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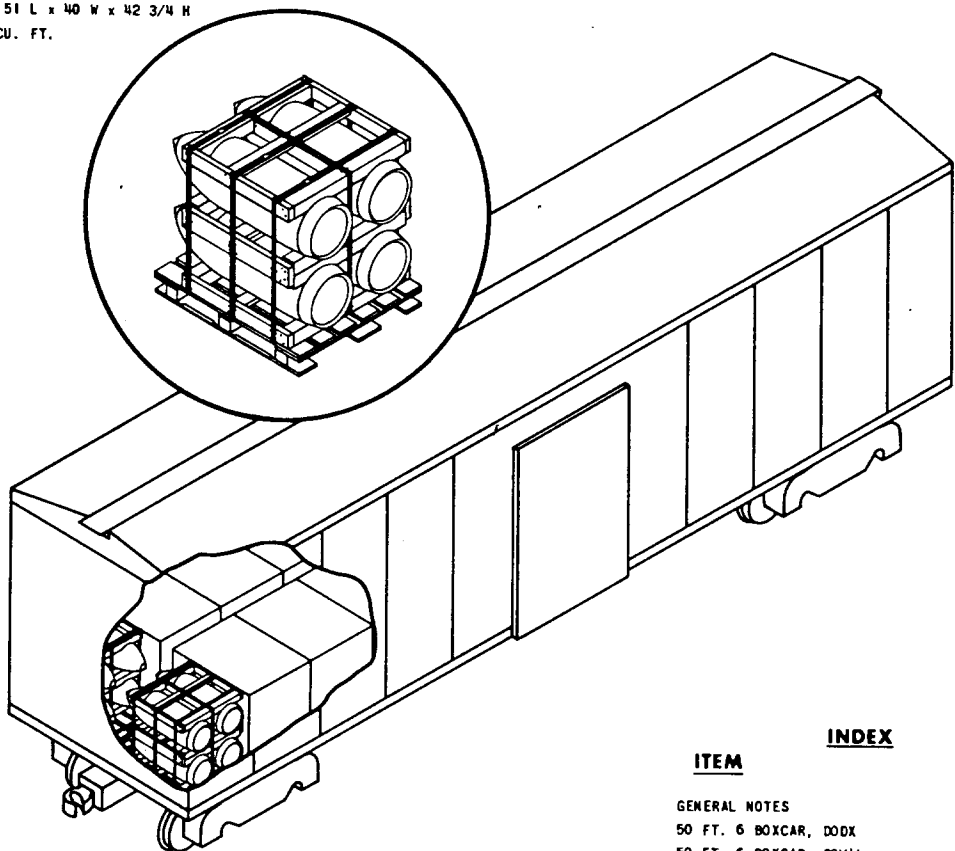
Naval Ordnance Systems Command
Department of the Navy

WR-52/77
16 March 1967

WEAPONS REQUIREMENT, CARLOADING
BOMB, DEMOLITION, 750 LB., M117A1.

UNIT LOAD DATA

WEIGHT - 3230 LBS.
DIMENSIONS - 51 L x 40 W x 42 3/4 H
CUBE - 50.5 CU. FT.
WR-53/705



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

ITEM	INDEX	PAGE
GENERAL NOTES		2
50 FT. 6 BOXCAR, DODX		2 & 3
50 FT. 6 BOXCAR, COM'L.		4 & 5
50 FT. 6 BOXCAR, COM'L. (PLUG TYPE DOORS)		6 & 7

WR-5 1/39 TRUCKLOADING		REV LTR		REVISION DESCRIPTION		DATE		TDA		BUXPL		SYSCOM	
WR-53/705 PALLETIZING		WR NO.		ASSOCIATED PROCESS		APPROVAL							
AUTHORIZED AND RELEASED FOR GENERAL USE						APPROVED BY BUREAU OF EXPLOSIVES							
						<i>A. J. Graemisch</i> MILITARY ASSISTANT 1/6/67 SIGNATURE DATE							
<i>J. E. Kelly</i> NCWAL 1/22/67 SIGNATURE TECHNICAL DIRECTING ACTIVITY (TDA) DATE						ORIGINATOR <i>C. P. Troutman</i> 1/20/67 SIGNATURE							
<i>R. E. Albright</i> AIR-5342 2/17/67 SIGNATURE (AIR) (OR) SYSCOM, BY DIRECTION DATE						NAVAL WEAPONS HANDLING LABORATORY U.S.N.A.D. EARLE, NEW JERSEY							
												PAGE 1 OF 7	

GENERAL NOTES

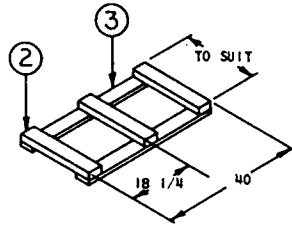
1. WHEN PLANNING SHIPMENTS, ORDER THE MINIMUM NUMBER OF CARS OF THE CAPACITY REQUIRED FOR THE SHIPMENT. FOR BOMBS COVERED BY THIS WEAPONS REQUIREMENT USE CERTIFIED CARS. UTILITY LOADER CARS SHALL BE SERIES DODX 28000.
2. LOADING PLANS SHOWN ARE FOR DODX UTILITY LOADER CAR WITH 50 FT. 6 INCHES INSIDE LENGTH, 107 3/4 INCHES INSIDE WIDTH BETWEEN SIDE RAILS; COMMERCIAL BOXCAR WITH 50 FT. 6 INCHES INSIDE LENGTH, 110 INCHES INSIDE WIDTH WITH CONVENTIONAL SLIDING DOORS; COMMERCIAL BOXCAR WITH 50 FT. 6 INCHES INSIDE LENGTH, 110 INCHES MINIMUM INSIDE WIDTH WITH PLUG TYPE DOORS. CARLOAD IS TO BE PREPARED IN ACCORDANCE WITH THE LOADING AND DUNNAGING PROCEDURE FOR THE TYPE AND SIZE OF CAR SELECTED.
3. THE LOAD ITSELF CONSISTS OF LIVE 750 LB. DEMOLITION BOMBS M117A1.
4. THE BOMBS ARE PALLETIZED FOUR TO A UNIT LOAD ON A 40 x 48 WOOD PALLET. - SEE WR-53/705
5. PALLETS ARE HANDLED AND LOADED WITH A SUITABLE FORK LIFT TRUCK.
6. UNLESS OTHERWISE SPECIFIED, MAILING SHALL BE IN ACCORDANCE WITH WR-52.
7. ATTACH SHIPPING DOCUMENTS, CLOSE AND SEAL BOXCAR DOOR, AND ATTACH APPLICABLE PLACARDS AS PRESCRIBED IN WR-52.

50 FT. 6 BOXCAR, DODX

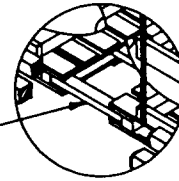
LOADING AND DUNNAGING PROCEDURE - THE CARLOAD CONSISTS OF 32 PALLETIZED UNIT LOADS. A DETAILED DESCRIPTION AND OPERATING INSTRUCTIONS FOR THE UTILITY LOADER CAR ARE CONTAINED IN DP 1750.

1. POSITION DETACHABLE WALL MEMBERS AT THE FOLLOWING HEIGHTS FROM THE CAR FLOOR 7", 24", 41" AND IN THE AREA WHERE DOUBLE TIERING IS CALLED FOR AT 49", 68", AND 84".
2. POSITION SLEEPERS (PIECE 1), DOUBLED, AS SHOWN FOR THE FIRST STACK. NAIL FIRST PIECE TO FLOOR WITH 16d NAILS STAGGERED EVERY EIGHT INCHES AND SECOND PIECE THROUGH FIRST WITH 30d NAILS STAGGERED EVERY EIGHT INCHES. (AS AN ALTERNATE, SWAY BRACE FRAME, DETAIL B, WITH PIECE 3 MODIFIED TO 44" LENGTH, MAY BE USED IN PLACE OF SLEEPERS. A DOUBLE 2 x 4 STOP NAILED TO THE CAR FLOOR IN THE DOORWAY AREA MUST BE INSTALLED TO PREVENT LONGITUDINAL MOVEMENT OF THE FRAMES.)
3. PLACE THE FIRST STACK AGAINST THE END WALL AND SIDES OF BOXCAR WITH PALLETS ORIENTED AS SHOWN.
4. POSITION CROSS MEMBERS SNUGLY AGAINST THE FIRST STACK AT THE 7", 24", AND 41" HEIGHTS.
5. INSTALL CROSS MEMBERS AT 49", 68", AND 84" HEIGHTS DIRECTLY ABOVE CROSS MEMBERS INSTALLED IN NOTE 4.
6. POSITION SLEEPERS, DOUBLED, FOR THE SECOND STACK.
7. INSTALL SWAY BRACE FRAME STOP, CONSISTING OF A 5/8 x .020 METAL STRAP AND SEAL (PIECES 4 AND 5) AS SHOWN.
8. PLACE THE SECOND STACK, A DOUBLE TIERED STACK, AGAINST THE CROSS MEMBERS AND THE SIDE WALLS OF BOXCAR AS SHOWN.
9. FABRICATE SWAY BRACE FRAME WITH 8d NAILS, CLINCHED, (SEE DETAIL B) AND INSERT IN THE UNDERSTRUCTURE OF THE SECOND LAYER PALLETS. (SEE VIEW A.)
10. POSITION CROSS MEMBERS SNUGLY AGAINST THE SECOND STACK AT THE 7", 24", 41", 49", 68", AND 84" HEIGHTS.
11. PLACE THE THIRD STACK, A DOUBLE TIERED STACK, AS SHOWN, DUNNAGE WITH SLEEPERS AND SWAY BRACE FRAME IN THE SAME MANNER AS FOR STACK TWO, AND INSTALL CROSS MEMBERS AT THE 7", 24", 41", 49", 68", AND 84" HEIGHTS.
12. INSTALL SWAY BRACE FRAME STOP AS IN NOTE 7. A TOTAL OF FOUR STRAPS ARE REQUIRED, ONE EACH END OF DOUBLE TIERED LAYER, BOTH ENDS OF CARS.
13. PLACE THE FOURTH AND FIFTH STACKS, SINGLE TIERED STACKS, INSTALL SLEEPERS AND CROSS MEMBERS AS SHOWN.
14. INSTALL DOORWAY MEMBERS IN THE DOORWAY FARTHEST FROM THE LOADING PLATFORM AT THE 7", 24", AND 41" HEIGHTS.
15. REPEAT ABOVE STEPS TO LOAD OTHER END OF CAR IN A SIMILAR MANNER. LOADING BOTH ENDS SIMULTANEOUSLY IS PERMITTED.
16. PLACE LAST STACK EACH END OF CAR AS SHOWN.
17. INSTALL DOORWAY MEMBERS IN THE DOORWAY NEAREST THE LOADING PLATFORM AT THE 7", 24", AND 41" HEIGHTS.
18. POSITION CROSS MEMBERS SNUGLY AGAINST THE LAST STACK EACH END OF CAR AT THE 7", 24", AND 41" HEIGHTS.
19. SECURE ALL LOOSE AUXILIARY EQUIPMENT AT ANY LOCATION IN THE BOXCAR WHICH WILL NOT INTERFERE WITH UNLOADING.

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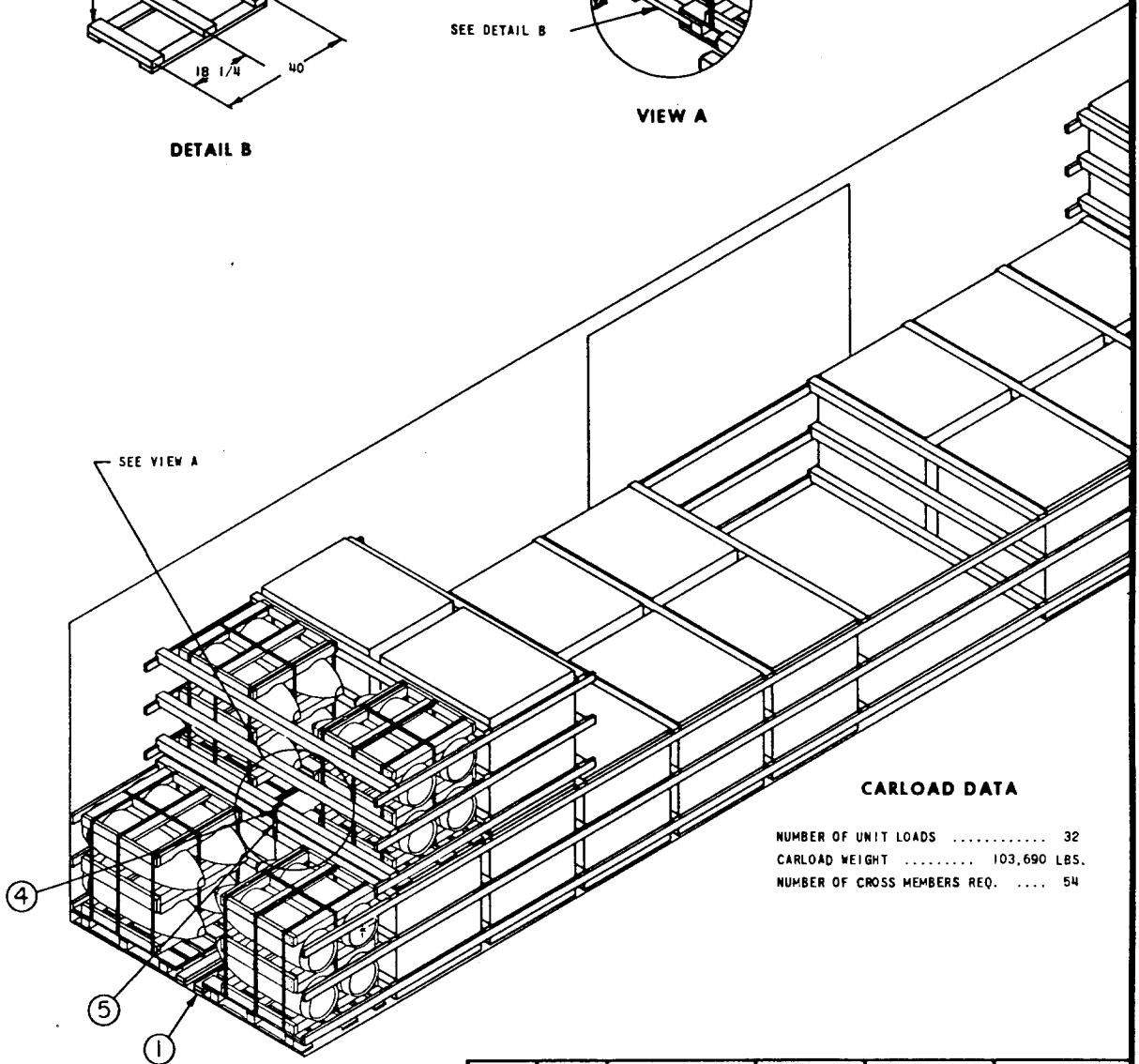
DETAIL B



VIEW A

SEE DETAIL B

SEE VIEW A



CARLOAD DATA

NUMBER OF UNIT LOADS 32
 CARLOAD WEIGHT 103,690 LBS.
 NUMBER OF CROSS MEMBERS REQ. 54

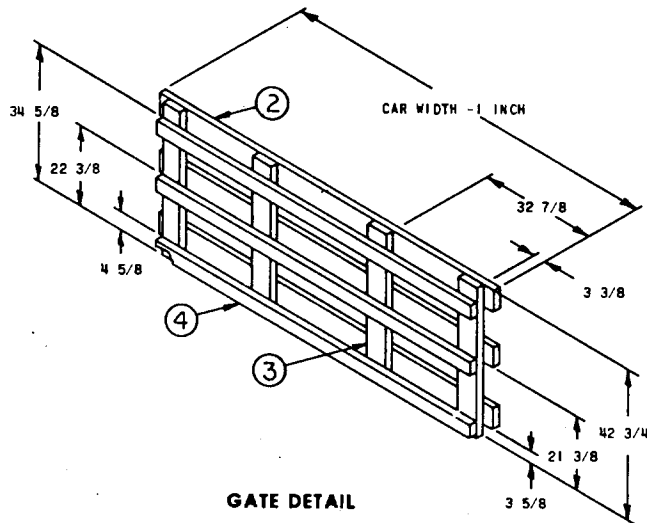
4	5	SEAL	STEEL	COHL	5/8
4	4	STRAPPING	STEEL	00-S-781 TY. 1 CL. A	5/8 x .020 x 42
8	3	SWAY BRACE STRINGER	WOOD	MM-L-751	1 x 4 x 40
12	2	SWAY BRACE CLEAT	WOOD	MM-L-751	2 x 4 x TO SUIT
48	1	SLEEPER	WOOD	MM-L-751	2 x 4 x 40
REQ.	ITEM	DESCRIPTION	MAT'L	MAT'L SPEC.	DIMENSIONS
LIST OF MATERIALS					

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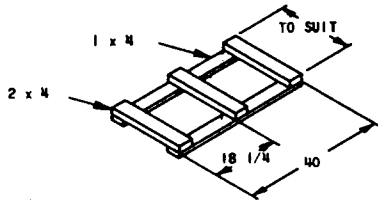
50 FT. 6 BOXCAR, COMMERCIAL

LOADING AND DUNNAGING PROCEDURE - THE CARLOAD CONSISTS OF 28 PALLETIZED UNIT LOADS.

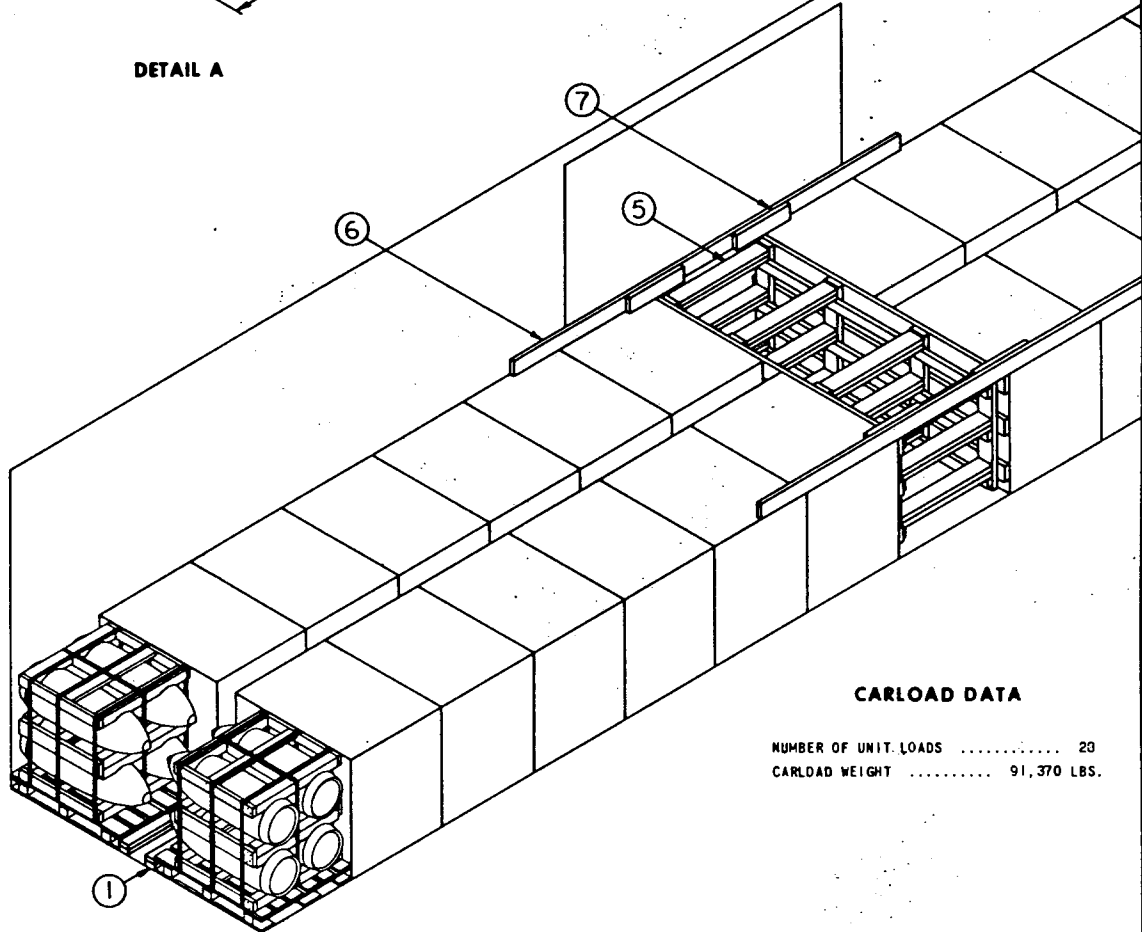
1. PLACE THE FIRST STACK SNUGLY AGAINST END WALL AND SIDES OF BOXCAR WITH THE BOMBS ORIENTED IN THE CAR AS SHOWN.
2. POSITION SLEEPERS (PIECE 1), DOUBLED, AS SHOWN FOR THE FIRST STACK. NAIL FIRST PIECE TO FLOOR WITH 16d NAILS STAGGERED EVERY EIGHT INCHES AND SECOND PIECE THROUGH FIRST WITH 30d NAILS STAGGERED EVERY EIGHT INCHES. (AS AN ALTERNATE, SWAY BRACE FRAME, DETAIL A, MAY BE USED IN PLACE OF SLEEPERS. A DOUBLE 2 x 4 STOP NAILED TO THE CAR FLOOR IN THE DOORWAY AREA MUST BE INSTALLED TO PREVENT LONGITUDINAL MOVEMENT OF THE FRAMES, BUT MUST NOT INTERFERE WITH THE MOVEMENT OF THE LOAD OR CENTER GATES.)
3. REPEAT ABOVE STEPS FOR EACH SUCCESSIVE STACK CONTINUING UNTIL SEVEN COMPLETE STACKS ARE IN ONE END OF CAR. LOAD OTHER END OF CAR IN SIMILAR MANNER. BOTH ENDS OF CAR MAY BE LOADED SIMULTANEOUSLY
4. PREASSEMBLE CENTER GATE ASSEMBLIES AS SHOWN IN GATE DETAIL (2 REQUIRED).
5. POSITION CENTER GATE ASSEMBLIES WITH HORIZONTAL GATE MEMBERS (PIECE 2) AGAINST LAST STACK OF UNIT LOADS.
6. POSITION 24 STRUTS (PIECE 5) ON STRUT CLEATS (PIECE 4) AND TOENAIL TO VERTICAL GATE MEMBERS (PIECE 3) WITH TWO 12d NAILS. NAIL DOUBLED STRUTS TO EACH OTHER WITH 10d NAILS EVERY EIGHT INCHES.
7. POSITION GATE HOLD DOWN MEMBERS (PIECE 6) AGAINST TOP OF GATE AND NAIL TO WALLS OF CAR WITH FIVE 10d NAILS AT EACH END. NAIL HOLD DOWN CLEATS (PIECE 7) TO GATE HOLD DOWN MEMBER DIRECTLY ABOVE GATES WITH FIVE 12d NAILS PER CLEAT.
8. INSTALL DOORWAY PROTECTION AS REQUIRED IN WR-52.



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DETAIL A



CARLOAD DATA

NUMBER OF UNIT LOADS 20
 CARLOAD WEIGHT 91,370 LBS.

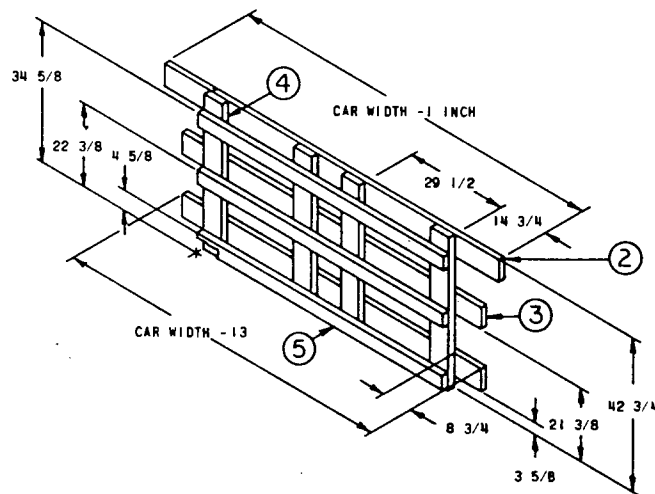
4	7	HOLD DOWN CLEAT	WOOD	MM-L-751	2 x 6 x 24
2	6	HOLD DOWN	WOOD	MM-L-751	2 x 6 x (DOOR WIDTH +48)
24	5	STRUT	WOOD	MM-L-751	2 x 6 x WEDGE FIT
6	4	STRUT CLEAT	WOOD	MM-L-751	2 x 4 x (CAR WIDTH -7 3/4)
8	3	VERTICAL GATE MEMBER	WOOD	MM-L-751	2 x 6 x 42 3/4
6	2	HORIZONTAL GATE MEMBER	WOOD	MM-L-751	2 x 6 x (CAR WIDTH -1 INCH)
56	1	SLEEPER	WOOD	MM-L-751	2 x 4 x 40
REQ.	ITEM	DESCRIPTION	MAT'L	MAT'L SPEC.	DIMENSIONS
LIST OF MATERIALS					

WR-52/77

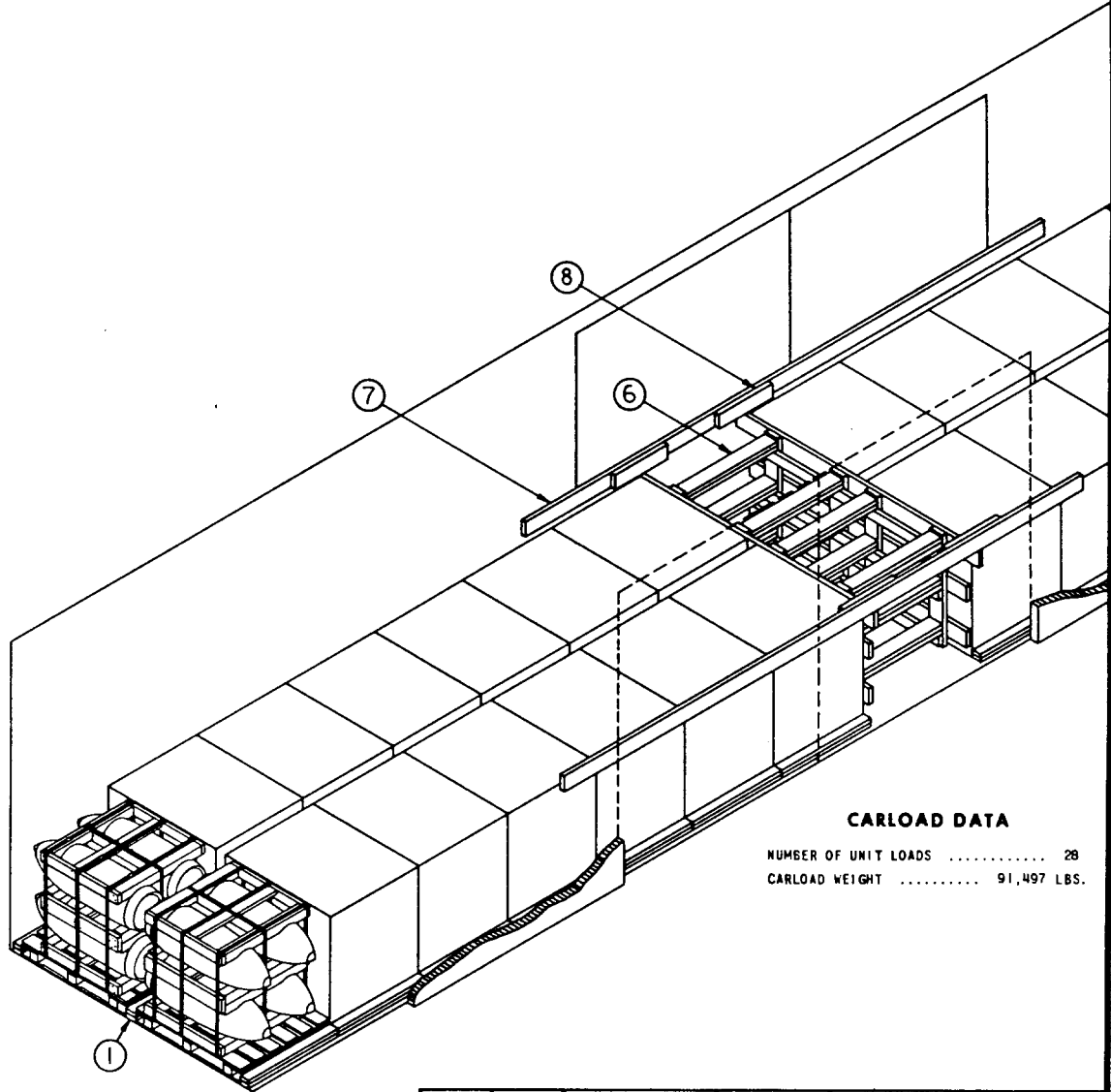
DUNNAGING FOR OFFSET PLUGTYPE DOORS

LOADING AND DUNNAGING PROCEDURE - THE CARLOAD CONSISTS OF 28 PALLETIZED UNIT LOADS.

1. POSITION SLEEPERS (PIECE 1), DOUBLED, ON THE CENTER LINE OF THE CAR AND EACH SIDE 48 INCHES FROM THE CENTER LINE SLEEPERS. NAIL FIRST PIECE TO FLOOR WITH 16d NAILS STAGGERED EVERY EIGHT INCHES AND SECOND PIECE THROUGH FIRST WITH 30d NAILS STAGGERED EVERY EIGHT INCHES.
2. PLACE THE FIRST STACK SNUGLY AGAINST THE END WALL OF CAR AND BETWEEN THE SLEEPERS, ORIENTED IN THE CAR AS SHOWN.
3. REPEAT ABOVE STEPS FOR EACH SUCCESSIVE STACK CONTINUING UNTIL SEVEN COMPLETE STACKS ARE IN ONE END OF CAR. LOAD OTHER END OF CAR IN SIMILAR MANNER. BOTH ENDS OF CAR MAY BE LOADED SIMULTANEOUSLY.
4. PREASSEMBLE CENTER GATE ASSEMBLIES AS SHOWN IN GATE DETAIL BELOW. (2 REQUIRED)
5. POSITION CENTER GATE ASSEMBLIES WITH HORIZONTAL GATE MEMBERS (PIECES 2 AND 3) AGAINST LAST STACK OF UNIT LOADS.
6. POSITION 24 STRUTS (PIECE 6) ON STRUT CLEATS (PIECE 5) AND TOENAIL TO VERTICAL GATE MEMBERS (PIECE 4) WITH TWO 12d NAILS. NAIL DOUBLED STRUTS TO EACH OTHER WITH 10d NAILS EVERY EIGHT INCHES.
7. POSITION GATE HOLD DOWN MEMBERS (PIECE 7) AGAINST TOP OF GATE AND NAIL TO WALLS OF CAR WITH FIVE 10d NAILS AT EACH END. NAIL HOLD DOWN CLEATS (PIECE 8) TO GATE HOLD DOWN MEMBER DIRECTLY ABOVE GATES WITH FIVE 12d NAILS PER CLEAT.



GATE DETAIL



CARLOAD DATA

NUMBER OF UNIT LOADS 28
 CARLOAD WEIGHT 91,497 LBS.

NOTE:
 IF LUMBER (ITEM 7) OF SUFFICIENT LENGTH TO SPAN
 PLUG DOORS IS NOT AVAILABLE, RANDOM LENGTH MATERIAL,
 DOUBLED AND SPLICED, BUT WITH JOINTS OF SPLICE OFFSET,
 MAY BE USED. DO NOT NAIL TO PLUG DOORS.

4	8	HOLD DOWN CLEAT	WOOD	MM-L-751	2 x 6 x 24
2	7	HOLD DOWN	WOOD	MM-L-751	2 x 6 x DOOR WIDTH +48
24	6	STRUT	WOOD	MM-L-751	2 x 6 x WEDGE FIT
6	5	STRUT CLEAT	WOOD	MM-L-751	2 x 4 x CAR WIDTH -30 1/2
8	4	VERTICAL GATE MEMBER	WOOD	MM-L-751	2 x 6 x 42 3/4
4	3	HORIZONTAL GATE MEMBER	WOOD	MM-L-751	2 x 6 x CAR WIDTH -13
2	2	HORIZONTAL GATE MEMBER	WOOD	MM-L-751	2 x 6 x CAR WIDTH -1 INCH
84	1	SLEEPER	WOOD	MM-L-751	2 x 4 x 40

REQ.	ITEM	DESCRIPTION	MAT'L	MAT'L SPEC.	DIMENSIONS
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LIST OF MATERIALS