

MILITARY STANDARD

MIL-STD-1325-97

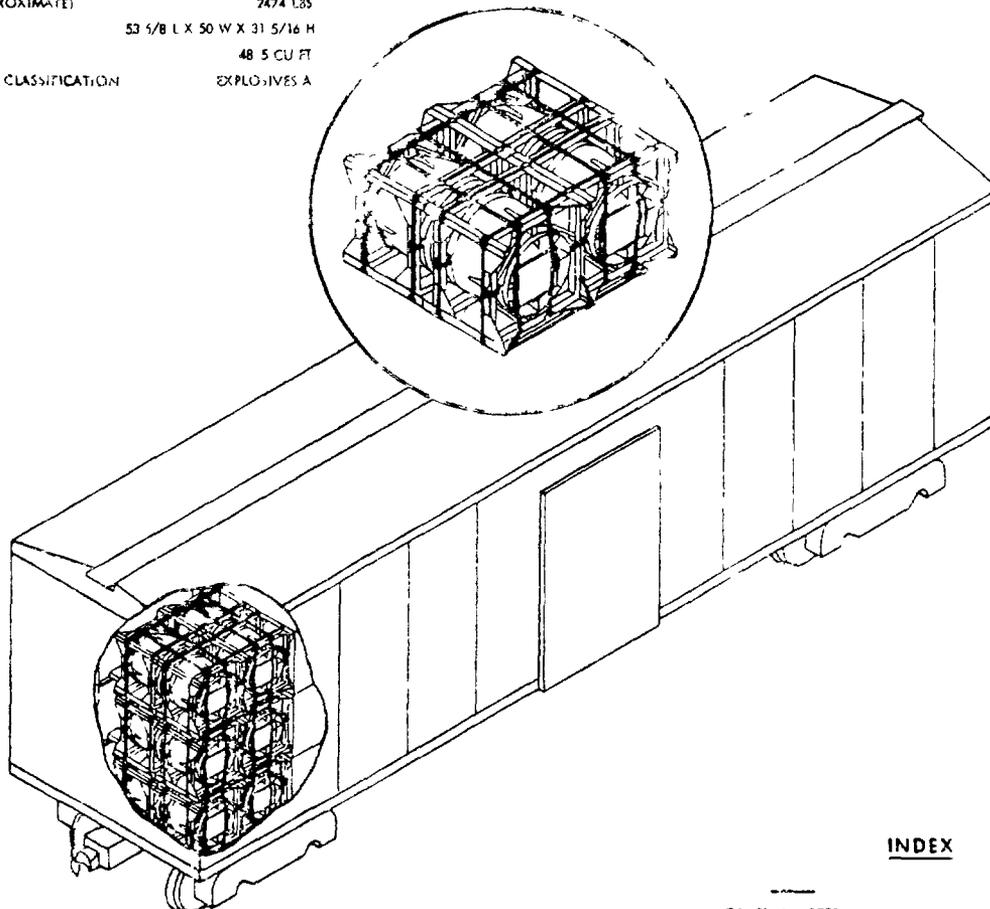
(NAVY)

MILITARY LOADING OF HAZARDOUS MATERIALS EXPLOSIVE SECTION MK 1 MOD 1 IN CRATE MX 101 MOD 1 FLEET ISSUE UNIT LOAD

5 APRIL 1976
SUPERSEDING
18 52/97
4 OCT 1968

UNIT LOAD DATA

UNIT LOAD DRAWING	NR 54/181
WEIGHT (APPROXIMATE)	2474 LBS
DIMENSIONS	53 5/8 L X 50 W X 31 5/16 H
CUBE	48.5 CU FT
DOT HAZARD CLASSIFICATION	EXPLOSIVES A



INDEX

	PAGE
GENERAL NOTES	7
40 - 6 CARLOAD COM	2, 3 & 4
50 - 6 CARLOAD COM	6, 7 & 8

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)

FSC B140

AUTHORIZED AND RELEASED FOR GENERAL USE.

APPROVED BY BUREAU OF EXPLOSIVES

M.S. Barry 2/11/76
 GNA _____ DATE
 _____ DATE
 _____ DATE

[Signature] 3/12/76
 SIGNATURE MILITARY STANDARD MODEL SERVICES DATE
 ORIGINATOR *[Signature]* 4/10/76
 SIGNATURE
 EXPLOSIVES HANDLING LABORATORY
 WPN'S & VALVE NEW JERSEY
 PAGE 1 OF 8

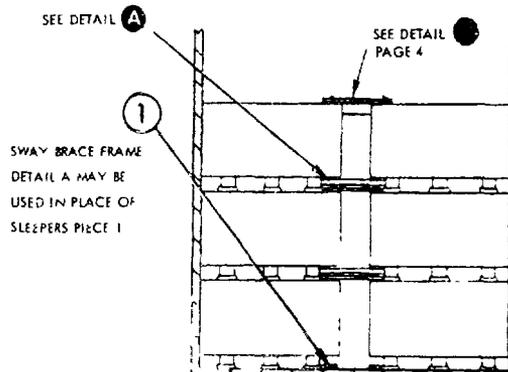
MIL-STD-1325-102 (NAVY)

GENERAL NOTES

- 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. IN PLANNING SHIPMENTS ORDER THE MINIMUM NUMBER OF CARS OF THE CAPACITY REQUIRED FOR THE SHIPMENT. DODX UTILITY LOADER CARS SHALL NOT BE USED FOR ITEMS WITH EXPLOSIVE OR B HAZARD CLASSIFICATION.
 3. LOADING PLANS SHOWN ARE FOR COMMERCIAL BOXCARS WITH 40 FT 6 IN INSIDE LENGTH, 110 IN INSIDE WIDTH, AND COMMERCIAL BOXCARS WITH 50 FT 6 IN INSIDE LENGTH, 110 IN 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 1 MOD 1 EXPLOSIVE SECTIONS IN MK 101 MOD 0 CRATES PALLETIZED IN ACCORDANCE WITH WR-54/161.
 7. THE UNIT LOADS ARE HANDLED AND LOADED WITH A SUITABLE FORKLIFT 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 OR STRAP. RATHER THAN A TOOL THAT MAKES A NOTCH-TYPE JOINT. THE STRAPPING MUST BE IN ACCORDANCE WITH NAVSUP NOTICE 4642 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-S-781 TYPE I HEAVY DUTY CLASS A DRY (UNLUBRICATED)
 - SEALS - FED SPEC QQ-S-781 STYLE III HEAVY DUTY
 11. AFTER BLOCKING AND BRACING HAS BEEN INSPECTED ATTACH SHIPPING DOCUMENTS INSIDE THE CAR IN AN ACCESSIBLE AREA. CLOSE AND SEAL BOXCAR DOORS AND ATTACH APPLICABLE PLACARDS TO THE OUTSIDE OF CAR AS PRESCRIBED IN OP 2165 (VOL 1).

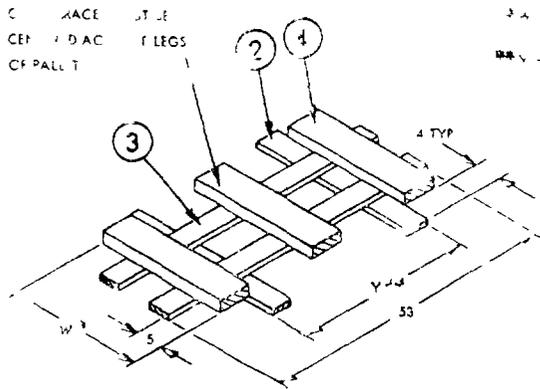
40 FT 6 IN BOXCAR, COMMERCIAL

1. THE CARLOAD CONSISTS OF 48 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING.
2. WHEN LESS THAN CARLOAD (LCL) QUANTITIES ARE 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/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH MIL-STD-1325-100 (NAVY) OR PARTIAL UPPER LAYER BRACING IN ACCORDANCE WITH MIL-STD-1325-102 (NAVY). SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. 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 DOORS. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE APPLICABLE TO BOXCARS EQUIPPED WITH CONVENTIONAL SLIDING TYPE DOORS OTHER THAN 6 FT WIDE.
4. THE DEPICTED PROCEDURES AND METHODS OF BLOCKING ARE ALSO APPLICABLE TO BOXCARS EQUIPPED WITH PLUG DOORS PROVIDING STACKS WITH MORE THAN HALF OF THE UNIT LOAD IN THE DOORWAY AREA ARE UNITIZED WITH TWO LATERALLY APPLIED 1 1/4 IN STEEL STRAPS PER STACK EACH TENSIONED AND SEALED WITH TWO DOUBLE CRIMPED SEALS AND A TOP SWAY BRACE CONSISTING OF A STRAPPING BOARD AND CROSS BRACE TWO PER STACK (SEE DETAIL D) INSTALLED BETWEEN THE ROWS OF THE DOORWAY STACKS. EACH STRAP IS SECURED TO STRAPPING BOARD WITH TWO 1 1/4 IN STAPLES. 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. IF LUMBER OF SUFFICIENT LENGTH TO SPAN PLUG DOORS IS NOT AVAILABLE RANDOM LENGTH MATERIAL DOUBLED AND SPLICED BUT WITH JOINTS OF SPLICES OFFSET MAY BE USED. DIMENSIONAL LUMBER DOORWAY PROTECTION PIECES 12 AND 13 IS NOT REQUIRED WHEN PLUG DOOR EQUIPPED BOXCARS ARE USED EXCEPT WHEN CAR HAS A COMBINATION OF PLUG DOOR AND CONVENTIONAL SLIDING DOOR. THEN DIMENSIONAL LUMBER DOORWAY PROTECTION IS REQUIRED FOR THE CONVENTIONAL DOOR. PLUG DOORS MUST BE SECURELY CLOSED AND WIRED TOGETHER WITH A STRONG FLEXIBLE STEEL WIRE INSERTED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES AND THE WIRE ENDS TWISTED TOGETHER.



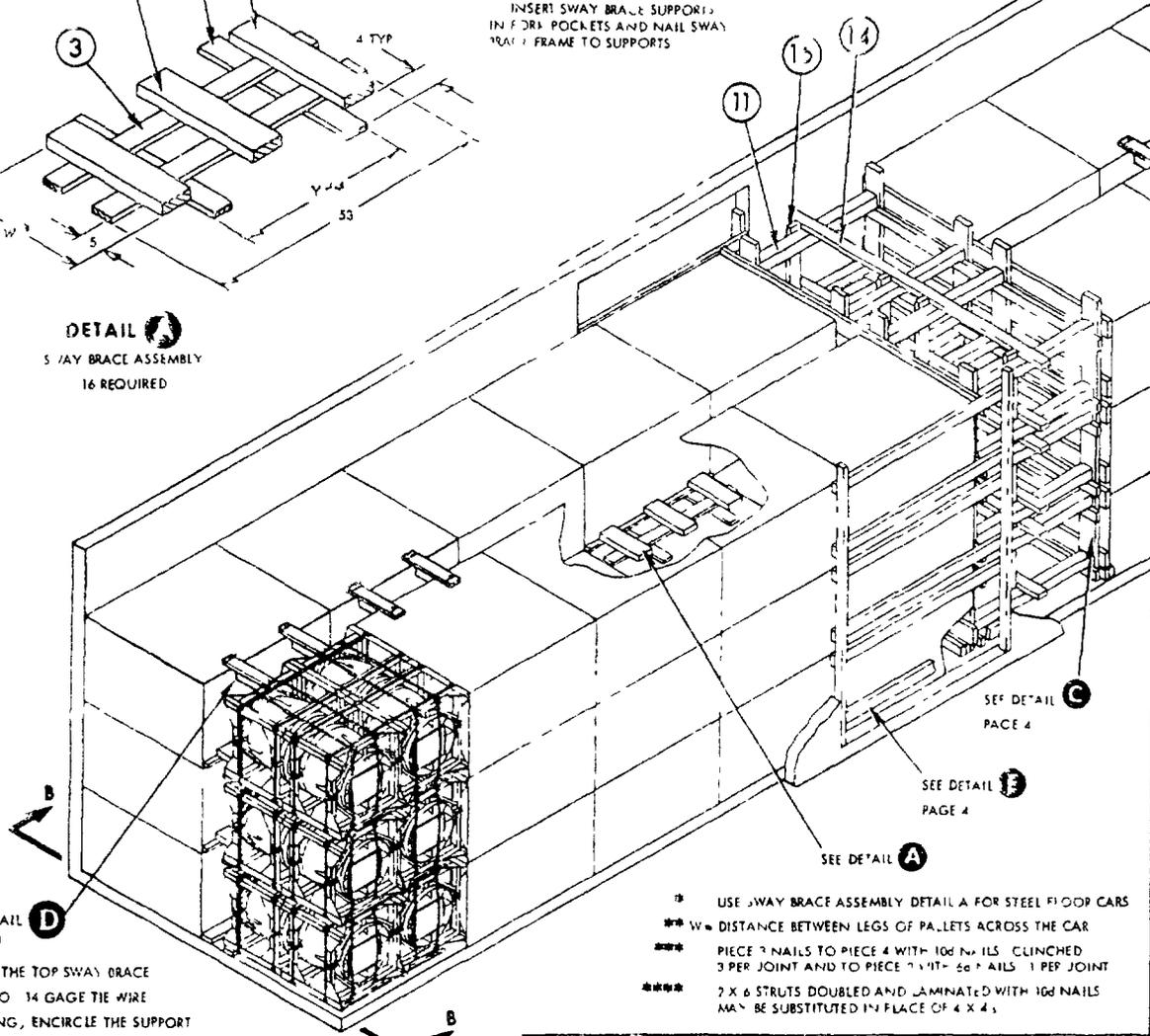
SECTION B-B

MIL-STD-129 27 (PART 1)



DETAIL 1
SWAY BRACE ASSEMBLY
16 REQUIRED

3 A DISTANCE BETWEEN POSTS OF PALLET CROSS TIE BAR
 *** DISTANCE BETWEEN LEGS OF PALLET
 INSERT SWAY BRACE SUPPORTS IN FORK POCKETS AND NAIL SWAY BRACE FRAME TO SUPPORTS



SEE DETAIL **D** PAGE 4
 SECURE THE TOP SWAY BRACE WITH NO. 14 GAGE TIE WIRE 24 LONG, ENCIRCLE THE SUPPORT PIECE AND THE STRAP OF THE UNIT LOAD AND TWIST TAUT

CARLOAD DATA

NUMBER OF UNIT LOADS 48
 LOAD WEIGHT (APPROX) 118,752 LBS
 DUMPAGE WEIGHT (APPROX) 1,725 LBS
 CARLOAD WEIGHT (APPROX) 120,477 LBS Δ

- Δ USE SWAY BRACE ASSEMBLY DETAIL A FOR STEEL FLOOR CARS
- *** 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 7 WITH 6d NAILS 1 PER JOINT
- *** 2 X 6 STRUTS DOUBLED AND LAMINATED WITH 10d NAILS MAY BE SUBSTITUTED IN PLACE OF 4 X 4

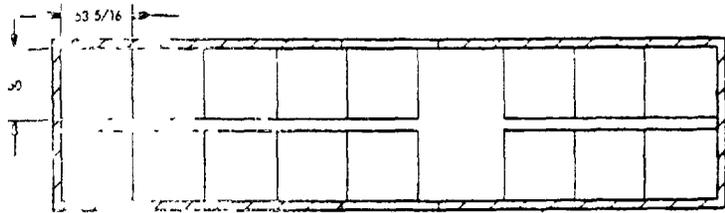
NO	DESCRIPTION	SIZE	NO OF PIECES	NAIL TO	NO OF NAILS	NO OF JOINTS	NAIL PER JOINT	NO OF NAILS	NO OF JOINTS	NO OF NAILS
17	CROSS PIECE	2 X 4 X CUT TO FIT	5	SEE 16	-	-	-	-	-	-
16	SUPPORT PIECE	1 X 4 X CUT TO FIT	8	17	-	-	-	10a	-	SEE FIELD NOTE
15	VERTICAL TIE BAR	2 X 4 X 9	3	10d	3 PER JOINT	10d	-	-	-	-
14	HORIZONTAL TIE BAR	2 X 4 X CAR WIDTH	4	6	1	3 PER JOINT	10d	-	-	-
13	HORIZONTAL DOORWAY MEMBER	2 X 4 X DOOR WIDTH	12	14	2 PER JOINT	10c	-	-	-	-
12	VERTICAL DOORWAY MEMBER	2 X 3 X 102	4	DOOR PILES	2 PER FOOT	20d	-	-	-	-
11	STRUT	4 X 4 X *** WEDGE FIT	24	6	2 PER FOOT	16c	-	-	-	-
10	HOLD DOWN CLEAT	2 X 3 X CUT TO FIT	4	9	4	16c	-	-	-	-
9	HOLD DOWN CLEAT	2 X 3 X CUT TO FIT	4	E	4	10c	-	-	-	-
8	HOLD DOWN SPACER	2 X 4 X CAR WIDTH	2	6	3 PER JOINT	10d	-	-	-	-
7	CENTER GATE STRUT CLEAT	4 X 4 X CAR WIDTH	12	6	3 PER JOINT	-	-	-	-	-
6	CENTER GATE STRUT	2 X 6 X 102	8	SEE 7	-	-	-	-	-	-

NO	DESCRIPTION	SIZE	NO OF PIECES REQUIRED	NAIL TO	NO OF NAILS	NO OF JOINTS	NAIL PER JOINT	NO OF NAILS	NO OF JOINTS	NO OF NAILS
5	CENTER GATE HORIZONTAL	2 X 6 X CAR WIDTH - 1	12	6	3 PER JOINT	10c	-	-	-	-
4	CROSS BRACE	2 X 6 X W ***	48	SEE 3	-	-	-	-	-	-
3	SWAY BRACE LONGITUDINAL	1 X 4 X 53	32	1	3	SEE NOTE ***	-	-	-	-
2	SWAY BRACE SUPPORT	1 X 4 X (W/8) ***	32	SEE 3	-	-	-	-	-	-
1	SLEEPER	2 X 1 X 53 *	16	CAR FLOOR	2 PER FOOT	6d	-	-	-	-

LIST OF MATERIALS & NAILING DATA

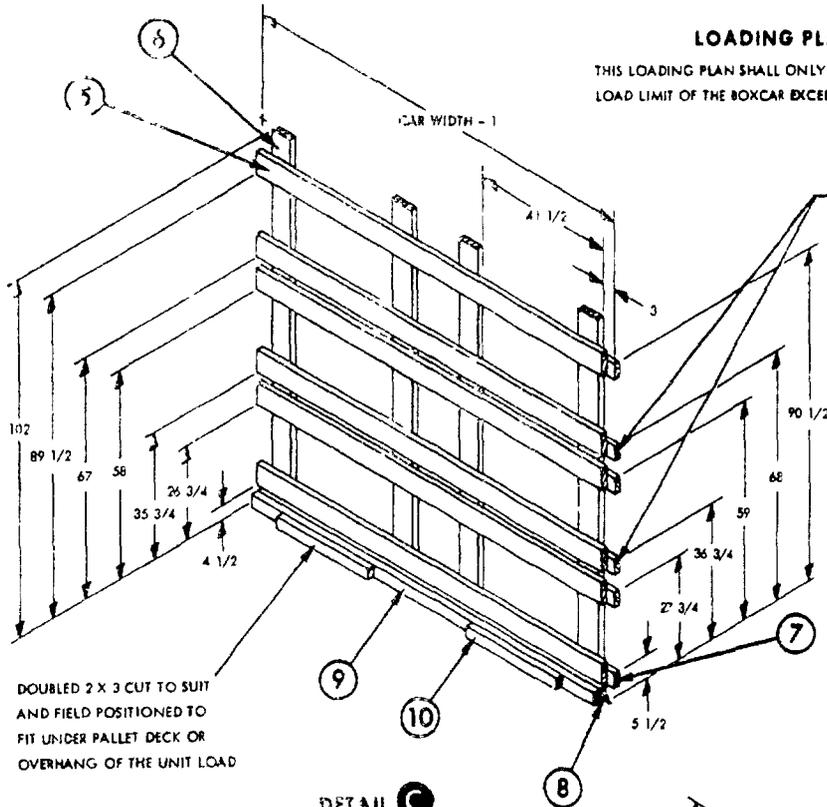
LIST OF MATERIALS & NAILING DATA

11 5511323 7 1A/1



LOADING PLAN

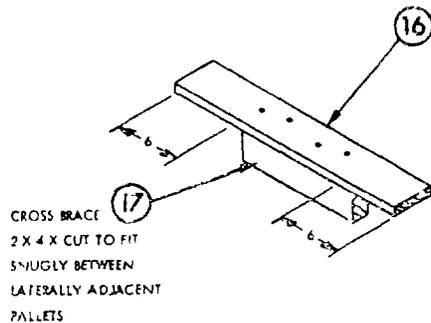
THIS LOADING PLAN SHALL ONLY BE USED WHEN THE LOAD LIMIT OF THE BOXCAR EXCEEDS 125,999 LBS



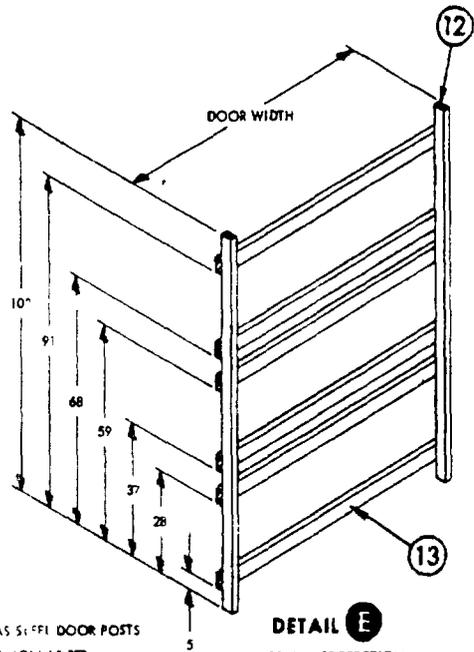
POSITION AFTER STRUTS HAVE BEEN INSTALLED ON LOWER STRUT CLEAT (REQUIRED ONE GATE ONLY)

DOUBLED 2 X 3 CUT TO SUIT AND FIELD POSITIONED TO FIT UNDER PALLET DECK OR OVERHANG OF THE UNIT LOAD

DETAIL C
CENTER GATE
2 REQUIRED



DETAIL D
TOP SWAY BR



DETAIL E
DOORWAY PROTECTION
2 REQUIRED

WHEN BOXCAR HAS STEEL DOOR POSTS
DOORWAY PROTECTION AS PER
UL STD-1325 (MAY) 5 REQUIRED

MIL-STD-3326-97 (NAVY)

THIS PAGE INTENTIONALLY LEFT BLANK

NA 510112 27, NAVY

50 FT 6 IN BOXCAR, COMMERCIAL

1. THE CARLOAD CONSISTS OF 60 UNIT LOADS WHICH MUST BE LOADED AND DUNNAGED IN ACCORDANCE WITH THIS PROCEDURAL DRAWING. BOXCARS NOT RATING THE LOAD CARRYING CAPACITY (LOADING) FOR UNIT LOADS MAY BE LOADED WITH A LESSER CARRYING CAPACITY. SPECIFICATIONS IN THIS DOCUMENT MUST BE FOLLOWED EXCEPT AS POSSIBLE IF A PARTIAL LAYER RESULTS. A PARTIAL LAYER OF LADING SHALL BE BRACED IN ACCORDANCE WITH MIL-STD-1325-100 (NAVY) OR MIL-STD-1325-102 (NAVY). SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED.
2. WHEN LESS THAN CARLOAD (LCI) QUANTITIES ARE 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/OR PARTIAL LAYER BRACING CONSTRUCTED IN ACCORDANCE WITH MIL-STD-1325-102 (NAVY). SELECT THE TYPE OF BRACE TO COMPLY WITH THE WEIGHT OF THE UNITS TO BE RETAINED. 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 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 DOORS PROVIDING STACKS WITH MORE THAN HALF OF THE UNIT LOAD IN THE DOORWAY AREA ARE UNITIZED WITH TWO LATERALLY APPLIED 1 1/4 IN STEEL STRAPS PER STACK EACH TENSIONED AND SEALED WITH TWO DOUBLE CRIMPED SEALS AND A TOP SWAY BRACE CONSISTING OF A STRAPPING BOARD AND CROSS BRACE TWO PER STACK (SEE DETAIL D) INSTALLED BETWEEN THE ROWS OF THE DOORWAY STACKS. EACH STRAP IS SECURED TO STRAPPING BOARD WITH TWO 1 1/4 IN STAPLES. 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. IF LUMBER OF SUFFICIENT LENGTH TO SPAN PLUG DOORS IS NOT AVAILABLE RANDOM LENGTH MATERIAL DOUBLED AND SPLICED BUT WITH JOINTS OF SPLICED OFFSET MAY BE USED. DIMENSIONAL LUMBER DOORWAY PROTECTION 1 PIECES 12 AND 13 IS NOT REQUIRED WHEN PLUG DOOR EQUIPPED BOXCARS ARE USED EXCEPT WHEN CAR HAS A COMBINATION OF PLUG DOOR AND CONVENTIONAL SLIDING DOOR THEN DIMENSIONAL LUMBER DOORWAY PROTECTION IS REQUIRED FOR THE CONVENTIONAL DOOR. PLUG DOORS MUST BE SECURELY CLOSED AND WIRED TOGETHER WITH A STRONG FLEXIBLE STEEL WIRE INSERTED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES AND THE WIRE ENDS TWISTED TOGETHER.

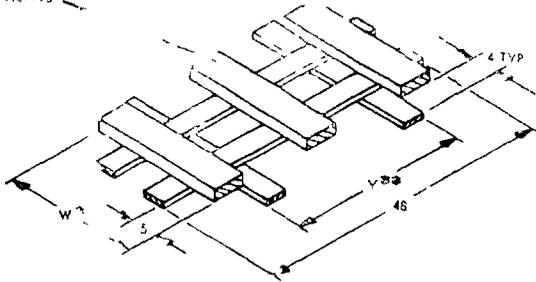
- * USE SWAY BRACE ASSEMBLY
DETAIL A FOR STEEL FLOOR CAPS
- ** V = DISTANCE BETWEEN LEGS OF
PALLET ACROSS THE CAR
- *** PIECE 3 NAILS TO PIECE 4 WITH 10d
NAILS CLINCHED 3 PER JOINT AND TO
PIECE 2 WITH 6d NAILS 1 PER JOINT
- **** 2 X 6 STRUTS DOUBLED AND LAMINATED
WITH 10d NAILS MAY BE SUBSTITUTED
IN PLACE OF 4 X 4

17	CROSS PIECE	2 X 4 X CUT TO FIT	8	SEE 16	-	-
16	SUPPORT PIECE	1 X 4 X CUT TO FIT	8	17	4	10d
					SEE FIELD	NOTE
15	VERTICAL TIE BAR	2 X 4 X 96	4	11	3 PER JOINT	10d
14	HORIZONTAL TIE BAR	2 X 4 X CAR WIDTH - 4	6	11	3 PER JOINT	10d
13	HORIZONTAL DOORWAY MEMBER	2 X 4 X DOOR WIDTH	12	12	2 PER JOINT	10d
12	VERTICAL DOORWAY MEMBER	2 X 3 X 102	4	DOOR POST	2 PER FOOT	20d
11	STRUT	4 X 4 X 30 WEDGE FIT	24	6	2 PER FOOT	16d
10	HOLD DOWN CLEAT	2 X 3 X CUT TO FIT	4	9	4	16d
9	HOLD DOWN CLEAT	2 X 3 X CUT TO FIT	4	8	4	10d
8	HOLD DOWN SPACE	2 X 4 X CAR WIDTH - 1	2	6	3 PER JOINT	10d
7	CENTER GATE STRUT CLEAT	2 X 4 X CAR WIDTH - 1	12	6	3 PER JOINT	10d
6	CENTER GATE VERTICAL	2 X 6 X 102	8	SEE 5, 7, 8		
5	CENTER GATE HORIZONTAL	2 X 6 X CAR WIDTH - 1	12	6	3 PER JOINT	10d
4	CROSS BRACE	2 X 6 X 57	60	SEE 3		
3	SWAY BRACE LONGITUDINAL	1 X 4 X 53	40	1 3	SEE NOTE	****
2	SWAY BRACE SUPPORT	1 X 4 X 57	40	SEE 1		
1	SLEEPER	2 X 4 X 57	20	CAR FLOOR	2 PER FOOT	16d
PIECE NO	DESCRIPTION	SIZE	NO OF PIECES REQ D	NAIL TO	NUMBER	SIZE NAILS

LIST OF MATERIALS & NAILING DATA

MIL-STD-1325-97(NAVY)

ROSS BR 5 MUST BE
CENTERED AGAINST LCC
O PALLET



* W DISTANCE BETWEEN POSTS OF
PALLET ACROSS THE CAR
** V DISTANCE BETWEEN INSIDE OF OUTER
POSTS OF PALLET
INSERT SWAY BRACE SUPPORTS IN
FORRY POCKETS AND NAIL SWAY BRACE
FRAME TO SUPPORTS

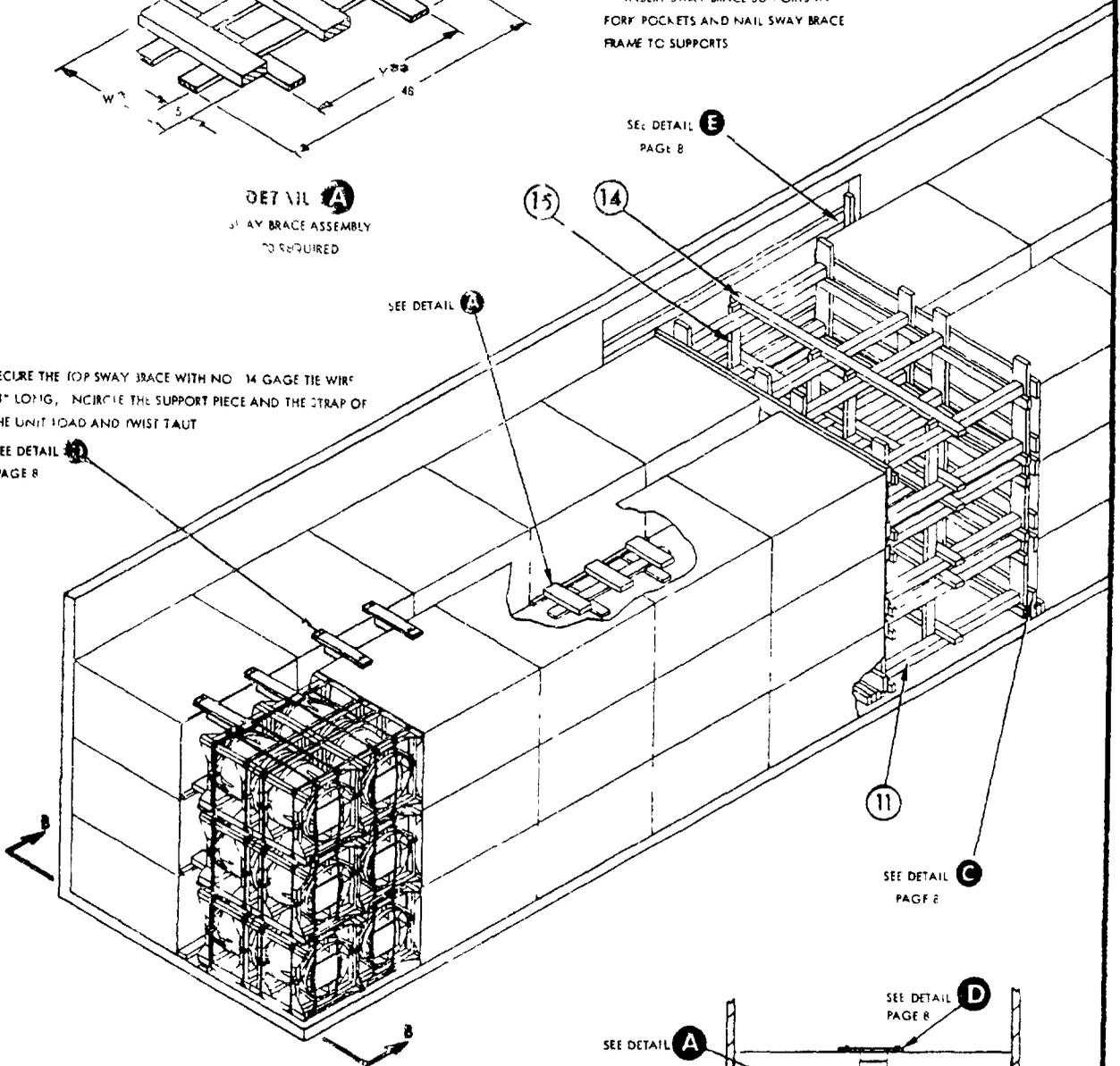
DETAIL **A**
SWAY BRACE ASSEMBLY
AS REQUIRED

SEE DETAIL **E**
PAGE 8

SECURE THE TOP SWAY BRACE WITH NO. 14 GAGE TIE WIRE
24" LONG, ENCIRCLE THE SUPPORT PIECE AND THE STRAP OF
THE UNIT LOAD AND TWIST TAUT

SEE DETAIL **D**
PAGE 8

SEE DETAIL **A**



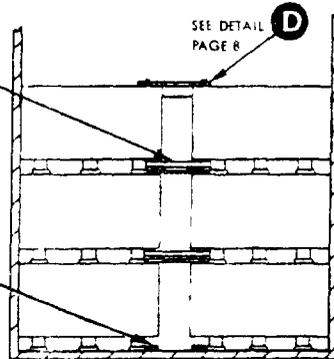
SEE DETAIL **C**
PAGE 8

SEE DETAIL **A**
SEE DETAIL **D**
PAGE 8

CARLOAD DATA

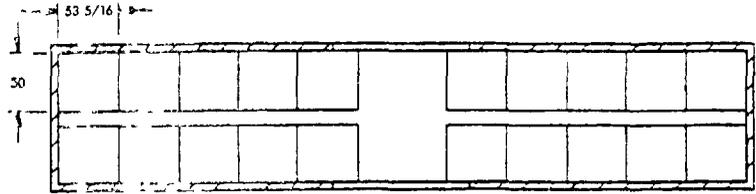
NUMBER OF UNIT LOADS	60
LOAD HEIGHT (APPROX.)	146 440 LBS
DUNFORD HEIGHT (APPROX.)	1 990 LBS
CARLOAD WEIGHT (APPROX.)	50 430 LBS

SWAY BRACE FRAME
TAIL **3** MAY BE
USED IN PLACE OF
PER 25 12C-1

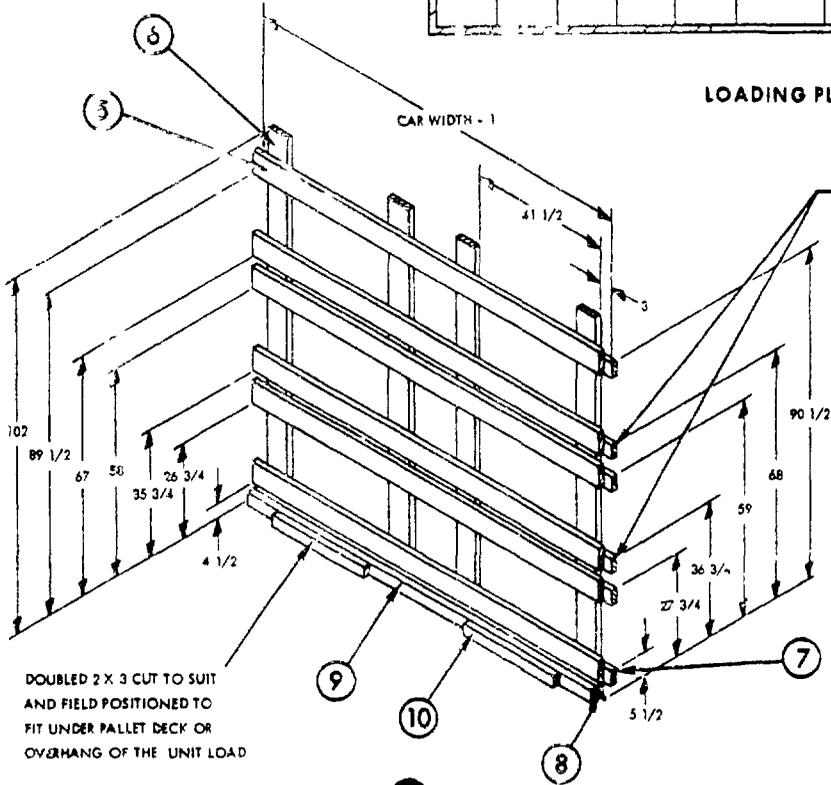


SECTION B-B

MIL STD 1325-97 (NAVY)



LOADING PLAN

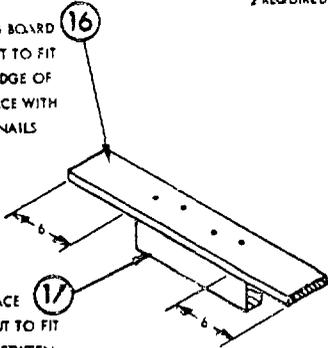


POSITION AFTER STRUTS HAVE BEEN INSTALLED IN LOWER STRUT CLEAT (REQUIRED 1 GATE ONLY)

DOUBLED 2 X 3 CUT TO SUIT AND FIELD POSITIONED TO FIT UNDER PALLET DECK OR OVERHANG OF THE UNIT LOAD

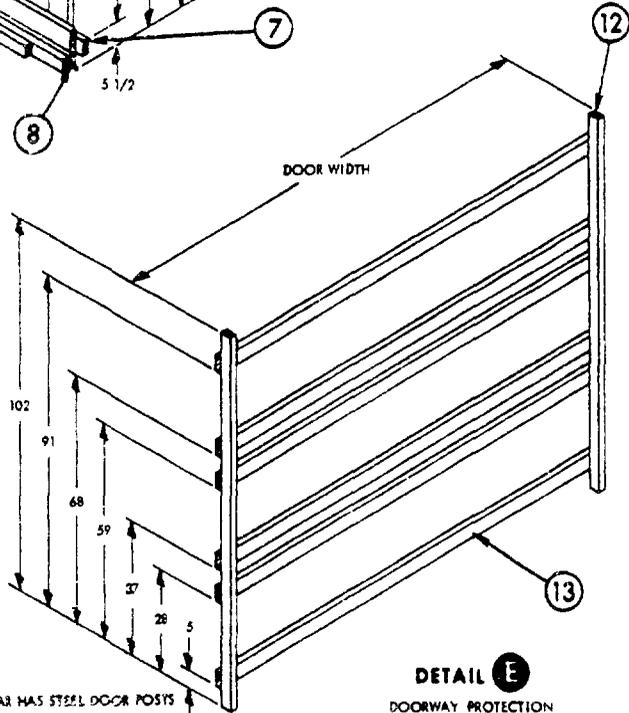
DETAIL C
CENTER GATE
2 REQUIRED

STRAPPING BOARD
1 X 4 X CUT TO FIT
NAIL TO EDGE OF
CROSS BRACE WITH
FOUR 10d NAILS



CROSS BRACE
2 X 4 X CUT TO FIT
TIGHTLY BETWEEN
LATERALLY ADJACENT
PALLET

DETAIL D
TOP CHAIN BRACE



IF THE CAR HAS STEEL DOOR POSTS
DOORWAY PROTECTION AS PER
MIL-STD-1325 (NAVY) IS REQUIRED

DETAIL E
DOORWAY PROTECTION
2 REQUIRED

FOLD

POSTAGE AND FEES PAID

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

COMMANDING OFFICER
NAVAL WEAPONS STATION EARLE
NAVAL WEAPONS HANDLING LABORATORY
COLTS NECK, NEW JERSEY 07722

FOLD