

063 *R*
0631 LAST.

NAVAL MOBILE CONSTRUCTION

BATTALION TWENTY FOUR



DEPLOYMENT COMPLETION REPORT

11 DECEMBER 1990 - 25 APRIL 1991



DEPARTMENT OF THE NAVY
NAVAL MOBILE CONSTRUCTION BATTALION TWENTY FOUR
REDSTONE ARSENAL, ALABAMA 35898

3000
Ser S3/0318
30 April 91

From: Commanding Officer
To: Distribution

Subj: SUBMISSION OF DEPLOYMENT COMPLETION REPORT

Ref: (a) COMCBPAC/COMCBLANTINST 3121.1B
(b) NMCB-24 ltr 5223 Ser 00/085 of 06 Feb 91
(c) NMCB-24 ltr 5223 Ser 00/115 of 05 Mar 91
(d) NMCB-24 ltr 5223 Ser 00/314 of 27 Apr 91
(e) THIRD NCR OORDER 90-1

Encl: (1) Executive Summary
(2) Training
(3) Operations
(4) Air Detachment
(5) Battalion Main Element
(6) Supply and Logistics
(7) Equipment
(8) Camp Maintenance

1. Enclosures (1) through (8) are forwarded in accordance with reference (a). Lessons learned that deal specifically with reserve issues were submitted by references (b), (c), and (d).

2. In accordance with reference (e), U.S. Naval Mobile Construction Battalion TWENTY FOUR deployed to Camp Rohrbach, Al Jubail, Saudi Arabia in support of Operations Desert Shield/Storm/Salute during the period 11 December 1990 to 25 April 1991. The Battalion's Air Detachment deployed to King Abdul Aziz Naval Base from 13 December 1990 to 26 March 1991. The Battalion displaced a 300-man Main element to Al Khanjar on 11 February 1991; it returned on 06 March 1991 to Camp Rohrbach.

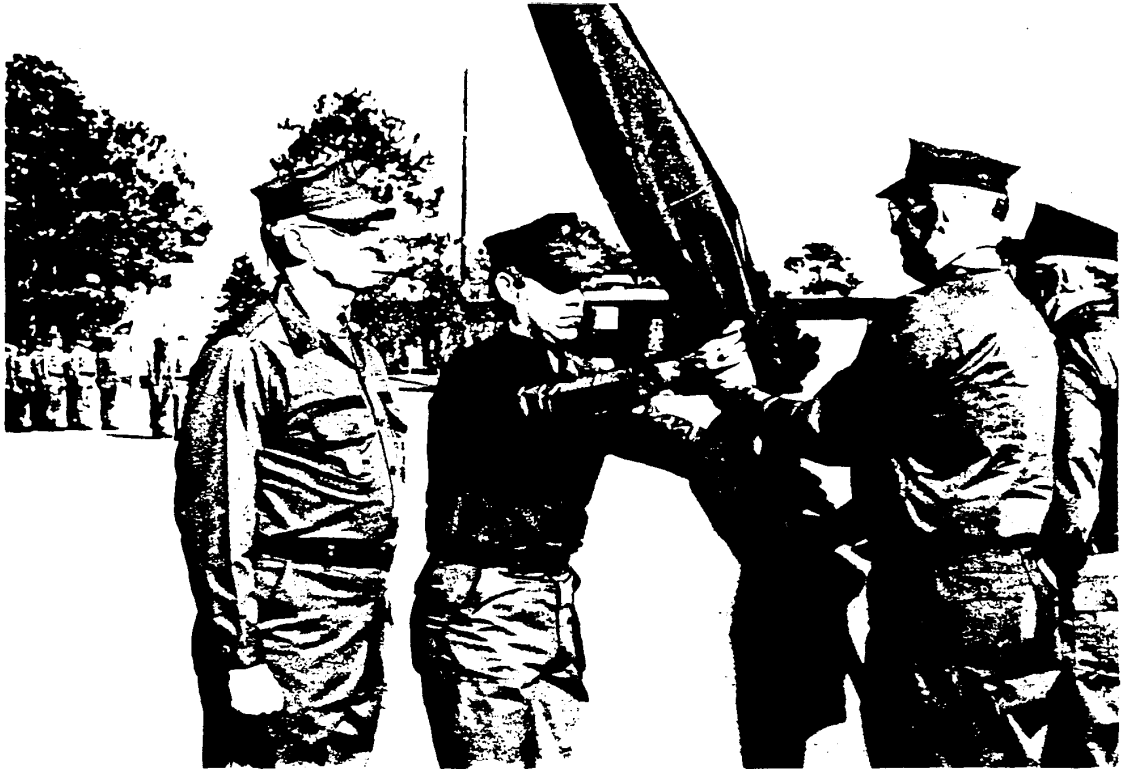
3. The Battalion accomplished construction work at 93 project sites utilizing a total of 31,154 mandays of direct labor. 88% of the direct labor expended was in direct support of 1ST Marine Expeditionary Force (I MEF). The majority of these projects were completed within rigid operational constraints, and improved the operational effectiveness of numerous Marine Corps units in Saudi Arabia.

NAVAL CONSTRUCTION BATTALION TWENTY FOUR

DEPLOYMENT COMPLETION REPORT

TABLE OF CONTENTS

Executive Summary	2
Training	5
Operations	10
Air Detachment	46
Battalion Main Element	52
Supply and Logistics	60
Equipment	67
Camp Maintenance	72



CDR MCGARRAH RETIRING RNMCB-24 FLAG AND RECEIVING NMCB-24 FLAG

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

GENERAL

1. On August 2, 1990, the Iraqi military invaded and occupied Kuwait. Over the next few months the United States began a military buildup in the Saudi Arabian desert. Following Presidential authorization, numerous Reserve units were recalled to active duty. In late November 1990, RNMCB-24 was recalled to active duty and on 09 December 1990 was activated as NMCB-24 for deployment to Saudi Arabia in support of Operation Desert Shield/Storm/Salute. This deployment completion report reflects the information gained during NMCB-24's deployment to Jubail, Saudi Arabia from 11 December 1990 to 25 April 1991.

TRAINING

1. Communications. Because of the extensive dispersion of Battalion elements (greater than 250 miles separation), communications capability was absolutely vital. The current allowance of communications equipment in the TOA is inadequate to properly support this type of dispersed operation.

2. CMS. The Battalion completely activated its CMS account, trained CMS custodians and procured the required equipment, directives and publications needed for deployment in a three week training period prior to activation. Despite the lack of prior experience, the Battalion managed the CMS program very effectively.

3. Training. 100% of Battalion personnel completed qualification firing on their assigned weapons and acquired the 980.1 basic CBR skill prior to deploying to Saudi Arabia. During the deployment, the Battalion was able to identify and obtain 2654 PRCP skills and apply for 11 NEC's, based on the extensive experience acquired.

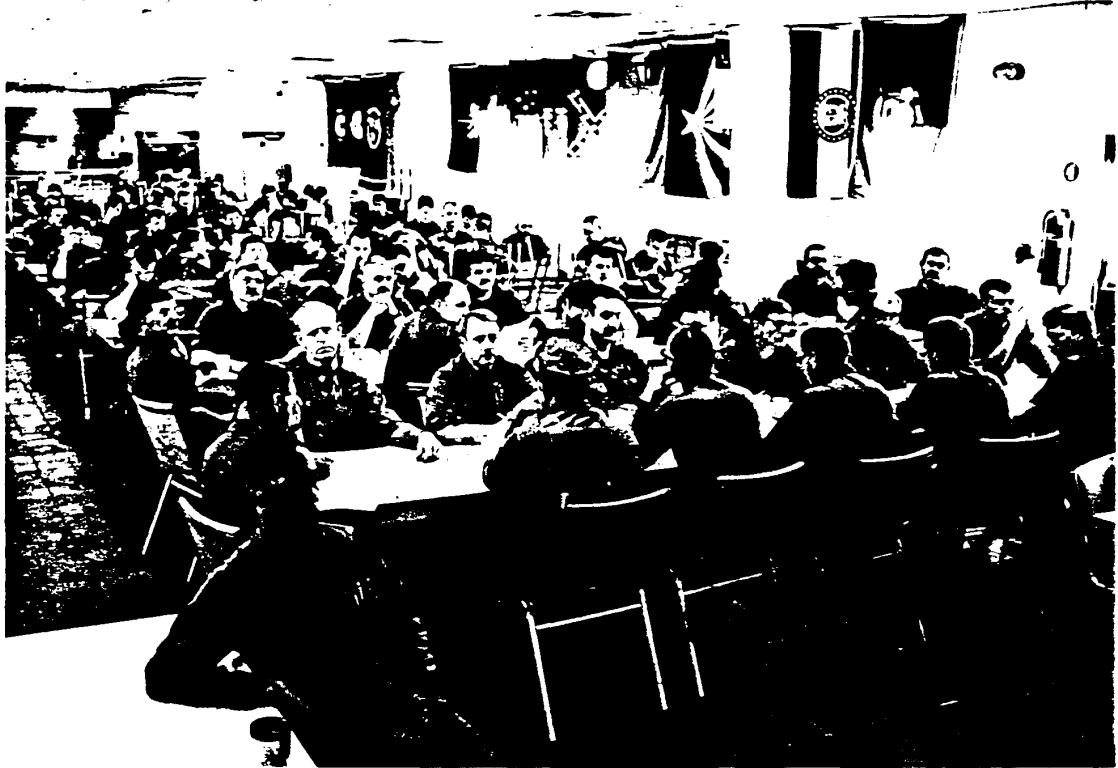
4. Camp Security. NMCB-24 maintained a Security force on board Camp Rohrbach jointly with NMCB-40 from 11 December 1990 to 15 April 1991. NMCB-24 assumed total security responsibility following NMCB-40's redeployment to homeport, and used security augment forces from NMCB-5 and NMCB-74 as units passed through Camp Rohrbach during retrograde.

OPERATIONS

1. NMCB-24 completed 93 I MEF projects and 86 internal camp improvement projects, utilizing 31,154 man days of direct labor in support of the war effort. The Battalion took advantage of the broad base of journeyman level skills available in its work force to simultaneously meet significant and diverse operational requirements while training the junior members in their professional rates.

AIR DETACHMENT

1. NMCB-24's Airdet was employed at King Abdul Aziz Naval Base throughout most of the deployment. They worked directly in support of elements of the THIRD Marine Air Wing.



NMCB-24 PERSONNEL RECEIVING INDOCTRINATION TRAINING

TRAINING

TRAINING SUMMARY

1. LESSONS LEARNED:

a. **CMS Materials**

Problem/Lesson: Communicators are not properly trained in basic CMS procedures and operation of secure voice equipment.

Discussion: No regular training in secure voice operations or CMS procedures had been held for enlisted or officer personnel prior to November 1990. As a result, it took several weeks prior to and during the initial stages of the deployment for selection and training of communication personnel.

Recommendation: Form a Communications platoon in "H" Company and make permanent assignment of personnel to the platoon. Ensure that the CMS Custodian, Communications Officer, and the Communications platoon get adequate training and participate as a platoon in all FEX's. Ensure that secure voice hardware, communications equipment and CMS software are available for use in the training of Communicators, Communications Officer and CMS Custodian.

b. **Intelligence**

Problem/Lesson: The Battalion did not receive timely intelligence information with which to brief detachments and staff..

Discussion: There was little or no formally defined responsibility for the Marine Corps staff to provide NCF commands with intelligence information. The intelligence function should be given renewed emphasis because of its implications on the operational functions of the Battalion in a contingency environment.

Recommendation: Ensure that the MEF provides timely and accurate information via the Regiment to the Battalions to ensure Battalion staffs are current on the tactical situation.

c. **Contingency Engineering**

Problem/Lesson: Not every officer is familiar with the way certain tactical and combat related structures are constructed and how to set up defenses.

Discussion: With a high probability of multiple remote detachments, every CEC officer could be put in a situation of having to establish a remote base camp and/or construct combat related structures. Fortunately, the technical library had a copy of Engineer Field Data (FM 5-34) and Field Fortifications (FM 5-15).

Recommendation: Provide to every CEC Officer a copy of Engineer Field Data (FM 5-34) and Field Fortifications (FM 5-15) and ensure that they receive training in these areas early in their careers.

2. NARRATIVE

a. Technical Training. Due to NMBC-24's recall and deployment to Saudi Arabia, all formal school training quotas for FY91 were forfeited to other RNMCBs. A deficit of twenty-four critical NEC's was identified early in the deployment. Although some school quotas were submitted in January 1990, no quotas were available for the requested schools. The training department continues to monitor the Battalion's status of critical NEC shortages and intends to request sufficient school seats at the June 1991 Training Conference to eliminate most critical NEC shortages.

b. Combat Skills Training. A total of 2,817 manhours of training was conducted in country, including the following subjects: M16 familiarization, mine recognition, M60 and .50 Caliber machinegun familiarization and hasty position drills, M60 machinegun live firing exercises, CBR plotter, CDC exercises, CMS procedures, emergency vehicle driver, ambush/quick reaction drill, first aid for combat wounds, handling friendly and enemy dead, law of war/UCMJ and post deployment stress. Mortar and .50 Caliber live fire exercises were scheduled numerous times but cancelled due to other units with higher priority requiring use of the range.

c. General Military Training. A total of 2,389 manhours of general military training was conducted in country with the major emphasis being placed on CBR training (1148 manhours). Regular and extensive CBR training was conducted prior to and during deployment to Saudi Arabia. All hands successfully completed refresher training in PRCP skill 980.1, CBR personal protection and decontamination, prior to entering the theater. CBR team skills (PRCP skill 980.2) were taught to all decontamination team personnel. The training conducted in theater consisted of Battalion team training with CDC exercises, survey team, decon team and mass casualty drills. Weekly individual CBR training included gas mask inspection/cleaning and donning of MOPP Gear. It was conducted by company CBR Petty Officers with support from the Battalion CBR Staff.

d. PRCP/NEC All NMBC-24 personnel were interviewed during the deployment. Various ABFC projects and related on-the-job training led to an increase of 2,654 PRCP skills, reducing the need for technical school training during the outprocessing period. Eleven NEC's were applied for during this period using the RNCF NEC equivalency process.

e. Summary. The Plans and Training Department was highly challenged during the preparation for and participation in Operations Desert Shield/Storm/Salute. The Battalion's entire allowance of communications equipment and weapons was employed under demanding, harsh conditions. Several problems were identified, with the majority of them being solved and the others overcome by Seabee ingenuity. The Plans and Training Department met the challenges of Operation Desert Storm in a successful manner.



NMCB-24 WAS THE PRIME CONTRACTOR ON CONSTRUCTING THE CONCRETE PADS, THE ROADS AND THE SEWER, WATER AND ELECTRICAL SYSTEMS FOR FLEET HOSPITAL 15

OPERATIONS

d. Project Procedures

Problem/Lesson: Initially, there was a lack of clear, understood procedures for project approval and material procurement.

Discussion: Initially, procedures for project approval and material procurement were not clearly communicated to or understood by the Battalion. Thus effort was wasted on attempted expediting through the wrong channels.

Action Taken: A flow chart was established up front, reviewed with all parties involved and followed for project approval and material procurement.

2. NARRATIVE

a. General

NMCB-24's Operations Department was the driving force in accomplishing a wide variety of construction projects. Upon receiving the order for recall to active status, the Operations Department communicated on a regular basis with the Battalion already in country to identify many of the operational constraints unique to the theater and the contingency environment. The Battalion learned significantly from these discussions and then formed an effective organization so that work could begin immediately upon arrival in Saudi Arabia. The engineering and P & E sections immediately began work on turnover, and construction work began within 8 hours of arrival in country. Due to the expedient nature of wartime construction, the Quality Control Section was not heavily utilized and was absorbed into the P & E section.

While deployed to Saudi Arabia in support of the I MEF, NMCB-24 accomplished 93 construction projects expending 31,154 mandays of effort from December 1990 to April 1991. The project summaries included in this report provide highlights for major significant projects completed by the Battalion; they are representative of projects completed while deployed. Included in these numbers is the Airdet, consisting of 120 personnel who were stationed at King Abdul Aziz Naval Base. The Airdet completed 12 projects expending 4800 mandays of direct labor in support of the Marine Air Wing from December 1990 to March 1991. A great majority of the specialty construction skills that were needed to complete the mission were already resident in the Battalion through the existing broad base of civilian construction skills. Other skills, especially with respect to more junior personnel, were acquired in pre-deployment training. NMCB-24 personnel were very well trained and competent in the construction skills that they possessed. The largest obstacle to overcome was the timely acquisition of materials and supplies; however, the Battalion was able to overcome these obstacles and complete all the projects in an expeditious manner.

LABOR DISTRIBUTION SUMMARY FOR OPERATION DESERT SHIELD/STORM/SALUTE
TOTAL MANDAYS FOR NMCB-24 MAINBODY AND AIR DET

MANDAYS	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	TOTAL	% TOTAL UNIT LAB. AVAILABLE
DIRECT LAB.	3824	9858	7174	7380	2918	31154	38.47%
INDIRECT	3532	3451	3752	4376	2163	17274	21.33%
MIL OPS &	2345	1841	1975	2186	977	9324	11.51%
DISASTER	0	0	0	0	0	0	0%
TRAINING	436	702	515	330	236	2219	2.74%
OVERHEAD	4385	4114	4348	5742	2432	21021	25.95%
TOTALS	14522	19966	17764	20014	8726	80992	100.00%

NUMBER OF PERSONNEL	691	674	673	667	660		
ACT. WORKDAYS	16	31	28	26	13	112	
% DL	26.33%	49.37%	40.39%	36.87%	33.44%	38.47%	(*)
EFFICIENCY	63.04%	83.88%	67.58%	76.46%	71.45%	73.36%	(**)

*DIRECT LABOR (ACTUAL MANDAYS) DIVIDED BY TOTAL (ACTUAL MANDAYS)

**DIRECT LABOR (ACTUAL MANDAYS) DIVIDED BY NO. DIRECT X NO. OF WORKDAYS X 1.125



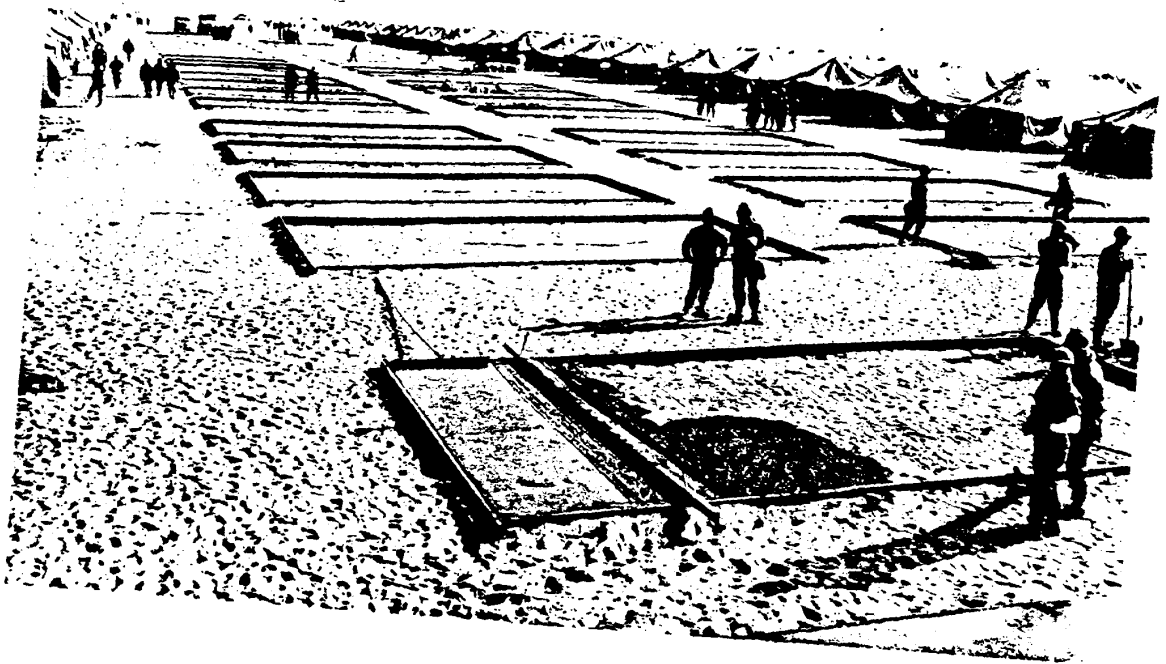
SOIL STABILIZATION OF 14.2 ACRES AT THE PORT OF JUBAIL FOR RETROGRADE STAGING

AVERAGE DAILY MANPOWER DISTRIBUTION BY FUNCTION

UNIT: NMCB-24 ARRIVAL DATE: 12DECEMBER90 DEPARTURE DATE: 25APRIL91

LOCATION: CAMP ROHRBACH, AL JUBAIL, SAUDI ARABIA

FUNCTION	OCCUPATIONAL FIELD 13:			NON	TOTAL:
	E1-E3	E4-E5	E6 & ABOVE	OF 13:	
DIRECT LABOR	105	186	52		343
CONST EQUIPMENT M & R	14	41	26		81
OPERATIONS/ENGINEERING	3	9	8		20
SAFETY			1		1
PROJECT SUPERVISION		10	31		41
PROJECT EXPEDITING		5	1		6
CTR/CSR/MLO	4	19	10	1	34
REPAIR PARTS		10	2		12
EMBARKATION			2		2
ORDNANCE		0	0	8	8
COMM/MARS	3	7	0	3	13
TRAINING		2	5		7
I DIVISION					0
DRUG/ALCOHOL					0
ADMIN/PERS/LEGAL		0	0	8	8
MEDICAL/DENTAL		0	0	14	14
SPECIAL SERVICES		0	0	4	4
CAREER COUNSELOR			1		1
MASTER AT ARMS		0		3	3
ESO					0
PHOTO LAB/PAD	1	0	0	2	3
SUPPLY/DISB/COMMISSARY	1	0	0	23	24
MESS COOKS	11	0	0	16	27
LAUNDRY	0	0		2	2
BARBER SHOP		0		1	1
CAMP MAINTENANCE	11	6	4		21
TOTAL:	153	295	143	85	676



CONSTRUCTING CONCRETE TENT PADS AT THE U. S. ARMY INTERMEDIATE
STAGING AREA (ISA)

AL JUBAIL PROJECT SUMMARIES

DV1-901 CONCRETE TANK BARRIERS

1. GENERAL. The project consisted of fabricating 175 concrete barriers. The size of the barriers was 2' X 3'-6" X 7'. Metal forms were built for quick assembly and repeated use.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	384 MD
Cumulative to date:	-	384 MD
3. COMPOSITION OF WORK FORCE: 2 EO's, 1 BU, 5 SW's
4. STATUS OF PROJECT:

Start Date	-	18DEC90
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	14FEB91
5. MATERIALS: Material cost \$13,351.00.
6. ENGINEERING: No engineering problems were encountered on this project.
7. PROBLEM AREAS: Concrete was not readily available each day due to the heavy demand in this area. There was also a delay in the shipment of the rebar. The barriers had to be transported to their destinations daily. Due to competition for resources, it was difficult to retain daily access to forklift and tractor-trailer assets.

JP1-101A SANDBAGGING WASHDOWN AREA

1. GENERAL. The project consisted of removing the sand bags from the bunkers in Alfa yard and hauling them to the wash down facilities. Sand was excavated from the existing paved ditch and a pit was dug to hold off water. This was accomplished at three separate sites.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	62 MD
Cumulative to date:	-	62 MD
3. COMPOSITION OF WORK FORCE: 2 EO's, 7 BU's, 1 SN
4. STATUS OF PROJECT:

Start Date	-	07 MAR 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	19 MAR 91
5. MATERIALS: No additional materials were needed to complete the project.
6. ENGINEERING: No engineering problems were encountered.
7. PROBLEM AREAS: None.

JP1-102 CAMP 2 SWIMMING POOL REPAIRS

1. GENERAL. This project consisted of repairing the second swimming pool at Camp Two due to the increase of personnel in the Jubail area during retrograde. The repairs included rebuilding and replacing ten pool lights, caulking and patching pool tiles, replacing water inlet covers on the pool floor, installing a manual control for back flushing filters in the pump room, installing pumps for chlorination unit and cleaning.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	48 MD
Cumulative to date:	-	48 MD
3. COMPOSITION OF WORK FORCE: 3 BU's, 1 UT, 1 CE
4. STATUS OF PROJECT:

Start Date	-	09 MAR 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	10 APR 91
5. MATERIALS: Provided by Marine Corps.
6. ENGINEERING: None.
7. PROBLEM AREAS: Difficulty in procuring materials through NCF Contracting.



JP1-107 RIFLE RANGE AND PT AREA IMPROVEMENTS AT RAS AL GHAR PLUS GRADING

1. GENERAL. Project consisted of site plan layout, design & bill of material for construction of rifle, pistol and PT areas at Ras Al Ghar.
2. DIRECT LABOR EXPENDED:

NMCE-24:	-	56 MD
Cumulative to date:	-	56 MD
3. COMPOSITION OF WORK FORCE: 5 EA's
4. STATUS OF PROJECT:

Start Date	-	22 MAR 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	15 APR 91
5. MATERIALS: None.
6. ENGINEERING: Survey work, design layout for rifle range and PT area improvements.
7. PROBLEM AREAS: None.

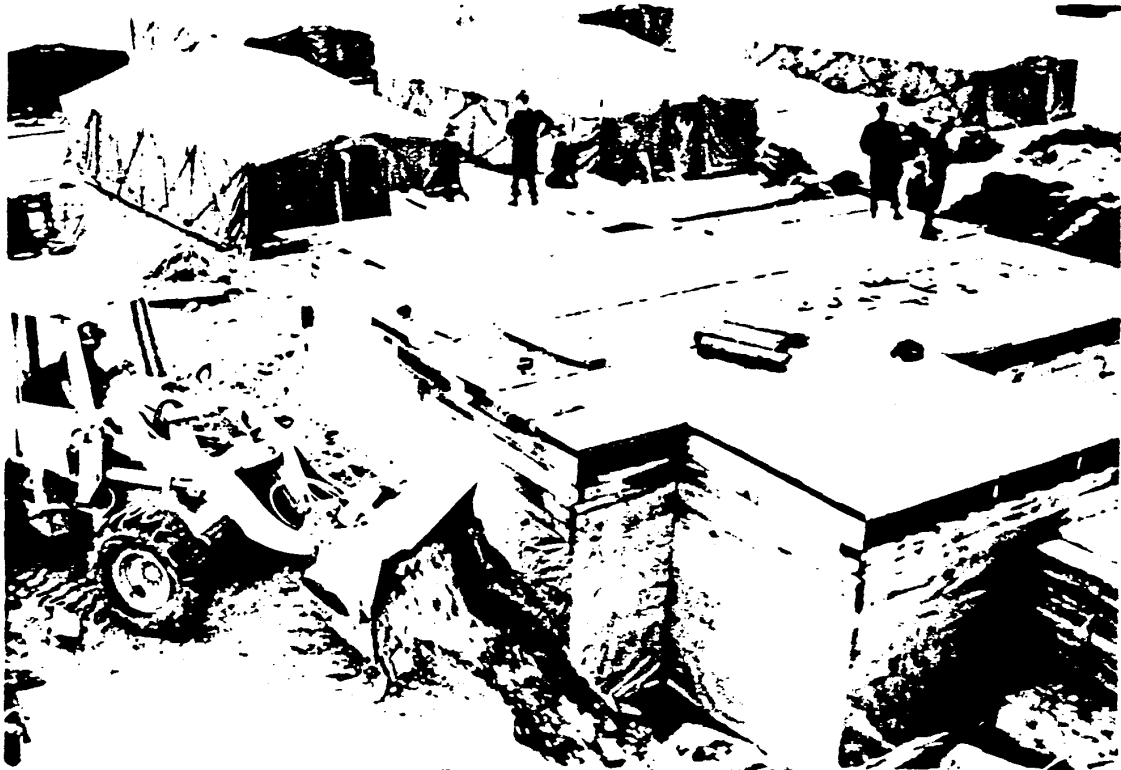


JP1-924X COC BUNKER

1. GENERAL. The project consisted of building a Command Operations Center (COC) bunker. Communication gear, maps, equipment boards and CBR monitoring equipment were installed in the bunker.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	92 MD
Cumulative to date:	-	92 MD
3. COMPOSITION OF WORK FORCE: 8 BU's, 1 EO, 2 CE's, 2 UT's
4. STATUS OF PROJECT:

Start Date	-	30 DEC 90
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	15 JAN 91
5. MATERIALS: Some materials were not available and substitutions had to be made. Material cost \$31,757.08.
6. ENGINEERING: The design was changed due to the material availability.
7. PROBLEM AREAS: The bunker could not be placed at the proper depth due to the high water table. Heavy timbers were not available which required lamination of the materials to build the posts and caps. Two air conditioners were installed to provide fresh air and control the humidity.



JP1-927 LOT F ELECTRICAL TIE-IN

1. GENERAL. The project consisted of installing commercial power to critical electrical equipment and connecting a generator for back-up power. A ditch was dug and 750' of 3/c wire was installed. Repair of existing black top required nine tons of asphalt.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	117 MD
Cumulative to date:	-	123 MD
 3. COMPOSITION OF WORK FORCE: 8 EO's, 2 BU's, 2 SW's, 7 CE's
 4. STATUS OF PROJECT:

Start Date	-	25 OCT 90
Percent at takeover	-	5
Percent at turnover	-	100
Completed	-	04 MAR 91
 5. MATERIALS: Shipment was delayed on the wire, transformer and control switches due to availability of materials. Material cost \$21,610.11.
 6. ENGINEERING: The plans were changed and materials had to be re-ordered.
 7. PROBLEM AREAS: Removal of asphalt had to be done with a backhoe because a power saw was not available. The materials were re-ordered due to a change of original design. Some of the original materials were not available and substitutions had to be made. Delay in the delivery of the transformer severely hindered job completion. Further delay was caused by the Saudi electricians not being available to make the final power connection in a timely manner.
-

JP1-924 CAMP MAINTENANCE PROJECTS/JP1-926 CD DISCRETIONARY PROJECTS

1. GENERAL. These camp projects included building bunkers, bunker improvements, security requirements and improvements, strongback frames, fabrication of numerous items, general electrical, plumbing and carpentry work, concrete pads, and support work for other job taskings.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	2493 MD
Cumulative to date:	-	2493 MD
3. COMPOSITION OF WORK FORCE: All rates.
4. STATUS OF PROJECT:

Start Date	-	17 DEC 90
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	15 APR 91
5. MATERIALS: GUCM Yard, Class IV Yard and BPA.
6. ENGINEERING: Provided as required for specific tasking.
7. PROBLEM AREAS: Material shortages and procurement delays presented problems on occasion.

JP1-941 PORT ACCESS ROAD, CURBING AND GRADING

1. GENERAL. This project consisted of constructing 60 meters of asphalt roadway and 120 meters of concrete curbing, and the installation of 50 meters of conduit encased in concrete and 17 cubic meters of select fill along the shoulder of the roadway.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	218 MD
Cumulative to date:	-	513 MD
3. COMPOSITION OF WORK FORCE: 23 BU's, 6 EO's
4. STATUS OF PROJECT:

Start Date	-	18 DEC 90
Percent at takeover	-	70
Percent at turnover	-	100
Completed	-	07 JAN 91
5. MATERIALS: Material Cost \$93,331.00.
6. ENGINEERING: None.
7. PROBLEM AREAS: Bill of Materials developed by NMCB-4 did not allow curbing forms to meet Saudi requirements.



JP1-944A SITE PREPARATION/UTILITIES CONNECTED FOR TRAILERS AT CAMP 15

1. GENERAL. This project consisted of site preparation and utility connections for one double-wide trailer on Camp 15. Project included installation of approximately 300' of primary electrical cable, 175' of water line and 150' of sewer line.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	62 MD
Cumulative to date:	-	62 MD
 3. COMPOSITION OF WORK FORCE: 1 EO, 3 CE's, 4 UT's
 4. STATUS OF PROJECT:

Start Date	-	01 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	15 FEB 91
 5. MATERIALS: Material Cost \$6,749.00. Some on hand, other BPA.
 6. ENGINEERING: No problems.
 7. PROBLEM AREAS: Encountered problems on plumbing hookups because existing plumbing included a mixture of standard and metric parts.
-

JP1-945 INSTALLATION OF SIREN SYSTEM

1. GENERAL. This project included the placing of nineteen sirens at strategic sites in the Jubail area for the Saudi Government. The project included monitoring the sirens for operational readiness. This project was taken over from NMCB-40. The sirens installed by NMCB-40 were maintained and no additional sirens were added.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	78 MD
Cumulative to date:	-	172 MD
3. COMPOSITION OF WORK FORCE: 2 CE's
4. STATUS OF PROJECT:

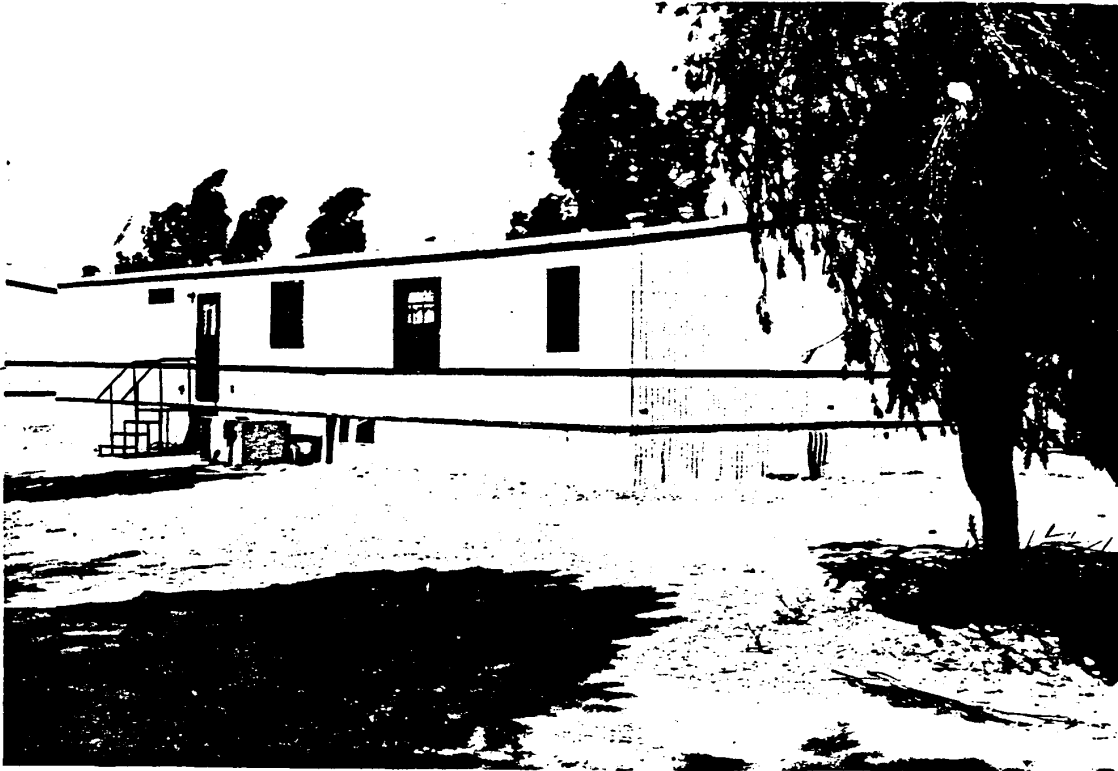
Start Date	-	14 FEB 91
Percent at takeover	-	90
Percent at turnover	-	100
Completed	-	30 MAR 91
5. MATERIALS: Purchased by Saudi Government.
6. ENGINEERING: No problems.
7. PROBLEM AREAS: None.

JP1-955 PERFORM REPAIRS TO LEASED WAREHOUSE NO. 1

1. GENERAL. Project consisted of replacing circuit breakers for lighting, connecting exterior lighting, repairing or replacing breakers in panel boxes, re-installing trough and panel covers, replacing telephone panel liners, repairing leaking P-traps, water tanks and shower heads, repairing heater control in water tank, replacing steel plate on loading dock and replacing window air conditioner.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	48 MD
Cumulative to date:	-	48 MD
3. COMPOSITION OF WORK FORCE: 4 CE's, 3 UT's
4. STATUS OF PROJECT:

Start Date	-	27 DEC 90
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	12 JAN 91
5. MATERIALS: Material Cost \$960.00.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.



JP1-958 COMMUNICATION ELECTRONIC MAINTENANCE FACILITY

1. GENERAL. Project consisted of connecting commercial power at the I MEF headquarters. This required the installation of two 150 KVA transformers, one 75 KVA transformer, and all other required electrical components.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	21 MD
Cumulative to date:	-	21 MD
 3. COMPOSITION OF WORK FORCE: 4 CE's
 4. STATUS OF PROJECT:

Start Date	-	26 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	07 FEB 91
 5. MATERIALS: Material Cost \$64,726.00.
 6. ENGINEERING: None.
 7. PROBLEM AREAS: None.
-

JP1-960 PORT ELECTRICAL MAINTENANCE

1. GENERAL. Project consisted of converting portable generator power to commercial power at the Container Crew Repair Facilities located in the Port of Jubail.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	42 MD
Cumulative to date:	-	42 MD
3. COMPOSITION OF WORK FORCE: 8 CE's
4. STATUS OF PROJECT:

Start Date	-	27 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	19 MAR 91
5. MATERIALS: There was a continuous revising of project materials due to changing job requirements. Materials on hand were staged, but no other materials were purchased through the Contracting Assistance Office.
6. ENGINEERING: None.
7. PROBLEM AREAS: The job requirements changed constantly which caused problems with ordering and receiving materials in a timely manner.

JP1-969 GUARD TOWERS AT CAMP FIVE

1. GENERAL. Project consisted of the construction of five (5) heavy timber guard towers to be used on the perimeter of Camp 5.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	117 MD
Cumulative to date:	-	117 MD
 3. COMPOSITION OF WORK FORCE: 10 BU's
 4. STATUS OF PROJECT:

Start Date	-	18 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	14 FEB 91
 5. MATERIALS: Material Cost \$5,178.00.
 6. ENGINEERING: None.
 7. PROBLEM AREAS: One guard tower had to be modified because of its location near a tree that could not be moved.
-

JP1-971 I MEF TRASH RACKS

1. GENERAL. The project consisted of the fabrication of three (3) 12-1/2" x 8-1/4" x 3' ID plywood paper shredder stands.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	1 MD
Cumulative to date:	-	1 MD
 3. COMPOSITION OF WORK FORCE: 1 BU
 4. STATUS OF PROJECT:

Start Date	-	18 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	18 JAN 91
 5. MATERIALS: Material Cost \$57.40.
 6. ENGINEERING: None.
 7. PROBLEM AREAS: None.
-

JP1-972 STRONGBACKS AT FLEET HOSPITAL 5

1. GENERAL. Project consisted of the construction of four (4) 16' x 32' strongback tents.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	124 MD
Cumulative to date:	-	124 MD
3. COMPOSITION OF WORK FORCE: 10 BU's
4. STATUS OF PROJECT:

Start Date	-	20 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	01 FEB 91
5. MATERIALS: Provided by Fleet Hospital 5.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.

JP1-977 300 TIPPY TOMS

1. GENERAL. Project consisted of designing and casting 300 concrete tippy tom bases with PVC stubouts. PVC extensions were connected to stubouts with flexible rubber hose. These were used by the Marine Corp as tank lane markers during minefield clearing operations.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	18 MD
Cumulative to date:	-	18 MD
3. COMPOSITION OF WORK FORCE: 4 BU's
4. STATUS OF PROJECT:

Start Date	-	23 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	30 JAN 91
5. MATERIALS: Material Cost \$994.92.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.

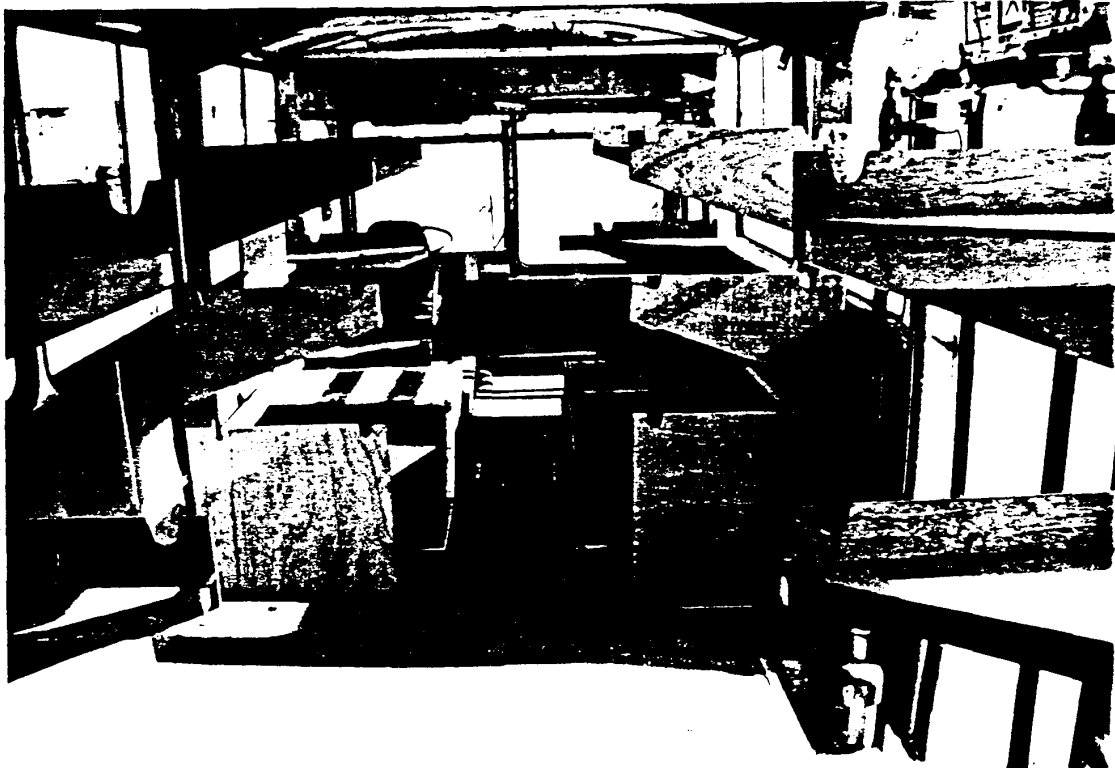


JP1-979 AMBULANCE BUS LITTER RACKS

1. GENERAL. Project consisted of the conversion of 48 passenger city buses into eighteen-man ambulance litter buses (22 fabricated from wood and 26 fabricated from steel).
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	772 MD
Cumulative to date:	-	772 MD
3. COMPOSITION OF WORK FORCE: 12 SW's, 12 BU's
4. STATUS OF PROJECT:

Start Date	-	24 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	27 FEB 91
5. MATERIALS: Material Cost \$22,779.31.
6. ENGINEERING: Designed for maximum use of space without fastening any materials to the inside surfaces of the buses.
7. PROBLEM AREAS: Delivery of steel material and buses.



JP1-983 SITE PREPARATION FOR 5TH TOA

1. GENERAL. Project consisted of grading and soil stabilization to widen existing 15' x 1000' access road to 30'.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	113
Cumulative to date:	-	113
 3. COMPOSITION OF WORK FORCE: 10 EO's, 3 EA's
 4. STATUS OF PROJECT:

Start Date	-	08 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	17 FEB 91
 5. MATERIALS: Used materials already in borrow area.
 6. ENGINEERING: Layout required.
 7. PROBLEM AREAS: Inadequate amount of fill material staged prior to start of work. Equipment not scheduled for job duration.
-

JP1-984 STRONGBACK TENT FRAME CONSTRUCTION

1. GENERAL. Project consisted of construction of three (3) 16' x 32' strongback tent frames and installation of electrical work.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	30 MD
Cumulative to date:	-	30 MD
 3. COMPOSITION OF WORK FORCE: 4 BU's, 4 CE's
 4. STATUS OF PROJECT:

Start Date	-	01 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	10 FEB 91
 5. MATERIALS: Material Cost \$4,038.85.
 6. ENGINEERING: None.
 7. PROBLEM AREAS: Plywood not available, 1" x 6" lumber used for flooring.
-

JP1-985 SPINEBOARDS FOR 1ST RADIO BATTALION BAS

1. GENERAL. The project consisted of the fabrication of six (6) spineboards.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	6 MD
Cumulative to date:	-	6 MD
3. COMPOSITION OF WORK FORCE: 2 BU's
4. STATUS OF PROJECT:

Start Date	-	02 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	04 FEB 91
5. MATERIALS: Material Cost \$101.38.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.

JP1-994 II MEF BEDDOWN REPAIRS EVALUATION - UTILITIES & VERTICAL CONSTRUCTION

1. GENERAL. Project consisted of repairing and/or rebuilding showers and strongback tent frames in areas "A" through "F" at the II MEF Beddown area. There were a total of six (6) showers to be repaired, one (1) shower to be rebuilt and 36 strongback tent frames to be repaired.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	123 MD
Cumulative to date:	-	123 MD
3. COMPOSITION OF WORK FORCE: 6 BU's
4. STATUS OF PROJECT:

Start Date	-	17 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	09 MAR 91
5. MATERIALS: Material Cost \$1,996.00.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.

JP1-995 MAINTENANCE OF SIREN WARNING SYSTEM

1. GENERAL. Project provided for maintenance and repairs to existing siren warning system through the eastern province of the Kingdom of Saudi Arabia after the initial installation.
2. DIRECT LABOR EXPENDED:

NMCB 24:	-	38 MD
Cumulative to date:	-	38 MD
3. COMPOSITION OF WORK FORCE: 2 CE's
4. STATUS OF PROJECT:

Start Date	-	18 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	15 MAR 91
5. MATERIALS: Material Cost \$0.00.
6. ENGINEERING: None
7. PROBLEM AREAS: None

JP1-999 RETROGRADE GALLEY AT 1ST FSSG - ASSUMED FROM NMCB-40

1. GENERAL. Project consisted of completion of a retrograde galley begun by NMCB-40. Remaining work consisted of installation of electrical work.
A: Project consisted of installation of metal roof and doors at retrograde galley.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	84 MD
Cumulative to date:	-	233 MD
3. COMPOSITION OF WORK FORCE: 8 BU's, 3 CE's
4. STATUS OF PROJECT:

Start Date	-	03 MAR 91
Percent at takeover	-	80
Percent at turnover	-	100
Completed	-	15 MAR 91
5. MATERIALS: Material Cost \$0.00.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.

JW1-942 PROVIDE TWO D7 DOZERS TO BUILD BERM IN SUPPORT OF NMCB-40

1. GENERAL. Project provided sub-contractor assistance to NMCB-40 to construct berm.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	22 MD
Cumulative to date:	-	22 MD
 3. COMPOSITION OF WORK FORCE: 2 EO's
 4. STATUS OF PROJECT:

Start Date	-	07 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	30 JAN 91
 5. MATERIALS: Material Cost \$0.00.
 6. ENGINEERING: None.
 7. PROBLEM AREAS: None.
-

JW1-955 TAXIWAY EXTENSION FOR JUBAIL NAVAL AIRPORT

1. GENERAL. Project consisted of formwork and casting of 12' taxiway extension at Jubail Naval Air Station.
A: Project also consisted of the placement of 12' x 162' and 12' x 265' taxiway access roads.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	158 MD
Cumulative to date:	-	158 MD
3. COMPOSITION OF WORK FORCE: 10 BU's, 7 EO's
4. STATUS OF PROJECT:

Start Date	-	06 MAR 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	22 MAR 91
5. MATERIALS: Material Cost \$6,492.23.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.

1. NARRATIVE

The Air Detachment of NMCB-24 was deployed with the Advance Party to Al Jubail, Saudi Arabia. Within twenty four hours of arrival in country, the entire Air Detachment moved from Al Jubail to King Abdul Aziz Naval Base approximately 25 miles south of the Al Jubail camp. The Air Detachment consisted of two officers and one hundred and twenty men. The Air Detachment assumed a support role to the USMC Air Operations at the base and started work immediately. Projects included construction of an ammunition supply point, placement of concrete for pads to support aluminum framed structures and grading to construct twenty roadway hides and forty-five hundred feet of taxiway extension.

The Air Detachment was also directly integrated into the defense plan of the base, manning a 50 caliber position 24 hours a day and providing support with mortars. The mortars were test fired and used in support of the base defense.

The Air Detachment completed construction projects at King Abdul Aziz Naval Base and on 26 March 1991 rejoined the Battalion Main Body at Al Jubail and assumed project work in support of retrograde operations.

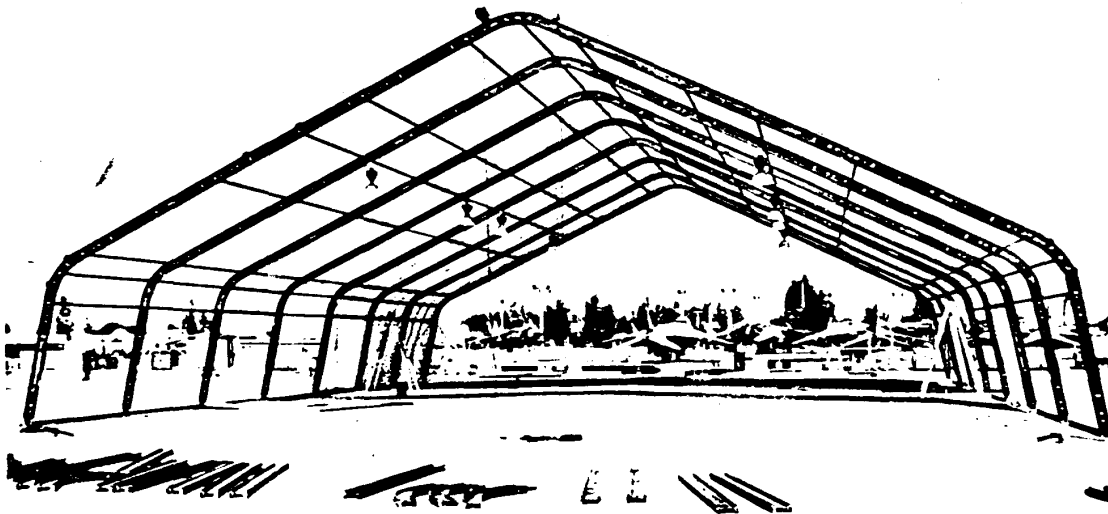


KA1-913 CLAMSHELTER AND PADS - PLACE FIVE CONCRETE PADS

1. GENERAL. Project consisted of five (5) 72' x 148' reinforced concrete pads formed and poured as flooring and support for five (5) aluminum framed clamshelters placed on the pads.
2. DIRECT LABOR EXPENDED:

NMCR-24:	-	460 MD
Cumulative to date:	-	460 MD
3. COMPOSITION OF WORK FORCE: 4 SW's, 10 BU's
4. STATUS OF PROJECT:

Start Date	-	15 DEC 90
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	12 JAN 91
5. MATERIALS: Furnished by Marines.
6. ENGINEERING: Structures were pre-engineered.
7. PROBLEM AREAS: None.



KAI-925 ASPHALT HIDES

1. GENERAL. Twenty (20) runway hides, each 3000 square feet, were surveyed and graded in preparation for paving. The paving was to be completed by civilian contractor. As the war commenced, the contractor failed to show and the pavement was never placed.

 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	15 MD
Cumulative to date:	-	15 MD

 3. COMPOSITION OF WORK FORCE: 3 EA's, 5 EO's

 4. STATUS OF PROJECT:

Start Date	-	23 DEC 90
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	07 JAN 91

 5. MATERIALS: None.

 6. ENGINEERING: None.

 7. PROBLEM AREAS: None.
-

KII-905 MSR MAINTENANCE/REPAIR BETWEEN MISHAB AND KIBRIT

1. GENERAL. Project consisted of the maintenance and repair of a 56 KM, four lane highway. Equipment used included scrapers, graders, rollers and water trucks. The completion of this project provided a much needed supply route.

2. DIRECT LABOR EXPENDED:

NMCB-24:	-	1535 MD
Cumulative to date:	-	1535 MD

3. COMPOSITION OF WORK FORCE: 26 EO's, 6 CM's

4. STATUS OF PROJECT:

Start Date	-	10 JAN 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	10 APR 91

5. MATERIALS: None.

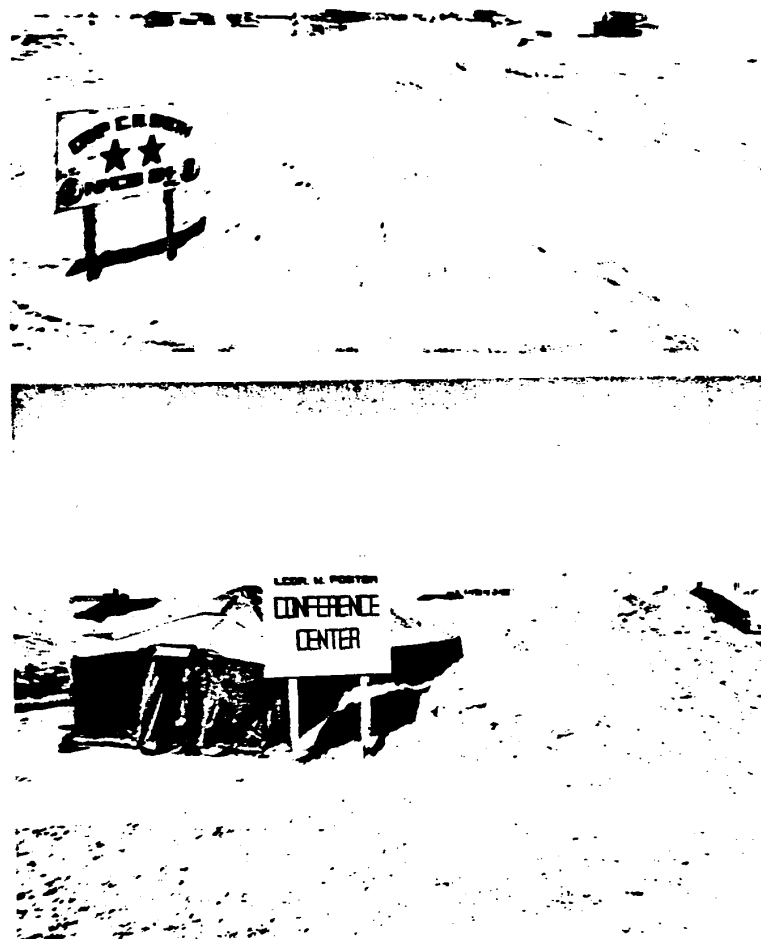
6. ENGINEERING: None.

7. PROBLEM AREAS: The lack of equipment replacement parts was the major problem.

1. Battalion Main Element

On February 11, 1991, the Battalion Command Element and 300 men displaced approximately 250 miles North to a location near the Saudi Arabia-Kuwait border. The displacement was necessary to position Naval Construction Forces to directly support U. S. Marine Corps ground war operations. The camp was constructed concurrently with twenty four hour operations to construct two C-130 landing strips and Military Supply Routes. Other projects included construction of AM2 matting landing fields to support air operations and maintenance of approximately twenty miles of roadway inside the Kuwait border.

The entire move was accomplished with organic assets within the Naval Construction Force. Sufficient long haul capability to move rapidly does not exist within a single Battalion. The Battalion Main Element displaced back to Al Jubail on March 6, 1991 to support retrograde operations.



TH1-902 MISCELLANEOUS EARTHWORK AT AL KHANJAR

1. GENERAL. Project consisted of the construction of berms for camp layout, perimeter and access road around and to the camp, and the construction of berms for the I MEF headquarters site.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	736 MD
Cumulative to date:	-	736 MD
3. COMPOSITION OF WORK FORCE: 150 EO's, 50 CM's
4. STATUS OF PROJECT:

Start Date	-	13 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	04 APR 91
5. MATERIALS: Only spare parts.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.



TH1-905 C-130 LANDING STRIP AT AL KHANJAR

1. GENERAL. Project consisted of constructing two (2) runways, 6600' long and 150' wide. These runways were surveyed, graded and rolled. A 500' x 500' loading ramp was also placed at each end of both runways. Maintenance on this project was continuous.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	464 MD
Cumulative to date:	-	464 MD
3. COMPOSITION OF WORK FORCE: 5 EA's, 8 EO's
4. STATUS OF PROJECT:

Start Date	-	11 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	03 APR 91
5. MATERIALS: None.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.



TH1-906 AMMO SUPPLY POINT (ASP) AT AL KHANJAR

1. GENERAL. A berm and an access road were built as an ammunition supply point.
 2. DIRECT LABOR EXPENDED:

NMCB-24:	-	31 MD
Cumulative to date:	-	31 MD
 3. COMPOSITION OF WORK FORCE: 8 EO's, 5 EA's
 4. STATUS OF PROJECT:

Start Date	-	16 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	19 FEB 91
 5. MATERIALS: None.
 6. ENGINEERING: None.
 7. PROBLEM AREAS: None.
-

TH1-907 MOVE AND ERECT GALLEY FROM ABU HYDRIYAH TO AL KHANJAR

1. GENERAL. Project consisted of tearing down the galley at Abu Hydriyah and transporting it to Al Khanjar to be used at the EPW holding compound.
2. DIRECT LABOR EXPENDED:

NMCB-24:	-	14 MD
Cumulative to date:	-	14 MD
3. COMPOSITION OF WORK FORCE: 4 BU's
4. STATUS OF PROJECT:

Start Date	-	19 FEB 91
Percent at takeover	-	0
Percent at turnover	-	100
Completed	-	26 FEB 91
5. MATERIALS: None.
6. ENGINEERING: None.
7. PROBLEM AREAS: None.



INVENTORY OF PARTS IN THE SAND AT THE 6101 TENT

SUPPLY

SUPPLY DEPARTMENT

1. LESSONS LEARNED

a. Computer Support

Problem/Lesson: The TOA does not contain sufficient computer assets whereby every company can efficiently perform operational missions and accomplish administrative responsibilities.

Discussion: All companies have significant administrative work loads in personnel management/administration, project management/tracking, operational reports and missions that could be much more effectively and efficiently done if computer resources were available. This would result in more timely and accurate reports and free up resources for additional direct labor.

Recommendation: The makeup of the TOA should be reviewed to ensure sufficient computer assets are available and properly assigned.

b. Agricultural Inspection

Problem/Lesson: Many man-days have been wasted due to failure to provide agricultural inspection requirements before retrograde pack-up began.

Discussion: Most of the Battalion TOA boxes were steel-banded, and all of another Battalion's ISO containers were packed and ready for shipment before agricultural inspection requirements were promulgated. This resulted in duplication of work opening, repacking and rebanding TOA boxes which had already been packed and banded. Of much greater significance, however, was the wasted labor and diversion from projects of CESE assets required to completely empty, clean (remove all dirt) and repack all of the nearly 100 ISO containers of the other Battalion. If the agricultural requirements had been known before the other Battalion's pack up, the result would have been clean ISO containers which passed agricultural inspections when initially packed, saving a significant amount of labor and CESE asset time.

Recommendation: Appropriate directives/instructions for agricultural inspection requirements should be promulgated and used as standard operating procedure for movement of material. Trained agricultural customs inspectors should be available in all Battalions.

c. Marine/Navy Supply Interface

Problem/Lesson: Significant time was wasted making trips to Marine Supply for items which were not in stock or otherwise not available.

Discussion: In the dynamic and fast-paced war setting, availability of items from Marine Supply changed dramatically and unexpectedly from day to day. Many labor hours and much rolling stock availability were wasted making dry runs to Marine Supply.

Recommendation: Navy commands in support of, and being supported by, Marine commands should have the "haystack" computer tie-in to the Marine Corps Supply System. This would allow both real-time readout of material availability and electronic requisitioning.

3

f. **GALLEY** - The galley operation was located in a galley building with one common kitchen and two separate mess decks. This was an ideal arrangement for messing two separate Battalions simultaneously. Fresh provisions including milk, fruit and a limited selection of vegetables were in adequate supply. "A" rations, including frozen food, were in ample supply through the end of the war and followed the Marine Corps' 14 day menu cycle. After the war, during retrograde operations, "A" rations were in limited supply and "B" rations, while more plentiful, were not available in sufficient quantities to allow three hot meals. The noon meal was supplemented with excess MRE's. Galley equipment was very adequate. Late in the deployment, however, the scullery became inoperable and replacement parts could not be located. Paper products were sufficient to support operations.

g. **SERVICES** - Camp facilities were quite adequate to provide a barber shop, Marine Corps exchange, Saudi commissary, laundry and recreation center. The Marine Corps exchange was staffed with Battalion personnel but was actually managed by the Marine Corps. The Saudi commissary was a Saudi private enterprise which operated from a building located on the camp. The recreation center, while managed by an SHCS and staffed with personnel from Supply and other departments/companies, was not in the Supply chain of command but was overseen by the Battalion's Morale, Welfare and Recreation Officer.

h. **MISCELLANEOUS COMMENTS** - Perhaps the most significant lesson learned about this TOA is that it is not configured for this operational environment. The allowance for many critical automotive repair parts (e.g. filters) was too low. Of great help in compensating for TOA and project material inadequacies was the ability to procure directly from 78 local vendors through BPA's set up by Marine Contracting. A majority of the time, urgent requests could be filled within 48 hours through use of a Battalion expediter. The TOA contained no civilian vehicles. Due to the cultural sensitivity, only civilian vehicles were to be used in town by civilian-clothed expediters. To accomplish this requirement, a Government of Japan jeep was provided midway through the deployment and two other vehicles were rented using OPTAR funds.



SOIL STABILIZATION PROJECT WORK AT THE JUBAIL PORT FOR RETROGRADE OPERATIONS

EQUIPMENT

EQUIPMENT

1. LESSONS LEARNED.

a. Equipment Allowance

Problem/Lesson: The TOA vehicle allowance turned over to the Battalion was not adequate to accomplish all missions when the Battalion was divided among three widely-dispersed locations.

Discussion: Critical areas of shortage included light vehicles (pick-ups, blazers, vans) for personnel transport and project logistics support as well as light plants and working welding machines. This created problems such as ensuring that materials reached the job site and that safety procedures were being met. Further, utility type vehicles, such as line trucks and utility trucks, were needed for utility type construction to allow the trucks to be stocked with necessary materials for use at each work site.

Recommendation: The adequacy of rolling stock in the TOA should be reviewed and the TOA upgraded to support the mission of multiple, dispersed detachments. Resources, both personnel and equipment, must be evaluated and/or made available prior to accepting and assigning taskings.

b. Inadequate Equipment

Problem/Lesson: The correct CESE for the climate and work assigned was not available.

Discussion: For the predominantly horizontal work assigned during deployment, additional motor graders, scrapers and dozers were required. Many times Battalion personnel struggled to keep up with taskings to support road construction/maintenance and runway construction due to the lack of equipment. At times, the start of projects was delayed because of equipment unavailability. Battalions were routinely assigned to support other Battalions who had the higher priority CESE requirements at any one time. The current CESE allowance is standard for all regions of the world.

Recommendation: The CESE should be reevaluated and tailored to meet the projected missions considering the environment in which the missions will be conducted. Augment CESE should be made available quickly as needs are identified.

e. Transportation

Problem/Lesson: When the Battalion was divided among three dispersed locations, adequate transportation was not available for efficient project operations.

Discussion: During the war phase, the projects remaining in Jubail required transportation to the job site. Transportation was often difficult to obtain. Trucks were needed to move supplies from the staging area to the work site. Some materials had to be moved by hand, slowing down progress of jobs. Utility type vehicles, such as line trucks and utility trucks, were needed for utility type construction to allow the trucks to be stocked with necessary materials for use at each work site. These service vehicles could also have been used as people movers. Pickups were needed by Platoon Commanders to facilitate communications and efficient monitoring of jobs.

Recommendation: The adequacy of rolling stock in the TOA needs to be reviewed and the TOA upgraded to support this real scenario.

2. NARRATIVE

a. Maintenance. The overall leadership and innovation of the EO's, CM's, HT's and MR's were the primary factors in the success of the CESE maintenance program. The general condition and age of the equipment and the harsh environment of the desert added to the complex challenge of maintaining the equipment in an operable condition for mission critical projects. Shelters made of tents were used as mechanic shops but were only marginally adequate due to the wind and dust exposure of equipment under repair. However, Alfa Company was able to maintain a monthly average equipment availability of 93%. The general unavailability of CESE replacement parts created another obstacle to be overcome. The Marine Corps Equipment Shop at the Port was used to obtain common items but the larger items had to be ordered from Gulfport or Port Hueneme. Due to the slow response of the supply system at critical times, equipment repairs were delayed and some project work suffered.

b. Transportation. The Battalion operated a daily dispatch of vehicles for project support. This greatly added to the efficiency of project support in that priority was placed on critical projects and the equipment was made available for personnel or material transport accordingly. The Battalion was also tasked with providing long haul capability in support of the war effort for itself and for other Battalions in theater. The high demand for long haul capability continually stretched the limited supply of all Battalions and impacted the speed with which some projects could be completed.

c. Projects. The tasked projects provided an excellent training opportunity for all EO's to operate all of the heavy equipment that was available in the TOA. The following is a list of horizontal projects that were completed during this deployment:

- * Constructed and/or maintained over 145 miles of MSR
- * Constructed two C-130 landing strips totaling over 2 miles of runway, ramps and connectors
- * Constructed protective berms for I MEF Command Post, MAG 26 Camp, ASF and an EPW Camp
- * Constructed drainage system and utility trenching for U. S. Army ISA
- * Constructed approximately 28.4 acres of soil stabilization for MAG 26 and retrograde staging
- * Constructed 1 mile of internal roadway for Fleet Hospital 15



CONSTRUCTING STRONGBACKS FOR RETURN OF BATTALION MAIN ELEMENT

CAMP MAINTENANCE

CAMP MAINTENANCE

1. LESSONS LEARNED:

a. Port-o-let and Dumpster Contracts

Problem/Lesson: The port-o-let and dumpster contracts for Camp Rohrbach were difficult to manage due to the Battalion having no control over the enforcement or writing of the contracts.

Discussion. The Battalion's medical personnel were responsible for the preventive maintenance of diseases on Camp Rohrbach. There were no sanitary standards in these contracts which the medical personnel could enforce. There was also no means of communication between the contractor and the battalion for orderly and routine cleaning of the port-o-lets and dumpsters.

Recommendation. Every Battalion should be allowed to have direct control and enforcement authority of the contracts that service the camp.

b. Personnel

Problem/Lesson. Camp maintenance personnel were constantly being used to complete tasked job assignments outside of the camp.

Discussion. Camp maintenance is vital in keeping the day-to-day operations of the camp in good working order. It was very tempting to use the camp maintenance personnel for project work when projects were experiencing a critical completion schedule. This caused the scheduled camp maintenance to be neglected and allowed camp maintenance to be performed only in emergency situations.

Recommendation. A cadre of camp maintenance personnel should be assigned solely to do maintenance and repair projects within the camp.

c. SAMMS Computer Training for Camp Maintenance

Problem/Lesson. The Battalion had no prior experience on the SAMMS Camp Maintenance program.

Discussion. NMCB-24 was able to attend camp maintenance classes prior to being recalled to active duty. However, there was no time for individuals to be trained on the SAMMS Camp Maintenance Program. This program was used extensively once in-country to produce valuable records and reports.

Recommendation. Ensure that adequate personnel are trained in the use of the Camp Maintenance SAMMS program.