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Naval Ordnance Systems Command  
Department of the Navy

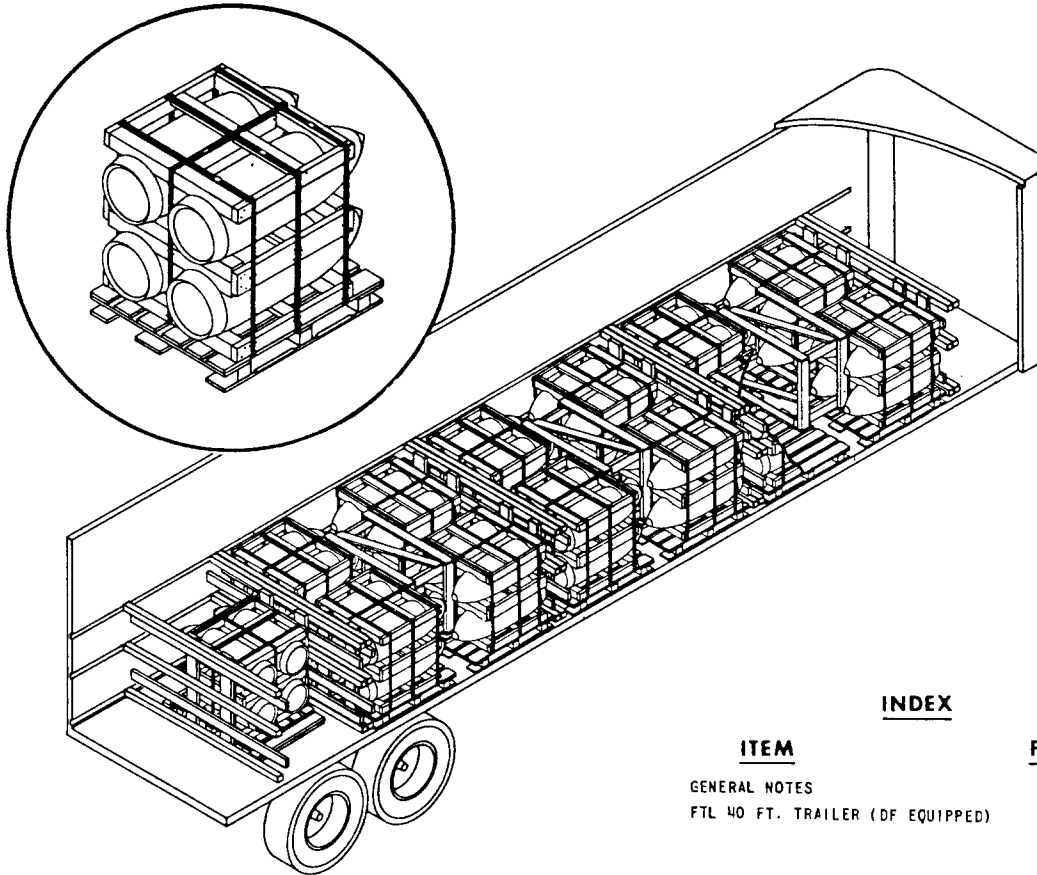
WR-51/46

20 FEBRUARY 1968

**WEAPONS REQUIREMENT, TRUCKLOADING**  
Trailer-On-Flat-Car (TOFC) or Container-On-Flat-Car (COFC)  
**BOMB, DEMOLITION, 750 LB., M117A1, PALLETIZED**  
**DOMESTIC UNIT LOAD WR-53/705**

**UNIT LOAD DATA**

WEIGHT OF UNIT LOAD - 3230 LBS.  
DIMENSIONS - 51 L x 40 W x 42 3/4 H  
CUBE - 50.5 CU. FT.  
D.O.T. HAZARD CLASSIFICATION.....  
EXPLOSIVES A



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UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES

53/705	PALLETIZING						
52/77	CARLOADING						
51/39	TRUCKLOADING (HIGHWAY)						
WR NO.	ASSOCIATED PROCESS	REV LTR	REVISION DESCRIPTION	DATE	TDA	BUXPL	SYSCOM
<b>AUTHORIZED AND RELEASED FOR TRAILER-ON-FLAT-CAR (TOFC) OR CONTAINER-ON-FLAT-CAR (COFC) USE.</b>		<b>APPROVED BY BUREAU OF EXPLOSIVES</b>					
		<i>D. F. Grossmuck</i> SIGNATURE		MILITARY ASSISTANT <i>7/6/67</i> DATE			
<i>J. E. Kelly</i> NWHL <i>6/19/67</i> SIGNATURE TECHNICAL DIRECTING ACTIVITY (TDA) DATE		<b>ORIGINATOR</b> <i>C. P. Troutman</i> <i>6/19/67</i> SIGNATURE					
<i>R. E. Albrecht</i> AR-53442 <i>8/25/67</i> SIGNATURE (WH) (ORD) SYSCOM, BY DIRECTION DATE		<b>NAVAL WEAPONS HANDLING LABORATORY</b> U.S.N.A.D. EARLE, NEW JERSEY					
						PAGE 1 OF 3	

## GENERAL NOTES

1. THIS DOCUMENT PROVIDES DETAILED INSTRUCTIONS FOR LOADING 750 LB. DEMOLITION BOMBS, M117A1, PALLETIZED, IN DF EQUIPPED VANS WHEN SHIPPING THE VAN TRAILER-ON-FLAT-CAR (TOFC) OR CONTAINER-ON-FLAT-CAR (COFC).
2. BOMBS SHALL BE PALLETIZED IN ACCORDANCE WITH DOMESTIC UNIT LOAD WR - 53/705.
3. DF EQUIPPED VANS SHALL BE IN CONFORMANCE WITH AND SHIPPED ON FLAT CARS COMPLYING WITH BUREAU OF EXPLOSIVES PAMPHLET 6C, APPENDIX NO. 1.
4. FOR GENERAL TRUCKLOADING PROCEDURES AND REGULATIONS REFER TO THE GENERAL WEAPONS REQUIREMENT (WR - 51).

## FTL 40 FT. TRAILER (DF EQUIPPED)

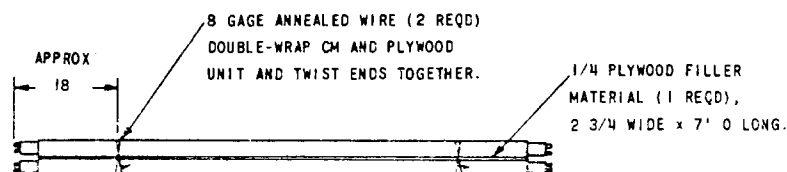
LOADING AND DUNNAGING PROCEDURE. FULL LOAD FOR A 40 FT. TRAILER (DF EQUIPPED) CONSISTS OF 13 STRAPPED PALLETIZED UNIT LOADS CONTAINING 4 BOMBS EACH, FOR A TOTAL OF 52 BOMBS. LOAD AND DUNNAGE AS FOLLOWS:

1. INSTALL PAIRED DF CROSS MEMBERS ON THE 4", 28" AND 48" BELT RAILS AND 45 INCHES FROM THE FORWARD END OF THE TRAILER. PAIRED CROSS MEMBERS CONSIST OF TWO CROSS MEMBERS WITH 1/4" PLYWOOD FILLER, 2 3/4" WIDE x 7'0" LONG, WIRED TOGETHER WITH 8 GAGE ANNEALED WIRE, DOUBLE WRAPPED AND TWISTED TOGETHER AND INSTALLED ON BELT RAILS. (SEE DETAIL E)

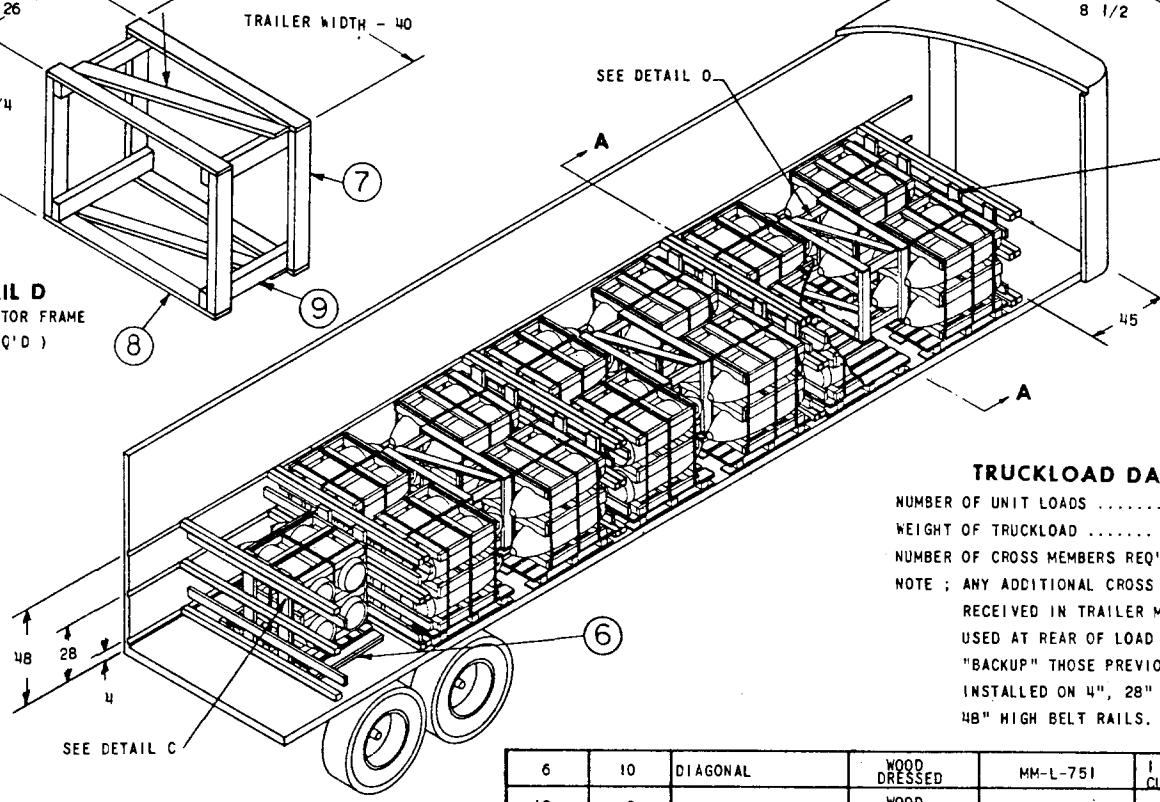
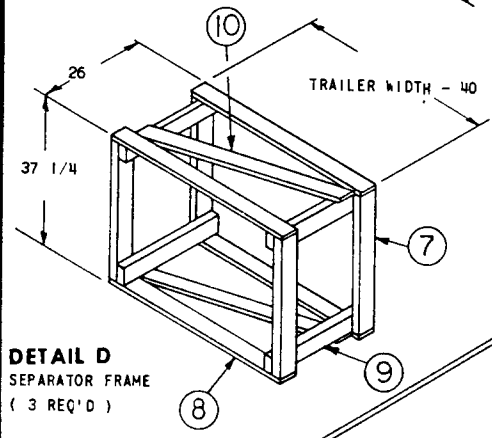
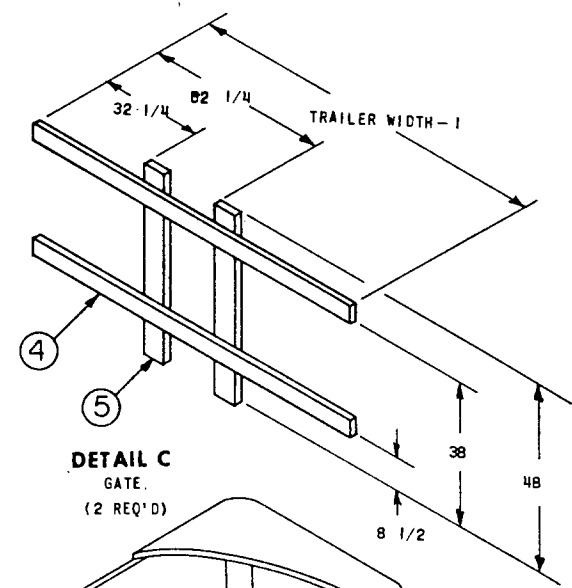
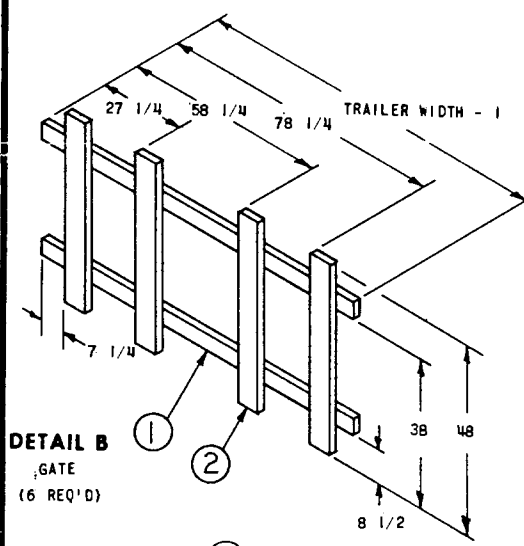
**CAUTION**

WHEN POSITIONING THE CROSS MEMBERS, MAKE A VISUAL CHECK TO ENSURE THAT CROSS MEMBERS ARE LOCKED SECURELY IN PLACE.

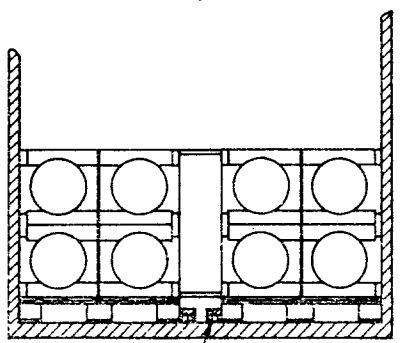
2. PREFABRICATE GATE (DETAIL B), CONSISTING OF TWO HORIZONTAL MEMBERS (ITEM 1), AND FOUR VERTICAL MEMBERS (ITEM 2), USING THREE 12d NAILS EACH JOINT AND POSITIONED AGAINST DF CROSS MEMBERS. VERTICAL MEMBERS OF GATE ARE POSITIONED AGAINST CROSS MEMBERS WITH HORIZONTAL MEMBERS FACING THE FRONT OF THE TRAILER.
3. POSITION TWO UNIT LOADS, BOMB BASE FORWARD, AGAINST TRAILERS SIDE WALLS AND VERTICAL MEMBERS OF GATE AS SHOWN.
4. POSITION SLEEPERS (ITEM 3), DOUBLED AGAINST EACH PALLET AS SHOWN (SEE SECTION A-A). NAIL FIRST PIECE TO TRAILER DECK USING 16d NAILS EVERY 8 INCHES AND SECOND PIECE TO FIRST IN LIKE MANNER.
5. ASSEMBLE SEPARATOR FRAME (DETAIL D), CONSISTING OF FOUR UPRIGHTS (ITEM 7), FOUR HORIZONTALS (ITEM 8), FOUR LONGITUDINALS (ITEM 9), AND TWO DIAGONALS (ITEM 10), USING THREE 12d NAILS EACH JOINT.
6. POSITION ASSEMBLED SEPARATOR FRAME (DETAIL D), OVER THE NOSE END OF THE INBOARD BOMBS OF THE TWO UNIT LOADS AS SHOWN.
7. POSITION TWO ADDITIONAL UNIT LOADS IN TRAILER WITH THE NOSE END OF THE BOMBS FACING THE PREVIOUSLY POSITIONED UNIT LOADS AS SHOWN. THE SEPARATOR FRAME (DETAIL D) SHALL COVER THE CENTER BOMBS TO PREVENT SHIFTING.
8. POSITION SLEEPERS (ITEM 3), AS IN STEP 4.
9. POSITION GATE (DETAIL B) WITH VERTICAL MEMBERS (ITEM 2), AGAINST BASE END OF UNIT LOADS.
10. INSTALL PAIRED DF CROSS MEMBERS ON THE 4", 28" AND 48" BELT RAILS WITH PLYWOOD FILLER AS IN STEP 1.
11. CONTINUE LOADING, REPEATING STEPS 2, 3, 4, 5, 6, 7, 8, 9, AND 10 UNTIL 12 UNIT LOADS HAVE BEEN LOADED IN TRAILER.
12. PREFABRICATE GATE (DETAIL C), CONSISTING OF TWO HORIZONTAL MEMBERS (ITEM 4) AND TWO VERTICAL MEMBERS (ITEM 5) USING THREE 12d NAILS EACH JOINT AND POSITION AGAINST DF CROSS MEMBERS WITH HORIZONTAL MEMBERS FACING FORWARD.
13. POSITION ONE UNIT LOAD IN CENTER OF TRAILER AND AGAINST VERTICAL MEMBERS OF GATE AS SHOWN.
14. POSITION SLEEPERS (ITEM 6), DOUBLED, AGAINST BOTH SIDES OF PALLET AS SHOWN. NAIL FIRST PIECE TO TRAILER FLOOR USING 16d NAILS EVERY 8 INCHES AND SECOND PIECE TO FIRST IN LIKE MANNER.
15. POSITION GATE (DETAIL C) WITH VERTICAL MEMBERS AGAINST UNIT LOAD AS SHOWN.
16. INSTALL SINGLE DF CROSS MEMBERS ON THE 4", 28" AND 48" BELT RAILS AND AGAINST VERTICAL MEMBERS OF GATE, (DETAIL C).
17. ATTACH SHIPPING DOCUMENTS TO REAR DUNNAGE.
18. CLOSE AND SEAL TRAILER DOORS.



**DETAIL E**  
PAIRED DF CROSS MEMBER



**TRUCKLOAD DATA**  
 NUMBER OF UNIT LOADS ..... 13  
 WEIGHT OF TRUCKLOAD ..... 41,990 LBS.  
 NUMBER OF CROSS MEMBERS REQ'D ..... 27  
 NOTE ; ANY ADDITIONAL CROSS MEMBERS  
 RECEIVED IN TRAILER MAY BE  
 USED AT REAR OF LOAD TO  
 "BACKUP" THOSE PREVIOUSLY  
 INSTALLED ON 4", 28" AND  
 48" HIGH BELT RAILS.



6	10	DIAGONAL	WOOD DRESSED	MM-L-751	1 x 4 x CUT TO FIT
12	9	LONGITUDINAL	WOOD DRESSED	MM-L-751	2 x 4 x 26
12	8	HORIZONTAL	WOOD DRESSED	MM-L-751	1 x 4 x TRAILER WIDTH-40
12	7	UPRIGHT	WOOD DRESSED	MM-L-751	2 x 4 TO SUIT
4	6	SLEEPER	WOOD DRESSED	MM-L-751	2 x 4 x 40
4	5	REAR GATE VERTICAL MEMBER	WOOD DRESSED	MM-L-751	2 x 6 x 48
4	4	REAR GATE HORIZONTAL MEMBER	WOOD DRESSED	MM-L-751	2 x 4 x TRAILER WIDTH-1
24	3	SLEEPER	WOOD DRESSED	MM-L-751	2 x 4 x 48
24	2	FRONT GATE VERTICAL MEMBER	WOOD DRESSED	MM-L-751	2 x 6 x 48
12	1	FRONT GATE HORIZONTAL MEMBER	WOOD DRESSED	MM-L-751	2 x 4 x TRAILER WIDTH-1
REQ.	ITEM	DESCRIPTION	MAT'L.	MAT'L SPEC.	DIMENSIONS

**LIST OF MATERIALS**

**SECTION A-A**

**FTL 40 FT. TRAILER (DF EQUIPPED)**