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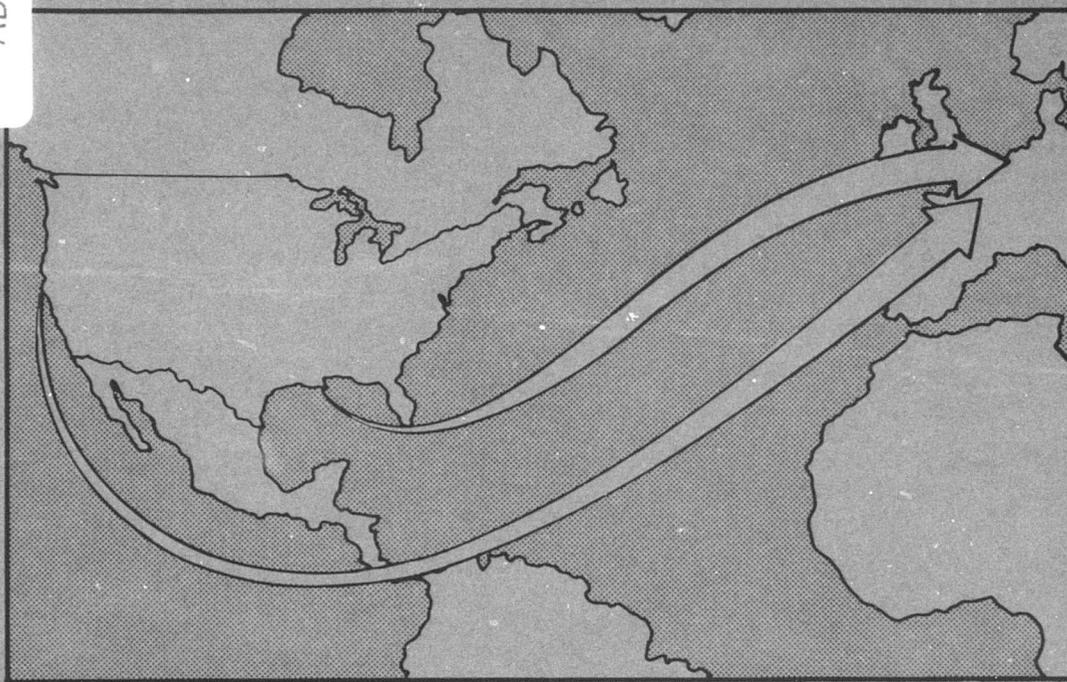
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MTMC REPORT OA 81-4a-27

ANALYSIS OF MTMC PARTICIPATION IN THE REFORGER 81 EXERCISE

MAY 1982



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MILITARY TRAFFIC MANAGEMENT COMMAND
TRANSPORTATION ENGINEERING AGENCY
 NEWPORT NEWS, VIRGINIA 23606

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ANALYSIS OF MTMC PARTICIPATION
IN THE REFORGER 81 EXERCISE

(OA 81-4a-27)

May 1982

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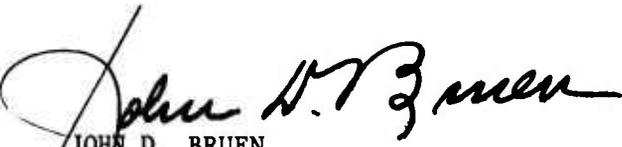
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FOREWORD

This report is designed to analyze the Military Traffic Management Command's participation in REFORGER 81. The sixth exercise in the REFORGER series to deploy unit equipment to Europe by surface transportation, REFORGER 81 provided the opportunity for MTMC to continue refinement of unit deployment procedures and identify system shortcomings.

The true worth of REFORGER exercises rests in the training realized by the participants and the documentation of lessons learned. Once the problem areas have been identified, we must strive to overcome these hurdles in subsequent deployment exercises. Our ability to improve unit readiness and strategic mobility can only be enhanced through analysis and corrective action of those activities requiring better planning or closer supervision at execution.

The Executive Summary highlights our support of REFORGER 81 and offers several recommended actions. The final section of the report is a consolidation and discussion of lessons learned during the exercise. In particular, your attention is invited to these two sections addressing the deficiencies and actions we must take to correct or eliminate the problems. Our efforts to find the solutions now will be clearly reflected in a smooth and orderly deployment in REFORGER 82 and a higher state of readiness for our combat and support units.


JOHN D. BRUEN
Major General, USA
Commander, MTMC



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EXECUTIVE SUMMARY

1. Objective. To analyze MTMC active and reserve component unit participation in the 1981 REFORGER (return the forces to Germany) exercise.
2. Scope. This analysis is limited to MTMC's role in the REFORGER 81 surface deployment of unit equipment to Europe and redeployment to home station. Discussions focus on those elements of the surface transportation system over which MTMC exercises supervisory and traffic management responsibility: CONUS highway and rail line-haul; seaports of embarkation and debarkation activities, including cargo receipt and staging, vessel loading/discharge, and cargo documentation.
3. Background. REFORGER 81 is the sixth in a series of REFORGER exercises involving movement of unit equipment by surface transportation to Europe. The deployment applies unit capabilities, MTMC procedures, and the European lines of communication (LOC) to move equipment into the theater of operations. MTMC's participation has significantly increased as a result of the continued emphasis on surface transportation in REFORGER exercises. Three major first-time occurrences--the use of a west coast port, the involvement of military stevedores, and the use of US Army reserve deployment control units (DCU)--set this REFORGER exercise apart from previous ones.
4. Conclusion. Lessons learned from past REFORGER exercises were applied during early planning stages and resulted in a highly successful and efficient operation. The deployment, which took place from the west and gulf coasts, involved both active-duty military terminal service companies and reserve-component transportation terminal units and deployment control units. The exercise was particularly useful in providing realistic training for Army elements in their wartime missions. There were, however, numerous recurring problems.
5. Summarized recommendations. It is recommended that:
 - a. All deployable units conduct rail outloading training quarterly. Training should include European rail-loading techniques.
 - b. Unit equipment be inspected for mechanical condition prior to shipment. All major deficiencies must be corrected prior to departure from the installations.
 - c. Vehicular cargo space be used to the fullest extent possible as was done at Fort Ord this year. (Recurring)
 - d. All tracked vehicles be fitted with U-shaped towing shackles at the installation prior to shipment. (Recurring)

- e. The ship's cargo officer provide to the senior stevedore written instructions on specific requirements for lashing, blocking, and bracing equipment, and that the ship's officers be available in working holds to provide guidance when required.
- f. Contact teams at ports be equipped with sufficient personnel, tools, repair parts, and contact vehicles to solve the most common recurring REFORGER maintenance problems. (Recurring)
- g. All cargo loaded in vehicle beds be properly secured. (Recurring)
- h. M880-series vehicle keys be firmly attached to vehicles to ensure their availability to all changes of transportation modes.
- i. Inoperable vehicles be stowed aboard ship in such a place and way that they can be most easily and quickly discharged.
- j. Use of ITTX-type railcars be prohibited for any phase of REFORGER rail transit operations. (Recurring)
- k. The Port of Beaumont be provided with a modern mobile, multilevel rail-loading ramp for REFORGER exercises.

SECTION I

INTRODUCTION

1. Subject. Analysis of MTMC participation in the REFORGER 81 exercise.
2. Objective. To analyze MTMC's participation in REFORGER 81 and to improve transportation procedures and services in support of deploying units.
3. Scope. This analysis is limited to the deployment and redeployment of major elements of the 4th Infantry Division (Mechanized), 7th Infantry Division, and 9th Infantry Division, and the miscellaneous supporting units for which MTMC had transportation planning and/or support responsibilities. REFORGER operations, not the responsibility of MTMC, were evaluated to the extent necessary to identify transportability problems within the cognizance of MTMC. Specifically, the Commander, MTMC, was responsible for:
 - a. Providing transportation planning support to the Office, Joint Chiefs of Staff (OJCS), the unified and specified commands, and the military services.
 - b. Providing traffic management support for the movement of equipment and personnel within CONUS.
 - c. Arranging for the use of CONUS ocean terminals (military and commercial).
 - d. Coordinating the movement of unit equipment into and out of CONUS water terminals.
 - e. Supervising CONUS water terminal operations, consisting of unit equipment receipt, segregation, staging, and loading aboard ship.
 - f. Providing technical liaison and assistance to the appropriate host-nation authorities for coordinating the unloading and loading of unit equipment and associated handling, staging, processing, accounting, and documenting functions by US forces in Europe.
4. Study parameters. The following phases of REFORGER 81 are keyed to one or more of the aforementioned responsibilities and are examined in this analysis:
 - a. Conceptual and operational planning.
 - b. Shipload planning.
 - c. Cargo documentation.
 - d. Unit deployment from CONUS.

- e. Cargo discharge at European ports.
- f. Redeployment port operations in Europe.
- g. Discharge in CONUS and return to home station.

SECTION II

REFORGER 81 PRE-EXERCISE PLANNING

1. CONUS port survey. In December 1980, MTMC surveyed CONUS ports, including Great Lakes ports, for use in REFORGER 81. Ports with poor physical characteristics or other limiting factors were eliminated. The application of cost analysis resulted in the selection of the Ports of Beaumont, Texas, and the Military Ocean Terminal, Bay Area, Oakland, California, as seaports of embarkation/debarkation (SPOE/SPOD).

2. Planning conferences.

a. A US European Command (USEUCOM) conference was held at FORSCOM headquarters in October 1980. Lessons learned from previous REFORGER exercises and REFORGER 81 concepts, objectives, and milestones were reviewed.

b. The ARRED agent conference was held at Fort Carson, Colorado, 4 through 6 February 1981. This conference provided MTMC an opportunity to discuss planning guidance and movement requirements with deploying units.

c. A port planning conference was held at Beaumont, Texas, on 14 and 15 April 1981, to coordinate the participation of the 1191st Transportation Terminal Unit (TTU), the 7th Transportation Group, and MTMC Gulf Outport. A memorandum of understanding (MOU) between the 4th Infantry Division and MTMC TEA was negotiated for the Port Support Activity.

d. The REFORGER 81 Departure Reporting Conference, hosted by the Joint Deployment Agency (JDA), was held at MacDill Air Force Base, Florida, on 27 and 28 April 1981. REFORGER 80 lessons learned were reviewed and procedures for the 1981 exercise were established.

e. The Readiness Command (REDCOM) transportation conference was held at MacDill Air Force Base, 29 April through 1 May 1981. It served to resolve transportation planning and, specifically, the MAC airflw.

3. Staff assistance visits.

a. MTMC TEA representatives visited the Port of Beaumont, Texas, on 22 and 23 July 1981, to coordinate REFORGER 81 port operations with the commercial stevedoring contractor and military elements scheduled to participate in the exercise. The main purpose of the meeting was; (1) to outline responsibility for stevedoring services; and (2) to negotiate, with contractor personnel and International Longshoremen Association (ILA) representatives, for the use of the 7th Transportation Group stevedores.

b. MTMCWA and MOTBA, at MOTBA, coordinated the use of military stevedores in lieu of commercial stevedores.

c. MTMCEA representatives visited Gulf Outport, Louisiana, on 23 and 24 July 1981, to discuss the use of the unit equipment list (UEL) for REFORGER 81. The UEL was changed to make it more useful for reporting purposes and to help Gulf Outport personnel prepare advance transportation control and movement documents (TCMDs) from UEL cards.

d. MOTBA representatives visited Fort Ord, California, on 6 and 7 July, to discuss use of UELs, marking of equipment, and preparation of cargo for ocean shipping.

SECTION III

SHIPLOAD AND PRESTOW PLANNING

1. General. MTMC sealift planning for REFORGER 81 included shipload analysis, a vessel survey, and prestow planning. The Military Sealift Command (MSC) nominated the GTS Admiral William M. Callaghan and the USNS Meteor for the exercise. Both ships were used for deployment but were not available for redeployment. They were replaced by four breakbulk vessels, the SS Buyer, SS Pioneer Contender, SS Bay, and SS Transcolorado.

2. Ship description. The characteristics of the ships used to transport REFORGER 81 equipment are presented in table 3-1.

TABLE 3-1
VESSEL DESCRIPTIONS

Name	Type	Speed (kn)	Length (ft)	Cargo Capacity	Line	Hatches	Ramps
GTS <u>Callaghan</u>	RORO	25	694	167,537 Sq Ft 49,426 MTON	MSC Charter	6	4 Side 1 Stern
USNS <u>Meteor</u>	RORO	20	540	99,270 Sq Ft 24,334 MTON	MSC Nucleus	4	4 Side 1 Stern
SS <u>Bay</u>	Breakbulk C3-S-33a	18	483	54,568 Sq Ft 14,068 MTON	MSC Charter	5	None
SS <u>Buyer</u>	Breakbulk C3-S-46a	18	493	74,641 Sq Ft 18,329 MTON	MSC Charter	6	None
SS <u>Pioneer Contender</u>	Breakbulk C4-S-57a	21	561	65,128 Sq Ft 16,512 MTON	MSC Charter	6	None
SS <u>Transcolorado</u>	Breakbulk XC4 (Heavy Lift)	17	523	59,144 Sq Ft 16,451 MTON	MSC Charter	5	None

3. Shipload planning. MTMC performed the initial shipload analysis to determine the number and types of ships needed in REFORGER 81. Based on a 75-percent stow factor and the UEL, two RORO ships were requested.

4. Prestow planning. Ship prestow was planned by the MTMC Eastern Area and Western Area Commands for the GTS Callaghan and the USNS Meteor, respectively.

a. Prestow plans were developed by MTMCEA in April 1981, but required frequent updating as revisions to the REFORGER 81 equipment lists were made.

b. Of primary concern in the development of the prestow plan was the discharge requirements at the SPOD. The GTS Callaghan was prestowed for a stern-ramp discharge; however, MTMC TTCE announced a requirement for a port side-ramp discharge. Also, cargo designated as sea/air interface cargo required special considerations to insure immediate discharge to meet scheduled flights.

SECTION IV

UNIT PORT CALL, INSTALLATION OUTLOADING, AND CONUS LINE-HAUL TO SPOES

1. General. The exercise involved rail shipments of vehicles and general cargo from Fort Lewis, Washington, Fort Ord, California, and Fort Carson, Colorado, to Beaumont, Texas. It also involved movement of organic vehicles and general cargo from Fort Ord to the Military Ocean Terminal, Bay Area, Oakland, California. In addition, motor freight shipments were made from 11 installations to Beaumont, as summarized in table 4-1. MTMC advised shipping installations of railcar ordering requirements and proper loading and securing practices and provided an interface between carriers and shipping installations.

TABLE 4-1
DEPLOYMENT SPOE MOTOR-FREIGHT TRANSIT TIMES

	Destination	No of Vehicles	Departure Time	Arrival Time
IN NG	Beaumont	2	18 Aug	19-20 Aug
Ft Rucker	Beaumont	1	10 Aug	13 Aug
Ft Polk	Beaumont	1*	17 Aug	17 Aug
Ft Jackson	Beaumont	2	12 Aug	17 Aug
Ft Eustis	Beaumont	1	14 Aug	21 Aug
Ft Benning	Beaumont	2	17 Aug	20,22 Aug
Ft Lee	Beaumont	2	14 Aug	17 Aug
Ft Belvoir	Beaumont	19	13 Aug	17-22 Aug
Ft Meade	Beaumont	21	12 Aug	15-22 Aug
Ft Riley	Beaumont	12	12 Aug	13-19 Aug
Ft Carson	Beaumont	1	18 Aug	19 Aug

*Military transport.

2. Guaranteed traffic award. In June 1981, MTMC solicited carrier bids for volume cargo movement from the installations deploying the largest volume of equipment (Forts Carson, Ord, Lewis, and Riley) to the Port of Beaumont. These bids, compared with published tariff rates, resulted in a cost avoidance of \$530,959. Per car or per truck rates were established with 72-hour free-time and car-substitution clauses incorporated in the carrier contracts.

3. Port-call instructions. Port-call instructions were released, by message, to all units on 28 July 1981.

a. The MTMCCEA and MTMCWA port-call messages provided all units with call-forward instructions for movement to the SPOEs at Beaumont, Texas, and the Military Ocean Terminal, Bay Area (MOTBA) Oakland, California. Equipment arrival by rail at the SPOE from the 7th Infantry Division (Mech) (Fort Ord), 9th Infantry Division (Fort Lewis) and 4th Infantry Division (Mech) (Fort Carson) was scheduled for 19, 20, and 21 Aug 81, respectively. In addition, equipment from Forts Belvoir, Benning, Eustis, Hood, Jackson, Lee, Meade, Polk, Riley, and Rucker was designated to move via commercial truck and military conveyance to the SPOE. Equipment arrival schedules at the port were determined by: (1) the railcar offloading capability at the Port of Beaumont, (2) commercial truck line-haul movement projections, (3) a requirement for the cargo to be onsite one full day prior to scheduled vessel-loading date for additional maintenance checks, and (4) cargo-flow analysis to insure continuous movement into the SPOE without creating an undue arrival surge of backlog. All vehicles destined for MOTBA were transported by military convoy since the SPOE was less than 800 miles from the origin installation.

b. The port-call message was coordinated with both the REFORGER 81 units and the SPOE; while some minor problems were encountered, compliance with port-call instructions was generally good and cargo arrival proceeded smoothly.

4. Fort Lewis outloading.

a. Rail outloading assistance.

(1) Fort Lewis requested no rail-outloading training from MTMC, and no installation-level rail-loading training was conducted.

(2) A MTMCCEA representative provided onsite assistance from 3 through 5 August.

b. Rail outloading operations.

(1) The Fort Lewis rail outload took place on 3 through 5 August at three loading sites in the Logistics Center area. Bilevel cars were loaded by five two-man teams, and standard flatcars were loaded by a group of 30 personnel who were not divided into formal loading teams. Gondolas were loaded by mobile cranes and blocked and secured by facilities engineering personnel. Planned hours of operation were 0800 to 1700; however, loading operations at flatcar sites were completed by 1500 each day. Loading teams became very proficient as they gained experience in blocking and bracing vehicles. Although loading personnel were enthusiastic, they initially had little or no experience securing rail-loaded equipment and were required to rework some tiedowns and blocking and bracing.

(2) Vehicles were staged at the CONEX loading site and driven to the railcar loading sites as called forward by loading personnel.

(3) Vehicles were driven up a permanent end ramp and were loaded circus style onto standard flatcars. Bilevel cars were loaded by use of a mobile bilevel ramp. This ramp was not fully functional, requiring some onsite maintenance the first day of loading. Wooden spanners were used to span the gap between the bilevel ramp and railcars (fig 4-1).

(4) CONEXs were loaded into gondola cars by two mobile cranes operated by military personnel. Loads were blocked and braced by facilities engineering personnel using both top and bottom bracing.

(5) Railcars provided by the Burlington Northern Railway were in good condition except that some chains were missing from bilevel cars. The railcars were moved in regular train service.

(6) Side blocking did not have a 2- by 6-inch board against the vehicle wheels, as required by pattern 89 of section VI, AAR Open-Top Carloading Rules.

(7) Load plans were made by the installation transportation officer (ITO) and were based on 89-foot CTD and trilevel cars. However, these plans required modifications because 53-foot 6-inch standard flats and bilevel cars were provided, instead of 89-foot CTD and trilevel cars.

(8) Three of the 26 railcars from Fort Lewis went "bad order" en route. They were inspected and repaired, and then sent on to their destination, arriving on the required delivery date.

(9) There was a problem in loading the lower section of the last string of bilevel railcars. A permanent ramp was used, but it was so high above the railcar deck that nothing higher than a jeep could be loaded.

c. Problems.

(1) Initially, loading personnel were not familiar with rail blocking and bracing procedures, so railcar loading proceeded slowly. A major outloading in a contingency situation would not permit so much extra time, and loading-team proficiency would be more critical.

(2) Jeeps loaded on standard flatcars were secured with 1-inch banding (fig 4-2), in accordance with TM 55-2200-001-12, section 6, figure 49, item E; however, the banding was found to be broken upon arrival at the SPOE.

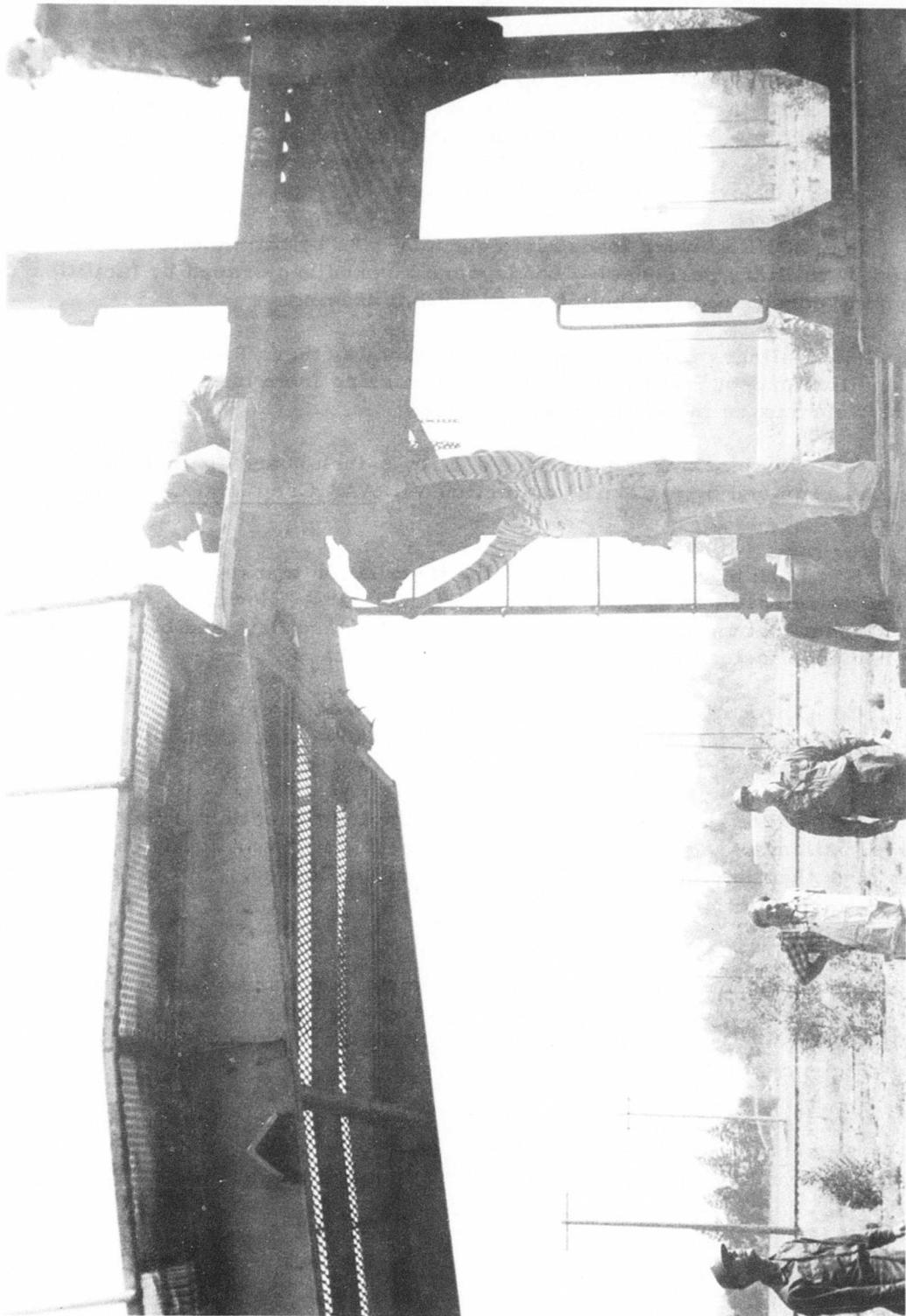


Figure 4-1. Fort Lewis bilevel rail-loading ramp.

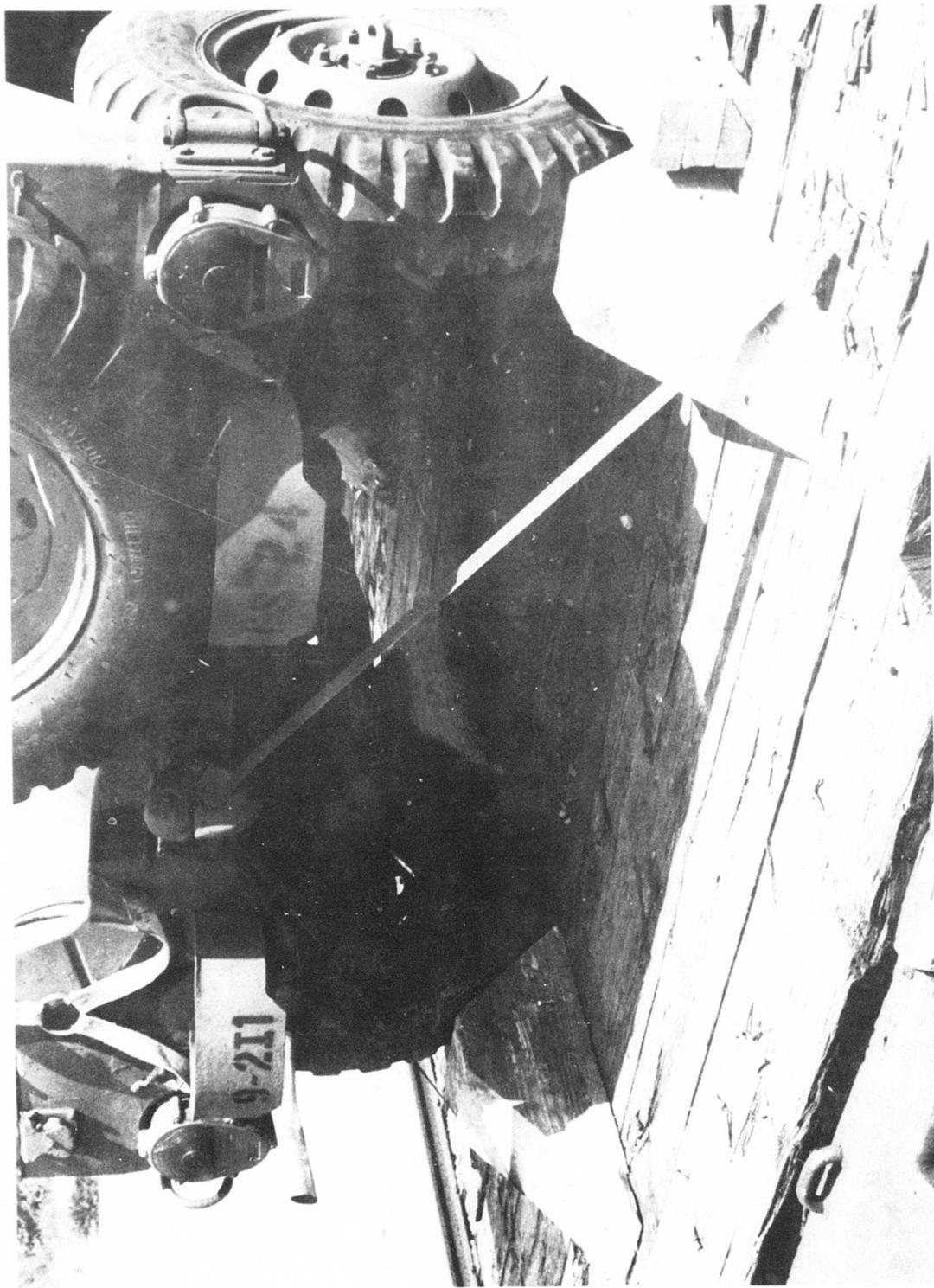


Figure 4-2. Jeep secured with 1-inch banding.

d. Recommendations. It is recommended that:

(1) All deployable units receive quarterly, or at least semiannual, rail-loading and blocking and bracing training.

(2) Blocking and bracing personnel be divided into formal five- or six-man teams, with an NCO in charge of each team and an officer in charge of a team group.

(3) Standard blocking and bracing methods using wire rope, instead of banding, be used to secure vehicles onto standard flatcars, and that TM 55-2200-001-12 be changed to reflect this recommendation.

5. Fort Ord outloading.

a. Rail outloading assistance.

(1) MTMCTEA personnel provided rail outloading training from 1 through 4 June to about 75 Fort Ord personnel.

(2) A MTMCTEA representative provided onsite technical assistance during the outloading from Fort Ord.

b. Rail outloading operations.

(1) The Fort Ord rail and convoy outloading took place from 10 through 12 August. Equipment was outloaded from three sites; 89-foot special-purpose cars were loaded at the 11th Street spur, 89-foot and 60-foot special-purpose cars were loaded at the balloon spur, and 89-foot bilevel cars were loaded at the quartermaster spur. Each loading team consisted of six men, including one NCO. All railcars were loaded, and 67 percent of the vehicles loaded were secured the first day. Operations were conducted from 0730 to 1630, with variations according to job completions. Supervision was excellent and the chain of command was clearly defined. Loading-team personnel did not change and this contributed to the rapid loading and securing operation.

(2) Circus-style loading procedures were used for wheeled vehicles. A new bilevel ramp was used to load the bilevel cars (fig 4-3). Permanent ramps were used at both the balloon spur and the 11th Street spur. Vehicles were called forward to the rail spurs by hand-held radios.

(3) Eight CONEXs were loaded by crane into one gondola at the quartermaster spur.

(4) Railcars were provided by the Southern Pacific Transportation Company. Most railcars were in good condition; however, some tiedown chains on the 60-foot special-purpose flatcars were missing. Railroad representatives were onsite. Railcars were moved in unit train service to the SPOE.

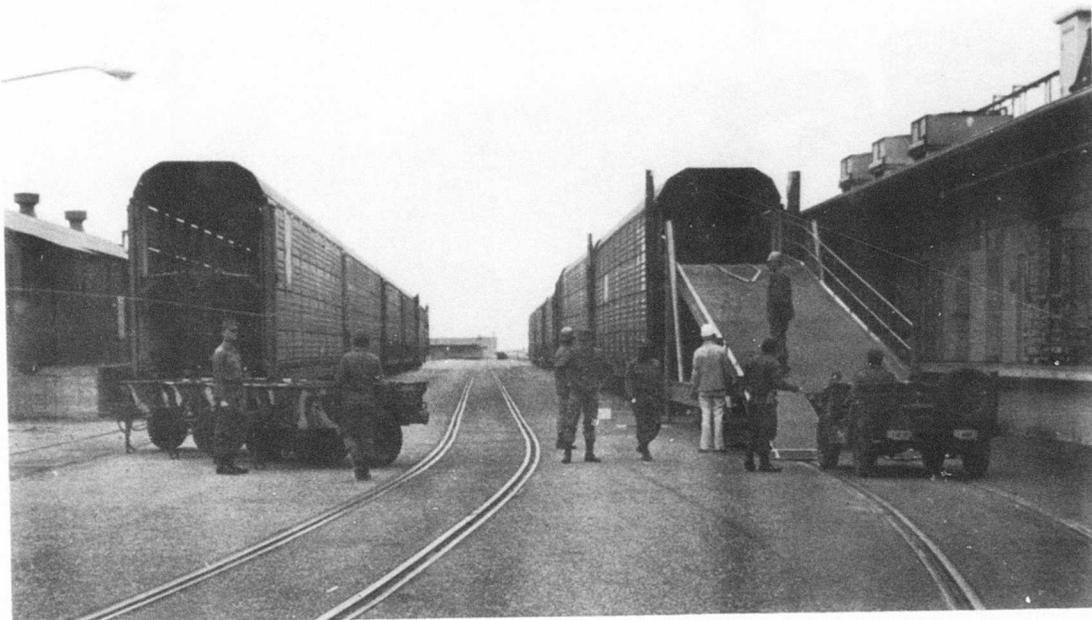


Figure 4-3. Fort Ord bilevel rail-loading ramp.

(5) Rail loading and securing was supervised by 1394th Deployment Control Unit (USAR) personnel at all these loading sites and both staging areas.

(6) Loading team proficiency began at a moderate level, but rapidly developed to a high level. It was obvious that rail-loading training had been conducted prior to the REFORGER loadout.

(7) Load plans were made by the Division Transportation Office (DTO) and were well done, requiring only minor revisions.

(8) The ITO and DTO were colocated and functioned well during the outloading. ITO personnel were onsite to assist in the loading.

(9) Cargo was loaded into the beds of trucks and trailers, vehicles were reduced to shipping configurations IAW AR 220-10 (fig 4-4), and thus, the CONEX rail requirement was reduced from 47 to 8 CONEXs. Cargo was well secured in the cargo beds and was covered with tarps.

(10) For easy identification of the 7th Infantry Division cargo at the Port of Beaumont, red and black 7th ID stickers were affixed to the left of the TCN on the front of prime movers and to the left bumperette of trailers and artillery pieces.



Figure 4-4. Fort Ord cargo beds fully used.

(11) The markings required by the REFORGER planning group to designate the mode of transportation at SPOD for convoy, sea/air interface, or rail movement were silk-screened onto plastic stick-on patches that were applied to the sides of the vehicles (fig 4-5).

(12) Jeeps were loaded on the top levels of bilevel cars while 1/4-ton trailers were loaded on the bottom levels. This caused some difficulty in offloading the trailers at the SPOE.

(13) Rail loading operations are summarized in table 4-2.

c. Convoy operations.

(1) Convoy operations were conducted from 10 through 12 August 1981.

(2) All convoys were divided into 5 or 6 march units of about 25 vehicles each. Convoys departed at 0900 each day, with about 5-minute intervals between march units. Convoy information is summarized in table 4-3.

d. Problems.

(1) Some chain tiedowns on the wooden-deck flatcars in the Fort Ord train were discovered to be loose while en route. The train was sidetracked and the deficiencies were corrected.

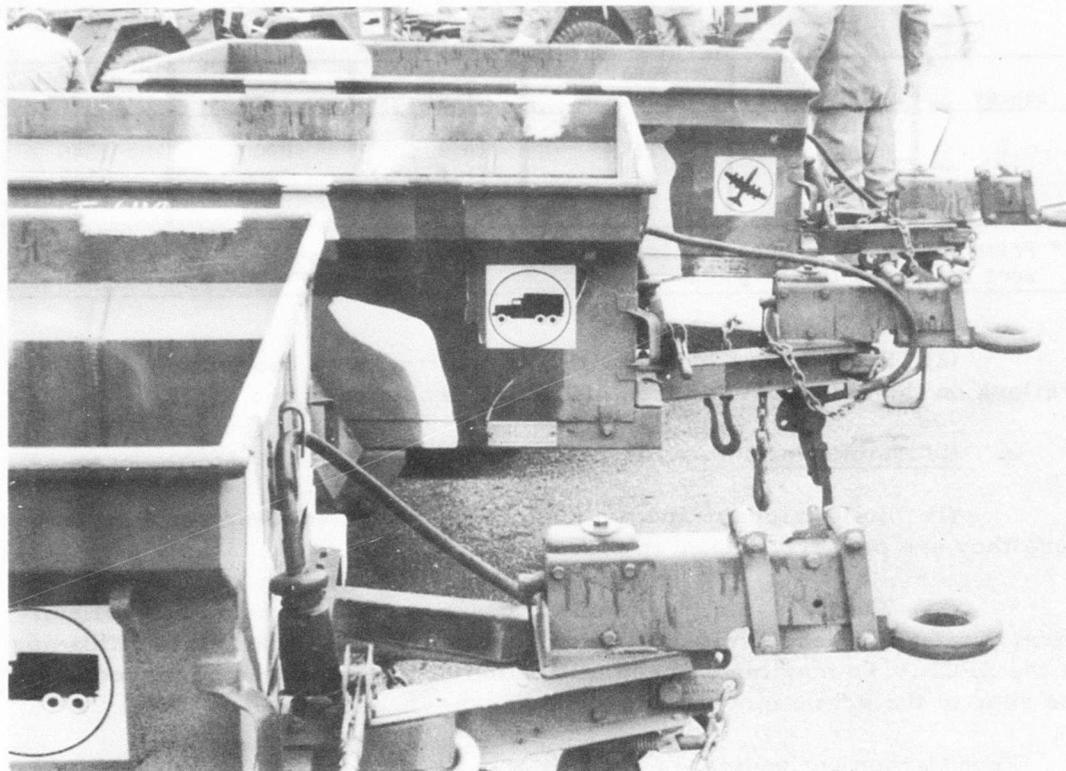


Figure 4-5. Plastic SPOD mode-designation stickers.

TABLE 4-2
SUMMARY OF CONUS-DEPLOYMENT TRAIN LOADING

Origin	Ft Lewis, WA	Ft Ord, CA	Ft Carson, CO	
Date loaded	4-5 Aug 81	10-11 Aug 81	13-15 Aug 81	
Destination	Beaumont, TX	Beaumont, TX	Beaumont, TX	
Departure time	5 Aug 81	1600, 12 Aug 81	1300, 17 Aug 81	
Arrival time at SPOE	14 Aug, 23 cars 20 Aug, 3 bad order	1915, 16 Aug 81	1140, 20 Aug 81	
Railcar Type	Number of Railcars			Totals
89' CTD flats	0	22	0	22
89' Bi-levels	12	11	4	27
60' CTD flats	0	11	61	72
54'6" STD flats	10	0	0	10
53'6" CTD flats	0	0	0	0
Gondolas	4	1	30	35
Totals				
Railcars	26	45	95	166
Wheeled Vehicles	166	244	190	600
Tracked Vehicles	0	0	40	40
Total Vehicles	166	244	230	640
# CONEXs	30	8	265	303

TABLE 4-3
MILITARY CONVOYS TO MOTBA

Convoy	March Units	Total Vehicles*	Date 1981	Depart Time	Arrival Time
1	5	124	10 Aug	0900	1345
2	6	131	11 Aug	0900	1345
3	6	136	12 Aug	0900	1345

* Prime movers only; does not include trailers or cargo. A total of 622 pieces were delivered to the port.

(2) Bilevel cars loaded with 1/4-ton trucks on one level and 1/4-ton trailers on the other level caused offloading problems at the SPOE.

e. Recommendations. It is recommended that:

(1) Built-in chain tiedown devices be inspected after securing to be sure they are properly locked in place.

(2) When 1/4-ton trucks and trailers are loaded on multilevel rail-cars, trailers be loaded directly behind prime movers to facilitate offloading at the SPOE. To maximize space utilization, trailer tongues be placed under the rear of the prime movers and secured.

6. Fort Carson outloading.

a. Rail outloading assistance.

(1) The Directorate of Industrial Operations (DIO), Division of Engineering and Housing (DEH), conducted cadre rail training, and the Installation Transportation Office (ITO) conducted railcar load planning for the division. As requested, MTMCTEA conducted European-type rail-loading training.

(2) A MTMCTEA representative provided technical assistance onsite during the loadout.

b. Rail outloading operations.

(1) A total of 466 items of equipment, consisting of wheeled/tracked vehicles, trailers, and CONEXs, were loaded onto 96 railcars at seven rail spurs. The railcars were spotted a day late, because heavy rain had left washouts along sections of onpost tracks. Supervisory, maintenance, and railway inspector personnel were available and provided timely assistance during the loadout. Additionally, a second storm caused washouts after loading, but prompt action by responsive track-maintenance crew precluded delays. Both military and civilian personnel were familiar with rail equipment, lashing materials, and procedures for loading equipment onto railcars. The major

shortfall was in proper positioning and securing of vehicles on the railcars. Initially, loading was slow, because railcar spanners and tiedown material arrived late and because loading teams lacked experience. With arrival of spanners, however, and as the "learning curve" increased the pace and efficiency of the loading teams and supervisors, loading time improved. Numerous questions arose concerning tiedown points, spacing between vehicles, and brake and gear setting.

(2) Vehicles were staged at a paved commercial-vehicle parking lot on main post. This area was used since most unit motor pools, unpaved, were muddied by heavy rains.

(3) All wheeled vehicles were loaded circus style. Permanent end ramps were used for loading onto single-deck railcars, and a mobile bilevel ramp was used for bilevel railcars.

(4) CONEXs were loaded into gondola cars by mobile cranes.

(5) Railcars were provided by the Denver and Rio Grande-Western Railroad (D&RGW), and were generally in good condition. A few, however, needed to be cleaned, and some special-purpose chain-tiedown flatcars required minor repairs, which were performed expeditiously by railroad personnel. The train was moved by unit train service to the SPOE.

(6) Supervision was well organized, with loading personnel being fully aware of whom to turn to for decisions and who was authorized to give direction.

(7) Load plans were completed by the ITO. Some minor revisions were required to accommodate the few railcar substitutions made by the railroad. Rail Loading and Sequence Plans, FC Form 1567, were prepared by the DIO/ITO and were followed except where UEL changes or last-minute substitutions were made. The major problem encountered was verification of weight and cube data of cargo vehicles, some of which were loaded with unit equipment.

(8) Coordination between the Division G-4 and Fort Carson DIO/ITO personnel was evident. Initially, the loading operations were delayed by late delivery of railcar spanners and tiedown material. Again, once the learning-curve problem was overcome, the operation proceeded rapidly. For a larger/more complex operation, the necessity for an onsite-operations area (G-4/DIO) would be readily apparent.

(9) Sensitive and hazardous cargo was properly identified and marked, and loose cargo in vehicles was properly checked and secured. Tracked and wheeled vehicles and trailers were marked with transportation control numbers (TCNs) and height and weight data. European mode-clearance indicators (yellow disks) were painted onto vehicles and trailers. Vehicles were shipped

in reduced configuration and were checked for fluid leaks. Many vehicles were found to have hydraulic fluid and oil leaks.

(10) The 1179th and 1394th Deployment Control Units, USAR, performed yeoman's duty in assisting deploying units with the administrative tasks required for deployment. Liaison personnel were placed with the DIO/ITO to assist in documentation and to expedite administrative problem solving. They also validated and checked TCNs and insured that CONEXs were properly marked; checked weight data, special-handling codes, packing lists, and weight tickets. Personnel checked for proper sealing and yellow-disk clearance mode. The DCU coordinated directly with the TTU at Beaumont on train departures, rail consists, and any problem areas that would affect the offload and staging operations at the port.

c. Problems.

(1) Many vehicles had serious hydraulic fluid and oil leaks.

(2) The practices and standards prescribed by the AAR, the D&RGW, and Fort Carson were generally adhered to; however, the railroad inspectors seemed willing to accept minimum requirements. Equipment spacing, tiedown points, and open-hook wiring were given cursory checks.

(3) Tracked equipment presented a recurring problem area in the use of "T" shackles (towing device) rather than "U" shackles (fig 4-6). The "U" shackle is acceptable for tiedown on US/European railcars and ocean vessels. Chain tiedowns were not always wired to the "T" shackles, as required, and some became slack or slipped off during rail movement to the SPOE. This problem is a long-standing one.

(4) Because of the poor use of vehicle cargo-carrying capability (fig 4-7), excessive CONEXs were required. Few, if any, checks were made to determine if CONEXs were cubed/weighed out or if the SENSITIVE markings were warranted.

(5) No onsite operations center was set up at the rail loading site. Such operations centers have been effective in resolving problems in the past.

(6) The ITO should be the coordinator/clearing house for all unit UEL changes; these problems could have been avoided. The unit equipment list (UEL), MTE Form 0-105 (test), expedited deployment and assisted in transportation planning. The UEL was used as the base document for transportation control and movement documents (TCMDs), rail load plans, vehicle inventories/checklists, vessel prestow plans, and advance document at the SPOE. Unilateral changes to the UEL by individual units, as well as a breakdown in the transmission of these changes throughout the system, created problems.

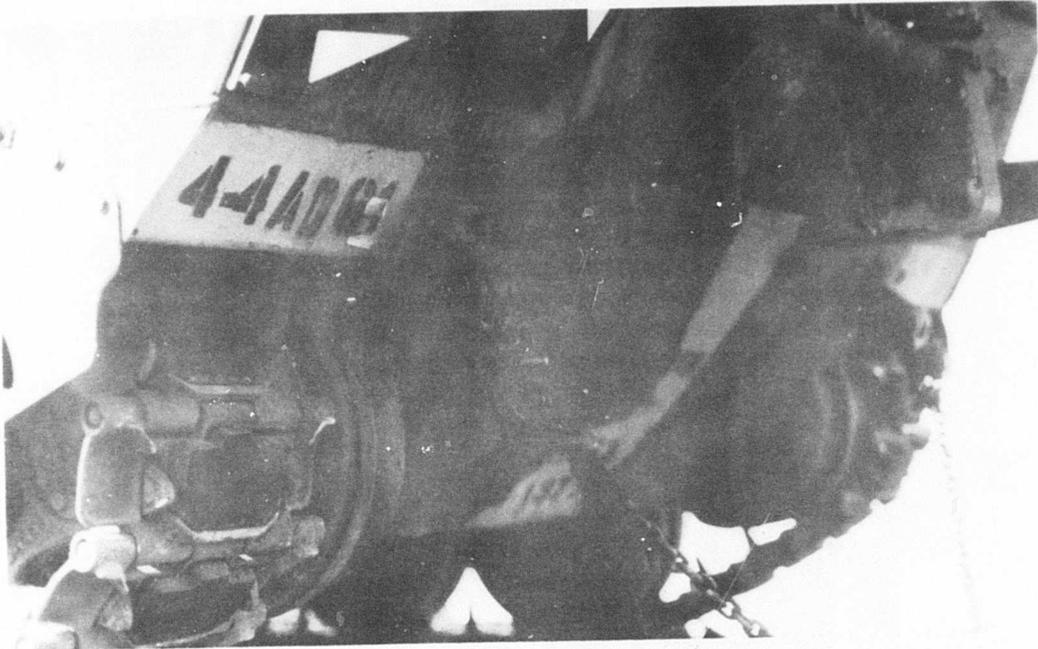


Figure 4-6. Vehicle fitted with "T" shackle instead of "U" shackle.

d. Recommendations. It is recommended that:

(1) No vehicles with serious hydraulic or oil leaks be shipped on an extensive deployment exercise.

(2) Coordination be made with the local railway inspector to ensure that AAR loading requirements are met.

(3) Vehicle cargo space be used IAW AR 220-10.

(4) As pointed out in past MTMC REFORGER analyses, all vehicles be fitted with U-shaped devices at lift points. The T-shaped towing hooks cannot be used aboard ship with Peck and Hale lashing devices.

(5) Loaded CONEXs be inspected prior to sealing to ensure proper loading and bracing techniques and for SENSITIVE markings, if appropriate.

(6) An "onsite" operations center be established to prevent or alleviate operational problem areas.

(7) The ITO be the coordinator for all UEL changes.

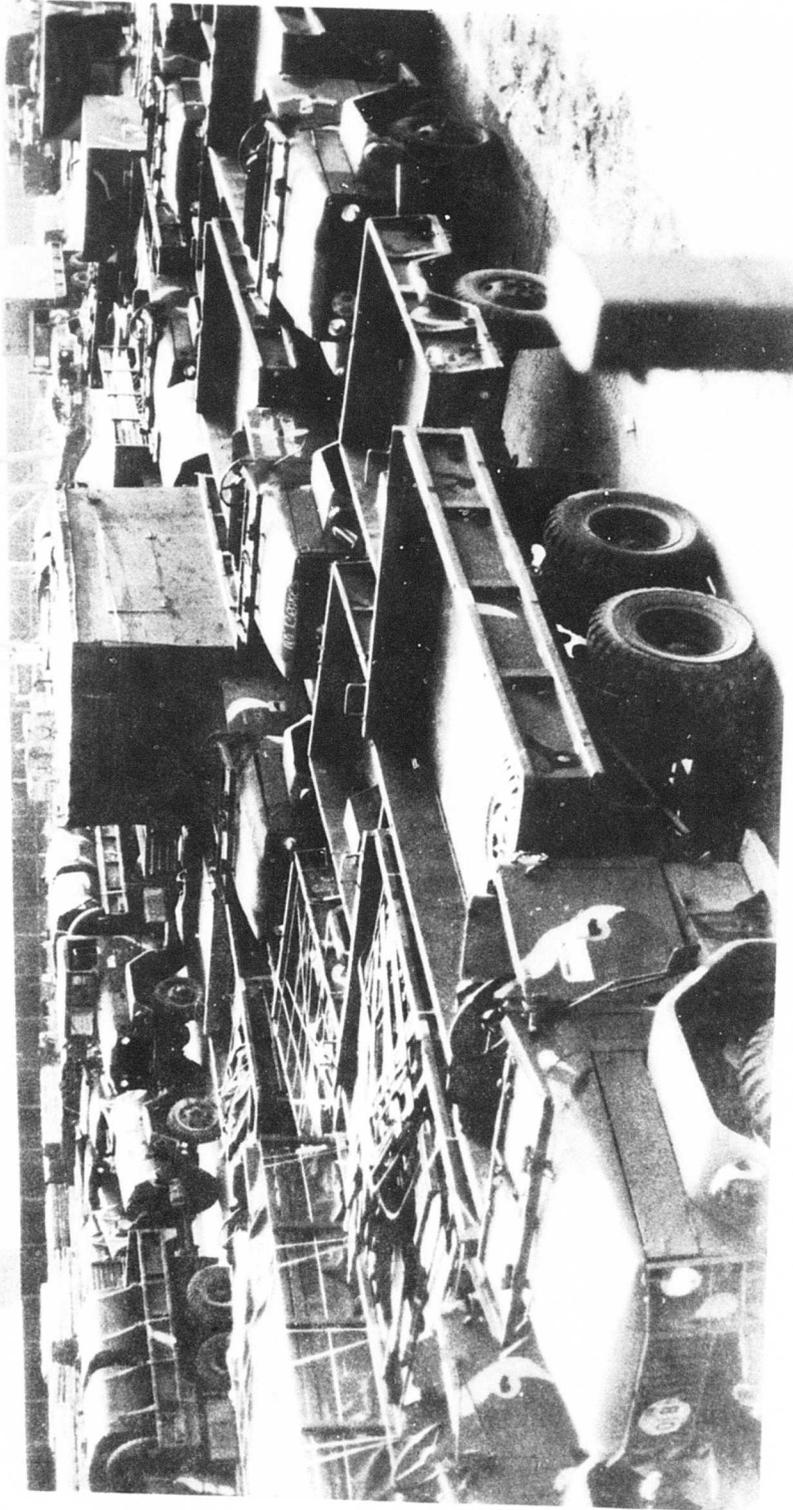


Figure 4-7. Vehicles with unused cargo space.

SECTION V

CONUS SPOE OPERATIONS

1. General.

a. The Military Ocean Terminal Bay Area (MOTBA), Oakland, California and the Port of Beaumont, Texas, were used to conduct all aspects of cargo receipt, segregation, staging, and shiploading of material for the CONUS portion of the deployment phase of REFORGER 81. Vessel loading operations are summarized in table 5-1.

TABLE 5-1
MOTBA SHIPLOADING SUMMARY

Ship	On Berth	Opns Date	No of Gangs	No of Men	Type of Gang	Hours Worked	Ship Sailed	MTON
USNS Meteor	1540 12 Aug 81	13 Aug	2	32	BB	0800-1700	1030 17 Aug	10,167
		13 Aug	1	14	BB	1900-0400		
		14 Aug	1	29	BB	0800-1800		
		15 Aug	4	5	LASH	0800-1700		
		15 Aug	1	25	RORO	0800-1700		
		15-16 Aug	4	5	LASH	1800-0500		
		15-16 Aug	1	25	RORO	1800-0500		
		16 Aug	4	5	LASH	0700-1500		
		16 Aug	1	25	RORO	0700-1700		
		16-17 Aug	8	5	LASH	1500-0420		
		16-17 Aug	1	25	RORO	1700-0420		

b. REFORGER 81 was conducted as a peacetime exercise in which safety was a major consideration. Cargo arrival at the ports was, therefore, scheduled to facilitate the segregation and staging of cargo.

c. In comparison with REFORGER 80, some improvement was noted in the area of advanced documentation received through the use of the UEL.

2. MOTBA SPOE operations.

a. General.

(1) The MOTBA Pier 7 facility and the breakbulk open-storage yard were used to conduct all aspects of cargo receipt, segregation, staging, and shiploading of material aboard the USNS Meteor. (See fig 5-1 for the task organization.) The area used, including the unimproved storage area for hundreds of REFORGER vehicles, is depicted in figure 5-2.

(2) A port assistance team from the 7th Infantry Division and 80 personnel from the 264th Transportation Company (TS) provided continuous support to MOTBA during the entire loading operation. The 1394th DCU (USAR)

REFORGER '81 TASK ORGANIZATION

MTMCWA

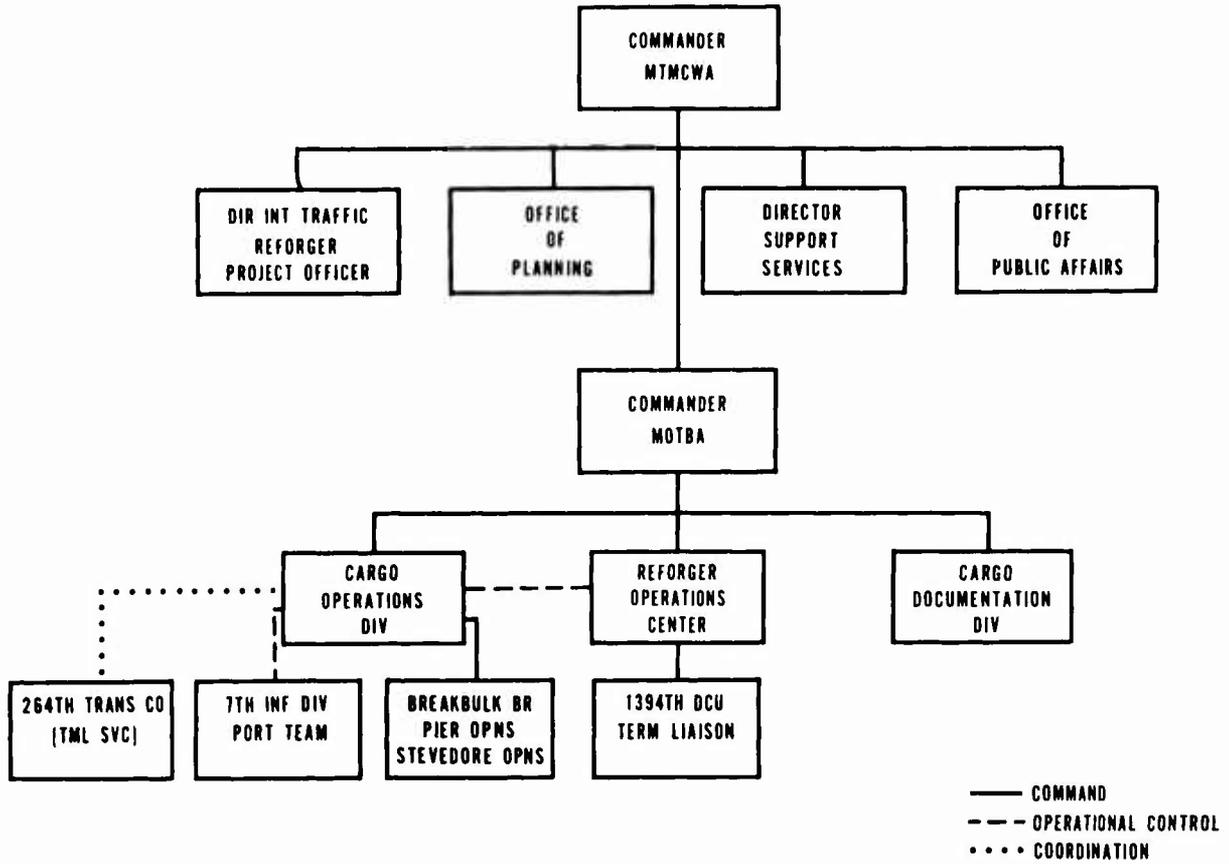


Figure 5-1. MOTBA deployment task organization.

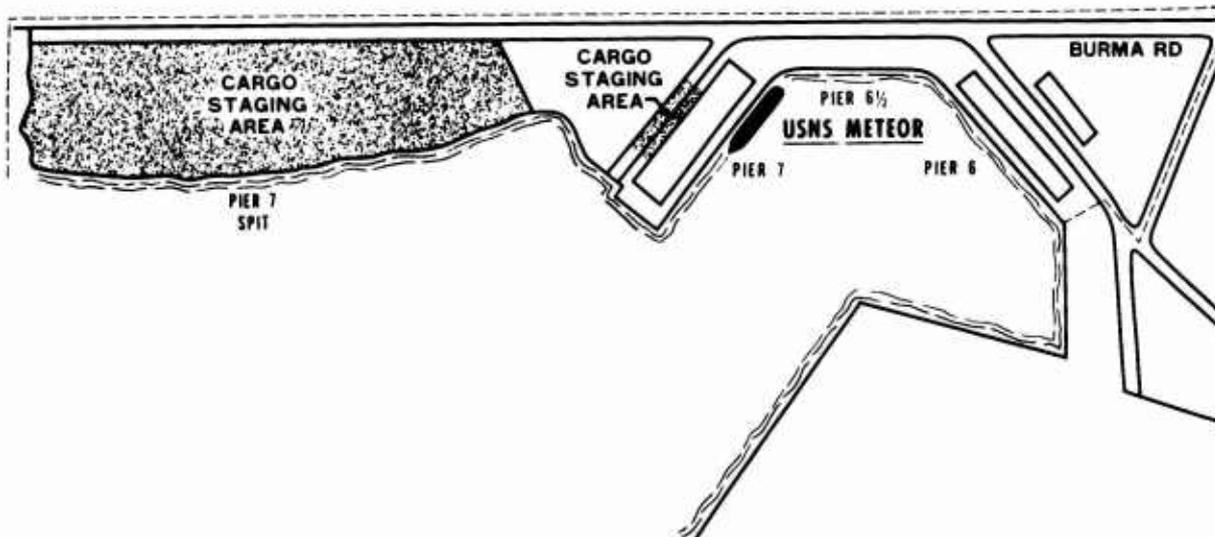


Figure 5-2. MOTBA Pier 7 area, deployment.

Terminal Liaison team provided additional support for cargo accounting and manning the operations center.

b. Cargo receipt and staging operations.

(1) All vehicles and CONEXs were staged in and around the MOTBA Pier 7 and adjacent staging areas, where vehicles were segregated by type. There was no noteworthy intransit damage to any of these vehicles.

(2) Initially, some confusion existed in equipment staging because of the large number of changes required in the advance documentation. CONEX numbers were not initially provided. Many vehicles had duplicate TCNs and others had TCNs that were not identified on the advanced documentation provided to MOTBA. MOTBA documentation personnel worked many extra hours to correct these problems, and no delays to actual vessel loading occurred.

c. Vessel loading.

(1) The USNS Meteor was loaded using the forward and aft side ramps for roll-on/roll-off operations. The stern ramp could not be used because of the configuration of Pier 7. Vehicles were driven into hatch 4 of the upper tween deck and lashed-in facing the hinged stern ramp since this ramp would be used during vessel offloading operations.

(2) The wharf gantry crane was used to install the ship's side ramps, and the ship's gear was used for lift-on operations for many of the vehicles loaded into hatches 1 and 2.

(3) Stevedore gangs were used as indicated in table 5-1. Contract and military stevedore operations were kept separate to minimize the possibility of labor disputes.

(4) The USNS Meteor was partially loaded by contract stevedores on 13 and 14 August. During this time, only the aft side ramp, the shore gantry crane, and ship's gear were used to move cargo onto the vessel. Jeeps and trailers were driven onto the aft side ramp and then moved forward through the ship onto the main deck. Ship's gear was then used to lower many of these vehicles into hatches 1 and 2. Thirty-eight CONEXs were also loaded in hatch 2 and a false deck was constructed above, creating space to overstore 1/4-ton trucks and trailers. The ship's heavy-lift boom was rigged to lift two D-7 bulldozers onto the main deck.

d. Military stevedore operations.

(1) Military stevedore operations began at 0800 on 15 August and were completed at 0420 on 17 August. Eighty members of the Fort Eustis-based 264th Transportation Company (TS) were given the mission of RORO loading and lashing 347 vehicles into hatches 3 and 4 of the USNS Meteor. About 50 personnel

from the 7th Infantry Division port-support team were used to drive vehicles aboard ship, thus allowing the stevedore unit to concentrate its efforts on securing cargo and vehicles as they came aboard the ship. The unit worked in two shifts around-the-clock, with each shift working about 11 hours. Shifts were changed during the breakfast and supper meals.

(2) On the evening of 14 August, after the contract stevedores had completed their work aboard ship, the 264th Transportation Company spent about 3 hours familiarizing themselves with the ship's areas where they would work, as well as with lashing several vehicles in compliance with the verbal instructions given by the vessel's chief mate, who required 8 lashings per vehicle on all vehicles 2-1/2 tons or over. Final plans and procedures for the scheduled 2-day operation were made at a late-evening coordination meeting attended by key personnel from MOTBA, 7th ID port-support team, and 264th Transportation Company. Additionally, the forward side port ramp was installed in preparation for the next day's roll-on/roll-off activities.

(3) Operations commenced at 0800 on 15 August, with the first vehicle driven onto the ship at 0845. The prearranged and highly manageable call-forward system allowed for a continuous, smooth flow of vehicles onto the ship. Twenty-five 7th ID drivers provided direct support to the first shift's loading activities. The use of hand-held two-way radios also helped the operation to flow smoothly.

(4) Initially, the prestow plan was precisely followed, but stevedore teams left many large gaps between vehicles, and a generally loose stow was found in the lower holds of hatches 3 and 4 (fig 5-3). Several loose lashings were found, and some lashings had been placed across brake lines (fig 5-4) and around suspension parts of 1/4-ton trucks. As operations continued, stevedores became more proficient and loose stows and improper lashings became the exception rather than the rule. A significant problem area occurred, however, when on several occasions, on-duty ship's officers (mates), other than the chief mate, entered the holds and informed the military stevedores that the secured lashings were incorrect and required them to be redone. Two complete hatches had to be relashed. The main problem involved precisely which lashing points were to be used on the various types of vehicles in the holds. The chief mate had the final word. He was also the cargo-accepting authority for the ship; however, he was not always available to settle lashing disputes between the stevedores and the ship's crew. This situation resulted in a great deal of lost time, double lashing of many vehicles, and a definite lowering of the morale of the Army stevedores.

(5) During the loading operation, numerous large groups of civilian and military personnel were given guided tours of the ship. These groups tended to hinder the loading operation, particularly since many were guided by the chief mate.



Figure 5-4. Lashings applied over axles on USNS Meteor.

e. Problems.

(1) Unit equipment lists (UEL), arriving at MOTBA, were handwritten and difficult to read.

(2) Some CONEXs arrived without TCNs and had to have numbers stenciled on at MOTBA. This caused unnecessary delay and double handling of CONEXs.

(3) Last-minute changes to the advance documentation resulted in a loss of one-third of the computer file. The file had to be re-input and delayed the date that the documentation was available.

(4) When advance information was coded from the UEL, errors in the pack and commodity codes were corrected where possible. However, if the nomenclature was not clear, the validity of the codes remained uncertain. Correction of documentation at the SPOE is very time-consuming.

(5) All cargo was to be stenciled with the first 10 digits of the TCN. At MOTBA many duplicate numbers were stenciled on separate items. Many vehicles had stencil numbers that were not provided on the TCMD documentation.

(6) Guidance provided by ship's officers was not consistent throughout the loading and lashing operation, and in two instances the entire holds had to be relashed, thus delaying operations.

(7) Tours of the USNS Meteor detracted from the effectiveness of the operation.

(8) Many windshields in the down position were found broken after the shiploading operations.

f. Recommendations. It is recommended that:

(1) UELs be typed, checked for accuracy, and verified before they are given to the port advance-documentation section. The 1394th DCU, if used, could assist in this area by being involved during the early planning stages of future REFORGER operations.

(2) ITOs provide CONEX TCN to the units in sufficient time for proper stenciling on cargo before being shipped to the SPOE.

(3) Punch card format be used to record advance data. This would facilitate changes to advance documentation.

(4) Advance documentation data be verified by originators before being sent to the SPOE.

(5) Vehicles be properly identified by TCNs before being moved from unit motor pools.

(6) A specific letter of instruction (LOI), explaining pertinent procedures for lashing and blocking and bracing, plus any other special instructions military stevedores may require, be provided by vessel masters. (See appendix.)

(7) Onduty mates be in holds being worked to oversee operations, making corrections early in loading operations, so that mistakes will not be perpetuated throughout a number of holds.

(8) Tours of ships not be conducted during loading operations. The number of visitors overall must be reduced to a minimum.

3. Beaumont SPOE operations.

a. General.

(1) MTMCEA Gulf Outport conducted cargo receipt, segregation, staging, and stevedoring/terminal service operations at the Port of Beaumont, Texas (fig 5-5). The Commander, Gulf Outport, established a task organization to operate the port from 16 through 29 August 1981 (fig 5-6). Shiploading operations at Beaumont are summarized in table 5-2.

(2) For this phase of the operation, the 1191st US Army Transportation Terminal Unit, USAR, New Orleans, Louisiana, wrote the operations order and provided operational command and control for the Port Support Activity and attached Terminal Service Company during the period 16 through 29 August 1981.

(3) The 4th Infantry Division's 392d Transportation Detachment (CD) served as the Port Support Activity (PSA) and provided command and control of ARRED personnel, maintenance crews, security guards, and drivers for tracked vehicles and M-561 (gamma goats) for staging and vessel loading operations.

(4) The 7th Transportation Group's 567th Transportation Company (TS), Fort Eustis, Virginia, provided drivers and teams to secure vehicles and CONEXs aboard the GTS Callaghan.

b. Cargo receipt and staging operations.

(1) The 1,141 pieces of equipment and CONEXs to be loaded aboard the GTS Callaghan were delivered to the Port of Beaumont, offloaded from commercial trucks and railcars, and positioned in port staging areas, by vehicle type to facilitate vehicle inventory, documentation, and loading. Most cargo was scheduled to arrive by train during the period 19 through 21 August. The first trains began to arrive on 14 August. The early arrival of the trains (from Fort Lewis) had no adverse effects on the staging operation; conversely, it actually facilitated matters, as their early arrival allowed the 1191st TTU and the Port of Beaumont to offload, document, and stage the equipment in an orderly and timely manner. About 40 percent of the staging area's capacity was used. The selection of the Main Street wharf facilitated separation of vehicles by type.

(2) Although no tiedown problems were recorded for vehicles and CONEXs arriving by commercial truck, a number of deficiencies were noted for rail cargo:

(a) Many chain tiedowns were loose and, in some cases, had become detached from their vehicles.

(b) Some chains were secured around axles and over hydraulic lines of vehicles arriving from Fort Carson.

PORT OF BEAUMONT

STAGING AREAS

- MAIN STREET
- HARBOR ISLAND

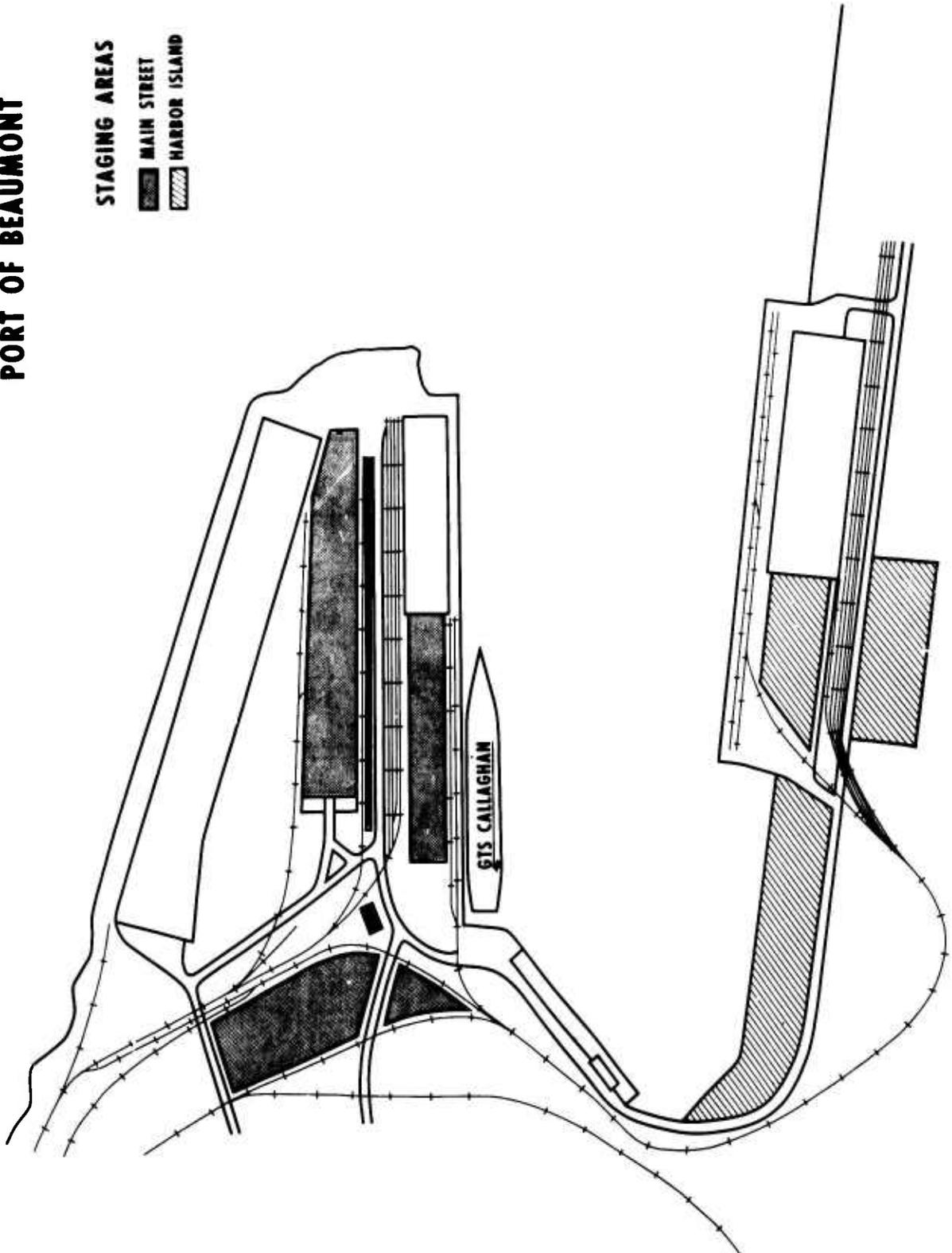


Figure 5-5. Port of Beaumont, deployment.

**MTMCEA
REFORGER TASK ORGANIZATION**

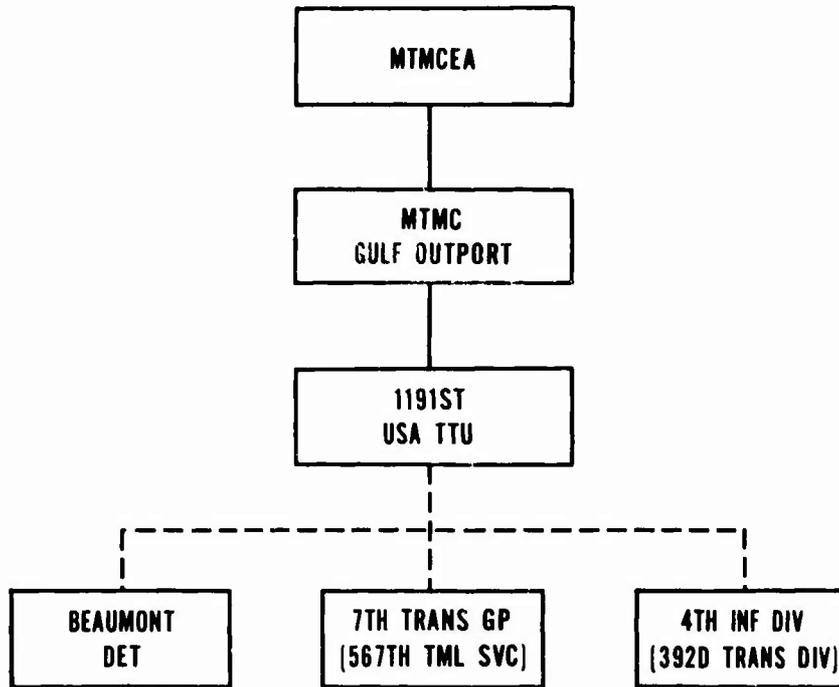


Figure 5-6. Beaumont deployment task organization.

TABLE 5-2
BEAUMONT SHIPLOADING SUMMARY

Ship	On Berth	Opns Date	No of Gangs	No of Men	Type Gang	Hours Worked	Ship Sailed 2015 26 Aug 81	MTON 16,600
GTS Callaghan	1513 22 Aug 81	24 Aug	2	32	LOLO	0700-1200		
		24 Aug	2	42	RORO	0700-1200		
		24 Aug	2	23	LASH	0700-1200		
		24 Aug	2	32	LOLO	1300-1800		
		24 Aug	2	42	RORO	1300-1800		
		24 Aug	2	23	LASH	1300-1800		
		24 Aug	2	32	LOLO	1900-2300		
		24 Aug	1	21	RORO	1900-2300		
		24 Aug	2	26	LASH	1900-2300		
		25 Aug	2	32	LOLO	0800-1200		
		25 Aug	2	42	RORO	0800-1200		
		25 Aug	2	23	LASH	0800-1200		
		25 Aug	2	32	LOLO	1300-1700		
		25 Aug	2	42	RORO	1300-1700		
		25 Aug	2	23	LASH	1300-1700		
		25 Aug	2	25	LOLO	1900-2300		
		25 Aug	2	39	RORO	1900-2300		
		25 Aug	1	10	LASH	1900-2300		
		26 Aug	2	23	LOLO	0700-1200		
		26 Aug	2	40	RORO	0700-1200		
		26 Aug	2	30	LASH	0700-1200		
		26 Aug	2	23	LOLO	1300-1900		
		26 Aug	2	40	RORO	1300-1900		
		26 Aug	2	30	LASH	1300-1900		

(c) Several 1-inch bands securing 1/4-ton vehicles onto the Fort Lewis train were broken in half, and a gamma goat had sustained damage to the tailgate and left side of cargo bed.

(d) Many vehicles had the steering wheels locked without keys attached. This was particularly true of the Fort Carson train. The keys were later found with the train guards, but not in time to prevent some locks' being cut. Unit instructions to tape keys to the locks were followed in most instances. However, before taping the keys to the locks, the drivers secured the chain around the steering wheel of the vehicle. Unit personnel had to go through the trains, untape the key, open the lock, remove the chain from steering wheel, and retape the key to the lock. This resulted in extra time preparing to unload the vehicles.

(e) The Fort Carson train arrived with the cars facing the wrong direction. This caused a longer drive to the staging areas. Because of the length of the train, it could not be turned around in Beaumont. The closest yard capable of this was Houston, Texas. The train was worked from the wrong position because a delay in Houston would have been too long.

(f) Some CONEX containers were not properly banded. Although specifications called for a 1-inch vertical and horizontal band, bands ranged from 5/8 inch to 2 inches. Securing of CONEXs in gondolas was often excessive. Wire rope (5/8 -inch) and turnbuckles (24-inch) were used on the Fort Carson train. This caused excessive delay in unloading and was also costly. Wire (9-gauge) and timber bracing (4X4) would have been sufficient.

(g) Turnbuckles used to secure communications shelters to vehicles vibrated loose in 75 percent of the cases. These should be tack welded or wired shut.

(h) Other discrepancies noted as cargo arrived in the port are:

1 Hairline cracks in vehicle windshields.

2 Minor body dents.

3 Bent bumpers

4 Broken or missing tiedown shackles.

5 Unsecured equipment in cargo beds.

6 Eighty-six CONEXs marked SENSITIVE were received from Fort Carson; however, only 25 were so indicated on the TCMD.

(3) Although most incoming vehicles arrived in operable condition, some, including tracked vehicles, had to be towed aboard the GTS Callaghan.

The Port Support Activity (PSA) did not have the necessary personnel, equipment, or capability to perform its onsite maintenance mission. With only one M880 and a few toolboxes, the unit possessed limited repair parts and no POL or recovery capability. The 392d did not have a vehicle with a 24-volt electrical system and had to rely on vehicular cargo to jump-start equipment with dead batteries.

(4) The PSA's limited capability allowed them to make only minor repairs to deadline equipment. In previous years, the PSA came with more assets and could easily use its home station because of its proximity to the port. In addition, installations providing the port support in the past were closer and could normally have available (within a reasonable time) those major items necessary to effect repairs. Since the 392d was from Fort Carson, however, this added dimension for service was not available to the unit.

(5) A problem was also encountered with sensitive/classified CONEX containers. Several boxes were stenciled sensitive, but special-handling codes were not provided on the advance documentation. Additionally, only in a few instances did signature and tally records (DD Form 1907) accompany sensitive cargo to the SPOE.

(6) Because deploying units failed to adhere to applicable surface transportability documents (FM 55-65 and TB 55-45-1), MTMCEA guidance, and the 4th Infantry Division exercise directive, additional unnecessary man-hours and funds were spent in preparing cargo for overseas movement. For example, several CONEX containers had to be rebanded, many tiedown shackles were either replaced or repaired, and equipment/supplies loaded in cargo beds of vehicles had to be resecured.

(7) REFORGER 81 was conducted as a peacetime exercise, with 3 days allowed to provide meaningful and realistic training for the 567th Transportation Company (TS).

(8) Equipment areas were posted with appropriate signs identifying staging areas. Vehicles were staged by type and stowage location, and sensitive CONEXs were segregated and guarded. This facilitated the entire call-forward process, which was also enhanced by the close working relationship among all cargo-loading participants.

(9) Offloading of bilevel cars was hindered by the antiquated, unsafe, and steep rail-loading ramp.

c. Vessel loading.

(1) Loading operations commenced at 0700 on 24 August and were completed at 1900 on 26 August. The vessel's stern ramp, as well as the forward and aft side ramps, was used to load the GTS Callaghan. All vehicles were either driven or towed aboard the vessel, while the ship's gear and the port's

60-ton gantry crane were used to load the 362 CONEXs. Extremely high temperatures within the ship caused two men to require treatment for heat exhaustion. Numerous rest breaks were used to compensate for the heat and for the rather poor venting of CO₂ fumes from the lower holds of the ship.

(2) Initially, the prestow plan was followed quite closely, but deviations were made, as stevedore teams created tight vehicle stows and placed more vehicles into the vessel's holds. CONEX loading, however, did not proceed as smoothly as vehicle loading. Breakbulk gangs experienced great difficulties in actually positioning, blocking, and bracing CONEXs. Forklifts used to maneuver CONEXs inside the ship constantly broke down, and productivity was slowed by the very high humidity, the temperature, and the inexperienced breakbulk gangs.

(3) Although PSA drivers from the 4th ID and 7th ID were provided to augment the stevedore company, many of them were unlicensed and unqualified to fill the requirement of driving tracked vehicles and gamma goats. This caused some delay, as those drivers had to be replaced by drivers from the 567th Transportation Company.

(4) During the third day of the loading operation, the ship's gear on hatch number 1 became inoperable, making the port's 60-ton gantry crane the only means of lifting CONEXs into hatches. As in past REFORGERS, a number of deadlined vehicles arrived in the port and had to be towed onto the GTS Callaghan. This situation, as well as the temporary breakdown of port recovery vehicle, hampered cargo flow.

d. Problems.

(1) Past, as well as the current, REFORGER experience gained, shows that there will always be maintenance problems with vehicular cargo. Some vehicles will arrive in deadlined or inoperable condition, and others will develop maintenance problems while in the port area.

(2) Initially, loading was slow and not efficient. This situation generally improved as the military stevedores became more familiar with the tiedown requirements for the various types of vehicles they had to load.

(3) Incoming rail cargo arrived with loose or badly secured tiedowns.

(4) Many tiedown shackles were broken or missing and had to be replaced by the port.

(5) Equipment in vehicle cargo beds had to be resecured by port personnel prior to loading.

(6) During this phase of REFORGER 81, the 567th Transportation Company (TS) was placed under operational control of the 1191st TTU (US Army Reserve). Because of the TDA structure of the 1191st TTU and the TOE

organization of the 567th Transportation Company, double -- and, in some cases, triple -- supervision of operating personnel existed in practically all areas of the operation. Frequently, firstline supervisors and even individual stevedores were being told by different supervisors to perform different tasks.

(7) The vehicle call-forward process presented continuous problems. The 1191st TTU was responsible for calling vehicles forward from staging areas, after coordination had been made with loading supervisors from the 567th Transportation Company. Although individuals from the 1191st TTU had radio communication with the staging area, between hatch superintendents, and with the TTU representative within the staging area, a loss of coordination often resulted because too many individuals were trying to coordinate the same task of bringing a vehicle forward to the vessel.

(8) The master of the GTS Callaghan published a LOI on his precise lashing requirements (appendix). At a coordination meeting, copies of this LOI were distributed, and it was made known that one of the vessel's mates would work in each area of operations aboard ship to ensure that the vessel master's lashing requests were adhered to. Problems occurred several times when the 1191st established lashing requirements different from those prescribed by the ship's captain.

(9) Vessel loading was slowed down by the 567th Transportation Company's departure twice daily, for their noon and evening meals. Initially, the company planned to have meals catered to the port, but excessive costs made this unfeasible. One-hour meal periods simply were not adequate to transport military personnel to and from local restaurants.

e. Recommendations. It is recommended that:

(1) The Port Support Activity be properly equipped with tools, repair parts, and support vehicles to handle inoperative vehicles in the port.

(2) Military stevedore personnel be provided practical training, such as that experienced in REFORGER 81, so they can enhance and develop their experience and expertise in shiploading operations.

(3) More rigorous and continuous rail-loading training be conducted at installations with deployment missions.

(4) Vehicles be fitted with lifting shackles prior to rail loading at the various participating installations.

(5) All cargo stowed in vehicle cargo beds be adequately and properly secured to withstand rail, ship, and convoy movement from the installation to the final destination in Germany.

(6) Coordination be made between TTUs and military stevedoring units to mutually determine what responsibilities each will bear and which unit will supervise loading operations. Chains of command must be established, published, and followed.

(7) Specific individuals be designated as hatch superintendents for the various hatches; only they will call cargo forward to their respective hatches.

(8) Prior to the start of loading operations, one set of lashing requirements be established and agreed to by all parties involved.

(9) In future REFORGER exercises where military stevedores are used, a field mess be established or an arrangement be made with commercial contractor to deliver prepared food to the port area for noon and evening meals. Another alternative would be to plan for extended meal periods.

SECTION VI

SPOD OPERATIONS – EUROPE

1. General.

a. Concept of operations. The MTMC Transportation Terminal Command, Europe (TTCE) mission in support of REFORGER 81 deployment was to plan for and conduct, in conjunction with host nations, vessel discharge operations at the Ports of Rotterdam, the Netherlands (NL), and Ghent, Belgium (BE), for unit equipment/supplies; loading of POMCUS equipment on a channel ferry for movement from the United Kingdom (UK) to the continent and modal transfer operations at Zeebrugge, BE; staging and loading of unit equipment at Rotterdam and Ghent for port clearance and onward movement to unit marshalling areas and sea/air interface airfields. MTMC TTCE employed two subordinate commands and one detachment in the deployment phase: MTMC BENELUX Terminal at the Ports of Zeebrugge and Ghent, Belgium, and at Rotterdam, the Netherlands; MTMC United Kingdom Terminal at the Port of Hull, England; and the 165th Transportation Detachment (Cargo Documentation) from MTMC Bremerhaven Terminal, Germany, to train and assist at the Ports of Hull, England, and Zeebrugge, Belgium.

b. Command and control. Command and control of SPOD operations were exercised jointly by the two host nations and MTMC TTCE. A TTCE Operations Center was established at the headquarters building in Rotterdam, with subordinate operations cells onsite at Rotterdam, Ghent, and Zeebrugge. The operations cells accumulated operating information; provided onsite briefings, visitor escort, access/egress control, and telex communication support to each site. MTMC BENELUX Terminal was the TTCE executive agent for all European REFORGER 81 planning and port operations. Vessels discharged were the GTS Callaghan at Rotterdam, the USNS Meteor at Ghent, and the North Sea Ferry, MV Norwave, at Zeebrugge.

c. Augmentation personnel. MTMC BENELUX Terminal was augmented by the following units:

(1) Unit drivers:

- (a) Zeebrugge - 608th Ord Co - vessel discharge and rail loadout.
- (b) Rotterdam - composite team of 62 for vessel operations / staging/rail loadout, augmented by 8 tracked-vehicle drivers, from 4th/1st ID.
- (c) Ghent - composite team of 82 for vessel operations / staging/rail loadout, from 7th ID.

(2) Transportation detachments:

- (a) 165th Trans Det (CD) - Zeebrugge, BE and Hull, UK.
- (b) 28th Trans Det (CS) - Ghent, BE
- (c) 392d Trans Det (CS) - Rotterdam, NL
- (d) 497th Trans Det (CD) - Rotterdam, NL
- (e) 355th Trans Det (CS) - Ghent, BE
- (f) 396th Trans Det (CD) - Ghent, BE

(3) Maintenance teams - 5th Maintenance Company (DS), 66th Maintenance Battalion, 21st Support Command (SUPCOM) (13 at Zeebrugge, 29 at Rotterdam, and 43 at Ghent).

(4) 42d Military Police Group customs support - detachment at each port.

(5) 527th Military Intelligence Battalion support - detachment at each port.

d. Military driver support. Military drivers from all three major units were used to drive equipment off the GTS Callaghan and USNS Meteor. The use of military drivers proved desirable since they are familiar with the operation of military vehicles. Except for the first shift offloading the GTS Callaghan, the drivers were adequate in both number and type.

e. SPOD documentation. At both Rotterdam and Ghent, prior to discharge operations, the ships were boarded by documentation teams, who predocumented the cargo by assigning to each item a control number to correspond with the documentation received from CONUS. These new numbers were written on each vehicle to aid in rapid documentation control as the cargo was checked after discharge from the vessels.

f. Intransit damage. No significant damage was sustained during the voyage.

2. Hull, England/Zeebrugge, Belgium, operations.

a. Mission. A mission of the MTMC United Kingdom Terminal was to plan for and execute, in conjunction with the host nation, the receipt, documentation, and outloading of vehicles and deploying CONUS-based troops. Movement was via commercial highway and unit convoy, from Burtonwood Army Depot to Hull, and aboard a ferry, for an English Channel crossing to Zeebrugge on 3 September 1981. Sixty-five vehicles were moved by highway after having been drawn from POMCUS by the 608th Ordnance Company (Conv Ammo), from

Fort Benning, Georgia. Ferry procurement was accomplished by the Military Sealift Command (MSC), UK. The 165th Transportation Detachment (CD) was deployed from Bremerhaven Terminal to train as a unit and assist UK and BENELUX Terminals.

b. Hull, England, operations. All cargo arrived in port by 1000 on 3 September. Two loaded, 25-ton military lowbeds were towed, by commercial tractors, from Burtonwood. Nineteen forklifts and three 5-ton cranes were delivered on commercial lowbeds. These were offloaded at Hull and all vehicles were driven onboard.

c. Zeebrugge, Belgium, operations.

(1) North Sea Ferry Company commenced unlashing cargo upon docking. Cargo was staged in port as it was discharged from the ferry. Port operations are summarized in table 6-1.

TABLE 6-1
HULL, ENGLAND - ZEEBRUGGE, BELGIUM, OPERATIONS

Ship	SPOE			SPOD		
	Date on Berth	Start Loading	Cease Loading	Date on Berth	Start Discharge	Complete Discharge
North Sea Ferry	1000 3 Sep	1020 3 Sep	1155 3 Sep	0905 4 Sep	0918 4 Sep	0955 4 Sep
MV <u>Norwave</u>						

(2) The lowbed trailers and two tracked vehicles were loaded onto railcars by a commercial mobile crane. All other vehicles were driven onto railcars by unit drivers. Securing was accomplished by contractor personnel, and was completed at 0210 on 5 September 1981. The train departed the port at 0222 on 5 September 1981.

d. Host-nation participation. The Belgian armed forces participated in several areas supporting the port operation. They provided special military police to control civilian and military traffic during rail-loading operations (mixed military/commercial ferry operations), for both accident-prevention and security purposes. They also provided meals and the rail-loading ramp, and their site representatives coordinated closely with the Belgian railroad. British Army Transportation and Movements Office, York, sent a representative to observe and assist.

3. Rotterdam, the Netherlands, port operations.

a. Port operations. The Princess Beatrixhaven RORO ramp was used for discharge of the GTS Callaghan (fig 6-1). Unlashing, in-stow checking, and exception checking commenced at 2235 and was completed at 0330 on 8 September. Discharge was performed by use of the stern and aft-starboard-side ramps for RORO operations and two shore cranes for lift-off operations. MTMC

BENELUX Terminal was in charge of ship discharge operations, as well as documentation supervision and port clearance. See fig 6-2 for a diagram of the deployment task organization. Port discharge operations are summarized in table 6-2.

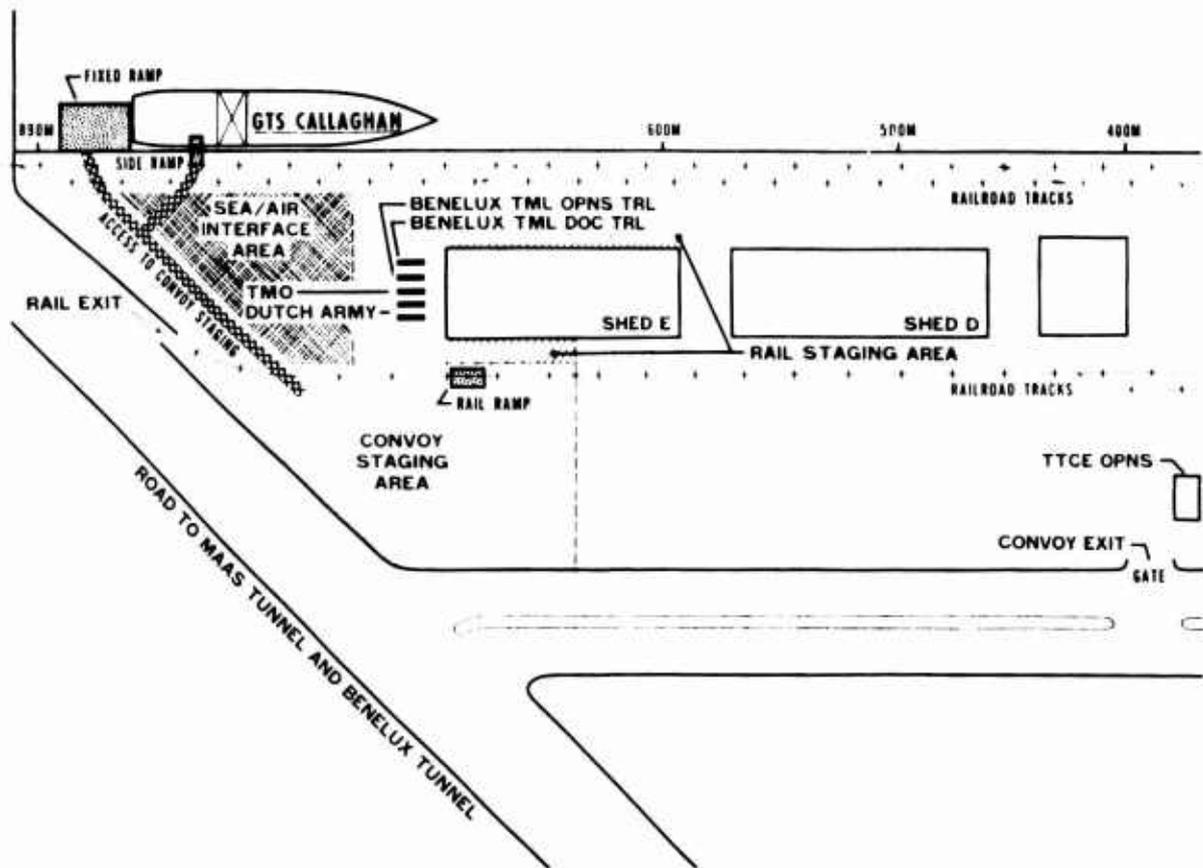


Figure 6-1. Rotterdam port facilities.

b. Staging. After being discharged from the ship, cargo was staged in four staging areas by mode of movement. There were two rail areas, one convoy area, and one sea/air interface area.

c. Rail loading. Cargo was loaded onto railcars by military drivers and secured by contract stevedores. NATO rail-loading ramps were provided by the Netherlands Ministry of Defense. Railcar loads were inspected by TTCE BENELUX Terminal personnel for compliance with host-nation rail-loading requirements. Rail loading and securing commenced at 0730 on 8 September, with CONEXs being loaded directly onto railcars, and ceased at 0515 on 9 September.

d. Convoy operations. Vehicles were arranged into convoy march units in the convoy staging area. Convoy operations commenced at 0953 on 8

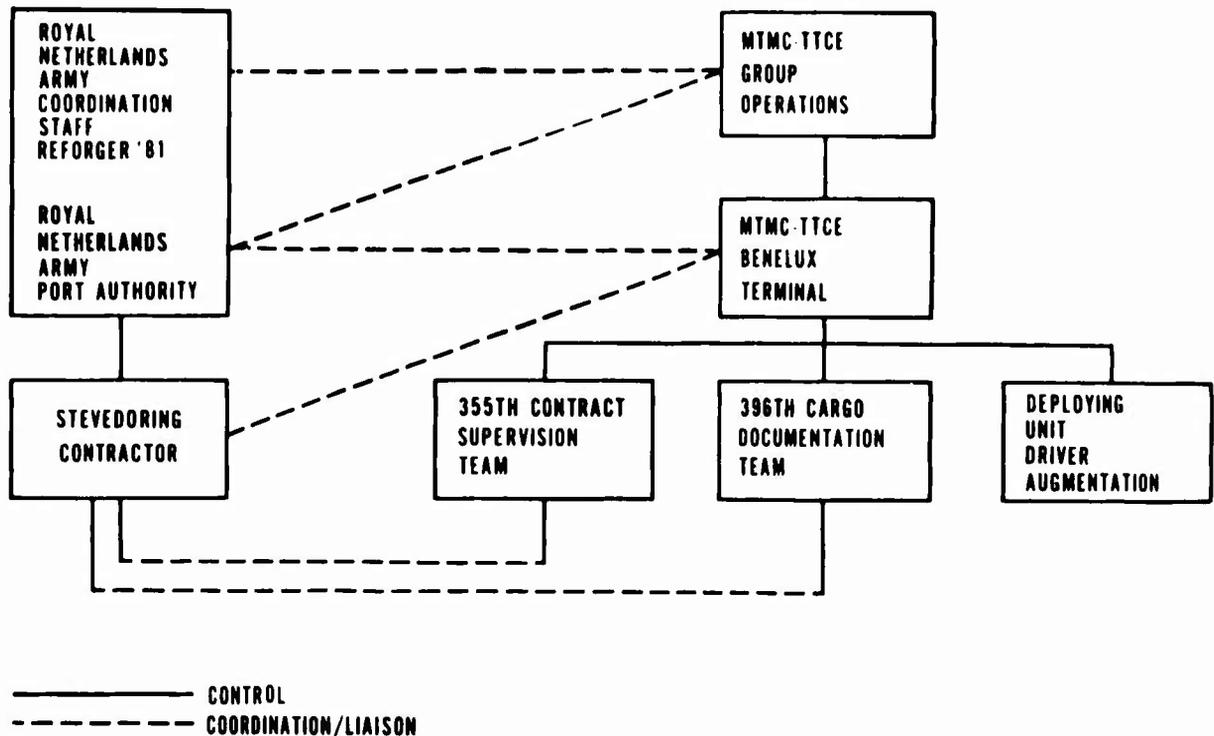


Figure 6-2. Rotterdam task organization.

TABLE 6-2
EUROPEAN SPOD VESSEL-DISCHARGE SUMMARY

Vessel	Date on Berth	Unlashing			Discharging			Total Time
		Start	Cease	Lapsed Time	Start	Cease	Lapsed Time	
GTS Callaghan	2235, 7 Sep 81	2235, 7 Sep	0030, 8 Sep	5 hrs	0730, 8 Sep	1655, 8 Sep	9.5 hrs	14.5 hrs
USNS Meteor	0415, 12 Sep 81	0030, 12 Sep	0415, 12 Sep	3.75 hrs	0618, 12 Sep	1700, 12 Sep	10.7 hrs	14.45 hrs

September, and all operable convoyable vehicles were cleared from the port in 13 convoys that day. In some instances, outside mirrors had been removed and stored in CONEXs. It took some time to locate the CONEXs, remove the mirrors, and install them onto the vehicles. Convoys were run to a marshalling area at Veldhoven, NL, a 3-hour journey from the port. Convoy escort was provided by the Royal Military Police. Convoys were under the control of the Royal Netherlands Army Movement Staff and 4th Transportation Command, Europe, 1st Movement Region.

e. Sea/air interface cargo. Sea/air operations were conducted on 10 and 11 September. Clearance on 10 September was delayed by heavy fog; however, the host nation eventually consented to escort convoys in smaller increments until all vehicles scheduled for departure had cleared (24 pieces to Ypenburg; 31 pieces to Woensdrecht). The port was cleared of all cargo by 11 September, when all sea/air convoys departed for Woensdrecht (34 pieces) and Ypenburg (23 pieces).

f. Military highway operations. Stake and platform trailers (S&P) transported red-banded CONEX containers to the unit marshalling area at Veldhoven on 8 September.

g. Clearance summary:

Sea/air - 112 pieces:
47 pieces Ypenburg, NL
65 pieces Woensdrecht, NL

Rail - 125 vehicles (including 40 tracked vehicles) -
Giessen, GE
- 307 CONEXs - Giessen, GE
2 shelters - Giessen, GE
45 CONEXs - Rotweil, GE

Convoy - 525 vehicles in 13 convoys, Veldhoven, NL

Truck (S&P) - 11 CONEXs - Veldhoven, NL

h. Damage. No significant damage was incurred during ship discharge, staging, or port clearance operations.

i. Host-nation support. The Netherlands armed forces participated in several areas supporting the port operation. They provided physical security, billeting, meals, POL, local transportation with military drivers, rail loading ramps, and military police convoy escort.

4. Ghent, Belgium, operations.

a. Port operations.

(1) Because of breakdowns en route, the USNS Meteor arrived 4 days later than scheduled. As a result, all plans for the Ghent operation had to be revamped. A plan to discharge the vessel and clear the port in 1 day was developed; the plan called for both convoy and rail movement from the port. (See figure 6-3, Ghent port facilities.)

(2) The RORO vessel, USNS Meteor, arrived at the Terneuzen locks, NL, at 0030 on 12 September and was boarded by 45 personnel for in-stow checks and unlashings. In-stow checks were completed during vessel movement from the Terneuzen locks to the Port of Ghent, Belgium. (See figure 6-4 for a diagram of the Ghent task organization.)

(3) Cargo was staged in port by mode, convoy and rail. (Note: Sea/air interface operations had been cancelled because of the late arrival of the USNS Meteor.) Red-banded CONEXs destined for the marshalling areas were transported by military S&P trailers.

5. Problems.

a. Damage assessment. Overprinted TCMDs, showing damages, were attached to each piece of equipment on the GTS Callaghan. Damages were also shown on the manifest. Prior to arrival of the vessel, it was decided that the overprinted TCMD would be the base document, showing damages recorded at the loading port. A team was formed to check each item in stow by comparing the TCMD with the item and mark any additional damage found in stow. The TCMD was then removed and used, before each item left the port, to record any additional damages that might have occurred in port. The TCMDs proved cumbersome, required an extensive sorting by mode, and required attachment to individual TCMDs used to ship each item out of the port. On the USNS Meteor, the overprinted TCMDs were not found on the vehicles. A computer-printed TCMD for each piece was found showing damages as noted by the cargo detachment supercargo personnel on board the vessel during sailing. Procedures used were identical to those for the GTS Callaghan, except that the TCMD with damages shown by the CD personnel had to be used as the base document, since the loading port did not place the overprinted TCMDs on each piece, nor record the damages as trailer data on the manifest.

b. NATO standard rail-loading ramps. The NATO standard rail-loading ramps are not suited to loading the US M880-series vehicles. The hump at the top of the ramp causes the M880 to bottom-out when cresting the ramp. Other vehicles experience difficulty when cresting, though bottoming-out does not occur. The problem is the steepness of the ramp angle, followed by an equally steep drop after the crest. Most drivers have never experienced such a ramp, as none are in the US inventory, either in theater or in CONUS. The ramp danger increases when cresting, in that the vehicle could very easily move off the narrow railcar used as the platform. The platform at the base of the ramp must be widened and the rate of descent after cresting must be lessened.

c. Fuel in vehicles. Many vehicles arrived in Rotterdam with one-quarter tank or less of fuel; therefore, an extensive refueling was necessary to enable vehicles to reach the marshalling area at Veldhoven. Ten vehicles were found in stow without fuel, and emergency fuel had to be carried aboard to permit discharge. Only emergency fuel supplies were available to support vessel discharge operations and convoy shuttle operations. An extensive fueling operation (requiring an emergency host-nation response for more fuel) had to be undertaken in the port, using host-nation-provided "jerry cans."

d. M880 keys. Considerable confusion existed as to who actually had the M880 keys. The supercargoes were out of contact and mentioned nothing about keys. Port personnel, unaware of such a requirement, never asked. Keys were not left in the ignitions. When it came time to discharge/move vehicles, master keys had to be obtained from maintenance personnel, and emergency keys had to be made locally from imprest funds.

e. Stowage of inoperable vehicles. Vehicles were loaded aboard the GTS Callaghan based upon prestow plan, irrespective of the vehicle maintenance

condition; as a result, several deadlined vehicles were positioned below decks in difficult-to-extract areas.

6. Recommendations. It is recommended that:

a. All damages be recorded as trailer data on the manifest. The manifest data would then be converted to a port-cargo clearance plan (PCCP), which could be used for the in-stow inspection and at each clearance point within the port. With the damages information transmitted as manifest data, damages could also be shown on the clearance TCMD, requiring only minimum additional damages information to be added. Damage data must be accurate and complete to ensure a workable system.

b. The theater determine its requirement for rail loading ramps throughout the LOC (to include ports) to meet reinforcement contingencies.

c. The fuel tanks of all vehicles shipped for REFORGER operations be three-quarters full.

d. Key-bearing vehicles have keys wired to steering columns and super-cargoes be given a large quantity of extra master keys.

e. Deadlined vehicles be stowed in the wings of the upper tween, out of the way, but easily accessible for extraction/maintenance.

SECTION VII

SPOE OPERATIONS – EUROPE

1. General.

a. MTMC TTCE exercised command and control of the redeployment of REFORGER 81 equipment through the Port of Bremerhaven, Germany (fig 7-1). The move was accomplished as an administrative shipment, using existing MTMC TTCE port-handling contracts and the most cost-favorable methods. The Bremerhaven task organization is shown in figure 7-2.

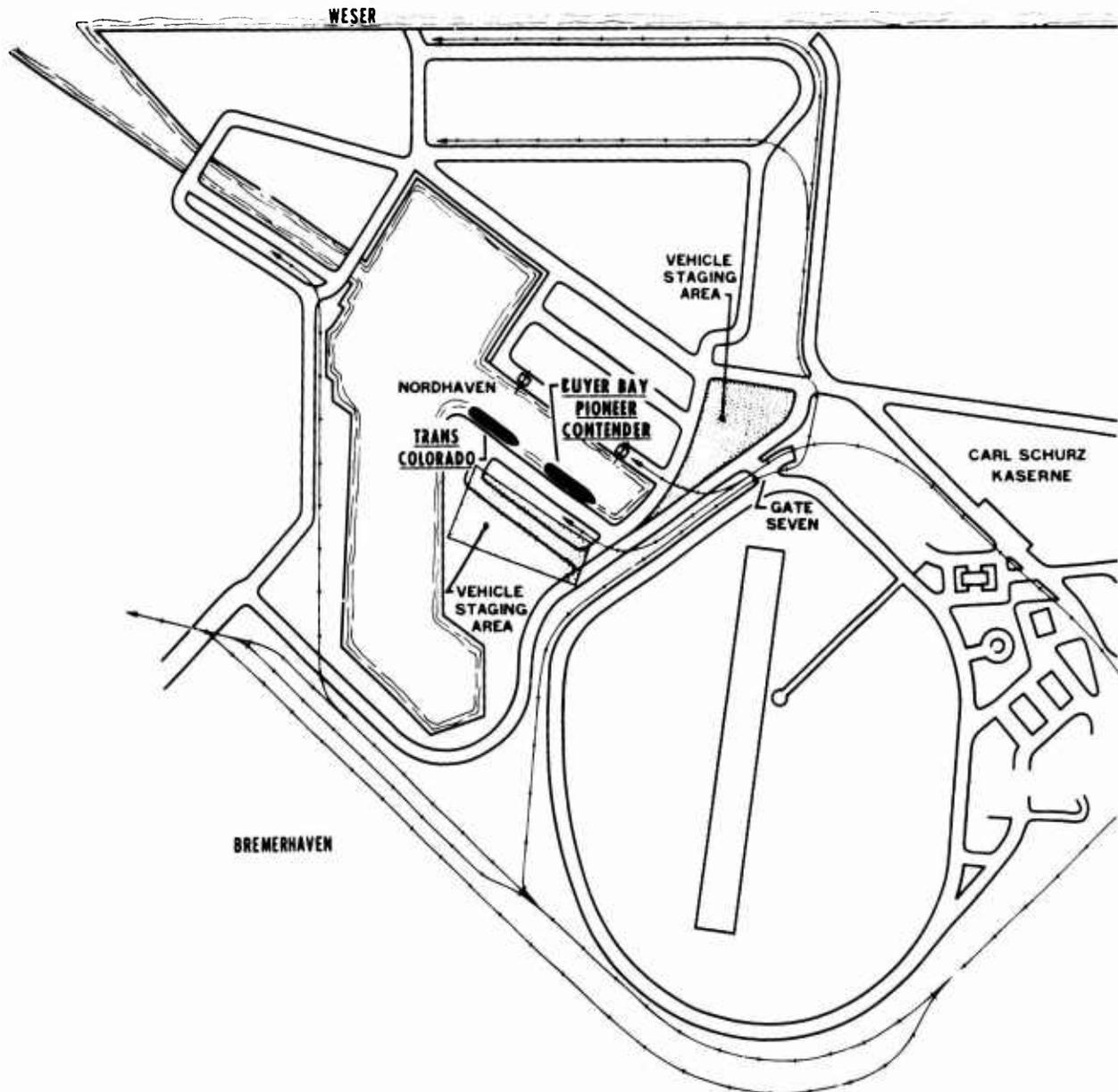


Figure 7-1. Bremerhaven port facilities.

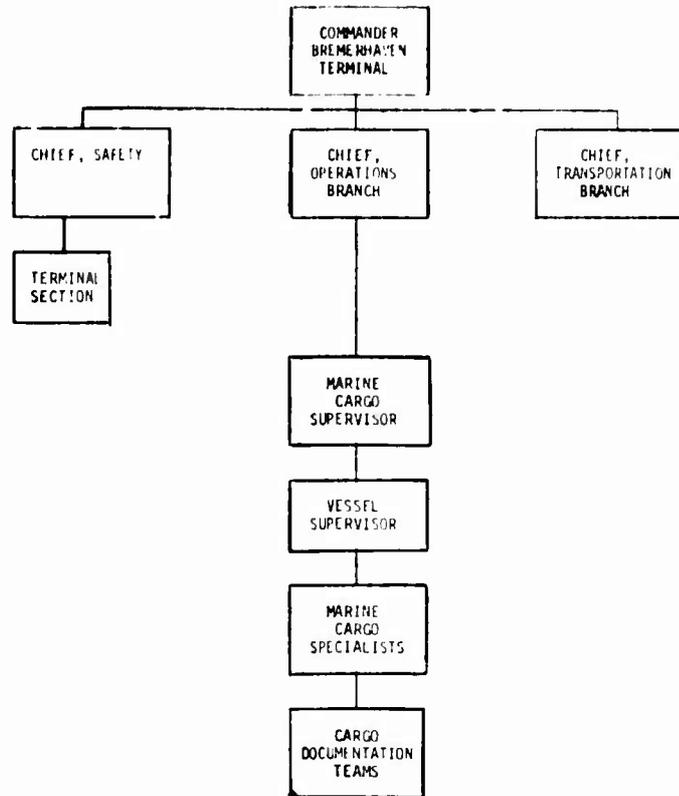


Figure 7-2. Bremerhaven task organization.

b. Upon completion of REFORGER 81 field exercises, the equipment was moved to unit assembly areas for cleaning, customs inspections, Department of Agriculture clearances, and certification of ammunition-free status. This procedure was used to expedite the movement of REFORGER cargo from three railheads, Fulda, Giessen, and Wildflecken, on 21 special trains arriving at the SPOE between 27 September and 13 October 1981. Rail deliveries are summarized in table 7-1. A small number of vehicles and CONEXs were transported by highway mode as shown in table 7-2. Two five-man teams from MTMC Bremerhaven Terminal were positioned at the railheads to assist local ITOs preparing freight warrants, TCMDs and other documentation.

c. The USAREUR 4th Transportation Command was responsible for movement of the cargo from unit assembly areas to the SPOE.

2. Bremerhaven SPOE operations.

a. General.

(1) MTMC Bremerhaven Terminal was responsible for receipt, staging, and subsequent loading of REFORGER 81 cargo at the Bremerhaven Nordhaven dock.

(2) The 4th Transportation Command's First Movements Region served as the clearance terminal TMO for the redeployment of vehicles to the Port of Bremerhaven.

TABLE 7-1
BREMERHAVEN SPECIAL-TRAIN SCHEDULE

Train No	ATA	From	Railcars	Veh	CONEX	MILVAN
5698-R	270540 Sep	Giessen	32	66	-	-
5691-R	280733 Sep	Fulda	32	116	-	-
5689-R	280940 Sep	Fulda	22	48	20	-
5694-R	282342 Sep	Giessen	29	55	4	-
5690-R	290255 Sep	Fulda	35	56	35	-
5704-R	290457 Sep	Giessen	45	151	6	-
5696-R	300441 Sep	Giessen	15	36	24	-
5697-R	020400 Oct	Giessen	21	19	66	-
5700-R	030431 Oct	Giessen	28	52	-	2
5699-R	040408 Oct	Giessen	17	34	-	-
5701-R	050440 Oct	Giessen	36	41	100	-
5707-R	060755 Oct	Wildflecken	22	39	-	-
5708-R	070017 Oct	Wildflecken	32	96	-	-
5706-R	070845 Oct	Wildflecken	26	51	-	-
5702-R	080817 Oct	Giessen	34	56	36	-
5703-R	100237 Oct	Giessen	22	146	23	-
5695-AR	102257 Oct	Wildflecken	35	108	-	-
5695-R	110657 Oct	Wildflecken	34	68	14	-
5705	120707 Oct	Wildflecken	33	70	0	-
5692	130848 Oct	Wildflecken	34	77	32	-
None	150600 Oct	Wildflecken	12	16	0	-

TABLE 7-2
BREMERHAVEN REDEPLOYMENT HIGHWAY-MOVEMENT SUMMARY

Origin	Arrival	No. of Vehicles	Cargo
Storzingen, GE	0600, 25 Sep	0	23 CONEX
Giessen, GE	0600, 28 Sep	3	0
Storzingen, GE	0600, 28 Sep	0	22 CONEX
Giessen, GE	0830, 2 Oct	0	1 CONEX

b. Cargo receipt and staging operations.

(1) Incoming vehicles were driven off railcars by personnel of the 8903d Civilian Labor Group (CLG) within the terminal area; every effort was made to keep vehicles on hardstand staging areas, to prevent them from becoming wet or muddy. Damage checks were made by commercial contractor personnel to verify, or identify and document, damage not detected at the railheads. Vehicle maintenance was provided by a contract maintenance team of the 8903d Civilian Labor Group.

(2) Arriving cargo was staged in the Nordhaven container terminal complex. To facilitate shiploading of essential items in priority sequence, as established by the 7th ID, a marking system, using the division's priorities of 1 through 12, was established by Bremerhaven Terminal. This was done since less cargo was being shipped to Oakland than was arriving from Oakland due to vessel substitution. Vehicles were staged by unit, priority, and destination SPOD (table 7-3).

TABLE 7-3
STICKER PRIORITY SYSTEM FOR SHIPLOADING
BREMERHAVEN

Div/Pri/Pod	Yellow w/Red	Yellow	Blue
Div & Pri	7th ID Pri (1-4)	7th ID (Pri 5-12)	4th ID
POD	Oakland	Beaumont	Beaumont

(3) Since the ship mix changed, load planning had to be redone for four breakbulk ships. The change in vessel types and the subsequent loss of cargo space influenced the decision to consolidate equipment by nesting empty trailers and by loading smaller vehicles onto the cargo beds of larger vehicles (fig 7-3).



Figure 7-3. Smaller vehicles loaded onto larger vehicles.

(4) Cargo did not arrive at the port as called forward. Also, railcars arrived over a 3-week period. Major alterations to the prestow plans were required and the loading order of the ships was revised.

c. Vessel loading.

(1) Shiploading operations proceeded smoothly because cargoes for the two CONUS SPODs have been prioritized. Most of the 7th Infantry Division cargo (priorities 1 through 4) was loaded on the SS Pioneer Contender, the only ship destined for Oakland. The balance of the 7th Infantry Division cargo and all other cargoes were loaded on the SS Buyer, SS Bay, and the SS Transcolorado, all of which were destined for Beaumont. Shiploading operations are summarized in table 7-4.

TABLE 7-4
BREMERHAVEN SHIPLOADING SUMMARY

Vessel	On Berth	Start Opns	Complete Opns	Work Hrs Elapsed	Break-bulk Gangs	Lashing Gangs	Ship Sailed	MTON
SS <u>Buyer</u>	12 Oct ^{1/}	12 Oct 0600	14 Oct 1600	42	4	4	15 Oct 0100	9065
SS <u>Pioneer Contender</u>	15 Oct	15 Oct 0600	17 Oct 1500	41	4	4	18 Oct 0125	7062
SS <u>Bay</u>	20 Oct	20 Oct 0600	23 Oct 1100	53	3	3	23 Oct 2030	8313
SS <u>Trans-colorado</u>	22 Oct	23 Oct 0600	23 Oct 2215 ^{3/}	16½	2 ^{2/}	2 ^{2/}	25 Oct 0300	2866

^{1/} For loading purposes. On berth prior to 12 Oct, but had to discharge cargo.
^{2/} Finished up with 3 gangs when SS Bay was completed.
^{3/} Completed loading of MILVAN. POV loading continued. (POD fro POV - ChaA), SC.)

(2) Numerous vehicles could not be started and had to be towed under the lifting hook. There was, however, little problem experienced in stowing disabled vehicles.

(3) The SS Transcolorado loaded only parts of holds 3 and 4 with REFORGER cargo. The remainder of the ship was loaded with POVs.

(4) During staging operations, a 7th Division 2½-ton cargo truck arrived in port loaded with three weather-exposed cargo inserts. Inside were a microfiche reader, papers, and spare parts, all rain soaked (fig 7-4). Bremerhaven Terminal personnel covered the inserts prior to loading.

(5) During the loading of the SS Pioneer Contender, stevedore gangs loaded two ½-ton trailers (M416s) together, using a single four-point sling. Two legs were attached to the front handles of each trailer. This practice was stopped and no damage was incurred.

(6) While loading the SS Bay, a longshoreman gang using ship's gear (jumbo), lifted two ½-ton trucks at one time using a spreader bar with two four-point slings. The vehicles bumped together during the lift. This practice was also stopped. Had a preventer been used between the vehicles, this might have been acceptable.

(7) An M880 vehicle, with shelter, being lifted aboard was swung into the gangway, damaging three stanchions and a handrail. There were no injuries and the gangway was repaired.

(8) TTCE Bremerhaven Terminal loaned the 3d SUPCOM \$185,000 worth of excess wire rope, cable clamps, shackles, and turnbuckles for rail blocking and bracing. All of these were recovered at the SPOE upon arrival of the trains and subsequently used for lashings aboard the four breakbulk ships.



Figure 7-4. Cargo exposed to weather.

d. Problems.

(1) Numerous vehicles could not be started at time of loading. This was partially the result of their being in the staging area for an extended period of time.

(2) As in every previous REFORGER exercise, vehicles arrived at the SPOE with unsecured cargo in cargo beds.

(3) Less than 50 percent of all CONEXs received were banded; however, all were locked. Fifteen unbanded CONEXs came open while being handled within the port. The apparent cause of the CONEXs opening was shifted loads.

(4) Unit integrity was not maintained throughout the vessel-loading operation. This resulted in some units' equipment being loaded on two or more vessels.

e. Recommendations. It is recommended that:

(1) Vehicles stored in staging areas over an extended period of time be started periodically to keep them in operating condition. Also, a plan be developed to check vehicles before being called forward from staging areas and to take corrective action there if needed.

(2) All vehicles should be checked by ITO, DTO, or 4th Transportation Command personnel prior to train departure from rail loading sites in Germany.

(3) All CONEXs used for REFORGER exercises must be inspected by the ITO, during loading, to ensure proper packing and weight distribution. At best, the number of CONEXs must be reduced as much as possible by loading cargo into vehicular cargo space, as was done at Fort Ord. There the CONEX requirement was reduced 108 units by effective use of vehicle cargo bed.

(4) When possible, unit integrity should be maintained during vessel loading. This would expedite port clearance of equipment at the SPOD.

SECTION VIII

CONUS SPOD OPERATIONS AND CONUS LINE-HAUL TO HOME STATION

1. General. Two ports were used to receive REFORGER 81 redeployment cargo; Beaumont, Texas, and MOTBA, Oakland, California.
2. Beaumont SPOD operations.
 - a. The Port of Beaumont, Texas (fig 8-1), was selected to handle the majority, 1,401 pieces, of the REFORGER 81 equipment being returned from Europe. Three of the four vessels, the SS Buyer, SS Bay, and SS Transcolorado, were discharged at this port.
 - b. The Commander, MTMCEA, was tasked with overall responsibility for re-deployment port operations and cargo clearance. The Commander, Gulf Outport, was tasked, by MTMCEA, to organize and conduct cargo-discharge and port-clearance activities. The Beaumont redeployment task organization is shown in figure 8-2.
 - c. Except for one 2½-ton expandable van with a broken suspension spring, no significant cargo damage was sustained during the ocean voyage, ship-discharging operations, or port-clearance activities.
 - d. Stevedoring operations and rail and highway outloading were performed by contract personnel.
 - e. Contract stevedores drove all vehicles to their appropriate staging areas except for tracked vehicles and gama goats, which were driven by the Port Support Activity personnel.
 - f. Military personnel connected battery cables on trucks, gama goats, and all gasoline-powered vehicles. Contract stevedores connected battery cables in all other vehicles.
 - g. The 392d Transportation Detachment (CD) from the 43d Support Group at Fort Carson Commanded and controlled the Port Support Activity (PSA), consisting of 39 full-time personnel. PSA provided port support to the Gulf Outport commander, including physical security, maintenance, driving, and documentation support.
 - h. The Pier 2 berth was used for all vessel discharge operations. In addition to ship's gear, a 60-ton gantry, and a 220-ton mobile crane were used to discharge ships. Berthing and discharge operations for all three ships are summarized in table 8-1.
 - (1) REFORGER 81 redeployment cargo was exceptionally clean; U. S. Agriculture Inspectors required no additional cleaning of equipment prior to commencing port-clearance operations.
 - (2) The first ship to berth was the SS Buyer. Discharge operations were slowed by malfunctioning contractor's MHE. A number of vehicles had loose cargo in cargo beds. Three CONEXs, two of which were marked sensitive, arrived with open doors and no banding (fig 8-3). PSA personnel corrected these deficiencies.

PORT OF BEAUMONT

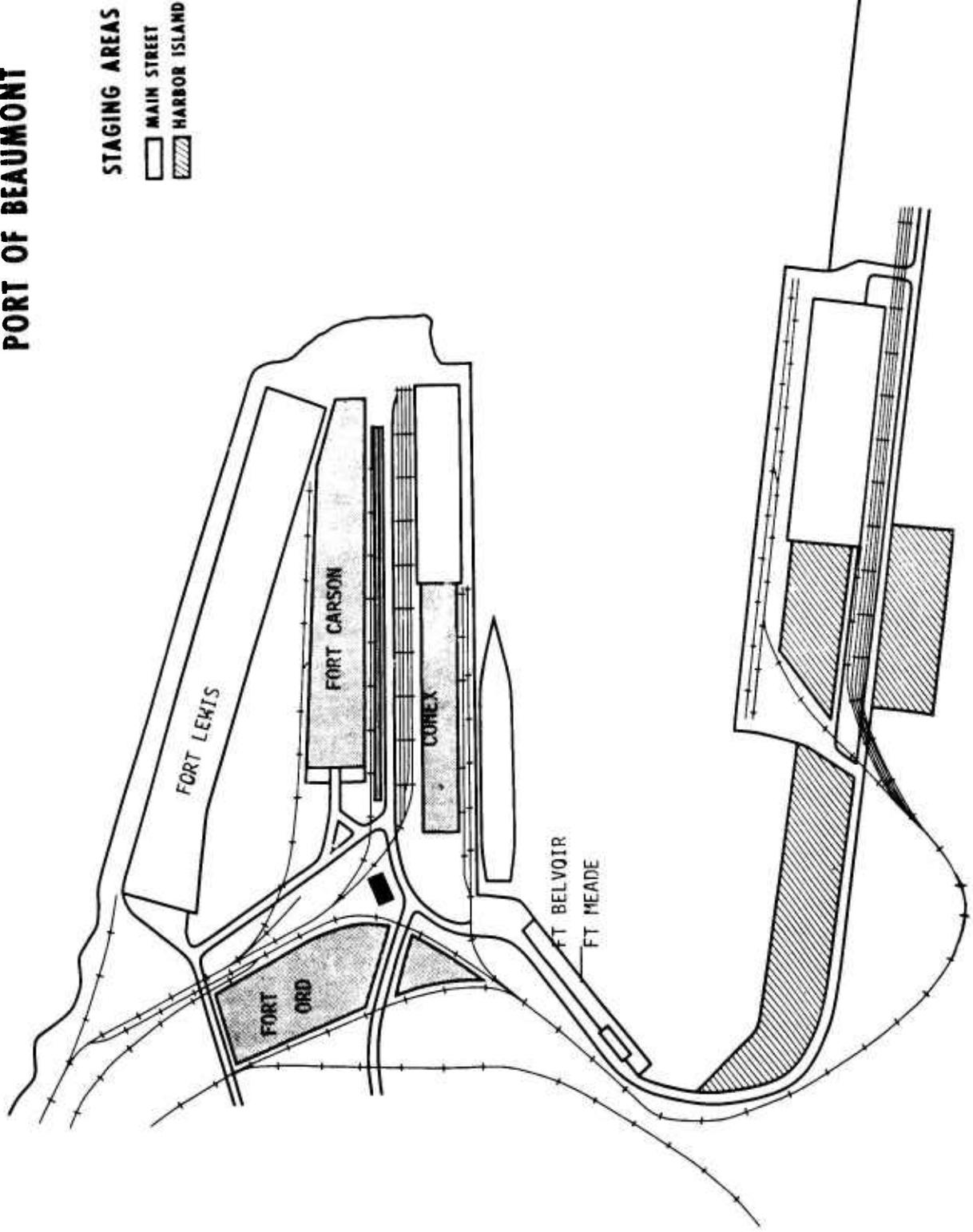


Figure 8-1. Port of Beaumont, redeployment.

MTMC GULF OUTPORT - TASK ORGANIZATION

REFORGER '81 (REDEPLOYMENT)

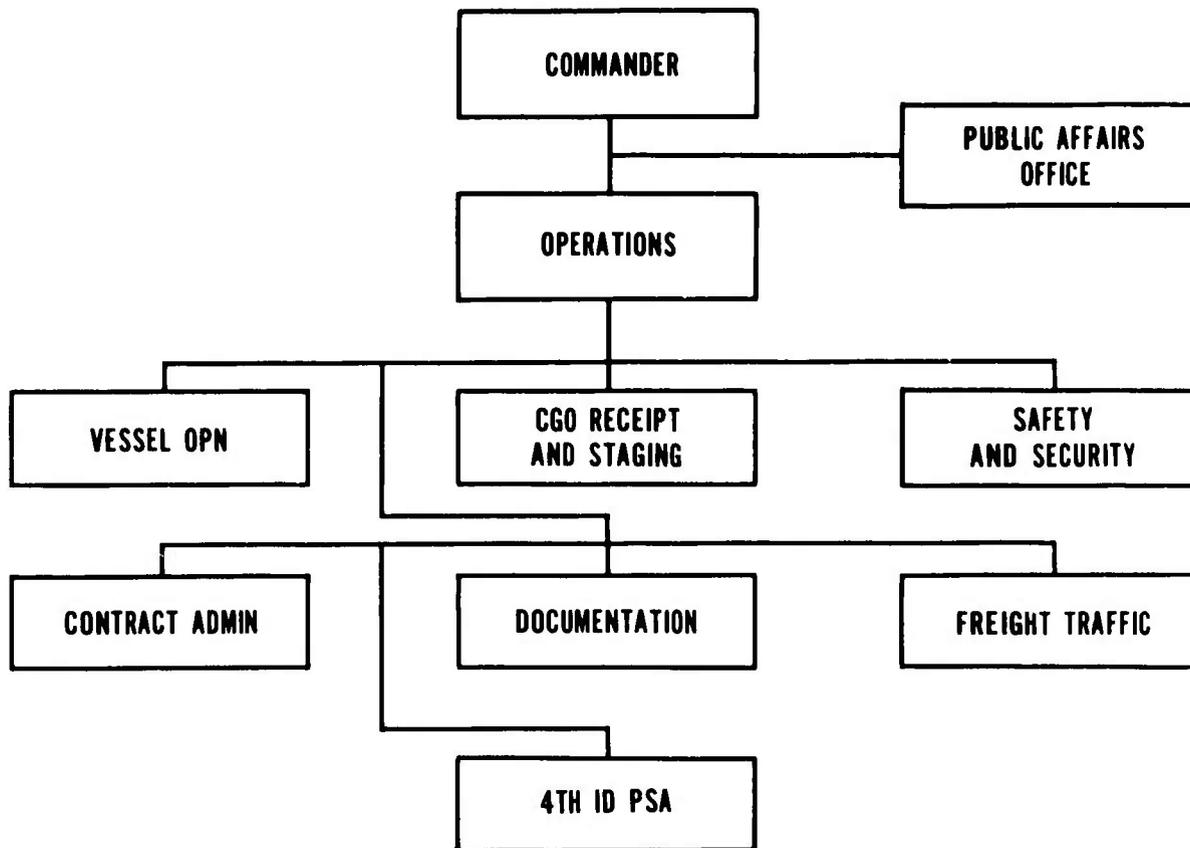


Figure 8-2. Beaumont redeployment task organization.

TABLE 8-1
SHIP DISCHARGE SUMMARY, BEAUMONT

Ship	On Berth	Operations Date	Number of Gangs	Number of Men	Type Gang	Hours Worked	Number of Pieces
SS <u>Buyer</u>	27 Oct 81	1430					
		27 Oct	4	16	BB	1900-2300	716
		28 Oct	4	16	BB	0700-1700	
		28 Oct	4	16	BB	1900-2300	
		29 Oct	2	16	BB	0700-1000	
29 Oct	2	13	Cleaning	0700-1000			
SS <u>Bay</u>	1700 5 Nov 81	5 Nov	4	16	BB	1900-2300	515
		6 Nov	4	16	BB	0700-1700	
		6 Nov	4	16	BB	1900-2300	
		7 Nov	2	16	BB	0800-0900	
		7 Nov	2	13	Cleaning	0800-1200	
SS <u>Transcolorado</u>	2300 10 Nov 81	11 Nov	3*	16	BB	0700-1500	170

*Two gangs started at 0700, one gang started at 1000.

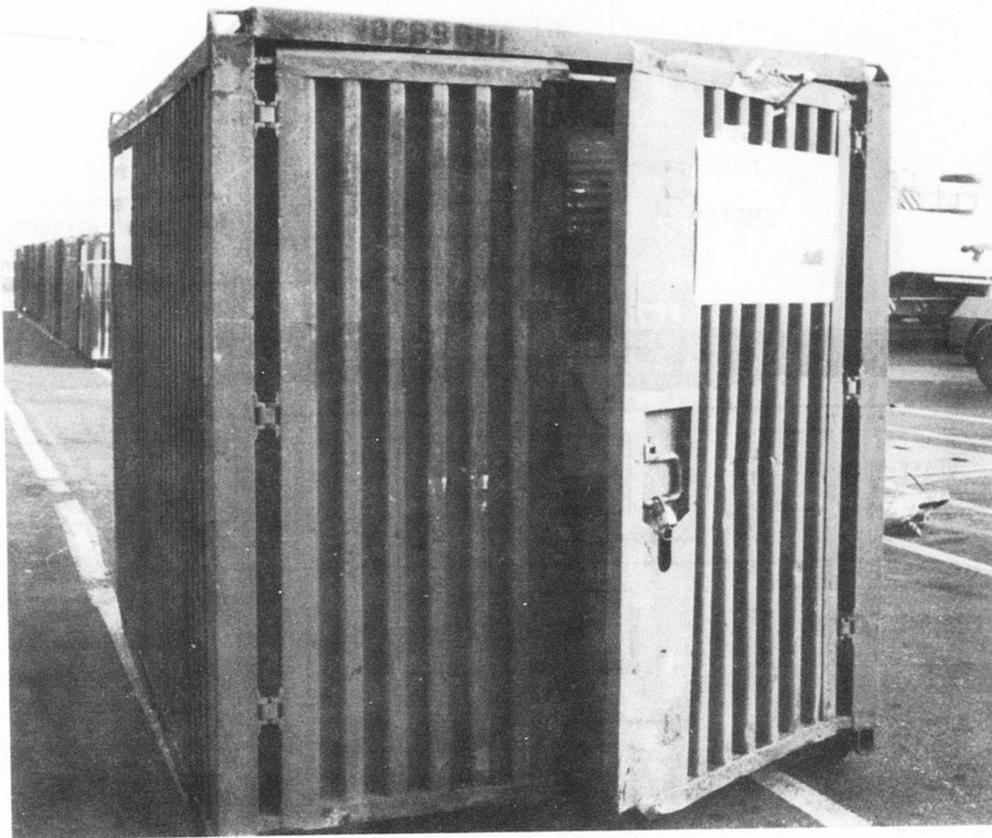


Figure 8-3. Unbanded CONEX with door open.

(3) The SS Bay was the second ship to arrive, and discharge operations were performed without significant problems. Some trailers were found loaded with unsecured equipment (figs 8-4 and 8-5) (radios, tool sets, electric tools, and oxygen acetylene bottles). Also, Vulcan air-defense weapons were found stowed without any protective covering, and the gun barrels were rusted inside and out. Hatch covers in number 4 lower hold and 5 upper tween decks could not be completely opened. These compartments were discharged through a partially opened hatch.

(4) The last ship to berth was the SS Transcolorado, and only hatches 3 and 4 contained REFORGER cargo.

i. Documentation.

(1) After vessel manifests were received from the SPOE, Gulf Outport's Cargo Documentation Division prepared Transportation Control and Movement Documents (TCMDs). It was Gulf Outport's intent to have preprinted TCMDs prepared for cargo on all redeployment vessels well in advance of ship arrival dates; however, due to data processing problems at the SPOE, this was not possible. As a result of the late arrival of manifest data, many TCMDs were prepared only hours prior to commencing discharge operations.

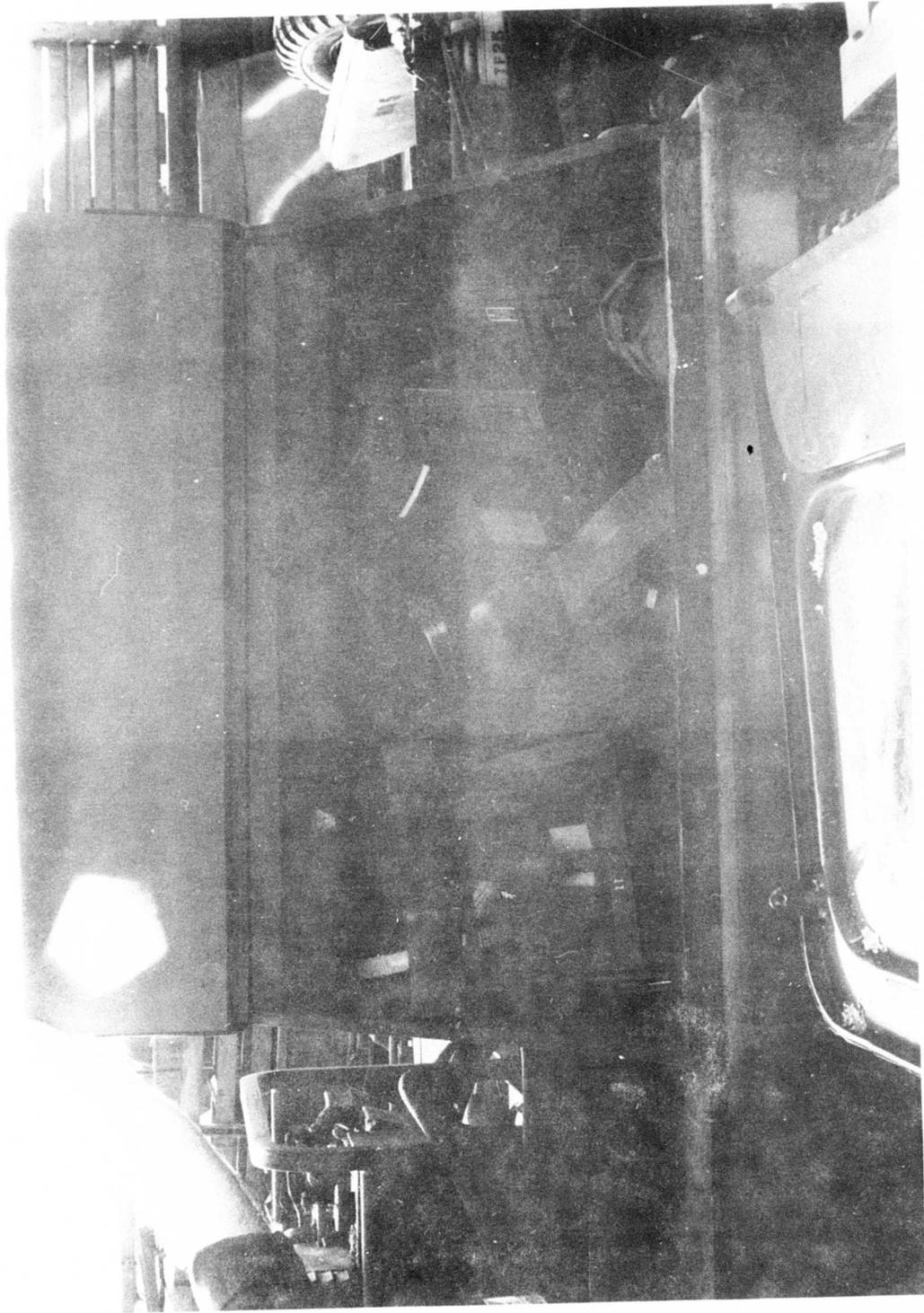


Figure 8-4. Unsecured radios in modified trailer.

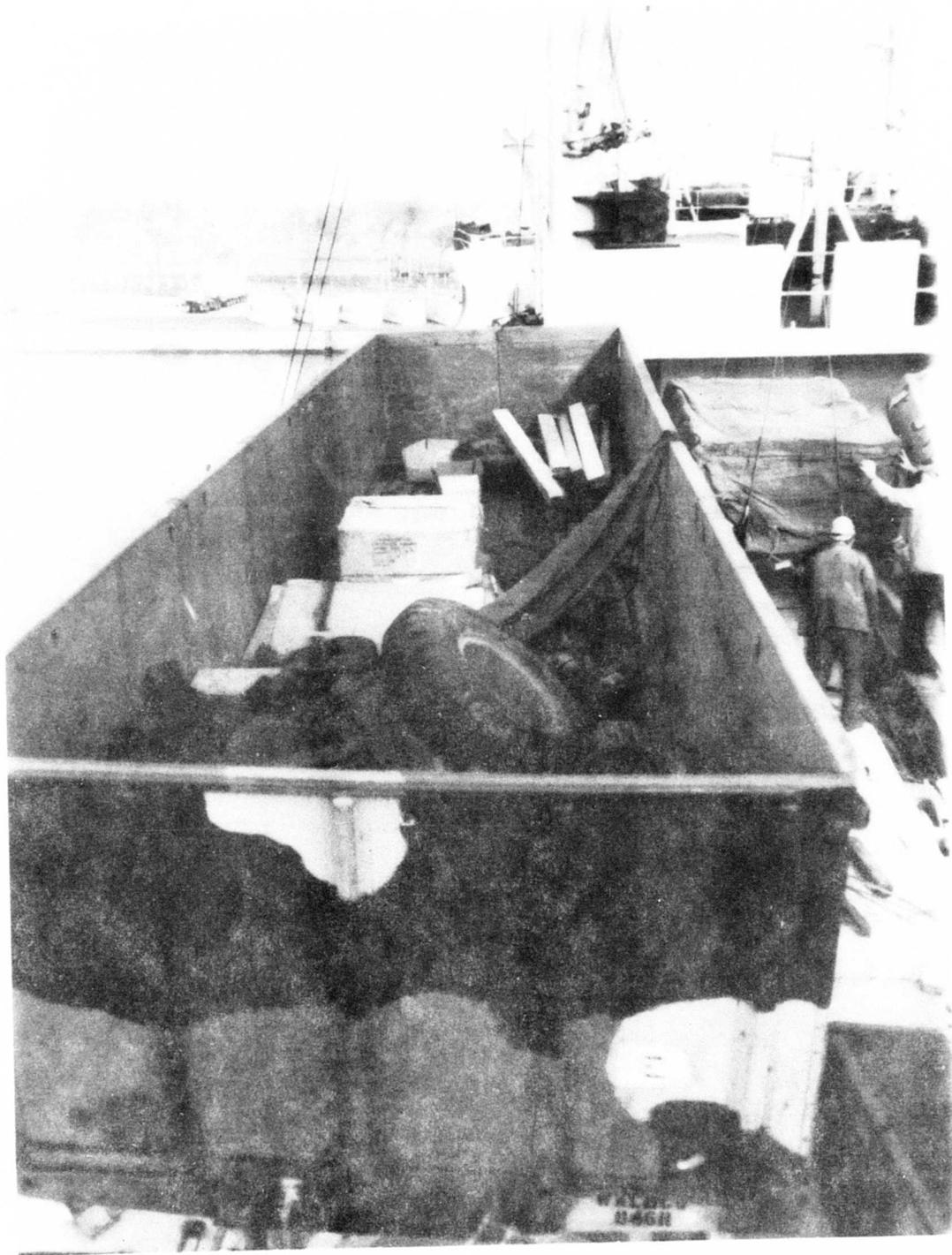


Figure 8-5. Unsecured cargo in S&P trailer.

(2) The Gulf Outport Documentation Division used TCMDs to account for all redeployment cargo received and cleared through the Port of Beaumont. After cargo was discharged from its respective vessel and staged, documentation personnel affixed TCMDs to each piece of cargo. All TCMDs were then matched against the cargo for accuracy and completeness. Following a detailed cargo inspection, in which all major exceptions were recorded on the TCMDs, the original copy of each TCMD was turned into the Documentation Section for computing the onhand inventory and reconciling vessel manifests.

(3) TCMDs remained on all cargo until it was cleared from the port. After cargo was loaded onto commercial and military conveyances (rail or truck), all TCMDs were removed from cargo and turned into the Freight Traffic and Documentation Sections. Freight Traffic personnel used TCMDs to prepare Government bills of lading (GBLs), and the Documentation Section again used them to adjust the cargo inventory.

(4) Numerous entries on the vessel manifests reflected incorrect weights, cubes, and nomenclatures.

(a) Several TCMDs had to be prepared because cargo had not been accurately manifested. In some cases, frustrated cargo was received that was not manifested.

(b) As in REFORGER 80, more sensitive cargo, stencilled SENSITIVE, arrived than was reflected on the manifest, or the accompanying Signature and Talley Records (DD Form 1907). For example, the manifest on the SS Buyer indicated that 24 pieces of sensitive cargo were stowed aboard the vessel; however, the Form 1907 obtained from the chief mate showed 69 pieces of sensitive cargo. Once the SS Buyer completed discharging and a thorough inventory was conducted, the final sensitive count came to 79 pieces.

j. Staging of equipment.

(1) A trailer transfer point was established at the east end of wharf 3 to accommodate the movement of all trailers to their staging areas. Once a prime mover was discharged and available to shipside, the driver was directed to the trailer transfer point to hook up a compatible trailer destined for the same installation. Following hookup of trailer, the driver was directed to take the vehicle and trailer to its assigned staging location.

(2) In the staging areas, all cargo was staged by inland destination. Furthermore, to facilitate port clearance, cargo was segregated into columns, by vehicle type, with rail cargo staged apart from that cargo to be outloaded on commercial and military trucks. Cargo that was hazardous or sensitive in nature was staged apart from other cargo in specific staging areas. All sensitive cargo was placed under 24-hour guard.

k. Port clearance.

(1) Rail loading.

(a) The lack of stow plans and the heterogenous loading of unit equipment aboard the three Beaumont ships made railcar ordering extremely difficult. The port operations section could not determine precisely what cargo was on each ship. This compounded the problem of ordering the required number of

railcars for port clearance. Orders were placed on short notice, which made it extremely difficult for railroads to provide the specific types of cars required. However, cars were provided, although substitutions were made by some railroads.

(b) Many gondola cars were received littered with trash. Some were refused; some were accepted and cleaned out by port personnel.

(c) The Missouri-Pacific Railroad provided 53-foot standard flatcars. Blocking and bracing vehicles onto these cars was very time-consuming.

(d) The Fort Ord train was loaded prior to the arrival of the last ship, which was thought to contain only two Fort Ord vehicles. As it turned out, the ship also contained 17 CONEXs. These were all sent by regular rail service. The Fort Ord train of 96 railcars had to be moved out to clear the yard and make room for the remaining railcars.

(e) All other trains were held until the cargo of the last ship was discharged so complete trains could be made up.

(f) Rail loading operations are summarized in table 8-2.

TABLE 8-2
SUMMARY OF BEAUMONT TRAIN LOADING

	Train Number					
	1	2	3	4	5	6
Dates Loaded	7-9 Nov	3,10,11 Nov	3,6,12 Nov	10-12 Nov	11-12 Nov	12 Nov
Destination	Ft Ord, CA	Ft Belvoir VA*	Ft Meade, MD*	Ft Carson, CO	Ft Lewis, WA	Ft Ord, CA*
Departure Date	10 Nov	4 & 11 Nov	4, 12, 13 Nov	13 Nov	13 Nov	
Railcar Type	Number of Railcars					
89'4" CTD Flat	1	0	2	38	7	0
89'0" CTD Flat	9	0	0	7	2	0
Bilevel	27	3	4	3	9	0
62'0" Flat	6	0	0	0	0	0
60'0" Flat	16	2	0	0	0	0
53'6" Flat	29	0	0	2	0	1
52'6" Flat	1	0	0	0	0	0
Gondola	1	1	1	30	4	4
Other	12	0	0	0	0	0
Total	97	6	7	80	22	5
Wheeled Vehicles	481	60	68	188	166	1
Tracked Vehicles	1	0	0	39	0	0
Total Vehicles	482	60	68	227	166	1
Number CONEXs	8	7	8	238	30	27

*Not special unit train service.

(2) Commercial motor and military truck.

(a) Twenty-four trucks were used in redeployment port-clearance operations.

(b) Truck outloading operations were begun at 0800 on 4 November and were completed at 1500 on 13 November.

(c) No significant problems were associated with commercial motor and military truck-outloading activities. All carriers responded in a timely manner and all truck cargo was expeditiously cleared from the port.

(d) Port clearance operations by commercial motor and military truck are summarized in table 8-3.

TABLE 8-3
SUMMARY OF BEAUMONT
COMMERCIAL MOTOR/MILITARY-TRUCK PORT CLEARANCE

Destination	Number of Trucks	Number of Pieces
Fort Carson	1	1
Fort Lee	2	10
Fort Jackson	2	3
Fort Benning	2	5
Fort Riley	11	45
*Fort Polk	1	1
Fort Eustis	1	2
Columbus, IN	2	10
Fort Rucker	1	1
Red River Army Depot	<u>1</u>	<u>1</u>
Total	24	79

*Military vehicle.

1. Guaranteed traffic award. HQ MTMC solicited bids from rail and motor carriers for volume movements to Forts Belvoir, Carson, Lewis, Meade, Ord, and Riley. As a result of the negotiation efforts, a savings of \$580,329 was realized, as compared with current tariff rates. The traffic award was made on 20 October 1981.

m. Problems.

(1) The Southern Pacific Transportation Company provided Beaumont with 89-foot chain tiedown cars, type ITTX. These cars have special adjustable, fold-away pedestals, 2 feet high and 2 feet long, that are held in place by uprights on both sides of the ends of the cars. These pedestals limit the width of cargo being end loaded to 8 feet 6 inches, and were made for transporting tractor trailers loaded "saddleback" style. Because of the width limitation, Vulcan had to be lifted onto

the cars, and Chaparrels had less than 1-inch clearance between the uprights. All of these cars had to be used to transport equipment to Fort Carson. When loading was completed, Fort Carson was advised, by message and telephone, of the situation.

(2) The Port of Beaumont ramp is marginally safe for loading/offloading bilevel railcars. It consists of a solid metal ramp that is placed against the upper deck of the railcar. The drive off/on angle is very steep.

(3) Three CONEXs arrived at Beaumont without banding and with open doors, and two were marked SENSITIVE.

(4) A number of vehicles arrived at Beaumont with loose cargo.

n. Recommendations. It is recommended that:

(1) When railcars are ordered, ITTX type cars be avoided.

(2) A mobile bilevel/trilevel railcar loading ramp be procured for the Port of Beaumont.

(3) All CONEXs be properly banded, at both the SPOE and SPOD, before being placed aboard vessels.

(4) During the redeployment phase, more command emphasis be placed on insuring that returning equipment be properly and safely secured in all trailers, cargo beds, and CONEXs.

3. Military Ocean Terminal, Bay Area (MOTBA) (fig 8-6). The west coast SPOD was MOTBA, Oakland, California.

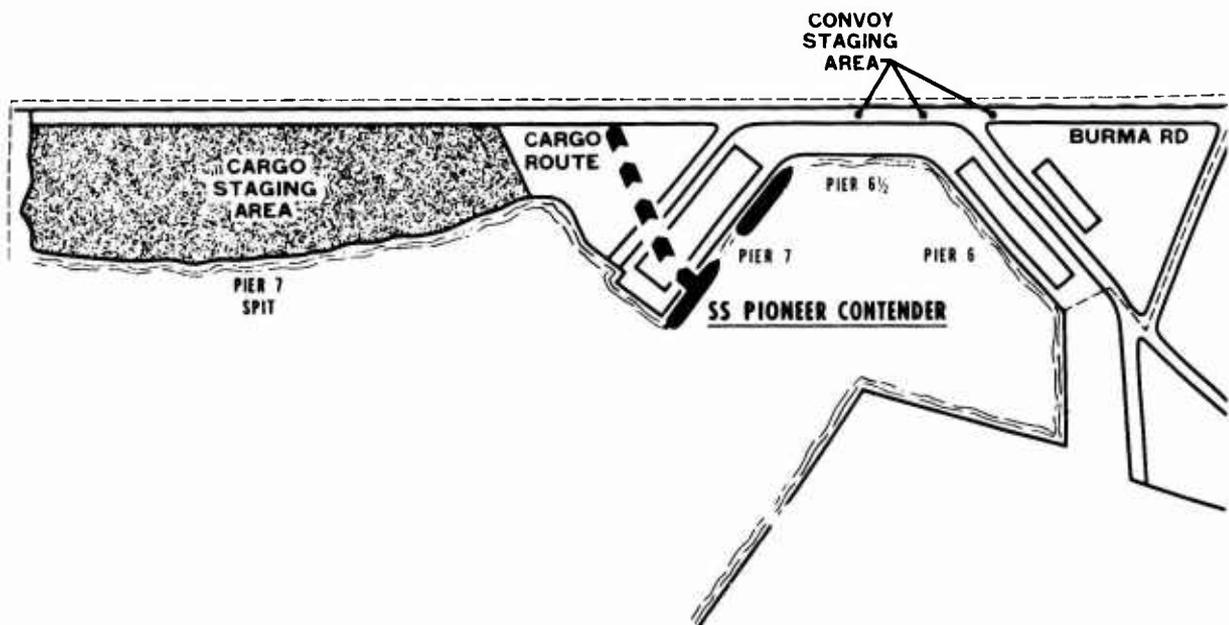


Figure 8-6. MOTBA Pier 7 area, redeployment.

a. Overall planning and execution responsibility was handled by MOTBA. Command and control of non-MTMC personnel was under the 7th Infantry Division DTO.

b. The SS Pioneer Contender was berthed at the west end of Pier 7. This pier has some condemned areas, notably the area west of the pier shed, which could not be used for vehicular traffic. Another breakbulk ship was berthed at Pier 7 east for cargo loading.

c. Discharge operations.

(1) See table 8-4 for a summary of berthing and discharge operations at Oakland.

TABLE 8-4
SHIP DISCHARGE SUMMARY, MOTBA

Vessel	DOB	Opns Start	Opns Cease	Elapsed Time	Man-hour Summary
					BB Gangs
Pioneer Contender	0800 10 Nov 81	0800 10 Nov 81	1700 13 Nov 81	81 hrs	4 of 10 men for 6 shifts*
* Not including cleaning gangs.					

(2) The vessel was discharged by use of a combination of ship's gear, a shore gantry crane, and a floating crane (one shift only). The limitations of the ship's booms, shortage of shore cranes, and mechanical problems with ship's gear caused some delays. For the most part, ship's booms were not rigged for lifting heavy vehicles. The only serviceable shore crane, at Pier 7, had to shuttle from hold to hold on the SS Pioneer Contender, as well as to another breakbulk ship at the east end of the pier. The ship's jumbo boom was inoperable for parts of two shifts. In addition, during one shift, one cargo boom became inoperable and extended across the hatch opening, forestalling further discharge through that hatch.

(3) The stevedore contractor recommended against connecting vehicle batteries while still in the holds. The plan developed called for vehicles to be lifted to the quay and then pushed or pulled through the transit shed, down a portable ramp near the center of the building, and across the railroad tracks to the staging area on the Pier 7 spit, a considerable distance away. This proved to be very tedious and time-consuming. Thereafter, batteries were connected on the quay or in the transit shed. Those vehicles that could start or could be push-started were driven to the staging area. Inoperable vehicles were pushed or pulled.

(4) During the third, fourth, fifth, and sixth shifts it rained; however, except during heavy downpours, the stevedores continued to work.

(5) No in-transit damage was found. No notable damage was incurred during discharge operations.

(6) The 7th Division provided a port support force of about 61 men, which worked two 30-man shifts to drive, inspect, stage, and perform contact maintenance.

(7) Ship's booms were not rigged for heavy lifts, and many became inoperable during various periods of the operation.

d. Staging.

(1) The 7th Pier spit was used for vehicle staging. Cargo was staged by unit. The spit area, as noted in section V, was not surfaced, and became very muddy and covered with water during rainstorms (fig 8-7).



Figure 8-7. MOTBA Pier 7 spit area during rain.

(2) Cargo-damage inspections were conducted in the Pier 7 transit shed prior to staging.

e. Port clearance.

(1) The port was cleared entirely by military convoy. All vehicles that were ready to be convoyed on the morning of 13 November were moved to Fort Ord in three serials, one per unit, for a total of 10 march units. The remaining vehicles were moved to Fort Ord singly or in small units. Highway planning was done by the DTO.

(2) Convoy vehicles were staged in march units along the perimeter fence on Burma Road on 12 November.

(3) The first march unit departed at 1030 on 13 November and arrived at Fort Ord at 1330. The last march unit departed at 1315 and arrived at Fort Ord at 1730. Also, eight truckloads of inoperable equipment were driven out of convoy. There were no accidents and only a few breakdowns.

SECTION IX

LESSONS LEARNED

1. General. This section contains observations of significant value in precluding operational difficulties in future deployment exercises and represents a summary of items compiled throughout the entire REFORGER exercise.

2. Rail-loading training.

a. Finding: Generally, rail loading, blocking, and bracing training is done only on an as-required basis or prior to major exercises. Scheduled training would increase effectiveness of rail loading teams, and decrease loading errors and subsequent damage to vehicles. (Recurring)

b. Recommendation: That such training, including European blocking and bracing methods, be conducted on a quarterly or semiannual basis for each deployable unit.

3. Inoperable vehicles.

a. Finding: Many vehicles were shipped from installations in nonoperational status or with serious leaks and mechanical problems. Major mechanical deficiencies were not corrected before installation outloading.

b. Recommendations: That unit equipment be inspected prior to shipment from home station to determine mechanical condition, and any vehicles that cannot be repaired at home station be replaced. (Recurring)

4. Unused vehicle cargo space.

a. Finding: Two major units shipped cargo without using vehicle cargo space. Using available vehicle cargo space will reduce overall shipping requirements, result in lower overall transportation, and increase loading/offloading efficiency at each transshipment point during the exercise.

b. Recommendation: That vehicular cargo space be used to the fullest extent possible, as was the case at Fort Ord for REFORGER 81. (Recurring)

5. U shackles.

a. Finding: Many tracked vehicles were shipped without U shackles, which are required for securing vehicles aboard ship. No other type shackle, particularly the T-shaped towing shackle, will work with Peck and Hale lashings used aboard MSC ships.

b. Recommendation: That all vehicles be fitted with U-shaped towing shackles (except those with no such capability like M880s) at the installation prior to shipment by any mode. (Recurring)

6. Shipboard lashing requirements.

a. Finding: Lashing requirements for the USNS Meteor at MOTBA were provided verbally and were unclear. At Beaumont, the master of the GTS Callaghan

provided such an LOI (appendix) for the deployment phase of the exercise. The LOI circumvented many standardization problems, wasted labor, and lost time, such as was the case at MOTBA during the same phase of the exercise.

b. Recommendation: Get vessel masters to provide LOIs on lashing requirements.

7. Ship's mates availability.

a. Finding: During loading of USNS Meteor, the mates on duty were not readily available to oversee or check lashing procedures used.

b. Recommendations: That ship's mates on duty on MSC ships be available in the holds being worked to insure that lashing, blocking, and bracing are being done properly, as well as to solve other problems that may arise. That mates be thoroughly familiar with the ship's master's requirements to prevent confusion, and possible relashing of cargo.

8. Windshields.

a. Finding: Numerous windshields were found to be broken, many as the result of being walked on during loading/offloading and securing/unsecuring on railcars and ships.

b. Recommendation: That MTMC determine best means of protecting windshields. (Recurring)

9. Contact teams at ports.

a. Finding: All REFORGER exercises have proved that some cargo will arrive at the SPOEs and SPODs in inoperable condition.

b. Recommendation: That contact teams be adequately staffed with trained mechanics who have sufficient personnel, tools, repair parts, and contact vehicles to cope with the most common mechanical problems encountered on past REFORGER exercises. (Recurring)

10. Unsecured cargo.

a. Finding: During the exercise, a significant number of vehicles were shipped with unsecured or insufficiently secured cargo in truck or trailer beds. This was particularly prevalent during redeployment.

b. Recommendation: That unit commanders insure their equipment is properly secured to prevent damage or loss. (Recurring)

11. Key availability.

a. Finding: Keys for M880-series vehicles were unavailable at the European SPOD when the GTS Callaghan was to be discharged. Duplicate keys had to be made locally.

b. Recommendation: That keys be left in M880-series vehicles. (Recurring)

12. Stowage of inoperable vehicles.

a. Finding: Inoperable vehicles were stowed at Beaumont according to their place on the stow plan aboard the GTS Callaghan. No flexibility was exercised to make exceptions to the stow plan for those vehicles to be stowed in more accessible places.

b. Recommendation: That inoperable vehicles be stowed where they do not impede vessel discharge.

13. Improper railcars.

a. Finding: Some railcars provided to Beaumont were 89-foot special-purpose ITTX cars, which have two uprights at each end of the railcars. These uprights limit the width of drive-on cargo to 8 feet 6 inches. Because of their width, Vulcans had to be lifted on at Beaumont and off at Fort Carson.

b. Recommendation: That care be taken to insure that ITTX railcars are not ordered for future REFÖRGER operations. It should also be made clear to furnishing railroads that ITTX cars are not to be substituted for other requested railcar types. (Recurring)

14. Multilevel rail-loading ramp at Beaumont.

a. Finding: That multilevel rail-loading ramp at the Port of Beaumont is antiquated, steep, and dangerous. Loading and offloading of vehicles using is hazardous.

b. Recommendation. That the Port of Beaumont be provided with a multilevel railcar-loading ramp. (Recurring)

15. CONEXs.

a. Finding: Many CONEXs were received unbanded, resulting in some CONEX doors coming ajar during vessel discharge operations. The stevedore contractor was tasked, on several occasions, to resecure CONEX doors. One CONEX was found to be unserviceable when a wrecking bar fell through its bottom during rail outloading operations.

b. Recommendation: That commanders using CONEXs insure that their CONEXs are banded horizontally and vertically to preclude doors from opening. Furthermore, CONEXs must be closely inspected at origin for serviceability before being shipped.

16. Towed Vulcans.

a. Finding: Ten M163 Vulcans (towed) arrived at Beaumont from Europe without protective coverings, which were on the weapons when they were deployed overseas. As a result, several Vulcan barrels and a firing mechanism incurred extensive corrosion. Gulf Outport personnel assisted the PSA in obtaining suitable canvas to cover all Vulcans prior to the departure of the Fort Ord train.

b. Recommendation: That unit commanders insure that weapon systems and other equipment subject to corrosion during surface moves are protected by suitable coverings prior to shipment.

APPENDIX

LOI FOR DEPLOYMENT SPOE SHIP STOWAGE

GTS. Adm. Wm. M. Callaghan
Voyage No. 218

FROM: Captain G.R. Miller
TO: MTMC
SUBJECT: Reforger 81 Loading

C
O
P
Y

In order that the loading can proceed without delays, the following factors should be called to the attention of all parties concerned.

1. LASHING

Lashing must be laid out in the approximate positions that they will be used. Loading will proceed by tiers and each tier shall be completely lashed before the next tier is started. Extra lashings shall be removed from completed areas. Once tight stow is established, moving lashings from behind vehicles is difficult and time consuming.

Lashings will be led in four (4) directions securing each vehicle against possible movement in any direction. Where fore and aft lashings are restricted by close stow, lashings may be crossed or shortened to achieve the proper leads. Lashings are to be made fast to clover leafs or D-rings and not to other lashings. All lashings are to be set up properly.

Lashings will be checked to insure that they are properly made fast to a sturdy structural member of the vehicle. (Not to the tie rods, mufflers, gas lines or gas tanks, or shock absorbers.) If the vehicle has lifting pads, utilize them. Replacement shackles must be supplied if not on the vehicle.

The weight and type of vehicle is to be kept in mind when selecting the number and type of lashing to be used. Basically, four (4) M-10's will be used on vehicles five (5) tons or under; four (4) M-35's on vehicles five (5) to seventeen (17) tons; six (6) M-35's on vehicles seventeen (17) to twenty five (25) tons and M-60 tanks require twelve (12) M-35's. If a trailer is stowed attached to its vehicle, two lashings are sufficient; if the trailer is stowed separately, it shall be secured as a full vehicle with four lashings.

No unused lashing gear is to be left in any of the compartments. There is sufficient lashing gear on the vessel for the contemplated load, but it is important that none be left behind in the completed spaces. All lashings shall be checked twice by ship's officers and approved.

IF IN DOUBT AS TO THE NUMBER OR TYPE OF LASHINGS TO BE USED
CHECK WITH A SHIPS MATE OR THE CHIEF OFFICER.

2. HAZARDOUS MATERIALS:

All hazardous materials are to be segregated and stowed in a trailer or truck which can be stowed on the main deck apart from the other cargo. Hazardous

materials are required by the United States Coast Guard to be separated by class and type. Hazardous materials include pyrotechnics, ammunition, acetylene, oxygen, loose wet batteries, battery fluid and/or any flammable or corrosive liquids.

All vehicles before loading must be checked while still in the staging area for loose and open jerry tins which may contain gasoline or gasoline fumes. Tank trucks used for the transport of fuel should be emptied and gas free.

3. LOOSE GEAR

In the past it has been noticed that there has been considerable loose gear in many of the vehicles. This cannot be allowed as the vessel is subject to considerable motion while at sea. ALL LOOSE GEAR MUST BE SECURED IN THE VEHICLE BEFORE COMING ABOARD: This means proper inspection and supervision in the staging areas. Loose gear not only means poor housekeeping, but also creates a hazard to the ship and its cargo.

4. LOADING, GENERAL NOTES:

Upon arrival the Chief Officer will consult with the loading supervisors and decide upon the stowage and securing of any outsize or special vehicles. Pre-stow plans will be approved and made available. Any departure from the pre-stow plan will be immediately made known to the Chief Officer.

B. Certain watertight doors will be kept open to allow access to the compartments for inspection of the cargo while at sea. Approximately three (3) feet is needed for this purpose. The Chief Officer will specify which doors are to be kept clear.

C. Several pickup trucks or utility vehicles will be made available to move lashing gear to the spaces to be loaded. Lashings will be laid out in the spaces to be loaded before the loading starts.

D. Utility vehicles with battery charging capabilities/compressor will be provided for assistance to troublesome vehicles.

E. In order to expedite the handling and stowage of trailers it is recommended that several forklifts, capable of transiting the ships ramps be fitted with tow bars on the forks, and be made available for the loading.

F. No fuel tanks are to be filled more than three quarters (3/4ths) full.

G. All jerry cans on vehicles to empty and gas freed.

H. Arrange to have generator trailers drained of fuel. These units have leaked fuel badly in the past when the ship rolled.

I. A final stow plan will be needed. This plan should show the gross weights of each vehicle. INCLUDING THE CARGO IN THE VEHICLE. This plan is very important as it is used to calculate the vessels stability and trip. Accurate figures of the weights in each deck and each hatch should be included in this plan.

J. Supervisory personnel should inspect and pass each vehicle before it is loaded. No vehicle should be permitted to board with any unsecured gear or hazardous cargo aboard. Ships Mates will be instructed to turn back any vehicle which is not considered suitable for loading.

cc: MSCLANT

S/ G. R. Miller, Master

LASHING ARRANGEMENT

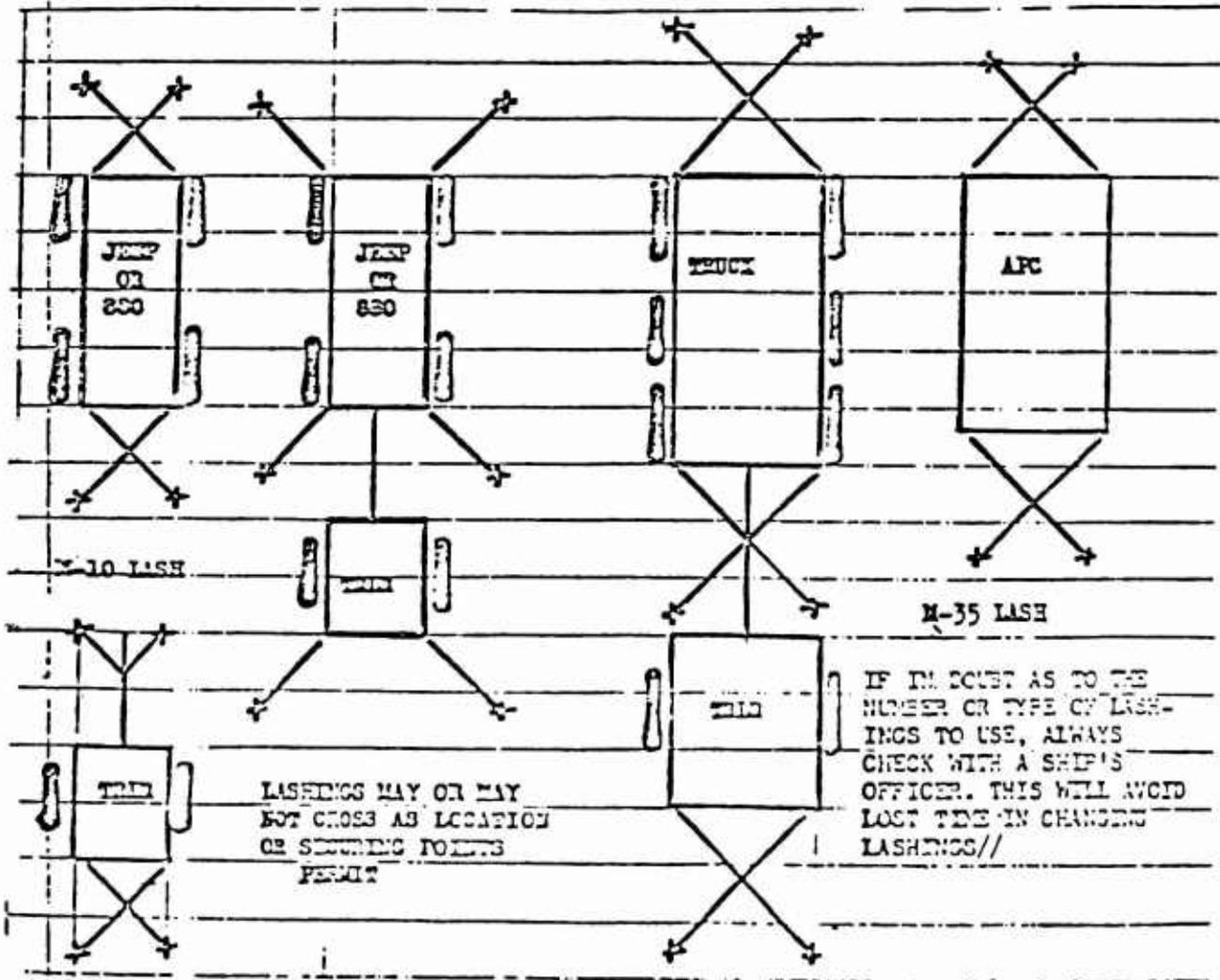
VEHICLE	M-10	M-35
Jeep	4	
Jeep and Trailer	4 + 2	
Trailer alone	4	4 if large tlr.
880	4	
880 and Trailer	4 + 2	
2½ Ton Truck		4
5 Ton Truck		4
Truck and Trailer		4 + 2
APC		4
Truck Tractor		6
Tractor and Trailer		6 + 4
Semi-Trailer		6
Shop Vans		6
Wrecker		8

NOTES

IF THE VEHICLE IS LOADED EXTRA LASHINGS WILL BE USED

IT IS IMPORTANT THAT THE VEHICLE BE POSITIONED WITH RESPECT TO THE DECK LASHING POINTS...D-RINGS AND CLOVER LEAF OPENINGS

THE LASHINGS MAY VARY SOMEWHAT FROM THIS LISTING, DEPENDING UPON THE USE OF THE BAS VEHICLE. THE SHIPS MATES MAY A EXTRA LASHINGS AS SEEM NECESSARY



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Landing Force Training Command
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Seneca Army Depot
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Chief, Readiness Group Devens
Fort Devens, MA 01433 (1)

Chief
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Rhine River Terminal
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