

# APPENDIX 45F

## UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS

CARTRIDGE, 105MM, PACKED 2 PER WOODEN BOX,  
UNITIZED 15 BOXES PER 35" X 45-1/2" PALLET;  
APPROX BOX SIZE 38-7/16" L X 14-1/8" W X  
8-5/8" H

NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH  
THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4116-20PA1002.

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U. S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U. S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND  <i>David A. Perovich</i> AMSTA-AR-ESK	DRAFTSMAN BETTY J. KUNDERT ENGINEER SANDRA M. SCHULTZ		
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REVISION NO. 5      FEBRUARY 1995	CLASS	DIVISION	DRAWING
SEE THE REVISION LISTING ON PAGE 2	19	48	4116/ 45F
			FILE 20PA 1002

DO NOT SCALE

PALLET UNIT DATA				
ITEMS INCLUDED		HAZARD CLASS AND DIVISION ●		APPROX WEIGHT LBS
NSN	DODIC	OD CLASS	COMP GROUP	
1315-01-032-6127	C520	(04)1.2	C	1,692
01-315-1635	C520	(04)1.2	C	1,692

- HAZARD CLASSIFICATION DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY. VERIFICATION OF THE SPECIFIED DATA SHOULD BE MADE BY CONSULTING THE MOST RECENT JOINT HAZARD CLASSIFICATION SYSTEM LISTING OR OTHER APPROVED LISTING(S).

### REVISIONS

REVISION NO. 1, DATED DECEMBER 1983, CONSISTS OF:

1. ADDING ITEM BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.
2. CHANGING BOX DIMENSIONS.

REVISION NO. 2, DATED MAY 1985, CONSISTS OF:

1. CHANGING BOX DIMENSIONS.

REVISION NO. 3, DATED NOVEMBER 1985, CONSISTS OF:

1. CHANGING PALLET CONFIGURATION.
2. DELETING ITEMS BY NATIONAL STOCK NUMBER FROM "PALLET UNIT DATA" CHART.

REVISION NO. 4, DATED AUGUST 1988, CONSISTS OF:

1. CHANGING PALLET CONFIGURATION TO CONFORM TO TRANSPORTATION REQUIREMENTS.
2. DELETING ITEMS BY NATIONAL STOCK NUMBER FROM "PALLET UNIT DATA" CHART.

REVISION NO. 5, DATED FEBRUARY 1995, CONSISTS OF:

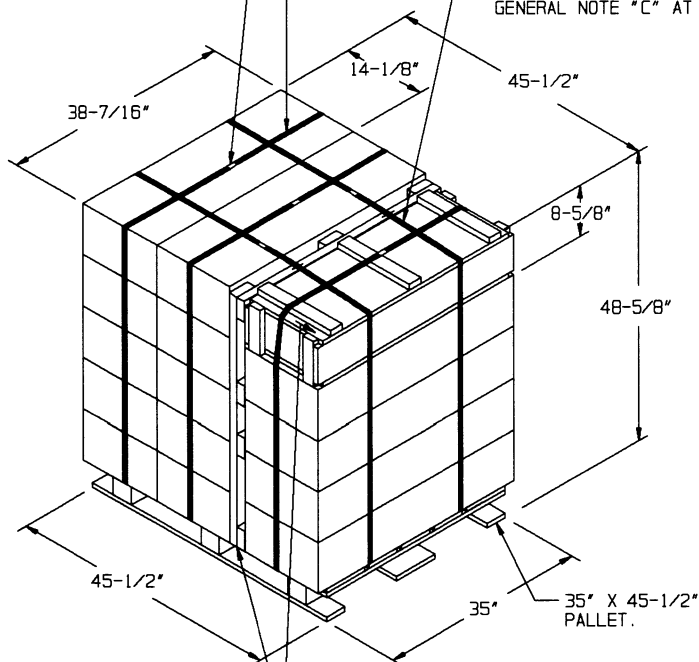
1. ADDING ITEM BY NATIONAL STOCK NUMBER TO "PALLET UNIT DATA" CHART.

**GENERAL NOTES**

SEAL FOR 3/4" STRAPPING (5 REQD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.

TIEDOWN STRAP, 3/4" X .035" OR .031" X 14'-9" LONG STEEL STRAPPING (3 REQD). SEE GENERAL NOTE "D" AT RIGHT.

LOAD STRAP, 3/4" X .035" OR .031" X 15'-10" LONG STEEL STRAPPING (2 REQD). SEE GENERAL NOTE "C" AT RIGHT.



SPACER ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 4. STAPLE LOAD STRAPS TO SPACER ASSEMBLY.

TYPICAL LOCATION FOR SECUREMENT OF A STRAP CUTTER. SEE GENERAL NOTE "F" AT RIGHT.

**PALLET UNIT**

SEE GENERAL NOTE "B" AT RIGHT.

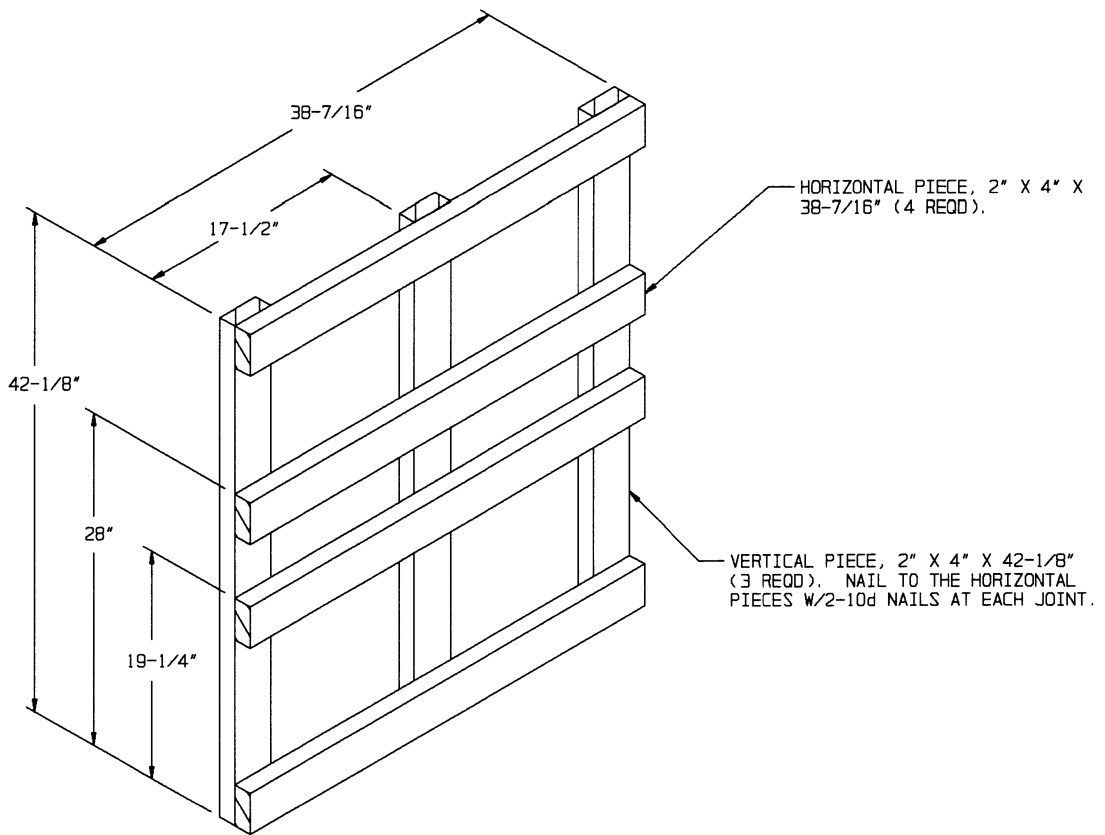
15 BOXES OF 105MM CARTRIDGES (2 PER BOX) AT 106 LBS - - - 1,590 LBS (APPROX)  
 DUNNAGE - - - - - 37 LBS  
 PALLET - - - - - 65 LBS

TOTAL WEIGHT - - - - - 1,692 LBS (APPROX)  
 CUBE - - - - - 49.1 CU FT (APPROX)

**BILL OF MATERIAL**

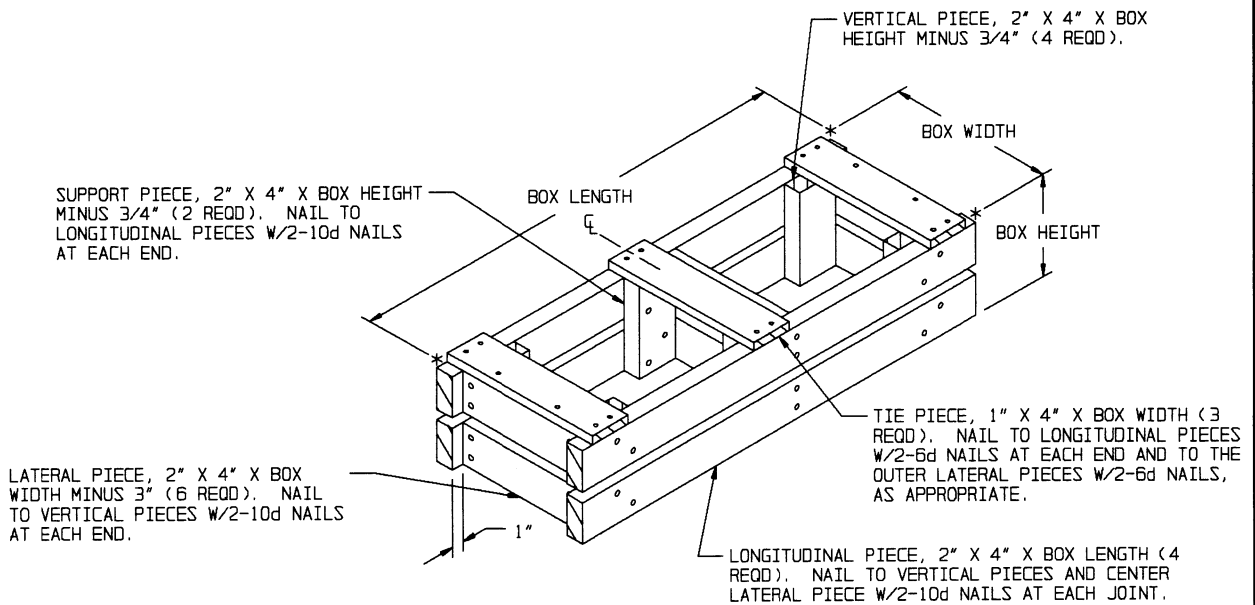
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	23.39	15.59
NAILS	NO. REQD	POUNDS
10d (3")	24	0.37
PALLET, 35" X 45-1/2" - - - 1 REQD - - - - 65 LBS		
STEEL STRAPPING, 3/4" - 75.92' REQD - - - - 5.42 LBS		
SEAL FOR 3/4" STRAPPING - - 5 REQD - - - - - NIL		
STAPLE, 15/16 X 3/4" - - - - 2 REQD - - - - - NIL		

- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4116-20PA1002. TO PRODUCE AN APPROVED UNIT LOAD, ALL PERTINENT PROCEDURES, SPECIFICATIONS AND CRITERIA SET FORTH WITHIN THE BASIC DRAWING WILL APPLY TO THE PROCEDURES DELINEATED IN THIS APPENDIX. ANY EXCEPTIONS TO THE BASIC PROCEDURES ARE SPECIFIED IN THIS APPENDIX.
- B. DIMENSIONS, CUBE AND WEIGHT OF A PALLET UNIT WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE BOXES AND THE WEIGHT OF THE SPECIFIC ITEM BEING UNITIZED.
- C. THE LOAD STRAPS MAY BE THREADED THROUGH THE STRAP SLOTS OF A PALLET OR PRE-POSITIONED ON THE PALLET DECK PRIOR TO PLACING BOXES ON THE PALLET. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS.
- D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET AND TO BE LOCATED AS SHOWN. TIEDOWN STRAPS WILL NOT BE APPLIED UNTIL THE LOAD STRAPS HAVE BEEN TENSIONED AND SEALED.
- E. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.
  - CARLOADING - - - - 19-48-4115-5PA1002
  - TRUCKLOADING - - - - 19-48-4117-11PA1003
  - STORAGE - - - - - 19-48-4118-1-2-3-4-14-22PA1002
  - END OPENING ISO
  - CONTAINER - - - - 19-48-4153-15PA1002
  - MILVAN - - - - - 19-48-4166-15PA1003
  - SIDE OPENING ISO
  - CONTAINER - - - - 19-48-4267-15PA1009
- F. FOR METHOD OF SECURING A STRAP CUTTER TO THE PALLET UNIT, SEE AMC DRAWING 19-48-4127-20P1000.
- G. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS APPENDIX, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS APPENDIX.
- H. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING 105MM CARTRIDGES WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 2, PROVIDED THE BOX PACK DOES NOT VARY FROM WHAT IS DELINEATED HEREIN. THE EXPLOSIVE CLASSIFICATION OF OTHER ITEMS MAY BE DIFFERENT THAN WHAT IS SHOWN.
- J. WHEN THE UNIT LOAD DEPICTED AT LEFT IS TO BE USED FOR UNITIZING MARINE CORPS AMMUNITION, ONE LAYER OF BOXES MUST BE OMITTED, TIEDOWN STRAP LENGTHS MUST BE DECREASED TO 13'-3", AND LOAD STRAP LENGTHS MUST BE DECREASED TO 14'-5", AND THE SPACER ASSEMBLY MUST BE MODIFIED. SPACER ASSEMBLY MODIFICATIONS INCLUDE ELIMINATING THE HORIZONTAL PIECE LOCATED AT 28" AND CHANGING VERTICAL PIECE LENGTH TO 33-3/4". THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 40", A GROSS UNIT WEIGHT OF 1,367 POUNDS, AND A UNIT CUBE OF 40.4 CUBIC FEET. ADDITIONALLY, THE UNIT MAY BE MODIFIED AS DESCRIBED WHEN BEING SHIPPED BY MILVAN OR END OR SIDE OPENING INTERMODAL FREIGHT CONTAINER. THE DETERMINATION TO REDUCE THE LOAD BY A LAYER FOR TRANSPORTATION WILL BE MADE BY THE RESPONSIBLE COMMAND AND WILL BE BASED UPON ECONOMICS OF TRANSPORTATION AND HANDLING.
- K. IF DIMENSIONAL VARIATION IN THE WIDTH OF THE BOX PERMITS, 1" X 4" VERTICAL PIECES, AND/OR HORIZONTAL PIECES MAY BE SUBSTITUTED IN THE CONSTRUCTION OF THE SPACER ASSEMBLY, IN LIEU OF 2" X 4" MATERIAL, IF AND ONLY IF THE USE OF 1" X 4" VERTICAL PIECES AND/OR HORIZONTAL PIECES WILL RESULT IN THE UNIT LOAD FILLING OUT THE PALLET.
- L. THE STYLE 1A PALLET DELINEATED IN THE DETAIL AT LEFT NEED NOT HAVE CHAMFERS OR STRAP SLOTS AS SPECIFIED WITHIN MILITARY SPECIFICATION MIL-P-15011 WHEN USED FOR THE UNITIZATION OF ITEMS COVERED BY THIS APPENDIX.
- M. ALL DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH GENERAL NOTE "X" IN THE BASIC PROCEDURES.



**SPACER ASSEMBLY**

(1 REQD)  
SEE GENERAL NOTE "K" ON PAGE 3.



**FILLER ASSEMBLY**

(FOR MINUS ONE BOX)