

## APPENDIX 109A

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

SIMULATOR, PROJECTILE, AIR BURST, PACKED  
200 PER WOODEN BOX, UNITIZED 30 BOXES PER  
35" X 45 $\frac{1}{2}$ " PALLET; APPROX BOX SIZE 23" L X  
12 $\frac{1}{2}$ " W X 9 $\frac{5}{8}$ " H

PALLET UNIT DATA						
ITEMS INCLUDED		HAZARD CLASSIFICATION <sup>①</sup>				WEIGHT (LBS)
NSN	DODIC	DOT CLASS	CG CLASS	QD CLASS	COMP GROUP	
1370- 00-028-5249	L373	A	IX-A	1.1	D	1,514

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

① 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).

**DO NOT SCALE**

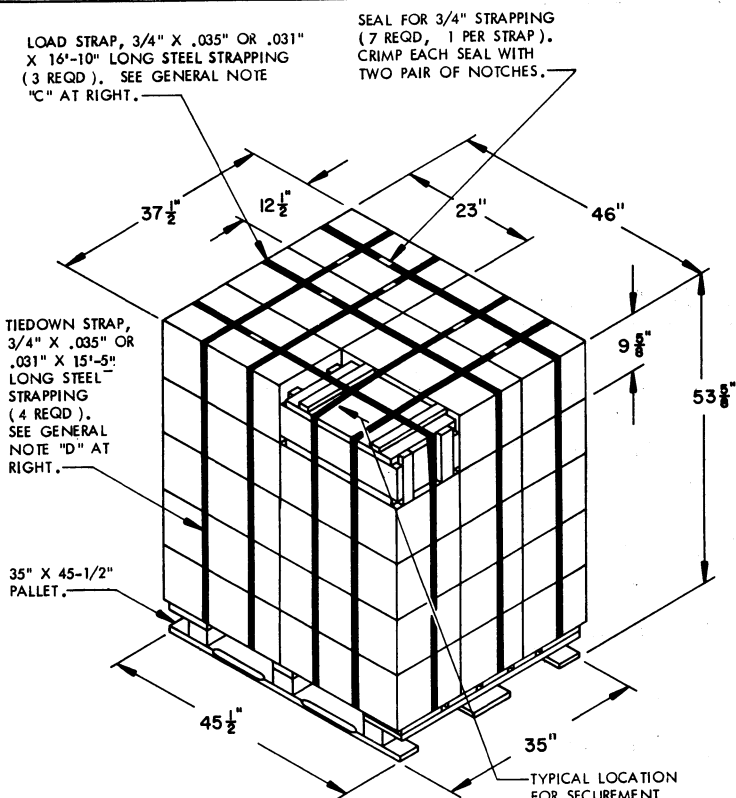
REVISIONS				DRAFTSMAN <i>RSW</i>	PROJ. ENG. <i>RSW</i>	LOG. ENG. OFFICER <i>RSW</i>	
				APPROVED, U. S. ARMY AMMUNITION, MUNITIONS AND CHEMICAL COMMAND			
				<div style="display: flex; justify-content: space-between;"> <div> <i>W. B. Benton</i>  <small>DRAWN - LBS</small> </div> <div> <i>John L. Sydnor</i>  <small>DRM - TMD</small> </div> </div>			
				APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND (DARCOM)			
				U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL			
				U. S. ARMY DARCOM DRAWING			
				NOVEMBER 1983			
				CLASS	DIVISION	DRAWING	FILE
				19	48	4116/ 109A	20PA 1002

LOAD STRAP, 3/4" X .035" OR .031" X 16'-10" LONG STEEL STRAPPING (3 REQD.). SEE GENERAL NOTE "C" AT RIGHT.

SEAL FOR 3/4" STRAPPING (7 REQD., 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.

TIEDOWN STRAP, 3/4" X .035" OR .031" X 15'-5" LONG STEEL STRAPPING (4 REQD.). SEE GENERAL NOTE "D" AT RIGHT.

35" X 45-1/2" PALLET.



#### PALLET UNIT

SEE GENERAL NOTE "B" AT RIGHT.

30 BOXES OF SIMULATOR, PROJECTILES (200 PER BOX) @ 48 LBS ----- 1,440 LBS (APPROX)  
DUNNAGE ----- 9 LBS  
PALLET ----- 65 LBS

TOTAL WEIGHT ----- 1,514 LBS (APPROX)  
CUBE ----- 53.5 CU FT (APPROX)

#### BILL OF MATERIAL

PALLET, 35" X 45-1/2"	1 REQD	65 LBS
STEEL STRAPPING, 3/4"	112.17 REQD	8.01 LBS
SEAL FOR 3/4" STRAPPING	7 REQD	NIL

#### GENERAL NOTES

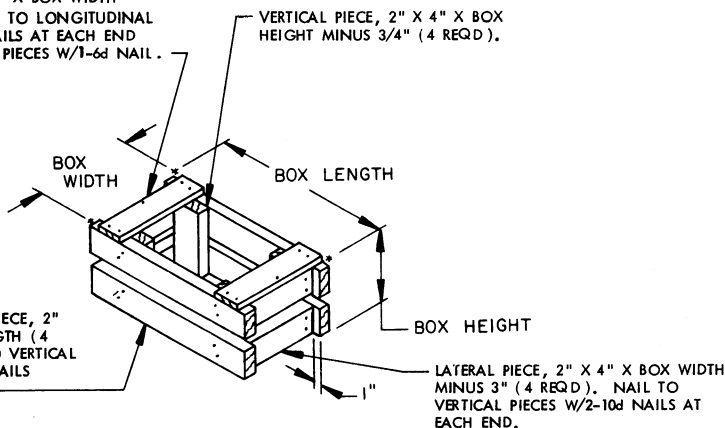
- THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4116-20PA1002. TO PRODUCE AN APPROVED UNIT LOAD, ALL PERTINENT PROCEDURES, SPECIFICATIONS AND CRITERIA SET FORTH WITHIN THE BASIC DRAWING WILL APPLY TO THE PROCEDURES DELINEATED IN THIS APPENDIX. ANY EXCEPTIONS TO THE BASIC PROCEDURES ARE SPECIFIED IN THIS APPENDIX.
- 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.
- THE LOAD STRAPS MAY BE THREADED THROUGH THE STRAP SLOTS OF THE PALLET OR PRE-POSITIONED ON THE PALLET DECK PRIOR TO PLACING BOXES ON THE PALLET.
- INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET AND TO BE LOCATED AS SHOWN. TIEDOWN STRAPS WILL BE TENSIONED AND SEALED PRIOR TO LOAD STRAPS.
- THE FOLLOWING DARCOM DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.
 

CARLOADING -----	DRAWING 19-48-4115-SPA1002
TRUCKLOADING -----	DRAWING 19-48-4117-11PA1003
STORAGE -----	DRAWING 19-48-4118-1-2-3-4-14-22PA1002
- FOR METHOD OF SECURING A STRAP CUTTER TO THE PALLET UNIT, SEE DARCOM DRAWING 19-48-4127-20P1000.
- IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS APPENDIX, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS APPENDIX.
- THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING SIMULATOR, PROJECTILES WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON THE TITLE PAGE, 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.
- WHEN THE UNIT LOAD DEPICTED AT LEFT IS TO BE USED FOR UNITIZING MARINE CORPS AMMUNITION, 1 LAYER OF BOXES MUST BE OMITTED, TIEDOWN STRAP LENGTHS MUST BE DECREASED TO 13'-9", AND LOAD STRAP LENGTHS MUST BE DECREASED TO 15'-2". THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 44", A GROSS UNIT WEIGHT OF 1,226 LBS, AND A UNIT CUBE OF 43.9 CUBIC FEET. ADDITIONALLY, THE UNIT LOAD MAY BE MODIFIED AS DESCRIBED WHEN BEING SHIPPED BY MILVAN OR COMMERCIAL INTERMODAL FREIGHT CONTAINER, CONVENTIONAL VAN TRAILER OR CONVENTIONAL OR HIGH-CAPACITY BOXCAR. 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.

TIE PIECE, 1" X 4" X BOX WIDTH (2 REQD.). NAIL TO LONGITUDINAL PIECES W/2-6d NAILS AT EACH END AND TO LATERAL PIECES W/1-6d NAIL.

VERTICAL PIECE, 2" X 4" X BOX HEIGHT MINUS 3/4" (4 REQD.).

LONGITUDINAL PIECE, 2" X 4" X BOX LENGTH (4 REQD.). NAIL TO VERTICAL PIECES W/2-10d NAILS AT EACH END.



FILLER ASSEMBLY  
(FOR MINUS ONE BOX)