APPROVED BY

U.S. COAST GUARD

BUREAU OF EXPLOSIVES

SUPERVISOR, MILITARY & INTERMODAL SER

DATE 1/21/8T

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LOADING AND BRACING WITH WOODEN DUNNAGE IN COMMERCIAL CONTAINERS OF PALLETIZED UNITS OF 60MM BOXED AMMUNITION (27-BOX PALLET UNIT) (WOODEN BOX)

THE DEPICTED WOODEN DUNNAGE METHOD CAN BE APPLIED TO ANY COMMERCIAL INTERMODAL 20-FOOT CONTAINER, ALTHOUGH THE DUNNAGE DIMENSIONS HAVE BEEN GIVEN FOR A 92" WIDE BY 95" HIGH (INSIDE DIMENSIONS) CONTAINER, ALTHOUGH THE LOAD AS SHOWN IS BASED ON AN 8'-6" HIGH CONTAINER IS PREFERRED FOR SHIPPING THE DEPICTED LOAD, WHEN AN 8'-0" HIGH CONTAINER IS USED, THE HEIGHT OF SOME DUNNAGE ASSEMBLIES WILL HAVE TO BE LOWERED BY REMOVING SOME MATERIAL FROM THE TOP OR BOTTOM OF SOME OF THE VERTICAL PIECES.

LOADING AND BRACING SPECIFICATIONS AS DELINEATED HEREIN ARE ADEQUATE FOR SHIPMENTS TO BE MOVED BY ANY SURFACE MODE OF TRANSPORT (MOTOR, RAIL, AND WATER).

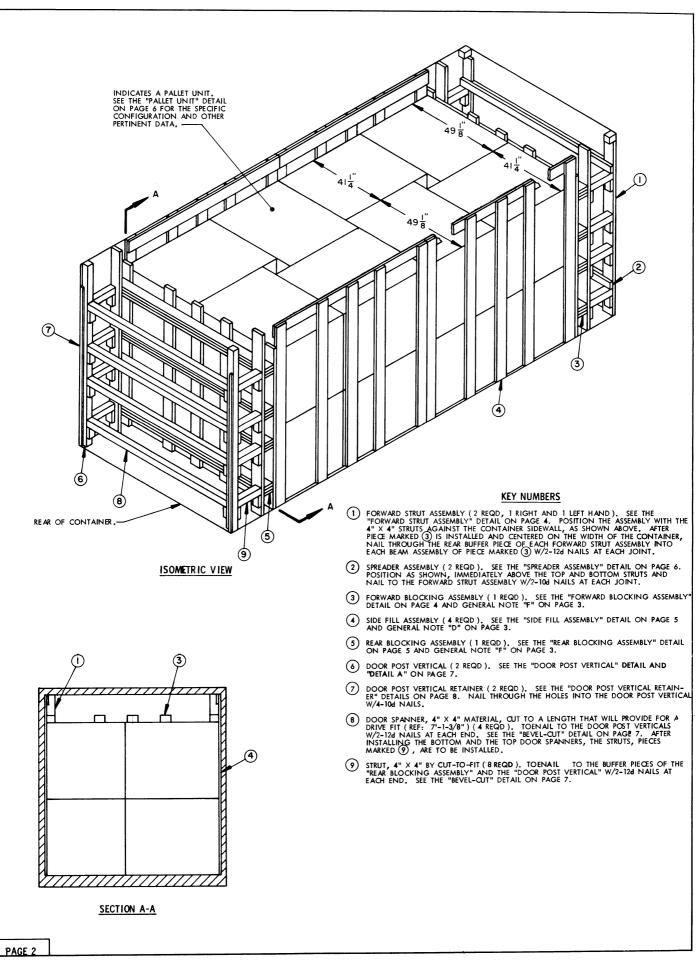
REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC). SPECIAL T/COFC NOTES FOLLOW.

- A. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.
- B. THE LOAD LIMIT OF A T/COFC RAIL CAR MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED SO THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES MORE THAN ONE-HALF OF THE LOAD LIMIT FOR THAT CAR.

DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS/MODIFIED FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.

REVISIONS	P.B. Long WRF feller	
	Darrel C. Filler	
	ATTENTO DE VERSALOT COMPARISMO ES MEDIA AND ADMISSION ATTENTO DE VERSALOT COMPARISMO ES MEDIA AND ADMISSION V.S. AMEN' DE PERSON EMMONTROS CONTRE AND SCHOOL	
	U. S. ARMY DARCOM DRAWING MARCH 1980	
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DO NOT SCALE



(GENERAL NOTES CONTINUED)

- L. RECOMMENDED SEQUENTIAL LOADING PROCEDURES
 - PREFABRICATE ONE RIGHT HAND AND ONE LEFT HAND FORWARD STRUT ASSEMBLY, TWO SPREADER ASSEMBLIES, ONE FORWARD BLOCKING ASSEMBLY, FOUR SIDE FILL ASSEMBLIES, ONE REAR BLOCKING ASSEMBLY, AND NAIL A DOOR POST VERTICAL RETAINER TO EACH DOOR POST VERTICAL, ONE RIGHT HAND AND ONE LEFT HAND.
 - INSTALL THE TWO FORWARD STRUT ASSEMBLIES (ONE RIGHT HAND AND ONE LEFT HAND) AND TWO SPREADER ASSEMBLIES.
 - 3. INSTALL FORWARD BLOCKING ASSEMBLY,
 - 4. INSTALL ONE SIDE FILL ASSEMBLY AND LOAD TWO PALLET UNITS.
 - 5. REPEAT STEP 4.
 - 6. LOAD FOUR PALLET UNITS.
 - 7. REPEAT STEP 4.
 - 8. REPEAT STEP 4.
 - 9. REPEAT STEP 6.
 - 10. INSTALL REAR BLOCKING ASSEMBLY.
 - 11. INSTALL THE TWO DOOR POST VERTICAL ASSEMBLIES (ONE RIGHT HAND AND ONE LEFT HAND).
 - 12. INSTALL TWO DOOR SPANNER PIECES (ONE AT THE LOWEST POSITION AND ONE AT THE UPPERMOST POSITION).
 - INSTALL THE STRUTS BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
 - 14. INSTALL REMAINING TWO DOOR SPANNER PIECES.

BILL OF MATERIAL	-
LINEAR FEET	BOARD FEET
187 49 299 63	94 33 299 84
NO. REQD	POUNDS
60 462 64	1/2 7-1/4 1-1/4
	LINEAR FEET 187 49 299 63 NO. REQD 60 462

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURE IS APPLICABLE TO A LOAD OF 27-BOX PALLET UNITS OF 60MM AMMUNITION PACKED IN WOODEN BOXES. SUBSEQUENT REFERENCE TO PALLET UNIT MEANS THE PALLET UNIT WITH AMMUNITION ITEMS. SEE PAGE 6 FOR THE DETAIL OF THE PALLET UNIT. <u>CAUTION:</u> REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.
- C. THE LOAD AS SHOWN IS BASED ON A 4,700 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH INTERMODAL COMMERCIAL CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 95" HIGH. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLAT CAR (T/COFC) SHIPMENT, HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF TRANSPORT, NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN BE USED.
- D. WHEN LOADING PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE FORWARD AND SIDE DUNNAGE ASSEMBLIES). ALTHOUGH A TOTAL OF ONE AND ONE-HALF INCHES (1-1/2") OF UNBLOCKED SPACE ACOSS THE WIDTH OF A LOAD BAY IS PREMITTED, LATERAL VOIDS WITHIN THE LOAD ARE TO BE HELD TO A MINIMUM. EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE VERTICAL PIECES ON THE SIDE FILL ASSEMBLIES ON ONE OR BOTH SIDES OF THE CONTAINER, NAIL EACH ADDITIONAL PIECE TO THE VERTICAL PIECE W/I APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE NUMBER AND THICKNESS OF THE VERTICAL PIECES MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN PALLET UNIT SIZE.
- E. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALY 3/4" THICK BY 5-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- F. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES OR WHEN LAMINATING DUNNAGE, ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE
- G. IN SOME CONTAINERS, SUCH AS SOME ALL STEEL CONTAINERS, THERE IS A SLOT AT THE CORNERS OF THE FORWARD WALL. A PIECE OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES ON THE FORWARD STRUT ASSEMBLY TO PROVIDE A FLAT SUFFACE FOR THE 2" X 6" BUFFER PIECES. A PIECE OF 2" X '4", 2" X 3", OR A SPECIAL WIDTH PIECE CUT—TO—FIT CAN BE USED. THIS FILL PIECE WILL BE NAILED WITH ONE APPROPRIATELY SIZED NAIL EVERY 12". THIS PIECE IS NOT REQUIRED WHEN THE FRONT WALL OF THE CONTAINER IS SMOOTH AND FLAT.
- H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- J. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- K. TO MAKE LOADING EASIER, TO HELP ACHIEVE A TIGHT LOAD ACROSS A CONTAINER AND TO PREVENT UNACCEPTABLE DAMAGE TO LADING UNITS WHEN LOADING A CONTAINER, A SLIP-SHEET CAN BE USED EFFECTIVELY AS A "SHOE-HORN" TYPE DEVICE. THE SLIP-SHEET WILL PROVIDE A SMOOTH SURFACE THAT WILL PREVENT UNIT STRAPS AND/OR BOXES FROM INTERLOCKING OR CATCHING ON OTHER PROJECTIONS WHEN LATERALLY ADJACENT LADING UNITS ARE BEING LOADED. A SLIP-SHEET WILL BE USED AFTER ONE-HALF OF A STACK IS LOADED WITH ONE OF ITS SIDES IN TIGHT CONTACT AT ONE SIDE OF THE CONTAINER. THE SLIP-SHEET IS TO BE PLACED AGAINST THE OTHER SIDE OF THE HALF-STACK BEFORE THE LAST HALF OF THE STACK IS LOADED. AFTER A STACK IS COMPLETED, THE SLIP-SHEET IS TO BE REMOVED FOR SUBSEQUENT USE WITH THE NEXT STACK A SLIP-SHEET IS SUITABLE SIZE CAN BE MADE FROM A SHEET OF 1/8" TEMPERED HARDBOARD (MASONITE) OR FROM A SHEET OF ANY OTHER MATERIAL THAT WILL SATISFY THE REQUIREMENT.

(CONTINUED AT LEFT)

LOAD AS SHOWN

ITEM	QUAN1	·ITY	WEIGHT (APPRO
PALLET UNIT DUNNAGE CONTAINER			- 1,093	LBS
	TOTAL WEIGHT		- 30,929	LBS

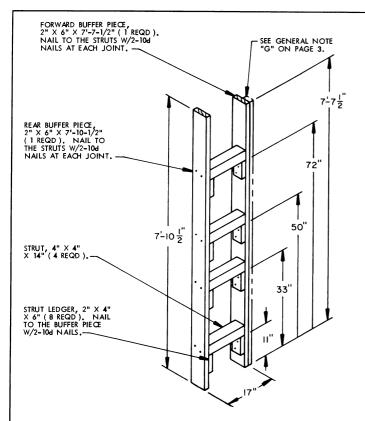
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MATERIAL SPECIFICATIONS

LUMBER -----: TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.

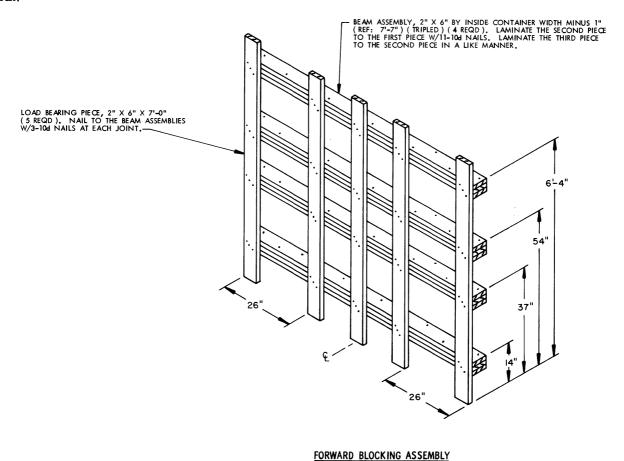
NAILS -----: FED SPEC FF-N-105; COMMON.

STEEL, STRUCTURAL ----: FED SPEC QQ-S-741; SQUARE STRUCTURAL TUBING AND ROLLED PLATE.

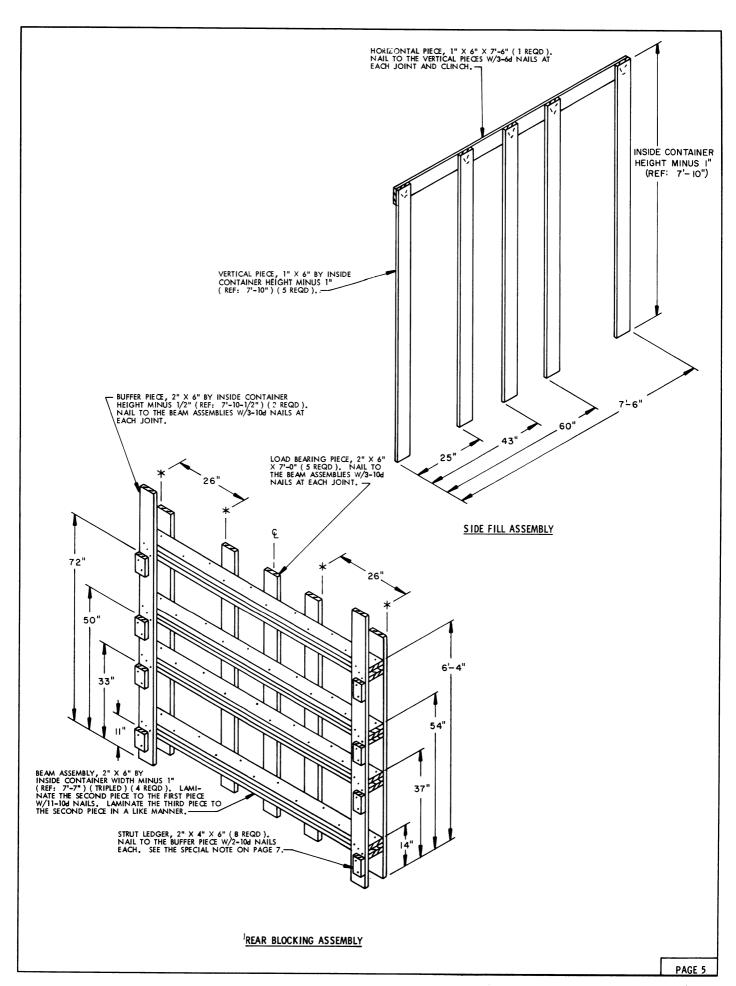


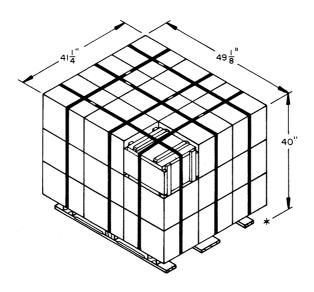
FORWARD STRUT ASSEMBLY

A "RIGHT HAND" FORWARD STRUT ASSEMBLY IS DEPICTED. A "LEFT HAND" ASSEMBLY IS ALSO REQUITED AND WILL BE THE SAME AS THE ASSEMBLY DEPICTED ABOVE, EXCEPT THE 4" X 4" STILUTS AND STRUT LEDGERS ARE ALIGNED ON THE OPPOSITE SIDE OF THE BUFFER PIECES.



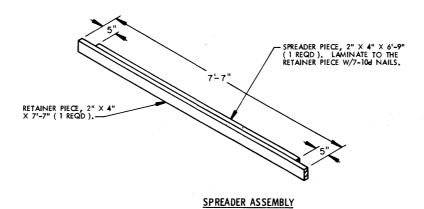
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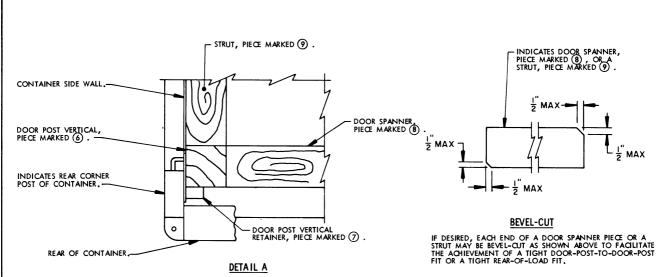




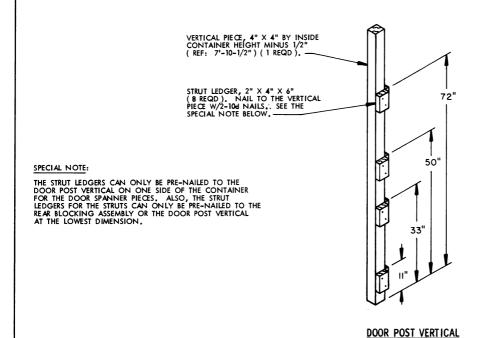
PALLET UNIT

UNIT WEIGHT ------ 1,571 POUNDS (APPROX)
CUBE ----- 46.9 CUBIC FEET





A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL AND ADJACENT DUNNAGE PIECES.



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