinforced with the 2d FSSG, would provide combat service support to the wing and both divisions during the attack.

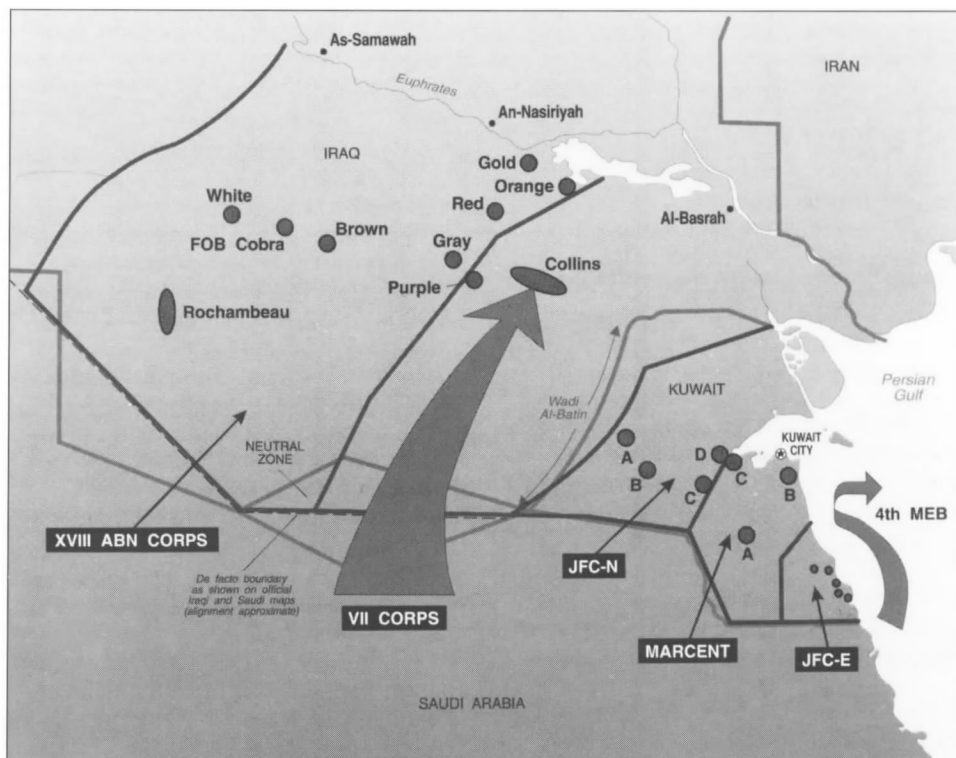
### *How to Merge the 1st and 2d FSSGs?*

*The most important thing that transpired, was how did you get these two FSSGs to fight as one?*<sup>212</sup>

Before the President's decision to reinforce the American forces,

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\*According to *The Generals' War*, pp. 166-169, British concerns for national prestige and fear of casualties forced Schwarzkopf to reassign the British to VII Corps' main attack. Schwarzkopf directed the ArCent commander, LtGen John J. Yeosock, to give the Marines an equal substitute, which in Yeosock's estimation was a U.S. Army brigade.



*Ground Offensive Campaign Concept of Operations*

Brigadier General Krulak at Camp Lejeune, North Carolina, had become certain that the 2d FSSG should deploy to Southwest Asia with its headquarters battalion. During October and early November, while preparing to replace the 1st FSSG, the 2d FSSG commander and staff studied General Brabham's organization in the theater and conducted a series of exercises that simulated the long distances faced in the Gulf region.\* The experience obtained in these exercises and telephone discussions with General Brabham convinced General Krulak all the more that he needed his headquarters battalion to control combat service support operations when the 2d FSSG replaced the 1st FSSG in Southwest Asia.

In early November, Lieutenant General Robert J. Winglass, the Deputy Chief of Staff for Installations and Logistics at Headquarters Marine Corps, visited General Krulak and relayed specific instructions from General Alfred M. Gray, the Marine Corps Commandant, that the 2d FSSG when it deployed would not take additional command and control assets.<sup>213</sup> Winglass explained that General Schwarzkopf had placed a ceiling on the number of personnel in the region and that I MEF could not exceed its limit. Krulak and his chief of staff, Colonel John A. Woodhead III, disagreed with these limitations and argued the need for the headquarters battalion to strengthen command and control capabilities, citing data

\*The assessment culminated in a command post exercise that located CSSDs at Fort Pickett, Virginia, and the main body of the FSSG at distant Camp Lejeune, North Carolina.

from the recently completed exercises.\* After departing Camp Lejeune, Winglass forwarded the 2d FSSG's concerns to General Gray who remained adamant that the 2d FSSG make a one-for-one replacement with 1st FSSG in the Gulf.\*\* According to the 2d FSSG commander, General Gray's decision "put us in a bind." Krulak, nevertheless, ordered Colonel Woodhead to plan for the replacement of 1st FSSG without his headquarters battalion and without increasing the number of FSSG personnel in I MEF. On 5 November, the FSSG commander sent General Boomer a letter which stated 2d FSSG's intent to "mirror-image" the 1st FSSG organization, and detailed the 2d FSSG's predeployment preparations, and requested a face-to-face meeting of the commanders and staffs of both FSSGs to plan the turnover.<sup>214</sup>

With the decision to reinforce the forces in the Gulf region, Central Command's restriction on the number of personnel disappeared. Responding to the change in circumstances, Colonel Woodhead drafted a message that outlined options for integrating the 1st and 2d FSSGs.<sup>215</sup> In the first course of action, the two FSSGs would form one giant-sized unit.\*\*\* The second option designated zones of action with each FSSG supporting the commands operating in its particular sector. According to the third concept, the Marine command would consolidate the 4th and 5th BSSGs afloat under a single FSSG headquarters. The fourth alternative, which General Krulak recommended, assigned the FSSGs different missions. One FSSG would provide direct support to I MEF's ground combat element and the other FSSG would furnish general support to the MEF and reinforce the direct support FSSG. After consulting with General Brabham by telephone, Krulak sent Woodhead's message to Lieutenant General Carl E. Mundy, Jr., the commander of both II MEF and the Fleet Marine Force Atlantic, and an information copy to General Brabham in Saudi Arabia.<sup>216</sup> General Mundy forwarded the message to General Gray for his information and concurrence.<sup>217</sup>

In Saudi Arabia, General Brabham agreed with General Krulak's initiative to use the two FSSG headquarters in general and direct support roles. The 1st FSSG was already organized along general and direct support lines, but lacked the command and control capabilities to support the offensive. Moreover, the offensive gave Brabham the additional task of directly supporting two divisions fighting a distant battle as well as providing general support to a reinforced MEF, conducting rear area security, and running the port used by both the U.S. and British armies. General Brabham expressed his views in a phone call to Lieutenant General Winglass and during a telephone conversation with General Krulak suggested that the 2d FSSG, "leap frog right over mine and become a direct support command."<sup>218</sup>

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\*Gen Krulak described Colonel Woodhead as "an unsung hero and the finest operational logistician in the Marine Corps at that time." (Krulak comments)

\*\*Krulak comments.

\*\*\*In the Vietnam War, the Force Logistics Command, which numbered about 3,000, was activated at Da Nang, South Vietnam, on 15 March 1966. It consisted of the 1st and 3d Service Battalions and the 3d Force Service Regiment (Jack Shulimson, *U.S. Marines in Vietnam: An Expanding War, 1966* [HQMC: Washington, D.C., 1982] pp. 277-88.)



Photo from Quilter, *With 1 MEF*, p. 32

*Col John A. Woodhead III, Chief of Staff, 2d FSSG and the DSC, at left, is shown with BGen Charles C. Krulak, Commanding General of the 2d FSSG and the Direct Support Command.*

Around Thanksgiving 1990, General Krulak prepared for a four-day visit to Saudi Arabia to determine, with Generals Boomer and Brabham, the command relationship between the two logistic commands. Krulak, with a small staff and without an answer from the Commandant on his command relationship message, departed Camp Lejeune. While awaiting a connecting flight at Andrews Air Force Base near Washington, D.C., General Krulak learned that Generals Gray and Winglass were in the VIP lounge and wanted to see him. On his arrival at the lounge, the Commandant playfully and lightly punched General Krulak a couple of times on the arm and then settled down to business. Krulak told Gray about using the two FSSGs in direct and general support roles and added that he and



General Brabham intended to propose this concept to General Boomer. Thirty minutes later, Krulak departed Washington with the Commandant's blessing on his recommendation. After arriving in Saudi Arabia, Generals Brabham and Krulak briefed General Boomer, who agreed with the plan, but wanted only one FSSG. Boomer declared that instead of assigning the direct support role to the 2d FSSG, just call the 2d FSSG the direct support command and put it under the umbrella of the 1st FSSG which would execute the general support mission.<sup>219</sup>

After the I MEF commander had decided upon the command relationship, it was the responsibility of General Brabham, who was senior to General Krulak and in charge of the single FSSG, to decide whether he or General Krulak would lead the Direct Support Command (DSC). General Brabham selected the general support mission which left the DSC in the hands of General Krulak.<sup>220</sup> Brabham's decision maximized the experience of both general officers. Brabham's previous tour at Central Command and his experiences since August gave him a clear understanding of the logistics situation in the Gulf and strong working relationships with Central Command, the U.S. Army, and the Saudis.<sup>221</sup> On the other hand, Krulak was a career infantry officer and the former assistant division commander of the 2d Marine Division, which was one of the two major units that the DSC would sustain.<sup>222\*</sup> He now would be responsible for supporting a movable 40-by-50-mile battle zone. According to the concept drafted by Colonel Woodhead, the 2d FSSG's chief of staff, the Direct Support Command would receive most of the tactical motor transport, engineers, and landing support assets from both FSSGs, as well as DSG-1. Brabham would get most of the supply, maintenance, and service capabilities, run the port, and push supplies to Krulak's DSC.<sup>223\*\*</sup>

### *The 1st FSSG Restructures and Refocuses*

*...The key to being able to do what we did in the Gulf is . . . flexibility . . .*<sup>224</sup>

### *The Establishment of GSG-2*

To push supplies forward to the battle area, without the benefit of tactical motor transport assets, required flexibility and creativity. Accordingly, General Brabham ordered his procurement officers to rent trucks and drivers from the

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\*Gen Krulak commented that "In his [General Brabham's] heart, he wanted to be up front with the divisions," and that "it was a real smart move by Jim Brabham, who knew what was going to be more fun, but like most Marines, made the right call that put him in the right position with his expertise and me, with my infantry experience, up front with the divisions." (Krulak comments)

\*\*Col Woodhead laid out the concept for direct and general support FSSGs in a paper called "CSS Command Relationships in SWA," which is reprinted in Appendix A. This concept paper also served as the basis for Gen Krulak's November message to the Commandant, which described the command options for integrating the 1st and 2d FSSGs.



Photo courtesy of LtGen James A. Brabham, Jr.

*Two civilian Mercedes Benz trucks were driven by "Saudi Motors." Gen Brabham relied on his contracted fleet of trucks to support I MEF's offensive into Kuwait.*

local economy. The FSSG contractors competed with the U.S., British, and Saudi armies to hire a motley assortment of third world drivers and vehicles. To make up for the shortcomings of the available assistance, General Brabham organized the drivers and their vehicles into a "line-haul" battalion and hoped that a Marine Corps-like organization would instill a sense of pride, dignity, and belonging, which were considerations not normally rendered to the drivers by their regular employers. To appeal to the more worldly needs of the vehicle operators, General Brabham authorized one meal per day, Marine Corps exchange privileges, and the opportunity of watching professional wrestling videos during off-hours. Brabham placed the 114 commercial tractor trailers and 56 bus drivers under the command of Lieutenant Colonel Charlie F. Smith, GSG-1's motor transport detachment commander. An unidentified wit dubbed the new organization "Brabham's Bedouins," but the unit was best known as "Saudi Motors."<sup>225</sup> On 12 November, Saudi Motors performed its first resupply by running convoys to CSSDs -111, -132, and -141.<sup>226</sup>

Opening a port near the Kuwaiti border was another creative way of pushing supplies to General Krulak's DSC. Almost from the beginning of Desert Shield, I MEF focused its attention on the port at Ras Al Mishab. During September and October, teams from the Navy support element at Jubayl surveyed the port's facilities and capabilities and on 7 November, Brigadier Generals Brabham and Thomas V. Draude, the assistant 1st Marine Division commander, visited the port. Following this trip, Brabham ordered Colonel Hampton, the commanding officer of GSG-1, to survey Mishab and to plan for an organization that made best use of the port, its air strip, and location along the coastal road to



Photo courtesy of LtGen James A. Brabham, Jr.

*An aerial view shows the motor transport compound at Ras Al Mishab. Gen Brabham established GSG-2 to open a port near the battlefield and to stock 10 days of supplies to support the ground attack into Kuwait.*

Kuwait. On 30 November, Hampton forwarded a rough estimate of the equipment and personnel, and a blueprint of the combat service support area needed to develop Mishab. The next day General Brabham selected Colonel Hampton to command GSG-2 at Ras Al Mishab.

Until 11 December, Colonel Hampton and a small staff waited for I MEF to approve the establishment of GSG-2. Upon this approval, Hampton relocated his staff at Mishab, and absorbed GSG-1's medical and dental units. GSG-2's mission was to stock 10 days of water, food, fuel, oils and lubricants, ammunition, and medical supplies for MAG-26 and the 1st and 2d Marine Divisions, and eventually to push supplies to General Krulak's Direct Support Command. On the 19th, Colonel Hampton took charge of the newly arrived 7th Engineer Support Battalion and the 7th Motor Transport Battalion.<sup>227</sup> The GSG-2 commander used his engineers to establish two amphibious assault fuel systems with a storage capacity of 1,200,000 gallons near the beach and airfield and four additional systems next to the highway. The six systems would eventually give GSG-2 a fuel storage capacity of 3,200,000 gallons.<sup>228</sup> The 7th Motor Transport Battalion using M970 refuellers and the U.S. Army, operating from forward operating base (FOB) Bastogne, hauled fuel. The engineers set up ROWPUs and produced potable water from the Persian Gulf. Captain Johnson, the naval construction task force commander, sent his Seabees to build FASP-3 on 19 December.<sup>229</sup> By the end of the month, Colonel Hampton commanded 1,226 Marines and sailors, who busily prepared to support forward units.<sup>230</sup>

*DSG-1, November-December 1990*

After nearly three months in Saudi Arabia, it was clear to Colonel Powell, the DSG-1 commander, that supporting the division was different than sustaining the wing. CSSDs moved with the division and directly influenced the ground scheme of maneuver. In the defense, CSSD-141 supported combat elements in the division's security zone while CSSD-111 sustained forces in the battle area. In comparison, static CSSDs with the 3d MAW performed housekeeping chores which did not directly influence aviation tactics. The transition to the offense would make DSG-1 mobile and more intimately involved in the planning and execution of the division's tactical plans. Accordingly, Powell transferred CSSD-131 to GSG-1 on 5 November and because of its HST and air delivery capabilities held on to CSSD-132 until the end of the month. The transfer of aviation CSSDs to GSG-1, allowed DSG-1 to concentrate on its only customer—the 1st Marine Division.

On 11 November, Colonel Powell had moved his headquarters from the port to a position near the 1st Marine Division command post at Abu Hadriyah.<sup>231</sup> This move allowed him to interact closely with General Myatt, the division staff, and his own commanders. General Brabham encouraged the relocation since it allowed Powell to voice General Myatt's logistic needs and problems to the 1st FSSG and, in turn, express General Brabham's capabilities and concerns to the division.<sup>232</sup> The DSG-1 commander attended division meetings and developed working relationships with the commanding general and his staff. Myatt believed that the division's main offensive limitation was logistics and ordered that a logistical exercise called LOGEX 1-91 be held between 12-17 November.<sup>233</sup> During the exercise, the division, the DSG, and GSG-1 worked through an offensive scenario to determine the amount of supplies needed.<sup>234</sup> As a result of the LOGEX, the 1st Marine Division expressed its supply requirements in daily amounts of ammunition, fuel, food, and water.

After the LOGEX, Colonel Powell convened a reorganization study group to restructure DSG-1 for the offense. The reorganization team studied the division's scheme of maneuver, converted supply requirements to ton-miles, and used driver-to-vehicle ratios and operating-hours to determine new tables of equipment and organization. The study group recommended the activation of two mobile CSSDs (MCSSDs) to move on the battle field with and sustain RCT-7 (Task Force Ripper) and RCT-1 (later named Task Force Papa Bear), which was scheduled to arrive from Camp Pendleton in December. Because of the lack of trucks, each MCSSD would be small, with the ability to move one day of water, fuel, and ammunition up to 65 kilometers from a fixed support area. The team recommended the activation of a general support CSSD to operate a fixed support area and to push supplies to the MCSSDs and ammunition to the artillerymen of the 11th Marines.<sup>235</sup> The general support CSSD would provide supply point distribution to the remaining units of the division, to include RCT-3 (Task Force Taro), which remained as the division's helicopter-borne reserve force. Since the MCSSDs lacked maintenance and supply capabilities, the general support CSSD



Photo courtesy of Maj Adrian W. Burke

*CSSD-141 Marines learn to wear their gas masks for as long as three hours a day while working and occasionally playing chess on a home-made set.*

would repair equipment either by sending contact teams to forward locations or by transporting the broken item to the fixed support area.<sup>236</sup> The DSG commander would control and coordinate the three subordinate CSSDs from a separate headquarters. Colonel Powell forwarded the new structure plan to the 1st FSSG and, when the 2d FSSG arrived in December, to his new boss, General Krulak.

Not waiting until the DSG was reorganized, CSSD-141 and -111 intensified training for offensive operations. For example, Lieutenant Colonel Kelly, the CSSD-111 commander, believed that during a rapidly moving assault the CSSD would have to fight its way in to deliver supplies and maintain the momentum of the attack. Accordingly, Captain Dennis P. Muller, the CSSD's security officer, trained each Marine and sailor to fire the .50-caliber and M60 machine guns, the M-19 grenade launcher, LAAW and AT-4 hand-held anti-tank weapons, and the M16 rifle and 9mm pistol. Everyone learned to drive 5-ton trucks and HMMWV's, and to call for artillery fire and close air support. Lieutenant Colonel Kelly ensured that all of his "Log Dogs" could fight as well as support. The lack of training ammunition, ring mounts for .50-caliber machine guns and M19 grenade launchers, TOW HMMWVs, global positioning systems (GPS), position locating and reporting systems (PLRS), and night vision devices, however, frustrated CSSD-111's training program and remained a primary concern together with the possibility of chemical and biological warfare.<sup>237</sup>

During November, CSSDs-111 and -141 continued to prepare and refine their ability to work in a chemical and biological infected environment. For example, Captain Burke trained his CSSD-141 Marines to work in their gas masks up to three hours per day. After achieving this goal, Burke reduced gas mask time to one hour per day to conserve filters which often clogged from sand

and sweat. In addition, the CSSD commander set up a chemical "hotline" for decontamination and practiced its execution with division units. A hotline consisted of personnel, equipment, and casualty triage stations that could move to within two kilometers of a chemical weapons impact zone. A contaminated unit would move from a "hot" staging area through the three decontamination stations, and exit, after cleaning, to a "cold" staging zone ready to continue with the battle.<sup>238\*</sup>

### *The Seabees Prepare for Reinforcements and the Offensive*

*Priority was to provide living space for the II MEF troops who began arriving in December.<sup>239</sup>*

During early November, Captain Johnson, the Seabee commander, analyzed I MEF's future construction requirements and planned for the arrival of reinforcements. The Seabees estimated that the level of preparations for the assault equaled the workload expended in setting up I MEF's defenses. Accordingly, Johnson calculated that four Seabee battalions were sufficient to accomplish his emerging missions, but hedged his bet by requesting a fifth battalion set of equipment and on-call reinforcements from NMCB-1 in Rota, Spain, to cover the unexpected. Captain Johnson planned to rotate two of his battalions and a portion of his staff to maintain the Navy's overseas deployment schedule. NMCB-24, a Reserve battalion, and NMCB-74, based in Gulfport, Mississippi, would replace NMCB-4 and -7 which would complete their seven-month overseas deployment in December.

With the plan for the ground offensive completed, the Seabees focused the efforts of their four battalions on finishing existing projects and on building camps for reinforcements. On 14 November, the Seabees finished FASP-2 near the Cement Factory Ridge and participated in an exercise called Imminent Thunder. On the 19th, NMCB-40 completed the 1st Marine Division mess hall at Abu Hadriyah just in time to host President Bush for Thanksgiving dinner.\*\* On the 25th, NMCB-5 finished the second parking apron at Jubayl Naval Air Facility, leaving only the third parking area uncompleted. On the same day elements from all four naval construction battalions began building a new tent camp for 15,000 occupants near Camp 15 in the Industrial City. An unidentified humorist nicknamed the camp "Wally's World," supposedly in reference to a fictitious amusement park in the comedy film "Summer Vacation," but in reality, a play on General Boomer's first name, "Walter." The six-sectioned camp covered 300 acres, consisted of 1,740 concrete slabs, 108 strongback tent frames, 24 mess hall buildings, 24 shower facilities, a sewer system, and 13 miles of road. Water and electricity came from the local Saudi systems.<sup>240</sup>

During December, the Seabees rotated units, completed more projects,

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\* Additionally, CSSD-111 developed a complementary NBC defensive plan with the 11th Marines and extensively trained with the artillery regiment. (Kelly comments)

\*\*The messhall was collocated with CSSD-111 at Abu Hadriyah. (Kelly comments)



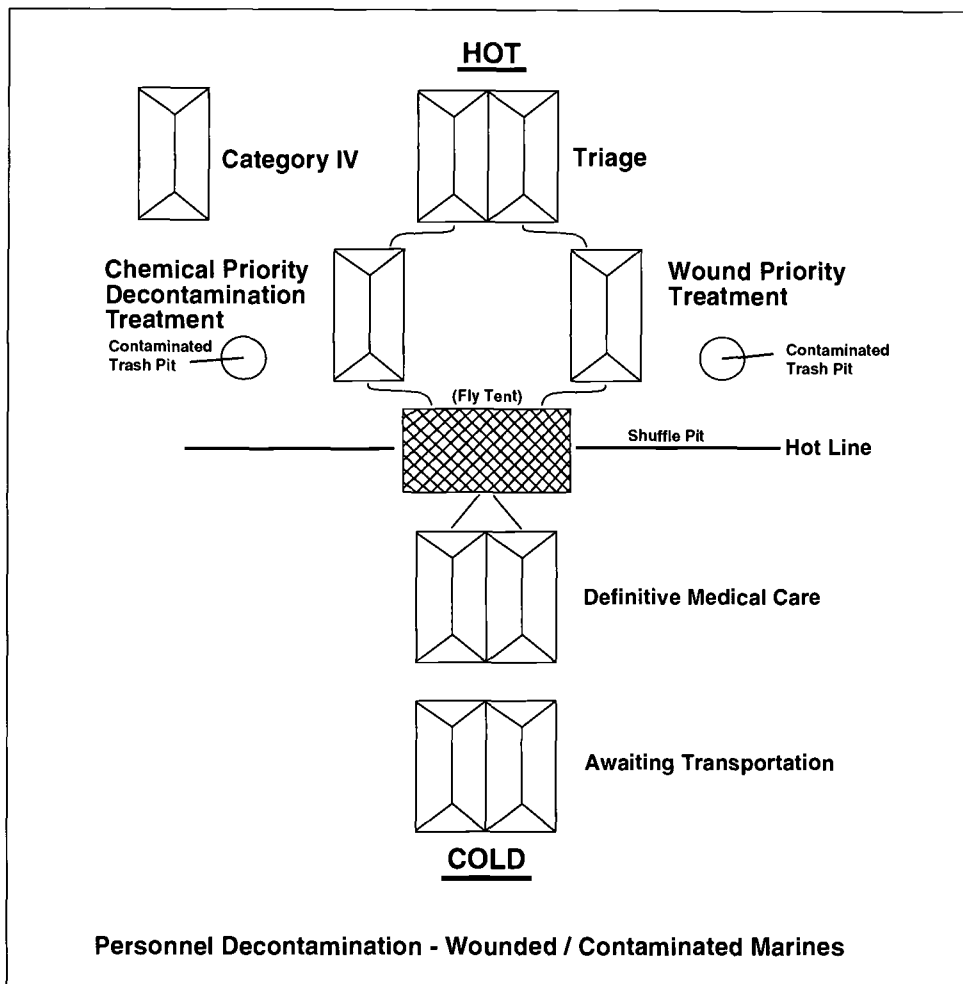


Diagram courtesy of Maj Adrian W. Burke

Diagram depicts CSSD-141's chemical hot line. Exposed units would enter at the hot end of the line and exit through the cold end after decontamination

and prepared for reinforcements. On 4 December, Commander Patrick Fogarty's NMCB-74 arrived at Shaikh Isa and replaced NMCB-7 which, before leaving Bahrain, finished MAG-11's ammunition supply point. Over the next two weeks, Commander James McGarrah's NMCB-24 replaced NMCB-4 and Captain Johnson received 24 additional staff personnel, which allowed him to redesignate the Seabee task force as the 3d Naval Construction Regiment (3d NCR).<sup>241</sup> To help with I MEF's construction burdens, Johnson called forward 200 Seabees from NMCB-1 in Rota, Spain, who arrived by mid-month.\* On the 18th, NMCB-74 moved to Mishab and started building FASP-3, but left behind a detachment at Shaikh Isa to complete the apron expansion program started by NMCB-7. On the

\* The additional personnel from NMCB-5, NMCB-24 reaching its wartime strength, the regimental augmentees arriving from the Naval Construction Force Support Unit, and an Underwater Construction Team increased the personnel strength of the 3d NCR to 2,800 by February 1991. (Johnson comments)



23d, NMCB-40 moved to Manifah Bay and assisted the 1st Marine Division engineers build a new support area and, a week later, started building firing ranges for the 2d Marine Division. On Christmas eve, NMCB-24 initiated site preparation for the second fleet hospital in the Jubayl area.<sup>242</sup>

### *Reinforcements*

*Throughout December, the focus of the I MEF effort was planning and preparation for offensive operations as directed by USCINCENT including the reception and training of reinforcements . . .*<sup>243</sup>

On the other side of the world in southern California, the 5th MEB, commanded by Brigadier General Peter J. Rowe, a veteran of the Hue City and Khe Sanh campaigns during the Vietnam War, prepared to deploy to the Gulf.<sup>244</sup> Lieutenant Colonel Robert E. Lupton commanded the 37 officers and 576 enlisted Marines and sailors of BSSG-5 which supported MAG-50 and Regimental Landing Team 5. Several months earlier, Lieutenant Colonel Lupton had quickly formed a BSSG to deploy with the 5th MEB to the Gulf using MSSG-11 as a nucleus and personnel and equipment from the 1st FSSG. After a few false starts and a reversion to a small planning headquarters, the 5th BSSG received 800 Reservists of whom 300 were engineers and military policemen, once the President made his decision to reinforce U.S. forces in the Gulf. Lupton again redesignated MSSG-11 as BSSG-5, absorbed the Reservists into the organization, and, on 1 December, departed for the Gulf. The 13 ships of Amphibious Group 3 and three MSC ships carried the 5th MEB and its follow-on supplies. After a brief stop in Hawaii to pick up additional personnel and equipment, Amphibious Group 3 steamed to the Philippines where the 5th MEB ended the year by conducting an amphibious exercise.<sup>245</sup>

Table: Amphibious Group 3 and follow-on shipping.<sup>246</sup>

USS <i>Tarawa</i> (LHA-1)	USS <i>Denver</i> (LPD-9)	USS <i>German- town</i> (LSD-42)	USS <i>Mobile</i> (LKA-115)
USS <i>Tripoli</i> (LPH-10)	USS <i>Juneau</i> LPD-10)	USS <i>Peoria</i> (LST-1183)	SS <i>Flickertail State</i>
USS <i>New Orleans</i> (LPH-10)	USS <i>Anchorage</i> (LSD-36)	USS <i>Barbour County</i> (LST- 1195)	MV <i>Neptune Iolite</i>
USS <i>Vancouver</i> (LPD-2)	USS <i>Mount Vernon</i> (LSD- 39)	USS <i>Fredrick</i> (LST-1184)	MV <i>Cape Girardeau</i>

In early December, General Myatt moved the 1st Marine Division north to make room for the arrival of the 2d Marine Division. The 1st Marine Division command post deployed 16 kilometers from its old location at Abu Hadriyah to a point 10 kilometers south of Manifah Bay along a desert road that connected Abu Hadriyah with Manifah Bay. On the 6th, division engineers began construction of a new division support area at Manifah Bay. The engineers disassembled strong-back tent frames at Ras Al Ghar and reassembled them at the new location. By mid-December, the 1st Marine Division transferred Camps 3, 5, and 15 to the arriving 2d Marine Division.<sup>247</sup>

On 8 December, 499 members of II MEF's Surveillance, Liaison, and Reconnaissance Party arrived by air, moved to the port of Jubayl, and prepared to unload the four ships of MPSRon-1, which were steaming towards Jubayl from the East Coast of the United States. Three days later, the air flow of reinforcements, mostly from the East Coast, but some from the West Coast, began bringing an average 945 Marines and sailors and 222 short tons of cargo every day for the remainder of the month. On the 13th, MPSRon-1 reached Jubayl, where the 6th MEB spent the next 10 days unloading the MVs *Kocak*, *Obregon*, *Pless*, and *Bobo*. BSSG-6, the combat service support element of the 6th MEB, sent the 2d FSSG's equipment to Lieutenant Colonel James W. Head, who used his MSSG-22 staff of 15 Marines to account for and sign over every piece of equipment to responsible officers.<sup>248\*</sup> By the end of the month, the size of I MEF increased by 58 percent. The 2d Marine Division added 11,000 Marines and sailors to I MEF, while the 1st FSSG almost doubled in size with the addition of the 2d FSSG. The 3d MAW operated 80 more aircraft.<sup>249</sup>

Arriving with II MEF's Surveillance, Liaison, and Reconnaissance Party was a small group of Marines and sailors from MWSS-273 at MCAS Beaufort, South Carolina, who were the first MWSS reinforcement to arrive in Saudi Arabia. Lieutenant Colonel William L. Riznychok commanded MWSS-273, whose main body reached the Persian Gulf in mid-December, picked-up equipment from MPSRon-1, and started moving to Ras Al Mishab the day before Christmas.<sup>250</sup> Completing the move on the 30th, Lieutenant Colonel Riznychok commanded 706 Marines and sailors who prepared Mishab for the arrival of MAG-26.<sup>251</sup> Meanwhile, Colonel Robert W. Coop, the former 3d MAW logistic officer, took charge of MWSSG-37 which, on 18 December, arrived from California. Coop, therefore, commanded all of the Wing MWSSs and became the camp commandant for King Abdul Aziz Naval Air Station.\*\* On the day after Christmas, MWSSG-37 moved equipment for a fifth and final MWSS from MPSRon-1 to King Abdul Aziz.<sup>252</sup> Near the end of the month, 159 personnel

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\*MSSG-22 was one of three permanent MSSGs in the 2d FSSG.

\*\*Col Coop selected King Abdul Aziz Naval Air Station for the MWSSG-37 headquarters because of its proximity to the port of Jubayl and to the air bases supported by his squadrons. Because of the location, MWSSG-37 retrieved equipment from MPSRon 1 without the problems experienced in August. In addition, MWSSG-37 benefitted from the extensive maintenance and supply capabilities resident with GSG-1 at the port. (Coop comments)



Photo courtesy of Col Thomas S. Woodson

*Marines from II MEF arrive by air at Jubayl Naval Air Facility as part of the large U.S. buildup in December 1990. These reinforcements gave I MEF the capability of ejecting the Iraqis from Kuwait.*

from MWSS-271 located at Marine Corps Air Station Cherry Point, North Carolina, arrived at King Abdul Aziz Naval Air Station and claimed the equipment from Colonel Coop's Marines.<sup>253</sup>

Arriving with the Marines and sailors of the 2d FSSG were a significant number of Reserve logisticians. From October into December, the Marine Corps had activated Reservists from the 4th FSSG to fill critical shortages in the 2d FSSG caused by BSSG-4's hasty departure with the 4th MEB.\* For example, on 6 December, Reserve bulk fuel specialists from Bakersfield, California, and Tucson, Arizona, and electricians and water supply technicians from Gary, Indiana, arrived at Camp Lejeune. During the next two days, the 8th Engineer Support Battalion, 2d FSSG, quickly merged the 215 Reservists from the 6th Engineer Support Battalion, 4th FSSG into its ranks and on 9 December, began sending them to Saudi Arabia. Unlike the active duty Marines, the Reserve engineers departed without any predeployment training.<sup>254</sup>

GSG-1, under Colonel Paul A. Pankey, a 36-year veteran of the Marine Corps who had assumed command on 7 December, operated a halfway house for

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\*As described earlier, 2d FSSG sent 1,464 Marines and sailors to BSSG-4, which was the combat service support element of the 4th MEB. The 4th MEB remained on board amphibious ships under the operational control of the Navy and not I MEF during Desert Shield and Desert Storm.

reinforcing FSSG units.<sup>255\*</sup> Newly arrived battalions from the 2d FSSG and the headquarters battalion from the 1st FSSG joined GSG-1, collected equipment, and either stayed in GSG-1 or were assigned to either General Krulak's DSC or Colonel Hampton's GSG-2. Colonel Pankey paired old and new units of the same functional variety together to facilitate acclimation to Saudi Arabia. For example, Lieutenant Colonel Charlie F. Smith, the commander of GSG-1's motor transport detachment, met Lieutenant Colonel Thomas S. Woodson's 8th Motor Transport Battalion at the port and transported the new arrivals to the GSG-1 motor pool where they were housed, briefed, and merged into operations. General Krulak brought every battalion from the 2d FSSG, except the dental battalion, while General Brabham brought forward only four of the battalion headquarters from Camp Pendleton.<sup>256</sup> By mid-December, Colonel Pankey was temporarily in charge of nine battalions from the 1st and 2d FSSGs, three detachments, and both the operations and defense of the port of Jubayl.<sup>257</sup>

### *Establishing the Direct Support Command*

*Once we got there, we established ourselves as a Direct Support Command.*<sup>258</sup>

After General Krulak arrived on 13 December, General Boomer ordered him to find a location in northern Saudi Arabia to support the I MEF forthcoming offensive.<sup>259</sup> Krulak placed Lieutenant Colonel Charles O. Skipper, the commanding officer of the 8th Engineer Support Battalion and a graduate of the U.S. Army's Engineer Officer Advance Course with a master's degree in engineering from the University of South Carolina, in charge of developing the plans for the DSC's support area. On the 17th, Krulak flew with a group of officers to an area called Qaraah located 100 kilometers west of the port of Mishab and near the Kuwaiti border. Captain Jonathan P. Hull, the commanding officer of Company C, 8th Engineer Support Battalion, and a team of engineers in HMMVWs met Krulak's helicopter and then surveyed Qaraah. Lieutenant Colonel Skipper described the area as "a totally flat, barren, and desolate place, littered with dead camels."<sup>260\*\*</sup>

Four days later, Krulak, his staff, and Captain Brian J. Hearnberger, the commanding officer of Company B, 8th Engineer Support Battalion, surveyed a number of other locations to include a spot called Kibrit located 50 kilometers

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\*Col Pankey commanded 1st FSSG (Rear) at Camp Pendleton California, between August and December 1990. After Col Pankey departed for the Persian Gulf, Col John A. Kelly commanded 1st FSSG (Rear). (Pankey comments)

\*\*LtCol Skipper added in his description of Qaraah that "We saw numerous dead camels which someone said had died from a plague. We also saw a four-foot-high vulture sitting on one of the carcasses. For new arrivals in the country, it was a great immediate impression on the challenges ahead of us." (Skipper comments)



Photo courtesy of Col Thomas S. Woodson

*Direct Support Command Marines in eight HMMWVs survey the desolate site at Kibrit where the command would establish CSSA-1 to support the I MEF attack into Kuwait.*

west of Mishab and 50 kilometers south of the Kuwaiti border.\* Distinguishing characteristics of this area were a fold in the ground which would hide the silhouette of a camp below the skyline, an old dirt airfield, and a desert road that ran east to GSG-2 at Mishab. Additionally, Kibrit was close enough to the border to support an attack, but far enough away to be out of the range of Iraqi artillery. These advantages convinced General Krulak that Kibrit was the proper place to support I MEF's attack.<sup>261</sup>

During this time, General Krulak met daily with General Brabham to decide the final distribution of units within the 1st FSSG. Both FSSG staffs and battalion commanders attended a nightly joint meeting co-chaired by the generals. Commanders presented recommendations for the best use of their units. For example, both Lieutenant Colonel Charlie F. Smith, who now commanded the 7th Motor Transport Battalion, and Lieutenant Colonel Thomas S. Woodson, who led the 8th Motor Transport Battalion, wanted the direct support role for their battalions and presented reasons for receiving the mission. By the 20th, Generals Brabham and Krulak decided the final distribution of forces. According to a previous agreement, in addition to responsibility for the Port of Jubayl, Colonel Pankey, who commanded GSG-1, would include in his organization the 2d Supply Battalion, 2d Maintenance Battalion, and 1st Landing Support Battalion, and then spin-off detachments, as needed, to the DSC and to GSG-2.<sup>262</sup> General Krulak would control the 7th Engineer Support Battalion, the 8th Engineer Support Battalion, the 2d Medical Battalion, the 8th Motor Transport Battalion, reinforced with most of the 1st FSSG's tactical motor transport assets, and landing support, maintenance, and supply detachments. The generals sent the 2d Landing Support Battalion, 7th Motor Transport Battalion, and 1st Medical Battalion to GSG-2, still commanded by Lieutenant Colonel Hayden. Hayden also took charge of the Headquarters and Services Battalion, 1st FSSG, which remained at Jubayl.<sup>263</sup>

On 22 December, General Krulak activated the DSC, focused its efforts on building Combat Service Support Area (CSSA) 1 at Kibrit, and established a direct support pipeline to the ground combat element. General Krulak used the Headquarters and Service Battalion, 2d FSSG, as his command element and received from GSG-1, the 2d Medical Battalion, 8th Engineer Support Battalion,

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\*Capt Hearnberger had the mission of starting construction at the new CSSA. LtCol Skipper commented that "his presence at the recon was critical." (Skipper comments)

and 7th Engineer Support Battalion. He ordered Lieutenant Colonel Charles O. Skipper, who led the 8th Engineer Support Battalion, to build a command post at Mishab and to begin the massive construction effort at Kibrit. Krulak directed Lieutenant Colonel David L. John to bring the 7th Engineer Support Battalion to Kabrit after completing its work at Mishab. Colonel Powell, the DSG-1 commander, who had reported to General Krulak on the 13th, transferred CSSD-142 which operated FASP -1 and -2 to GSG-1 on the 23d, and moved CSSD-111 to the northern part of the Triangle.\* DSG-1 remained responsible for support of the 1st Marine Division.<sup>264</sup>

On 20 December Krulak activated DSG-2 at Jubayl under Colonel Thomas P. Donnelly, Jr., the former 2d FSSG Deputy Chief of Staff for Operations, to sustain the 2d Marine Division. Colonel Donnelly planned a combat support area, similar to the one that DSG-1 established with CSSD-10, but unlike Colonel Powell, he did not plan to create a separate general support organization like CSSD-10. The DSC sent personnel and equipment to DSG-2 and on the day after Christmas, Colonel Donnelly began setting up a support area at CSSD-111's old position near Abu Hadriyah. To provide direct support to the division's maneuver regiments, Donnelly intended to establish MCSSD-28 to support the 8th Marines when it arrived in January. To sustain the 6th Marines, which deployed to Saudi Arabia in mid-December, he deployed MCSSD-26, under recently arrived Lieutenant Colonel David L. Wittle.<sup>265</sup>

Lieutenant Colonel Wittle organized his command into headquarters, motor transport, engineer, maintenance, supply, landing support, ammunition, communications, medical, and military police detachments. Wittle, together with his executive officer, Major Charles J. Clarke, had recommended tables of equipment and organization to the DSC based on their extensive experience as CSSD commanders during numerous combined arms exercises (CAX) at the Marine Corps Air Ground Combat Center, Twentynine Palms, California.\*\* After a review and adjustment of these requirements, the DSC sent detachments, mostly from the battalions of the 2d FSSG, to MCSSD-26. The highest personnel strength that MCSSD-26 attained was 259 Marines and sailors.<sup>266</sup> On 29 December, MCSSD-26 moved from the Port of Jubayl to the Cement Factory Ridge to join the 6th Marines.<sup>267</sup>

While DSG-2 established itself, the 8th Engineer Support Battalion started the huge construction effort to support the DSC. On 21 December, the battalion commander, Lieutenant Colonel Skipper, ordered Captain Hull's Company C to Mishab to build the DSC's rear area camp. Six days later, Skipper directed Captain Brian J. Hearnberger to move Company B to Kibrit and start building

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\*CSSD-142 was redesignated Ammunition Company, 2d Supply Battalion, GSG-1.

\*\*The CAX program consisted of two weeks of training culminating in a three-day mechanized attack across 80 kilometers of desert at the Marine Corps Air Ground Combat Center, Twentynine Palms, California. The Marine Corps conducted 10 CAXs per year which exercised a regimental headquarters in command of a reinforced infantry battalion, an aviation combat element, and a CSSD of about 300 Marines and sailors. Together, Lt Col Wittle and Maj Clarke commanded three different CSSDs in support of eight CAXs in the mid-1980's. (Wittle comments and BAT Tape 1390A)

the roads, fuel farm, and ammunition supply point that would make up the combat service support area. Skipper ordered Hearnberger to travel during the day, since he was concerned that local Saudi forces might shoot at them during the night. Skipper visited the commanders of the Saudi 8th and 10th Brigades who guarded the border, to brief them on the 8th Engineer Support Battalion's presence and operations at Kibrit. Even though intelligence reports showed that the Iraqis were in defensive positions and unlikely to attack, General Krulak obtained infantry support to guard Kibrit. Until the security force arrived, the 8th Engineer Support Battalion would rely on its own machine guns and LAAW hand-held antitank weapons to protect the site. On the afternoon of 27 December, Company B moved into Kibrit, started construction on CSSA-1, and was joined, three days later, by Captain Hull's Company C. At the end of December, the 8th Engineer Support Battalion was the closest I MEF unit to the enemy.<sup>268</sup>

### *The Year Ends*

*Emphasis on defensive operations was no longer a priority and a shift occurred to the offensive. —3d MAW Command Chronology*

By the end of December, I MEF had absorbed reinforcements and leaned

Table: 1st FSSG on 31 December 1990<sup>269</sup>

Unit	Subordinate Units		
DSC	H&S Bn, 2d FSSG 7th Engineer Support Bn 8th Engineer Support Bn 8th Motor Transport Bn 2d Medical Bn Det, 2d Maintenance Bn Det, 2d Supply Bn	DSG-1 -CSSD-111 -CSSD-141	DSG-2 -MCSSD-26 -MCSSD-28
GSG-1	2d Supply Battalion 2d Maintenance Battalion 1st Landing Support Battalion Det, Dental CSSD-131 CSSD-132		
GSG-2	Det, H&S Bn 7th Motor Transport Battalion 2d Landing Support Battalion 1st Medical Battalion Det, 2d Maintenance Battalion Det, 2d Supply Battalion Det, 8th Engineer Support Battalion Det, Dental		
H&S Bn	H&S Co, 1st FSSG Service Company -Information Management Unit -Exchange Platoon -Postal Platoon -Disbursing Platoon -Legal Support Section Military Police Company Communications Company		



forward towards Kuwait with its combat and combat service support units largely in place. General Boomer commanded two divisions, 301 aircraft, a Seabee regiment, and the better part of two FSSGs, spread over 300 kilometers from Bahrain to Kibrit. The 2d FSSG reinforced the 1st FSSG and established the DSC which would provide direct combat service support to the attacking forces from its forward base at Kibrit. GSG-2 stood up with the mission of stockpiling supplies in Northern Saudi Arabia and sending them to the DSC. GSG-1, H&S Battalion, 1st FSSG, and the 3d NCR remained in general support of the MEF while MWSG-37 took charge of the 3d MAW ground combat service support. As I MEF came together as an offensive force, the last peaceful month passed while the United Nations deadline of mid-January rapidly approached without any indication of an Iraqi withdrawal from Kuwait.

Table: Logistics support overview on 31 December 1990<sup>270</sup>

Location	Logistics Unit (S)	Supported Unit (S)	Distance To Saudi-Kuwaiti Border (Km)
Kibrit	DSC		50
Mishab	GSG-2 MWSS-273 NMCB-74 Det, 7th ESB	DSC	50
Tanajib			90
Manifah Bay/ Abu Hadriyah	DSG-1 -CSSD-111 -CSSD-141	1st MarDiv -TF Ripper -TF Shepherd -TF Taro	120
Jubayl Naval Air Facility	MWSS-374 CSSD-132 NMCB-5	MAG-16 MAG-26	195
Port of Jubayl/ Industrial City	1st FSSG -DSC CE --DSG-2 ---MCSSD-26 ---MCSSD-28 -GSG-1 -H&S Bn 3d NCR CE -NMCB-24 -NMCB-40	I MEF CE -2d MarDiv CE --6th Marines --8th Marines	210
King Abdul Aziz Naval Air Station	MWSG-37 CE -MWSS-174 -MWSS-271 Det, CSSD-132 Det, NMCB-24	MAG-13 (Fwd)	220
Ras Al Ghar	Det, MWSS-174	Det, MAG-16	240
Shaikh Isa	MWSS-373 CSSD-131 Det, NMCB-74	3d MAW CE -MAG-11 -MACG-38	360

## Desert Shield Ends and Desert Storm Begins: 1-31 January 1991

### *The Situation*

*United Nations Resolution 678—Authorized UN Members to use “all means necessary” ...if Iraq does not leave Kuwait by 15 January 1991.—DoD, Final Report to Congress on the Conduct of the Persian Gulf War*

The new year began with the breakout of hostilities imminent.<sup>271</sup> General Schwarzkopf had set 17 January as the date for the start of the air war and the 3d MAW made its preparations for air attacks against targets in Iraq and Kuwait from its fixed-wing bases in Bahrain and Saudi Arabia. The 1st Marine Division moved north to allow the 2d Marine Division to relocate to the field. As the countdown progressed, I MEF refined its plan against Iraqi forces in Kuwait and decided against an amphibious landing. The revised plan still called for the 1st Division to penetrate the two lines of Iraqi mines and obstacles in Kuwait and seize MEF Objective A, Al Jaber Air Base. As in the original scheme of maneuver, the 2d Marine Division was to follow the 1st Marine Division through the breach, but, now, instead of linking up with an amphibious force, would maneuver to the left of the 1st Marine Division and launch the main attack northwest towards Objective C, the choke point at Al Jahra. The 1st Marine Division would attack on the 2d Marine Division's right flank and seize MEF Objective B, Kuwait International Airport.<sup>272</sup> General Krulak's DSC would support both divisions from its base at Kibrit and the 3d MAW would provide helicopter support from Mishab and Tanajib.

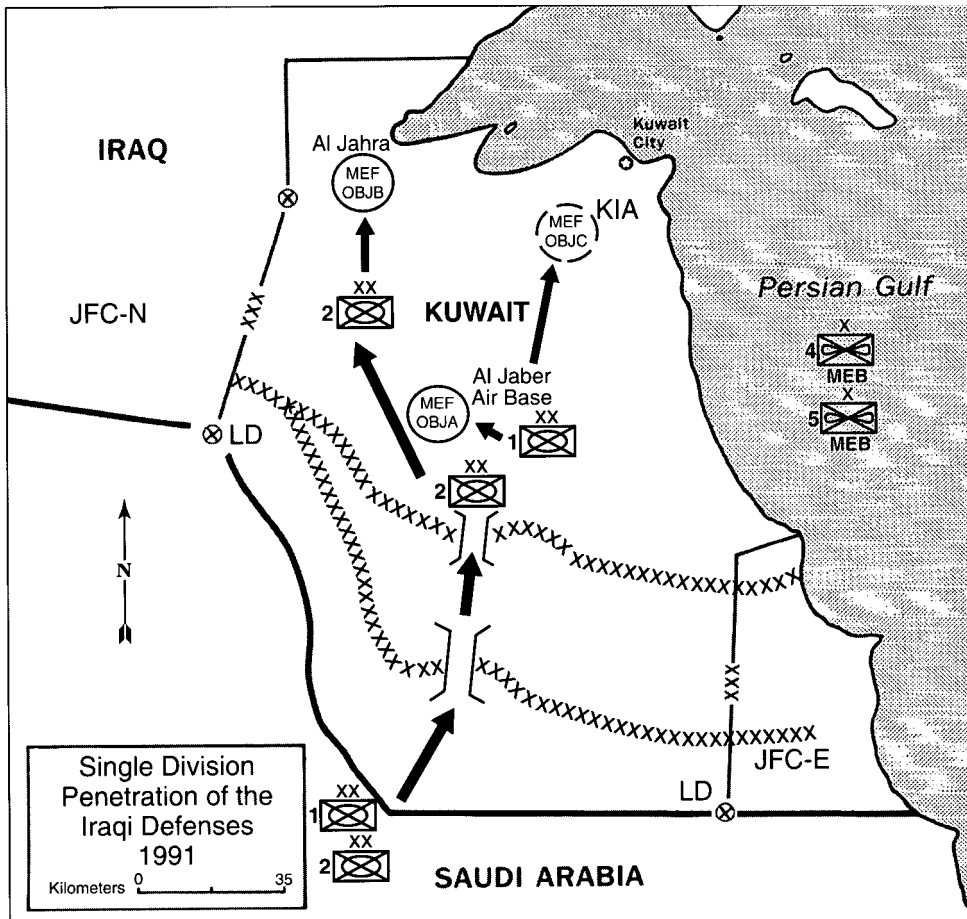
### *Leaning North: 1-16 January 1991*

*By 15 January, all units of 1st FSSG were in position and ready to conduct offensive operations to liberate Kuwait.*<sup>273</sup>

*MWSG-37 has provided all ground support requirements necessary for the 3d MAW . . .*<sup>274</sup>

### *Marine Wing Support Group 37*

With the air war about to be launched on the 17th, the southern MWSSs of MWSG-37 completed preparations for operations. To improve support for fixed-wing operations at Shaikh Isa, Lieutenant Colonel Stephen D. Hanson, the commanding officer of MWSS-373, established an air operations division, commanded by Captain Donald A. Thompson. The new organization provided base operations, crash and fire rescue, refuelling, expeditionary airfield services, and weather reporting.<sup>275</sup> At Jubyal Naval Air Facility, MWSS-374 had its hands full



with MAGs -16 and -26 and the 3d MAW headquarters, but completed there, with the help of the Seabees, the third helicopter parking apron. At King Abdul Aziz Naval Air Station, MWSS-174 expanded its operations by installing another tactical fuel dispensing system to support Harrier and OV-10 combat missions. Lieutenant Colonel James P. Chessum, the commanding officer of MWSS-174, sent a construction team to help MWSS-273 at Mishab, and provided trucks for the newly arrived MWSS-271.<sup>276</sup>

Although MWSS support in the south was well established, setting up in the north ran into rain and host nation reluctance. The arrival of the main body of MWSS-271, commanded by Lieutenant Colonel Richard H. Zegar, at King Abdul Aziz Naval Air Station on 6 January, gave Colonel Coop, the MWSG-37 commander, the ability to expand support for helicopter operations in northern Saudi Arabia. Expecting to support MAG-16 at Tanajib, MWSS-271 joined its advance party, collected its equipment, and then waited. The Saudi national oil company, ARAMCO, which owned the airfield at Tanajib, would neither allow MAG-16 nor MWSS-271 access to its facilities. Instead, on 12 January, Lieutenant Colonel Zegar sent a detachment to Kibrit to operate a FARP for elements of MAG-26,

and seven days later dispatched 30 military policemen to MWSS-273.\* Just south of the Kuwaiti border at Ras Al Mishab, MWSS-273 struggled against nature to prepare for the arrival of MAG-26. After repairing the damage caused by torrential rains on the 13th, Lieutenant Colonel William L. Riznychok's Marines, with the help of a construction team from MWSS-174, rebuilt an access road to the ammunition dump, refueled helicopters, opened a new mess hall, continued construction on the base camp, produced water with its ROWPUs, and, prudently, hardened bunkers.<sup>277</sup>

Table: Marine Wing Support Group 37

Marine Wing Support Squadron	Primary Location	Primary Supported Unit
MWSS-174	King Abdul Aziz Naval Air Station	Mag-13 (Forward)
MWSS-271	King Abdul Aziz Naval Air Station	Planned to Support MAG-16 at Tanajib
MWSS-273	Ras Al Mishab	Planned to Support MAG-26
MWSS-373	Shaikh Isa	MAG-11
MWSS-374	Al Jubayl Naval Air Facility	MAGs-16 and -26 3d MAW HQ

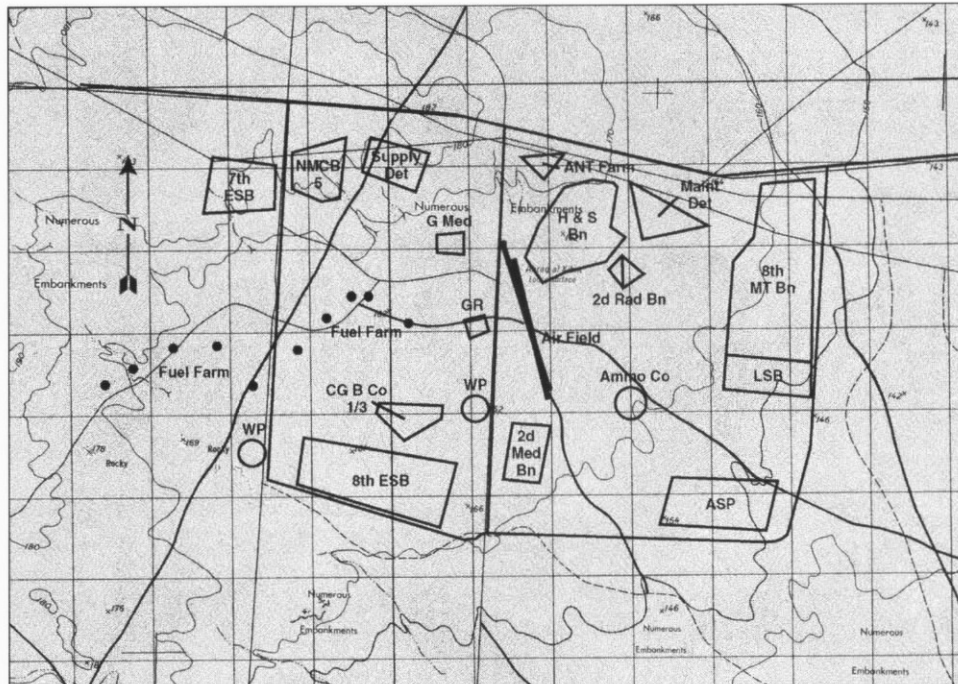
### *Setting Up Kibrit*

While the 3d MAW prepared for the coming air war, Generals Krulak and Brabham focused their attention on making Kibrit ready to support the ground assault. To supervise the effort, on New Year's Day, Krulak moved his main command post to Mishab and his forward command element to Kibrit. He sent a planning team, led by Lieutenant Colonel John A. O'Donovan, the DSC's deputy operations officer, to I MEF headquarters to assist in developing the various logistic schemes to support the different ground attack options under consideration.<sup>278\*\*</sup> On the 4th, Company C, 1st Battalion, 3d Marines, arrived at Kibrit to provide security. Two days later the 7th Engineer Support Battalion reinforced the 8th Engineer Support Battalion to assist in the construction of CSSA-1.<sup>279</sup> By

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\*Col Skipper, who commanded the 8th Engineer Support Battalion, commented that "Due to a shortage of manpower in the MWSS, the FARP was totally constructed by the 8th Engineer Support Battalion and over 50% of the fueling was done by Marines of the bulk fuel company." (Skipper comments)

\*\*Col O'Donovan noted that Gen Krulak, Col John A. Woodhead, the DSC's Chief of Staff, and Col Tace, the DSC's operations officer, attended the I MEF commander's meetings and planning updates to keep abreast of developments. (O'Donovan comments)



DSC Command Chronology, Dec 1990-Feb1991.

*The DSC designed Kibrit to be spread over 40 square kilometers. CSSA-1 overlay shows the vast size of the logistics area needed to support two attacking divisions.*

mid-month, the DSC's engineers finished building a sprawling complex spread over 40 square kilometers as a defensive measure against Iraqi air and artillery attack. The 8th Engineer Support Battalion and the 7th Engineer Support Battalion built a 73-cell ammunition support point, improved the 3,000-foot air strip, established a 1.8-million-gallon fuel dump, stored 500,000 gallons of water, dug in two field hospitals, and surrounded the entire complex with a blast berm.<sup>280</sup>

On 5 January, Saudi Motors began delivering supplies to Mishab. Three days later, General Brabham returned the 8th Motor Transport Battalion to General Krulak, which gave the DSC a strength of 352 officers and 6,537 enlisted Marines and sailors.<sup>281\*</sup> At the Port of Jubayl, Colonel Pankey replaced the 8th Motor Transport Battalion with the newly arrived Reservists from the headquarters of the 6th Motor Transport Battalion, commanded by Lieutenant Colonel Larry D. Walters. The Reservists took over the management of Saudi Motors just in time to confront the increasing hesitation of foreign drivers to work as the war approached.<sup>282</sup> To counter this reluctance, Walters assigned Marines as assistant drivers, which reassured the foreign drivers and gave the newly arrived Reservists an opportunity to familiarize themselves with the countryside.<sup>283</sup>

On 6 January, Captain Johnson began moving Seabees north to assist in the establishment of the DSC at Kibrit. Commander Walsh sent elements of

\*The 8th Motor Transport Battalion began moving to Kibrit on 28 December, but was not officially transferred from GSG-1 to the DSC until 5 January. (Woodson comments)



Photo courtesy of CW05 Thomas M. Sturtevant  
*"Saudi Motors" truck convoy arrives with supplies at Kibrit. This improvised organization filled a gap in the I MEF transportation system.*

NMCB-5 to the site to drill for water, but unfortunately, after several attempts, the well collapsed at a depth of 1,000 feet. The Seabees restored an existing 1,200-foot well to operation by replacing its submersible pump.\* On the 10th, Walsh dispatched a second crew to build a camp for 500 Seabees immediately inhabited by NMCB-40 which arrived to maintain the roads between Kibrit and Mishab. The rapid deterioration caused by extensive truck traffic forced the Seabee commander to assign NMCBs -5 and -40 the responsibility of repairing the 20 kilometers of road east of Kibrit, and NMCBs-24 and -74 the mission of fixing the 30 kilometers of road west of Mishab.\*\* The rains on the 13th damaged the marl and sand road and caused the Seabees to work 24 hours a day to repair the destruction. To coordinate northern operations, Johnson moved 10 members of the 3d NCR headquarters with I MEF's forward headquarters to Safaniyah, located equidistant between Mishab and Tanajib. Even though the bulk of the 3d NCR remained in the south, the focus had shifted north.<sup>284</sup>

### *DSG-1 Reorganizes and Deploys to the Field*

While the generals concentrated on establishing Kibrit, DSG-1 reorganized to support offensive operations and moved north with the 1st Marine Division. Executing the plan devised in November, CSSD-111 became CSSD-10

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\*LtCol Skipper, the 8th Engineer Support Battalion commander, commented that "They (the Seabees) tried mightily, but were unsuccessful at drilling a new well." (Skipper comments)

\*\*Moderate driving on a desert road turned it into a washboard surface that bounced well-secured cargo off the back of trucks. Drivers, to avoid the painful jarring, drove in virgin strips of sand parallel to the old path. In a matter of days, road systems hundreds of meters wide emerged. The Seabees graded the roads and eliminated the widening effect. (Songer comments and Burke comments)

and refocused its efforts on providing general support to the 1st Marine Division. Lieutenant Colonel Kelly remained in command. At Manifah Bay, Captain Burke renamed CSSD-141, MCSSD-11, and restructured the organization to provide direct support to Task Force Papa Bear (the 1st Marines). Colonel Powell ordered Captain Edward J. Winter, the former CSSD-111 operations officer, to form MCSSD-17 with the mission of supporting Task Force Ripper (the 7th Marines). Later in the month, Colonel Powell tapped Captain William H. Ritchie, III, who was working on the DSC staff, to command CSSD-13 and to support Task Force Taro (the 3d Marines) at Mishab.\* As DSG-1's subordinate commands moved to locations near their supported task forces, Colonel Powell moved his headquarters element north of the Triangle and focused his efforts on refining the division's support requirements, obtaining equipment and personnel from the DSC, and looking for more efficient ways to sustain the division.<sup>285</sup>

Table: Direct Support Group 1 lineage

Old Name	New Name	Function/Unit Supported
CSSD-111	CSSD-10	General Support/1st Marine Division
CSSD-141	MCSSD-11	Direct Support/Task Force Pappa Bear
N/A	CSSD-13	Direct Support/Task Force Taro
N/A	MCSSD-17	Direct Support/Task Force Ripper

Task Force Ripper was one of the two mechanized regiments that gave the 1st Marine Division its primary combat power and mobility. Colonel Carlton W. Fulford, Jr., commanded the task force which consisted of the 7th Marines headquarters element; the 1st Battalion, 5th Marines (mechanized); the 3d Battalion, 7th Marines (mechanized); the 3d Tank Battalion; and the 1st Combat Engineer Battalion. Exceeding a personnel strength of 4,800 troops, Ripper had concentrated its extensive mobility and fire power in 75 M60A1 tanks, 124

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\*DSG-1 renumbered CSSDs to conform with the numeric system used by DSG-2. For example, MCSSD-11 supported Task Force Papa Bear whose nucleus was the 1st Marines. The first "1" in MCSSD-11 designated it as supporting the 1st Marine Division and the second 1 designated the regiment as the 1st Marines. MCSSD-17 supported Task Force Ripper (7th Marines), and CSSD-13 supported Taro (3d Marines). The "0" in CSSD-10 indicated that the organization was in general support, while the 1 indicated it was in support of the 1st Marine Division. Accordingly, MCSSD-26 supported the 6th Marines and MCSSD-28 sustained the 8th Marines. Both regiments belonged to the 2d Marine Division. (Powell comments)





Photo courtesy of Col Alexander W. Powell

*Col Alexander W. Powell poses with his DSG-1 detachment commanders in a group picture. From left are Capt Adrian W. Burke (MCSSD-11), Capt Edward J. Winter (MCSSD-17), Col Powell (DSG-1), and LtCol Richard L. Kelly, (CSSD-10)*

amphibious assault vehicles, and 22 5-ton trucks. The 3d Battalion, 11th Marines, provided direct artillery support to the task force. On 1 January, Ripper moved 70 kilometers from its Desert Shield position at Abu Hadriyah to a location 30 kilometers northwest of the Triangle. At this location, Colonel Fulford continued to plan, train, and prepare equipment for the attack into Kuwait.<sup>286</sup>

On 6 January, the newly established MCSSD-17, under Captain Edward J. Winter, formed around the former CSSD-111 motor transport detachment, joined Task Force Ripper in its new position.<sup>287</sup> Captain Winter, although a new MCSSD commander, was neither new to the desert, nor to Task Force Ripper. Winter entered Saudi Arabia with the 7th MEB's Surveillance, Liaison, and Reconnaissance Party back in August, and after the bulk of BSSG-7 arrived, commanded Company B, 7th Motor Transport Battalion.\* When the 1st FSSG stood up the following month, he went to work as CSSD-111's operations officer, where he distinguished himself in perfecting night convoy resupply operations with the division, including Task Force Ripper.<sup>288</sup> During the Desert Shield phase, Captain Winter participated in the 1st Marine Division LOGEX and used his knowledge to construct the tables of organization and equipment of the MCSSD that would support Task Force Ripper. When MCSSD-17 formed and moved north of the Triangle, it was led by and manned with experienced Marines and sailors who knew their jobs and the units they supported.<sup>289</sup>

Captain Winter designed MCSSD-17 to provide one day of supplies and limited services to Ripper. The mobile transported 17,500 gallons of fuel, 12,400 gallons of water, empty bags for ground bulk liquid storage, one day of ammuni-

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\*During July and early August 1990, Capt Winter prepared Company B, 7th Motor Transport Battalion, to participate in Display Determination in Turkey with BSSG-7 by conducting extensive mobile resupply training with the 5th Marines. (Maj Edward J. Winter comments on draft, 26Sep96, Author's Files, hereafter Winter comments)

tion, MREs, batteries, and medical supplies.\* To obtain supply support, Ripper's battalions placed representatives with MCSSD-17's supply section.<sup>290</sup> After receiving an order for parts, the MCSSD passed the requests to CSSD-10, which in turn, filled the demand and sent the items to MCSSD-17 for delivery to the requested unit. Three RT 4000 forklifts, a TRAM, and the cranes on the MK-17 LVS trailers gave the mobile its material-handling capability. A LVS pulled an 870 trailer which hauled a D7 bulldozer. Winter divided his Mobile into a headquarters element, commanded by First Lieutenant Patrick W. Ford, and two mini-mobiles which delivered supplies. Second Lieutenant David J. Eskelund, former commander of CSSD-111 (South), led Mobile 1, and First Lieutenant Edwin E. Middlebrook, formerly a motor transport officer in CSSD-111, commanded Mobile 2.<sup>291</sup> MCSSD-17 practiced moving into position and setting up in an inverted triangle with each mini-mobile taking a point nearest the enemy and the headquarters element forming the third point away from the threat. Within the security triangle, Captain Winter practiced building a hasty enemy prisoner of war compound and temporary dumps to push supplies to Ripper with its two mobiles.<sup>292</sup>

Colonel Richard W. Hodory commanded Task Force Papa Bear, which was the 1st Marine Division's other mechanized fist. This task force consisted of the command element from the 1st Marines, which reached Saudi Arabia two days before Christmas; the 1st Battalion, 1st Marines, which arrived in January; the 3d Battalion, 9th Marines of "Speed Bump" fame; and the Desert Shield veterans of the 1st Tank Battalion. Company A, 1st Combat Engineer Battalion and the 1st Battalion, 11th Marines were in direct support of the task force.<sup>293</sup> On 1 January, Papa Bear established a mobile defense north of the Triangle and then trained, collected equipment, and planned for the assault.<sup>294</sup>

At Manifah Bay, Captain Burke sent half of his personnel and a good amount of his equipment to other DSG-1 units as he transformed CSSD-141 into MCSSD-11 to support Task Force Papa Bear.<sup>295</sup> Burke lost half of his landing support capabilities, but doubled the size of his motor transport detachment.<sup>296</sup> He organized MCSSD-11 into alpha, bravo, and charlie trains and alpha and bravo command groups. The mission of the Alpha and Bravo Trains was to distribute supplies to Task Force Papa Bear while the Charlie Train contained the mobile's internal support capabilities. First Lieutenant Delaney C. Williams commanded the Alpha Train, First Lieutenant Juan C. Osorno led the Bravo Train, and First Lieutenant Daniel B. Conley directed Charlie Train's efforts.<sup>297</sup>

On 6 January, MCSSD-11 moved 15 kilometers west of Manifah Bay and set up within easy reach of all elements of Task Force Papa Bear. Captain Burke supported the task force, instructed newly arrived units on combat service support methods, and continued training MCSSD-11 in convoy and security procedures.<sup>298</sup> MCSSD-11 practiced establishing the defensive triangle position with the Alpha and Bravo Trains pointed toward the threat and the Charlie Train located furthest from the enemy. Each train was a self-contained security entity that

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\*The term "mobile" is used as a synonym for mobile combat service support detachment (MCSSD).



Photo courtesy of Maj Adrian W. Burke  
*MCSSD-11 Commander Capt Adrian W. Burke poses with his staff. From left are SSgt Mark W. Fishback (detachment gunnery sergeant), 1stLt Daniel B. Conley (Charlie Train commander), 1stLt Charles W. Grove (executive officer), Capt Burke, 1stLt Joseph W. Eason (supply officer), and MSgt Alfred Chavez (operations chief).*

could defend itself when one or more trains departed the area. An interval of 500 meters was maintained between trains as a protection against Iraqi artillery fire, while the gaps between the mini-mobiles were covered by interlocking fields of fire.<sup>299</sup>

During this early January period, the general support element of DSG-1 was also active. On New Year's Day, Lieutenant Colonel Kelly moved the newly-named CSSD-10, 35 kilometers to the northern part of the Triangle, just south of the A-B road along a gravel thoroughfare called Crusher Road. CSSD-10 arrived in the area before the division grew in size, and began executing its mission. Because of the Iraqi air threat, Kelly had his Marines dig in their new positions, which were dispersed within a 10-kilometer perimeter.<sup>300</sup> From Crusher Road, CSSD-10 executed its new general support mission by pushing food, water, fuel, and ammunition to MCSSDs-11 and -17 and artillery ammunition to the 11th Marines. The 1st Marine Division's smaller task forces and independent units pulled provisions from the CSSD.<sup>301</sup> A second collecting and clearing company, a graves registration section, a Reserve ammunition platoon, and a military police detachment joined CSSD-10, augmenting its capabilities, and increasing its size to 880 Marines and sailors.<sup>302\*</sup>

CSSD-10's maintenance detachment helped keep the 1st Marine Division's equipment readiness level at 96 percent. First Lieutenant Kevin R.

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\*The Reserve ammunition platoon was from the Ammunition Company, 4th Supply Battalion, 4th FSSG, Greenville, South Carolina. (Powell comments). For a brief period, CSSD-10 had three collecting and clearing companies which increased its size to over 1,000 Marines and sailors. The third company was later transferred to the DSC. (Kelly comments)

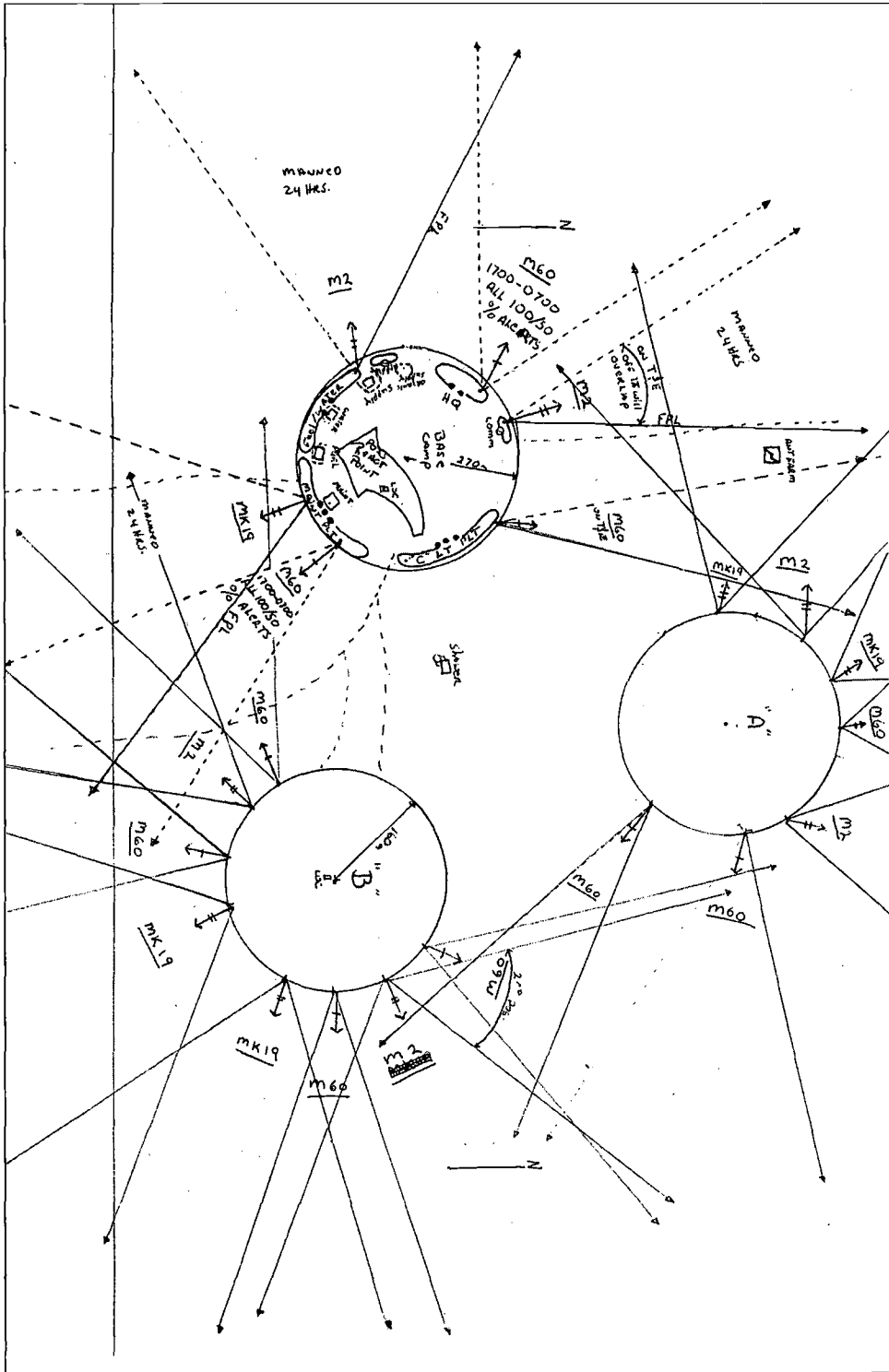


Photo courtesy of Maj Adrian W. Burke

MCSSD-11's defensive fire plan integrates the Alpha, Bravo, and Charlie trains' fields of fire.



Photo courtesy of LtGen James A. Brabham, Jr.

*A 1st FSSG maintenance contact team together with a wrecker work on an amphibious assault vehicle (AAV) in the field. Note the applique armor bolted to the side of the AAV.*

Wightman, a limited duty ordnance officer with 10 years of desert experience, two previous tours of duty in the Middle East, and who had deployed to the Cement Factory Ridge during August with CSSD-72, led the 180-man maintenance detachment. Wightman's team conducted overflow second echelon, full third echelon, and limited fourth echelon maintenance on the 1st Marine Division's equipment which was either brought back to CSSD-10's maintenance area or fixed by contact teams dispatched to forward areas. Between October and February, CSSD-10/111 deployed 800 contact teams to front-line locations, often at night and always, commanders worried, without adequate equipment to navigate and to protect themselves. Wightman sent items that exceeded CSSD-10's capabilities or took too long to fix to the DSC for repair and return. The maintenance detachment was mobile, taking only four hours to pack up and move by using old maintenance vans mounted on Vietnam War-vintage two-and-a-half-ton trucks.<sup>303</sup>

### *Ingenuity*

In every war, a group of usually forgotten Marines, who are normally in harm's way, develop creative solutions to problems unforeseen by centralized planners and rear echelon tacticians. By January, DSG-1 had spent more than four months in the desert performing combat service support in a high-threat environment. As individuals and as a group, Colonel Powell's Marines and sailors had experienced and ruminated on the many shortfalls and difficulties that confronted them. By January, DSG-1 had gone a long way in developing innovative and cre-



Photo courtesy of LtGen James A. Brabham, Jr.

*1st FSSG medical personnel practice decontaminating chemical casualties in the field.*

ative solutions to many combat service support conundrums.

At Crusher Road, CSSD-10 grappled with methods for handling and evacuating large volumes of wounded from the battlefield. Based on reports that Iranian medical personnel were often contaminated by chemically infected casualties during the Iran-Iraq war, Major William Lucenta, CSSD-10 S-3 Officer and a native of Massachusetts, looked for ways to decontaminate the wounded prior to receiving medical treatment. The maintenance detachment made stretchers by welding bedsprings to poles for carrying chemically dirty casualties to be sprayed at a decontamination site before receiving medical care. In a technique borrowed from the 11th Marines, the detachment would sandwich the contaminated Marine between swaths of chain link fence which allowed him to be sprayed, flipped, and sprayed again before seeing a doctor. Faced with the problem of removing an estimated 3,000 wounded from the battlefield with only two HMMWV ambulances,

Lieutenant Colonel Kelly directed Lieutenant Wightman and a team of medical personnel to devise other ways to get the wounded out.<sup>304</sup> As a result, Master Sergeant James R. Briley in his machine shop designed and prefabricated racks, which were hung by pins on the outside of MK 17 LVS trailers when fully loaded with cargo, then flipped inside the trailer, when emptied, to be fitted with stretchers. Twelve patients could be carried in this manner while medical personnel provided care from the center of the trailer.<sup>305\*</sup>

Another DSG-1 innovation was the development of the rapid refueling system. The Marine Corps did not possess a mobile system that could quickly refuel a large number of ground vehicles in a tactical situation. Two nozzles distributing fuel from a 55-gallons-per-minute pump was the best solution devised before the war. To refuel rapidly the 1st Marine Division's fleet of vehicles, Chief Warrant Officer-2 Robert A. Collins, CSSD-10's engineer officer, blended components from different bulk fuel systems to make from scratch a system that could simultaneously refuel eight vehicles in the field.\*\* The heart of the system was a 600-gallon-per-minute pump which was tied to separators and hoses that reduced and distributed enough pressure to fuel the vehicles simultaneously. The system was hauled by either a Commercial Utility Cargo Vehicle (CUCV) pickup truck or a HMMWV and connected to LVSs carrying sixcon fuel pods in order to set up a mobile refueling point.\*\*\* Two systems could refuel an entire tank company at one time while one system could fill up an entire amphibious assault company of 44 vehicles in an hour. MCSSDs -11 and -17 individually deployed two of the rapid refueling systems, which caught the eye of General Krulak who ordered the 8th Engineer Support Battalion to construct 10 systems for DSG-2.\*\*\*\* Lieutenant Colonel Wittle, commanding officer of MCSSD-26, modified a version of the system which dispensed fuel from six points.<sup>306</sup>

CSSD-10's maintenance detachment was a hotbed of ideas and initiative that kept the division and the DSC operating. In the dusty and wind-swept desert, Lieutenant Wightman's Marines modified circuit cards for the TOW II missile

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\*The lack of stretchers was another problem solved by innovation. Capt Burke used sections of piping used to hold camouflage material above the tents and a swath of chain-link fence to make a stretcher. MCSSD-17 found that their field expedient stretchers fit in the LVS ambulances. (Burke comments)

\*\*The rapid refuelling system evolved from a hybrid system developed at Manifah Bay by WO Collins during the fall of 1990. Collins calculated the proper pressure settings and chose components that CSSD-141 put together, tested, and used to fuel both helicopters and ground vehicles. When DSG-1 switched to the offensive, the Manifah Bay system was adapted for mobile operations. (Burke comments)

\*\*\*The Marine Corps uses commercial pick-up trucks which are officially called commercial utility cargo vehicles (CUCVs). (TM 11240-15/4a, p. 2-22)

\*\*\*\*Col Skipper, the commanding officer of the 8th Engineer Support Battalion, added that "the manufacture of ten rapid refuelling systems would have cannibalized all eight of our amphibious assault fuel systems. Accordingly, we managed to get several key components built by Zahaid, the Caterpillar Tractor dealer in Jubayl. Ultimately, we were able to equip DSG-2, MCSSD-26, and MCSSD-28 without degrading our bulk storage systems." (Skipper comments)





Photo courtesy of LtGen James A. Brabham, Jr.

*A Rapid Refuelling System is seen in operation. Note the 600-gallons-per-minute pump on the left side of the picture.*

guidance system and installed clean air modifications on M60 tanks.\* Mechanics designed and prefabricated mounts for laser target designators on HMMWVs for forward air controllers, which eliminated the time-consuming and dangerous tasks of unpacking the laser for use and repacking it for transportation. Wightman copied the 11th Marines' design for mounting .50-caliber machine guns on 5-ton trucks when ring mounts were not available. He also participated in the design and conversion of MK 17 LVS trailers into ambulances, and figured out a way to make HMMWV engines from CUCV motors. Much of the work was prefabricated by Master Sergeant Briley's machine shop using metal scrounged from the ARAMCO facility at Safaniyah and from the United States Army.<sup>307</sup>

Wightman benefitted from his previous contacts with the U.S. Army's XVIII Airborne Corps when CSSD-111 had supported the airborne troopers at Abu Hadriyah.\*\* The lieutenant traded tires, cokes, tents and "this and that" with the Army for stock metals, repair parts, and larger items such as 175 6.2-liter engines and 200 injectors to fix or replace engines damaged by the use of avia-

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\*Gen Krulak commented that Desert Storm was "the first time we went to war when you had optics as a major problem,...if your optics aren't ready you're not going to knock out a tank, so you had people up there, right on the front lines, men and women, who were optics repair people. They were doing things that we never thought would ever be done in such a mobile environment." (Krulak comments)

\*\*LtCol Lucenta related one example of Lt Wightman's ability to create good will. After observing Wightman use a wrecker to lift a downed Apache helicopter onto a truck for the U.S. Army, a local Bedouin tribesman asked the lieutenant through gestures to lift his camel into the bed of a pickup truck. Lt Wightman rigged the unhappy dromedary with a sling and hoisted the animal with his wrecker into the bed of the Saudi's vehicle. (LtCol William Lucenta interview. 10April96)

tion fuel in ground vehicles.<sup>308\*</sup> All things considered, the 1st Marine Division profited from the creative genius and hard work of CSSD-10's maintenance detachment and its maintenance officer.

### *DSG-2 Deploys to the Field*

On 4 January, DSG-2 became operational at CSSD-111's old Abu Hadriyah position and continued to collect people and equipment. More than half of the 868 Marines and sailors reporting to the DSG either fixed equipment or healed people.<sup>309</sup> Colonel Donnelly had under him 218 medical personnel organized into two collecting and clearing companies from the 2d Medical Battalion. Navy Lieutenants Rupert F. Lindo and Henry T. Bierrum commanded Company A and Company C, respectively. Major Dalton J. Langlinais was in charge of the maintenance detachment of 226 Marines. The remaining personnel consisted of engineer, supply, landing support, communications, and motor transportation detachments. Captain Carl D. Matter formed the motor transport detachment with Company A, 8th Motor Transport Battalion, which he also commanded, and furnished trucks and drivers to both MCSSDs.<sup>310</sup> Captain Peter M. Ramey led the engineer detachment which was responsible for fuel and water storage, earth moving, and material handling. Colonel Donnelly arranged his headquarters element into Alpha and Bravo command groups, the latter of which was led by Lieutenant Colonel John C. Hering, the DSG-2 executive officer.<sup>311</sup> By mid-month, the DSG helped transport the 2d Marine Division to the field, treated 93 patients, and issued 263,065 gallons of water and 252,678 gallons of fuel to the division and to its mobiles.<sup>312</sup>

Table: Direct Support Group 2

Unit Name	Function/Supported Unit
DSG-2	Direct Support/2d Marine Division
MCSSD-26	Direct Support/6th Marines
MCSSD-28	Direct Support/8th Marines

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\*Many participants in Desert Storm believed that it was a myth that aviation fuel caused problems in ground vehicles. Lt Wightman stated, however, that aviation fuel damaged the injectors and engines on the 6.2 liter engines in the HMMWV and CUCV engines. Col Coop, MWSG-37's commanding officer, added that HMMWV engines ran hotter and only lasted 12,000-14,000 miles before requiring replacement. According to Major Langlinais, DSG-2's maintenance officer, the addition of 10 weight oil and Dextron 2 to the aviation fuel prevented problems. He believed the cause of most fuel pump, engine, and carburetor problems resulted from units not treating their fuel with lubricants. Col Woodson, the commanding officer of DSC's 8th Motor Transport Battalion, experienced minimal mechanical problems caused by aviation fuel, but added that engines ran a little hotter than normal. (BAT Tapes 6 and 1081, Woodson comments, and Coop comments)

By 3 January, MCSSD-26, still in a formative stage, completed its movement to the Cement Factory Ridge where Lieutenant Colonel Wittle established Repair and Replenishment Point (RRP) Hubert to support the 6th Marines.\* From RRP Hubert, Second Lieutenant Shaun P. Kelley's motor transport detachment ran daily trips to the port where his trucks picked up equipment, such as tents and camouflage netting for the MCSSD as well as transporting 6th Marines' personnel to training at the Thunderbolt Range.\*\* In addition, the motor transport detachment hauled a daily average of 7,000 gallons of water, 7 pallets of MREs, 5,000 gallons of fuel, and numerous loads of ammunition to the regiment. MCSSD-26's maintenance detachment, led by Master Sergeant James E. Rettinghaus, supported the 6th Marines by conducting limited technical inspections on the regiment's equipment to identify and correct third echelon maintenance problems.<sup>313</sup>

In addition to the daily support given to the 6th Marines, MCSSD-26 prepared for combat. Captain David E. Fournier, the tactical coordination officer, organized crew-served weapons teams to protect the MCSSD and taught all officers and staff non-commissioned officers to request supporting fires and medevac helicopters. Vehicle operators refined day and night tactical driving skills, vehicle recovery procedures, and everyone fired his individual weapons.\*\*\* In addition, Lieutenant Colonel Wittle established the Combat Service Support Operations Center (CSSOC) as the mobile's cerebral cortex to process, task, track, and follow up on requests from the 6th Marines and to DSG-2. The CSSOC rapidly established effective convoy procedures that ensured safety. All convoy leaders and drivers reported to the CSSOC before a resupply mission with their radios and maps, and CSSOC personnel issued compasses and strip maps, and briefed the drivers on their resupply routes and link-up procedures.<sup>314</sup>

In early January, Lieutenant Colonel Head used his staff from MSSG-22 as the nucleus to form MCSSD-28 which the DSC designed to provide direct support to the 8th Marines. In keeping with 2d FSSG procedures for building task organizations, DSC battalion commanders analyzed MCSSD-28's mission from their functional perspective and sent recommended tables of organization and equipment to the group staff. The DSC staff consolidated, scrubbed, and approved the battalion's recommendations after obtaining Lieutenant Colonel Head's views

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\*An RRP is a combat service support installation, normally established in forward areas, to support mechanized or other rapidly moving forces (FMFM 4-1, p. 13-3). LtCol Wittle named RRP's after MCCSD-26 personnel who performed well. This was a motivational tool used along the same lines as a meritorious mast. (Warker comments)

\*\*The Thunderbolt range covered 585 square kilometers of desert southwest of the Triangle. The 2d Combat Engineer Battalion built the Division Mechanized Assault Course (DMAC) that simulated obstacles expected in Kuwait such as berms, tank ditches, trenchlines, and minefields. (2dMarDiv ComdC, 1Jan-18Apr91)

\*\*\*Night Driving Skills were of particular importance. According to Maj Warker, the MCSSD-26 operations officer/logistics officer, "Our drivers did not turn on their normal headlights after we left the port of Jubayl." (Warker comments)



Photo courtesy of Col Alexander W. Powell

*Col Thomas P. Donnelly, Jr., Commanding Officer, DSG-2, poses with his senior officers. From left are: LtCol John C. Hering, executive officer, DSG-2; Col Donnelly, LtCol David L. Wittle, commander MCSSD-26; and LtCol James W. Head, commander, MCSSD-28.*

on the composition of his organization.\* As a result of this process, MCSSD-28 formed with the same set of detachments as MCSSD-26, but with a slightly smaller number of people. On 8 January, Head activated MCSSD-28 at the Port of Jubayl and waited for the 8th Marines to collect its equipment and to move to the field.<sup>315</sup>

The 8th Marines had reached Saudi Arabia in December while most of its equipment arrived by ship between 4 and 22 January. The 1st Battalion, 8th Marines, unloaded its equipment from MPSRon-1 and then logistically supported the regiment while at the port. On 11 January, the 8th Marines moved to the Thunderbolt Range to train on the Division Mechanized Assault Course and to wait for the remainder of its equipment. MCSSD-28 followed the regiment to the field, established a combat service support area near the Cement Factory Ridge, began supporting the 8th Marines, and started an intensive training program to sharpen combat and NBC survival skills.<sup>316</sup>

### *Desert Storm Begins: 17-29 January 1991*

*It was now 2:30 A.M. and...my operations officer, reported that our airplanes and cruise missiles were airborne. "Okay," I said, "lets go to work."<sup>317</sup>*

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\*The 2d FSSG's method for allowing the battalion commanders to initiate the organization of detachments is called the "Det" system instituted by MajGen Martin L. Brantner when he was the commanding general of the 2d FSSG in 1988. (Woodson Intvw, 19Mar96). This procedure differs from the 1st FSSG whose detachment commanders initiated the process.

*Marine Wing Support Group 37*

On 17 January, Desert Shield ended and Desert Storm began when Central Command ordered the air war to start. The 3d MAW attacked Iraqi targets, while MWSG-37 and GSG-1 “went to work” by pumping large amounts of fuel into General Moore’s attacking aircraft. At Shaikh Isa in January, MWSS-373 dispersed five million gallons of fuel stored by CSSD-131 to the fixed-wing aircraft of MAG-11 which flew the majority of 3d MAW’s missions.<sup>318</sup> At Jubayl Naval Air Facility, Lieutenant Colonel Stephen G. Hornberger, commanding officer of MWSS-374, set up two additional tactical fuel dispersing systems using equipment from FARP Foss, which he closed, and supported 1,613 helicopter missions by pumping 543,300 gallons of fuel.<sup>319</sup> CSSD-132 at Jubayl Naval Air Facility stocked fuel for MWSS-374 and at King Abdul Azziz Naval Air Station stored fuel for MWSS-174. At GSG-1, Colonel Pankey designated refuelling as the number one priority for CSSDs -131 and -132 and reinforced Shaikh Isa with Reserve engineers from the 6th Engineer Support Battalion. In all, MWSG-37 pumped 6,330,610 gallons of fuel into 3d MAW’s aircraft during the month.<sup>320</sup>

The beginning of hostilities finally convinced ARAMCO to grant permission for MAG-16 to move to Tanajib. On 18 January, Commander Doyle, commanding officer of NMCB-40, sent Seabees from NMCB-40 to Tanajib to expand facilities for MAG-16’s helicopters. The first order of business was to lay a 1,750,000-square-foot AM-2 helicopter parking area on a base of 200,000 cubic yards of soil. Next, the Seabees built a 1,600-foot taxiway, concrete pads for clamshell hangers, a 60,000-square-foot maintenance hardstand, and a 9-module aviation ammunition supply point.<sup>321</sup> On the 25th, MWSS-271 started to arrive at Tanajib and prepared to support air operations there.<sup>322</sup>

*1st Force Service Support Group*

The Iraqis responded to 3d MAW’s bombs by shooting free-rockets-over-the-ground (FROG) missiles at Mishab on the 17th and the 19th, while at Jubayl, the drivers of Saudi Motors reacted by quitting their jobs. To lure the civilians back to duty and to keep the supplies moving to Kibrit, General Brabham authorized for each operator a gas mask and poncho for protection against a gas attack, and extra pay. Almost all of the drivers returned, but it was clear that Saudi Motors needed Marines to accomplish the mission fully. Always one step ahead of his fickle foreign drivers, General Brabham had on hand the 600 Reservists from the 6th Motor Transport Battalion, who upon arrival, received the four-hour United Parcel Service training course given to commercial drivers in the United States.<sup>323\*</sup> As the pool of trained and dependable Marine operators grew,

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\*LtCol James P. Collery, the 6th Motor Transport Battalion executive officer and an employee of United Parcel Service, brought the driver training course to Saudi Arabia. On his last day at the office before mobilization, Collery decided to pack the course in his personal belongings, just in case it was needed. It was needed. (Woodson comments)