

# MILITARY STANDARD

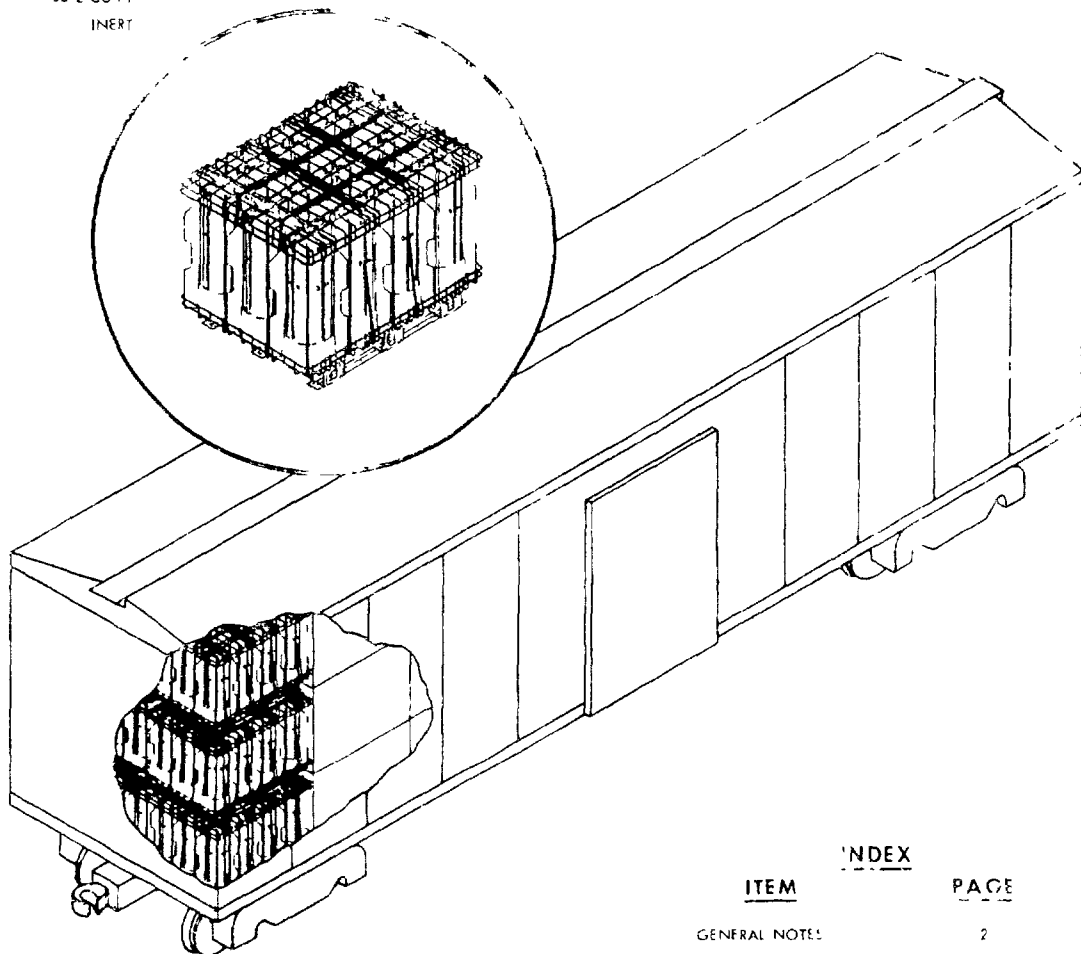
## LOADING

IN ASSEMBLY, BOMB, MK15 AND MOLS (51470)  
 IN PALLET ADAPTER ADU-3307E  
 FLEET ISSUE UNIT LOAD

100 51470  
 1 JUL 63

### UNIT LOAD DATA

UNIT LOAD DRAWING WK-54 242  
 WEIGHT 71 LBS  
 DIMENSIONS 48 1/4 L x 36 1/4 W x 3 3/4 H  
 CUBE 38.2 CU FT  
 DGT HAZARD CLASSIFICATION INERT



ITEM	INDEX	PAGE
GENERAL NOTES		2
DODX CARLOAD		2 & 3
40-6 CARLOAD COM1		4 & 5
50-6 CARLOAD COM1		6 & 7

NOTES

- UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
- FOR CROSS REFERENCE TO ASSOCIATED PALLETIZING, TRUCKLOADING AND CONTAINERLOADING MILITARY STANDARDS, REFER TO INDEX TO STANDARDS MIL-HDBK 236 (NAVY).

AUTHORIZED AND RELEASED FOR  
 GENERAL USE

APPROVED BY BUREAU OF EXPLOSIVES  
 NOT APPLICABLE

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 N A D EARLE, NEW JERSEY  
 PAGE 1 OF 7

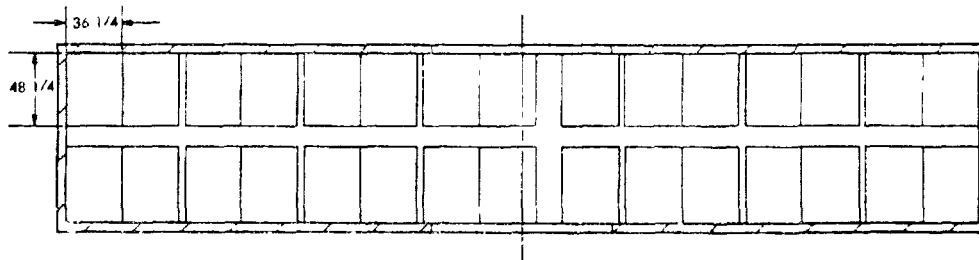
MIL-STD-1325 (NAVY)

## GENERAL NOTES

1. FOR GENERAL INFORMATION CONCERNING ORDERING, INSPECTING, AND PREPARING CARS, AND FOR DUNNAGING MATERIALS DESIGN AND INSTALLATION OF DUNNAGE SEE THE GENERAL DOCUMENT MIL-STD-1325 (NAVY) RAILCAR LOADING OF HAZARDOUS MATERIALS.
2. WHEN PLANNING SHIPMENTS ORC THE MINIMUM NUMBER OF CARS OF THE CAPACITY REQUIRED FOR THE SHIPMENT. UTILITY LOADER CARS SHALL BE SERIES DODX L300G.
3. LOADING PLANS SHOWN ARE FOR DODX UTILITY LOADER CAR WITH 50 FT 6 INCHES INSIDE LENGTH, 107 3/4 INCHES INSIDE WIDTH BETWEEN RAILS (111 INCHES INSIDE WIDTH BETWEEN SIDE WALLS). COMMERCIAL BOXCARS WITH 40 FT 6 INCHES INSIDE LENGTH, 110 INCHES INSIDE WIDTH, AND COMMERCIAL BOXCARS WITH 50 FT 6 INCHES INSIDE LENGTH, 110 INCHES INSIDE WIDTH.
4. THE LOAD LIMIT OF A CAR MUST NOT BE EXCEEDED NOR SHOULD THE RAILCAR BE LOADED SO THAT MORE THAN ONE-HALF OF THE LOAD LIMIT IS CARRIED BY ONE SET OF TRUCKS.
5. IF END WALLS OF CARS ARE NOT SQUARE THEY MUST BE SQUARED OFF BEFORE STARTING TO LOAD CAR.
6. THE LOAD CONSISTS OF MK 15 AND M60S BOMB FIN ASSEMBLY (SKAKFYE) PALLETIZED IN ACCORDANCE WITH WR-54 242.
7. THE UNIT LOADS ARE HANDLED AND LOADED WITH A SUITABLE FORK LIFT TRUCK.
8. UNLESS OTHERWISE SPECIFIED NAILING SHALL BE IN ACCORDANCE WITH MIL-STD 1325 (NAVY).
9. ALL STRAP JOINTS SHALL BE CRIMP TYPE JOINTS MADE WITH A CRIMPING TOOL THAT DOES NOT CUT THE SEAL OF STRAP RATHER THAN A TOOL THAT MAKES A NOTCH-TYPE JOINT. THE STRAPPING MUST BE IN ACCORDANCE WITH NAVSUP NOTICE 4652 DATED 21 APRIL 1971.
10. APPLICABLE MATERIAL SPECIFICATIONS:
  - DUNNAGE LUMBER - FED. SPEC MM-L-751
  - NAILS - FED. SPEC FF-N-105
  - STRAPPING - FED. SPEC QQ-5-781 TYPE I HEAVY DUTY CLASS A, DRY (UNLUBRICATED)
  - SEALS - FED. SPEC QQ-1-781 STYLE III, HEAVY DUTY
11. AFTER BLOCKING AND BRACING HAS BEEN INSPECTED ATTACH SHIPPING DOCUMENTS INSIDE THE CAR IN AN ACCESSIBLE AREA AND CLOSE AND SEAL BOXCAR DOORS.

## 50 FT 6 IN. BOXCAR, DODX

1. THE CARLOAD CONSISTS OF 90 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING.
2. A DETAILED DESCRIPTION AND OPERATING INSTRUCTIONS FOR THE UTILITY LOADER ARE CONTAINED IN OF 175C.
3. TO PREVENT UNUSED DODX EQUIPMENT FROM BECOMING DISLODGED DURING TRANSIT OF DODX CARS SECURE IT AT ANY LOCATION IN THE BOXCAR WHICH WILL NOT INTERFERE WITH UNLOADING.
4. WHEN LESS THAN CAPLOAD (LCL) QUANTITIES ARE REQUIRED TO BE SHIPPED IN DODX BOXCARS THE SAME PROCEDURES AND METHODS OF BLOCKING AND BRACING ARE APPLICABLE. ANY BAYS OR PORTION THEREOF MAY BE USED PROVIDING THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE AAR ARE COMPLIED WITH. (SEE MIL-STD-1325 (NAVY)). EACH CROSSMEMBER WILL BE USED IN SUCH A MANNER THAT IT WILL RETAIN NOT MORE THAN 2000 LBS OF THE LADING.



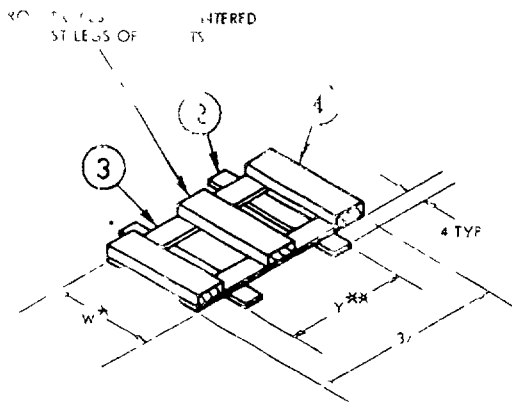
### LOADING PLAN

- \*W - DISTANCE BETWEEN LEGS OF PALLET ACROSS THE CAR
- \*\* = PIECE 3 NAILS TO PIECE 4 WITH 10d NAILS, CLINCHED, 3 PER JOINT AND TO PIECE 2 WITH 6d NAILS, 1 PER JOINT

5	LATERAL FLOOR MEMBER	2 x 6 x 107	2	CAP FLOOR	2 PER FOOT	16d
4	CROSS BRACE	2 x 6 x W*	90	SEE 3	-	-
3	SWAY BRACE LONGITUDINAL	1 x 4 x 37	60	2 4	SEE NOTE **	
2	SWAY BRACE SUPPORT	1 x 4 x (W-B)*	60	SEE 3	-	-
1	SLEEPER	2 x 4 x 36	30	CAR FLOOR	2 PER FOOT	16d
PIECE NO	DESCRIPTION	SIZE	NO PCS REQD	NAIL TO	NUMBER	SIZE
					NAILS	

LIST OF MATERIALS AND NAILING DATA

DD FORM 132-155 (NAVY)

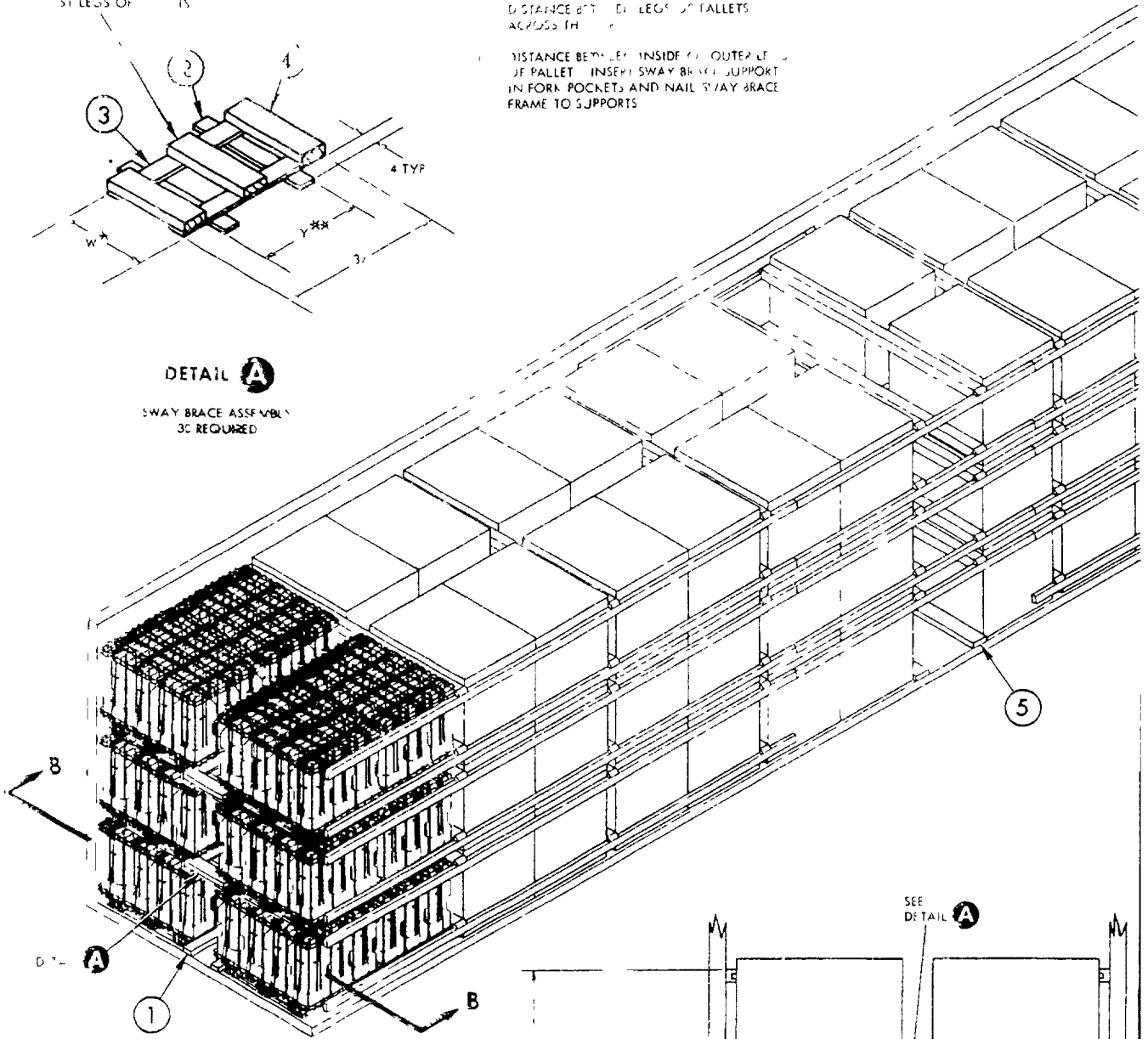


DISTANCE BETWEEN LEGS OF PALLET  
ACROSS THE WIDTH

DISTANCE BETWEEN INSIDE OR OUTER LEGS  
OF PALLET - INSERT SWAY BRACE SUPPORT  
IN FORK POCKETS AND NAIL SWAY BRACE  
FRAME TO SUPPORTS

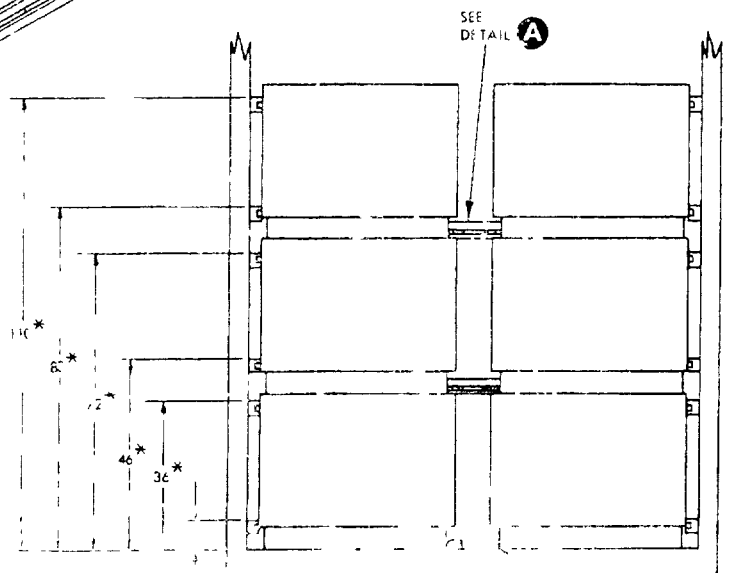
**DETAIL A**

SWAY BRACE ASSEMBLY  
30 REQUIRED



**CARLOAD DATA**

NUMBER OF UNIT LOADS	90
NUMBER OF CROSSMEMBERS REQUIRED	46
LOCAL WEIGHT	87 390 LBS
DISTANCE WEIGHT	845 LBS
TOTAL WEIGHT	87 235 LBS



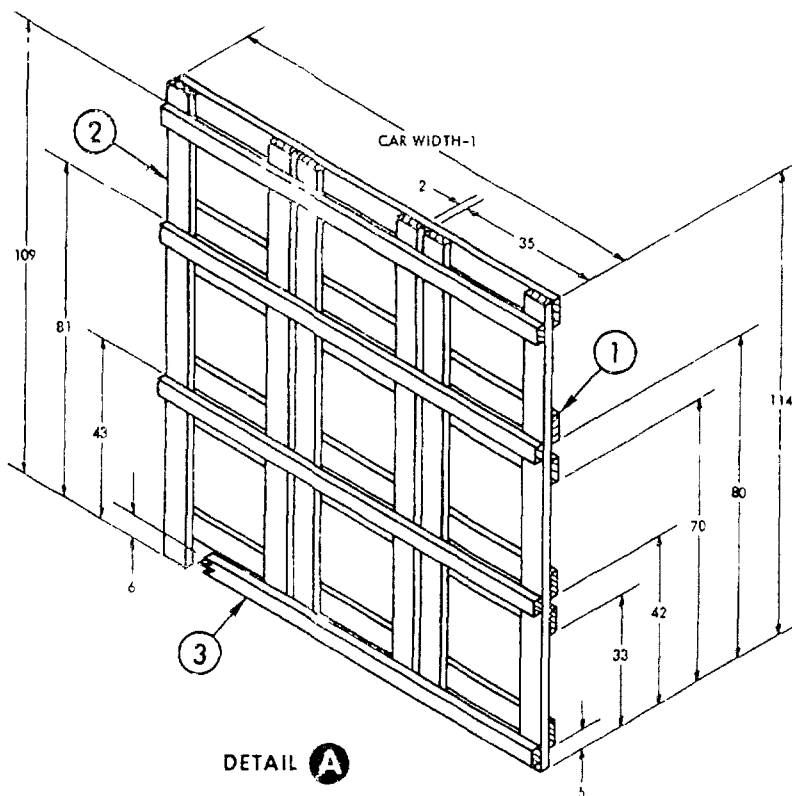
SECTION C  
DRAWING LOCATION C - ALL DIMENSIONS  
USED - FOR 35' TALL

COORDINATE ASSEMBLY TO 1

MIL-STD-1325 (NAVY)

## 40 FT 6 IN. BOXCAR, COMMERCIAL

1. THE LOADS CONSISTS OF 8 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURE.
2. IF LESS THAN ONE FULL QUANTITY IS REQUIRED TO BE SHIPPED IN COMMERCIAL BOXCARS, AND A PARTIAL LAYER RESULTS, THE PARTIAL LAYER OF LADING SHALL BE BRACED BY MEANS OF END BRACING AND A PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH WF-52/100. SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. THE CENTER GATE HEIGHT SHOULD BE ADJUSTED AS REQUIRED. THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE AAR MUST BE COMPLIED WITH, SEE MIL-STD-1325 (NAVY).
3. THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 6 FT WIDE DOORWAY OPENINGS AND ARE EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOOR. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 6 FT WIDE.



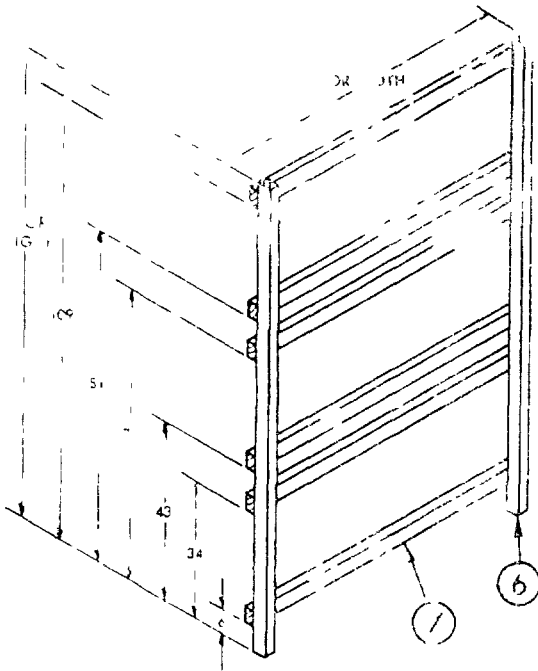
**DETAIL A**

CENTER GATE  
2 REQUIRED

\* 2 x 6 STRIPS DOUBLED AND LAMINATED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 x 4 S.

7	HORIZONTAL DOORWAY MEMBER	4 x 4 x DOOR WIDTH	12	6	2 PER JOINT	10d
6	VERTICAL DOORWAY MEMBER	2 x 3 x DOOR HEIGHT	4	DOOR POST	2 PER FOOT	20c
5	GATE HOLD DOWN	2 x 4 x 60	2	3	3 PER JOINT	10d
4	STRUT	4 x 4 x WEDGE FIT *	24	2	2 PER JOINT	16d
3	CENTER GATE STRUT CLEAT	2 x 4 x CAR WIDTH-1	8	2	3 PER JOINT	10d
2	CENTER GATE VERTICAL	2 x 6 x 114	12	SEE 1	-	-
1	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH-1	12	2	3 PER JOINT	10d
PIECE NO	DESCRIPTION	SIZE	NO PCS REQD	NAIL TO	NUMBER	SIZE
LIST OF MATERIALS AND NAILING DATA						

# MIL-STD-1325-166 (NAVY)

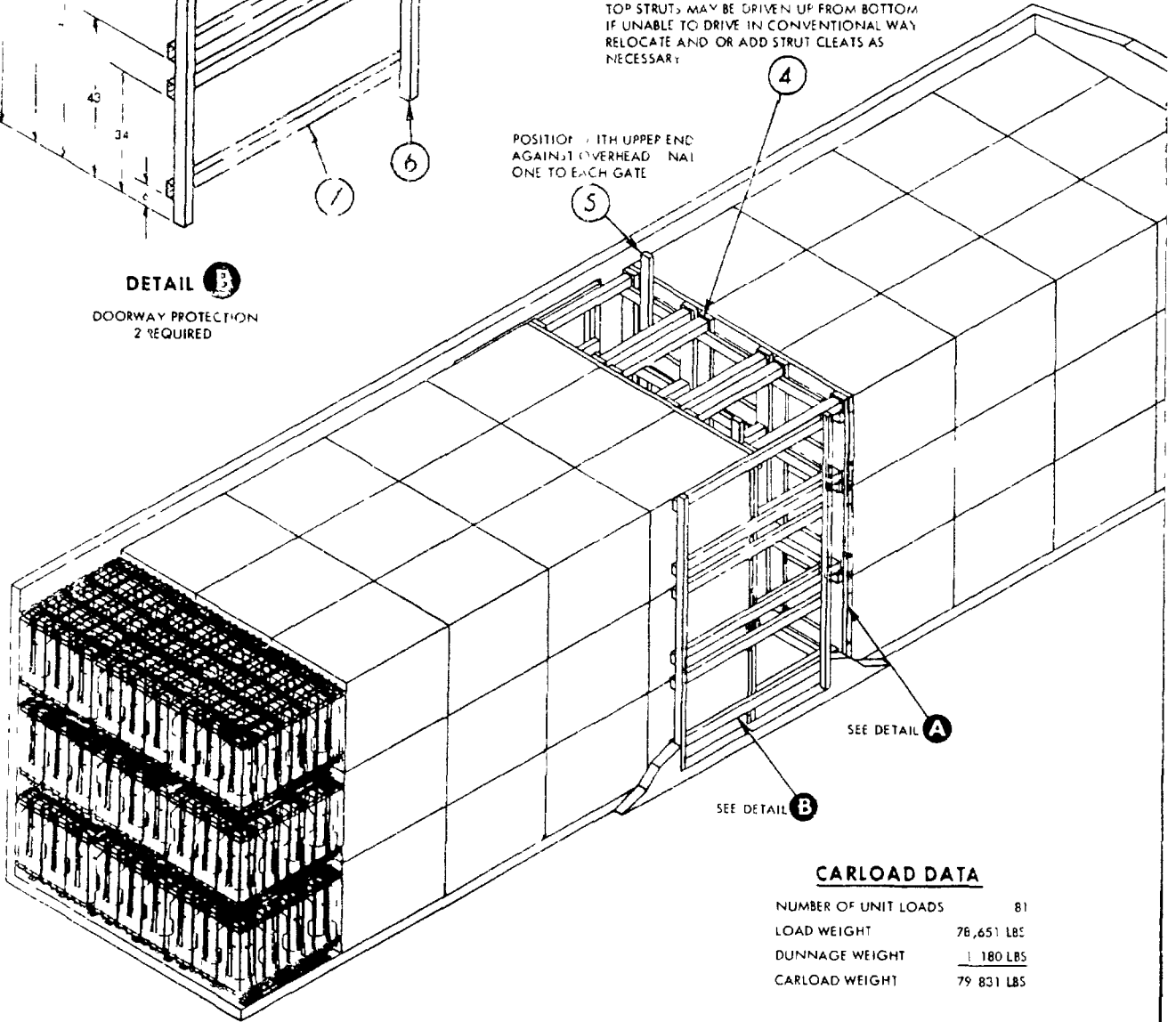


HEAVY BOX RIVET STEEL DOOR POST DOORWAY PROTECTION AS PER MIL-STD-1325 (NAVY) PAGE 46 FIG. 21 IS REQUIRED

NOTE  
TOP STRUTS MAY BE DRIVEN UP FROM BOTTOM IF UNABLE TO DRIVE IN CONVENTIONAL WAY RELOCATE AND OR ADD STRUT CLEATS AS NECESSARY

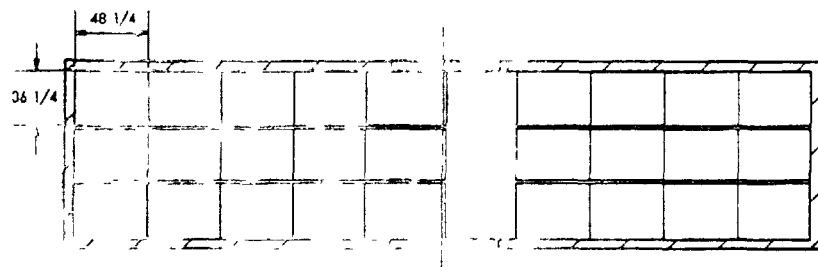
POSITION WITH UPPER END AGAINST OVERHEAD RAIL ONE TO EACH GATE

**DETAIL B**  
DOORWAY PROTECTION  
2 REQUIRED



### CARLOAD DATA

NUMBER OF UNIT LOADS	81
LOAD WEIGHT	76,651 LBS
DUNNAGE WEIGHT	1,180 LBS
CARLOAD WEIGHT	79,831 LBS

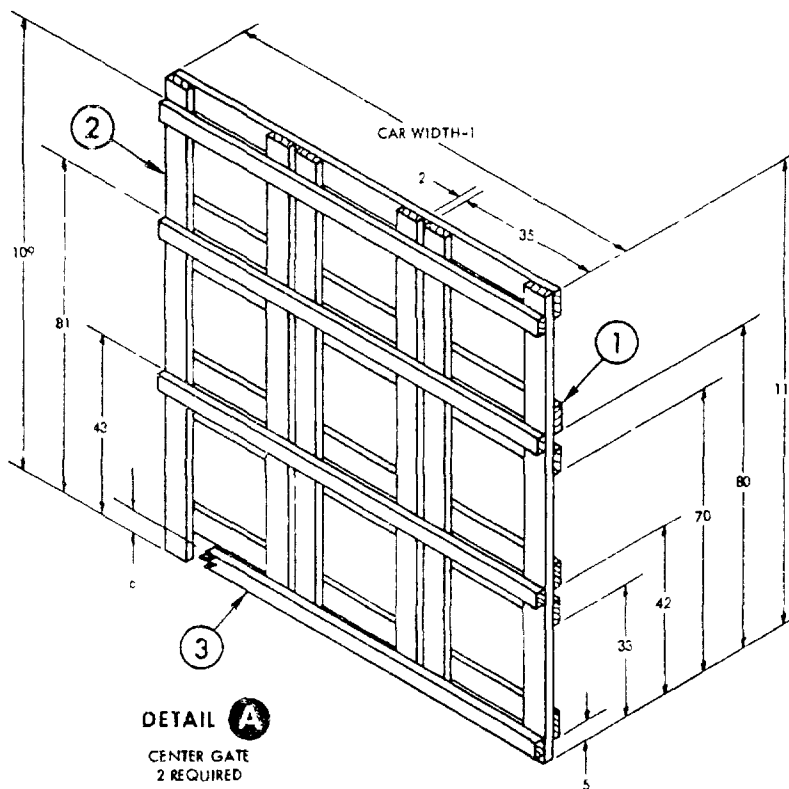


**LOADING PLAN**

MIL-STD-1325 (NAVY)

## 50 FT 8 IN. BOXCAR, COMMERCIAL

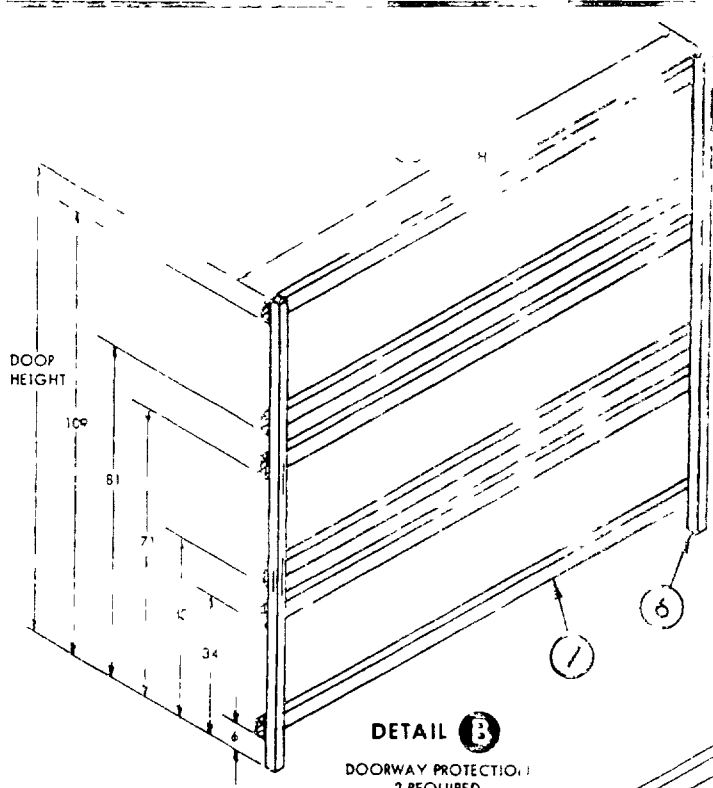
- 1 THE CARLOAD CONSISTS OF 108 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THE PROCEDURAL DRAWING.
- 2 WHEN LESS THAN CARLOAD (LC) QUANTITIES ARE REQUIRED TO BE SHIPPED IN COMMERCIAL BOXCAR, AND A PARTIAL LAYER RESULTS IN A PARTIAL LAYER OF LADING SHALL BE BRACED BY MEANS OF END BRACING AND/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH WR-52/100. SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. THE CENTER GATE HEIGHT SHOULD BE ADJUSTED AS REQUIRED. THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE CAR MUST BE COMPLIED WITH, SEE MIL-STD-1325 (NAVY).
- 3 THE LOADS AS SHOWN ARE BASED ON CARS WHICH HAVE 10 FT WIDE DOORWAY OPENINGS AND ARE EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 10 FT WIDE.
- 4 THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE ALSO APPLICABLE TO BOXCARS EQUIPPED WITH PLUG TYPE DOORS. DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT WHEN THE CAR HAS A COMBINATION OF A CONVENTIONAL SLIDING TYPE DOOR AND A PLUG TYPE DOOR AND AN ADEQUATE NAILING STRIP IS PROVIDED ON THE PLUG TYPE DOOR. STACKS WITH MORE THAN HALF OF THE UNIT LOAD IN THE DOORWAY AREA MUST BE UNITIZED WITH TWO LATERALLY APPLIED 1 1/2" STEEL STRAPS PER STACK. EACH TENSIONED AND SEALED WITH TWO DOUBLE CRIMPED SEALS. DOORWAY PROTECTION PIECES 6 AND 7 IS NOT REQUIRED WHEN PLUG DOOR EQUIPPED BOXCARS ARE USED. EXCEPT WHEN CAR HAS A COMBINATION OF PLUG DOOR AND CONVENTIONAL SLIDING DOOR. THEN DOORWAY PROTECTION IS REQUIRED FOR THE CONVENTIONAL DOOR. SECURELY CLOSE DOORS AND WIRE TOGETHER WITH A STRONG FLEXIBLE STEEL WIRE INSERTED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY OF FIVE OR MORE TIMES AND THE WIRE ENDS TWISTED TOGETHER.



**DETAIL A**  
CENTER GATE  
2 REQUIRED

\* 2 x 6 STRUTS DOUBLE END BRACED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 x 4 S.

7	HORIZONTAL DOORWAY MEMBER	2 x 4 x DOORWAY WIDTH	12	6	2 PER JOINT	10d
6	VERTICAL DOORWAY MEMBER	2 x 3 x DOORWAY HEIGHT	4	DOOR POST	2 PER FOOT	20d
5	GATE HOLD DOWN	2 x 4 x 60"	2	3	2 PER JOINT	10d
4	STRUT	4 x 4 x WEDGE FIT*	24	2	2 PER JOINT	16d
3	CENTER GATE STRUT CLEAR	2 x 4 x CAR WIDTH-1	8	2	3 PER JOINT	10d
2	CENTER GATE VERTICAL	2 x 6 x 114	12	SEE 1	-	-
1	CENTER GATE HORIZONTAL	2 x 6 x CAR WIDTH-1	12	2	3 PER JOINT	10d
PIECE NO	DESCRIPTION	SIZE	NO PCS REQD	NAIL TO	NUMBER NAILS	SIZE
LIST OF MATERIALS AND NAILING DATA						

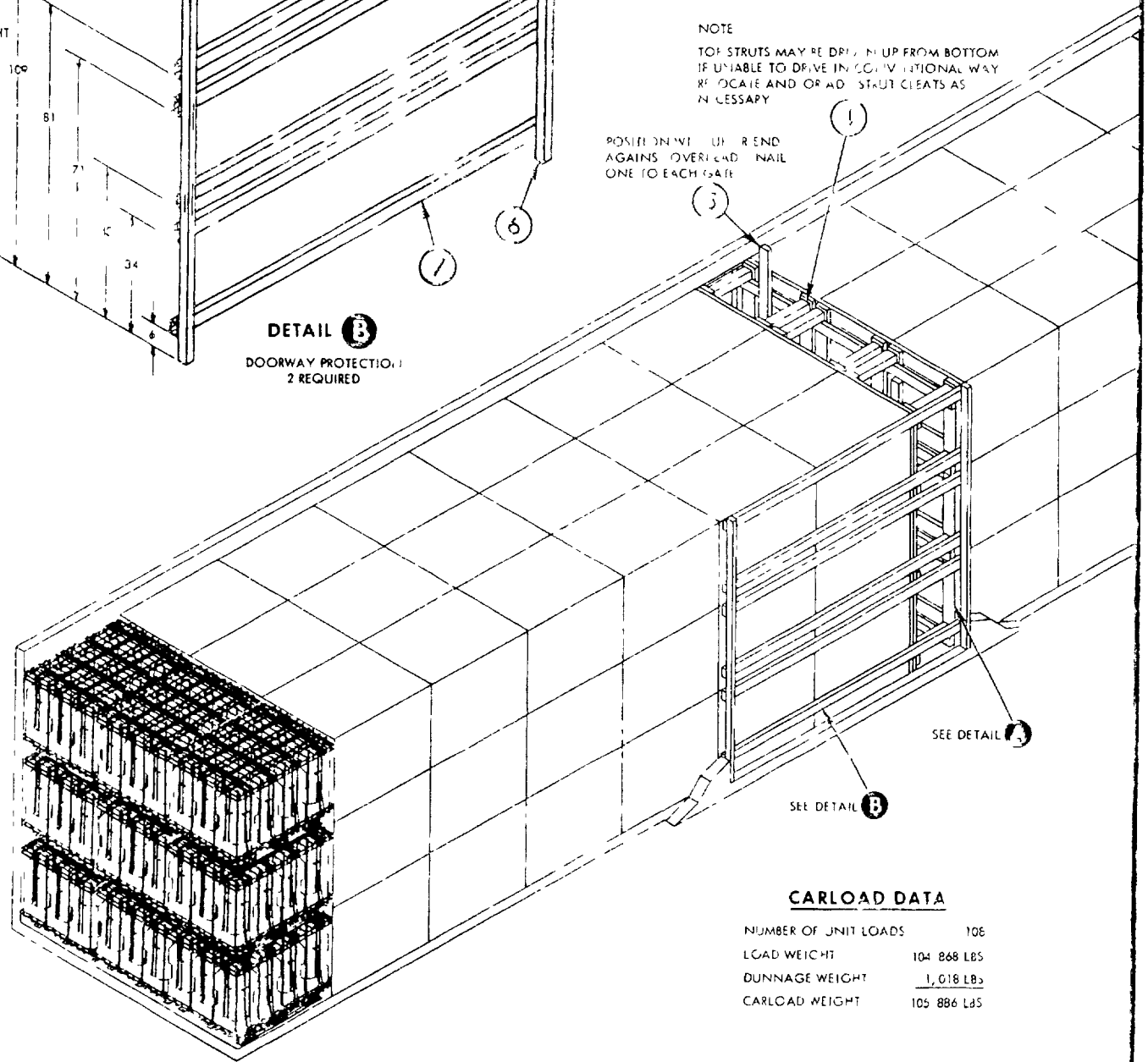


**DETAIL B**  
DOORWAY PROTECTION  
2 REQUIRED

7 IN BUCKING FOR 15 IN DOORWAY PROTECTION AS SHOWN FIG. 21 IS REQUIRED

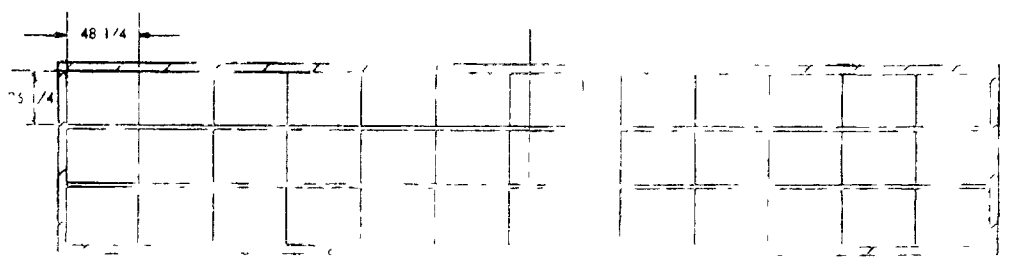
NOTE  
TOP STRUTS MAY BE DRIVEN UP FROM BOTTOM IF UNABLE TO DRIVE IN CONVENTIONAL WAY RELOCATE AND OR ADD STRUT CLEATS AS NECESSARY

POSITION THE UPPER END AGAINST OVERHEAD NAIL ONE TO EACH GATE



**CARLOAD DATA**

NUMBER OF UNIT LOADS	106
LOAD WEIGHT	104 868 LBS
DUNNAGE WEIGHT	1,018 LBS
CARLOAD WEIGHT	105 886 LBS



LOADING PLAN