

# APPENDIX 107F

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

**SIMULATOR, LAUNCHING, AT, GM, AND ROCKET,  
M22, PACKED 150 PER WIREBOUND BOX, UNITIZED  
18 BOXES PER 35" X 45-1/2" PALLET; APPROX BOX  
SIZE 22-1/8" L X 10-7/8" W X 9-1/2" 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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**APPROVED FOR PUBLIC RELEASE  
DISTRIBUTION IS UNLIMITED.**

### U.S. ARMY MATERIEL COMMAND DRAWING

<p>APPROVED, COMBAT CAPABILITIES DEVELOPMENT COMMAND ARMAMENTS CENTER</p> <p><b>HANSSSEN.JOSEP</b> H.W. 1376495538</p> <p><small>Digitally signed by HANSSSEN.JOSEP.H.W.13764955 38 Date: 2023.10.13 06:12:56 -05'00'</small></p> <p style="text-align: right;"><small>FCDD-ACE-LTP</small></p>	<p><b>CAUTION: VERIFY PRIOR TO USE AT <a href="https://www.dau.mil/cop/ammo/Pages/Default.aspx">https://www.dau.mil/cop/ammo/Pages/Default.aspx</a> THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 4.</b></p>		<p><b>AUGUST 1981</b></p>									
<p>APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND</p> <p><b>WARD.GINA.</b> M.1369379808</p> <p><small>Digitally signed by WARD.GINA.M.1369379808 Date: 2023.11.07 08:20:21 -06'00'</small></p> <p style="text-align: right;"><small>AMJM-MLT</small></p>	<p><b>DO NOT SCALE</b></p>	<p><b>REVISION NO. 2</b>      <b>SEPTEMBER 2023</b></p>										
<p>APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND</p> <p><b>BRAILS福德.KEITH</b> H.ANTHONY.10286 55661</p> <p><small>Digitally signed by BRAILS福德.KEITH.ANTHONY. 1028655661 Date: 2023.11.16 13:55:50 -06'00'</small></p> <p style="text-align: right;"><small>DEFENSE AMMUNITION CENTER</small></p>	<p>DESIGN ENGINEER</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">BASIC</td> <td style="width: 80%;">WILLIAM R. FRERICHS</td> </tr> <tr> <td>REV.</td> <td>QUYEN TRAN</td> </tr> </table> <p>ENGINEERING DIVISION</p> <p>TEST ENGINEER</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">TEST REPORT</td> <td style="width: 80%;">NA</td> </tr> </table> <p>EXPLOSIVES SAFETY DIRECTORATE</p>	BASIC	WILLIAM R. FRERICHS	REV.	QUYEN TRAN	TEST REPORT	NA	<p><b>FIEFFER.LAUR</b> A.A.1230375727</p> <p><small>Digitally signed by FIEFFER LAURA A.1230375727 Date: 2023.09.21 09:00:25 -05'00'</small></p> <p><b>FELICIANO.AD</b> IN.1259200373</p> <p><small>Digitally signed by FELICIANO ADIN.1259200373 Date: 2023.09.27 14:02:46 -05'00'</small></p> <p><b>CUMMINS.PAU</b> L.A.1231883122</p> <p><small>Digitally signed by CUMMINS PAUL A.1231883122 Date: 2023.09.28 14:21:13 -05'00'</small></p>	<p><b>SEE THE REVISION LISTING ON PAGE 2</b></p>			
BASIC	WILLIAM R. FRERICHS											
REV.	QUYEN TRAN											
TEST REPORT	NA											
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">CLASS</td> <td style="width: 15%;">DIVISION</td> <td style="width: 15%;">DRAWING</td> <td style="width: 55%;">FILE</td> </tr> <tr> <td style="text-align: center;"><b>19</b></td> <td style="text-align: center;"><b>48</b></td> <td style="text-align: center;"><b>4116/ 107F</b></td> <td style="text-align: center;"><b>20PA1002</b></td> </tr> </table>	CLASS	DIVISION	DRAWING	FILE	<b>19</b>	<b>48</b>	<b>4116/ 107F</b>	<b>20PA1002</b>		
CLASS	DIVISION	DRAWING	FILE									
<b>19</b>	<b>48</b>	<b>4116/ 107F</b>	<b>20PA1002</b>									

PALLET UNIT DATA				
ITEMS INCLUDED		*HAZARD CLASS AND DIVISION	*COMPATI- BILITY GROUP	APPROX WEIGHT (LBS)
NSN	DODIC			
1370				
01-085-2601	L367	1.3	G	794
01-646-9354	LA77	1.4	G	794

\*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 APRIL 1982, CONSISTS OF:

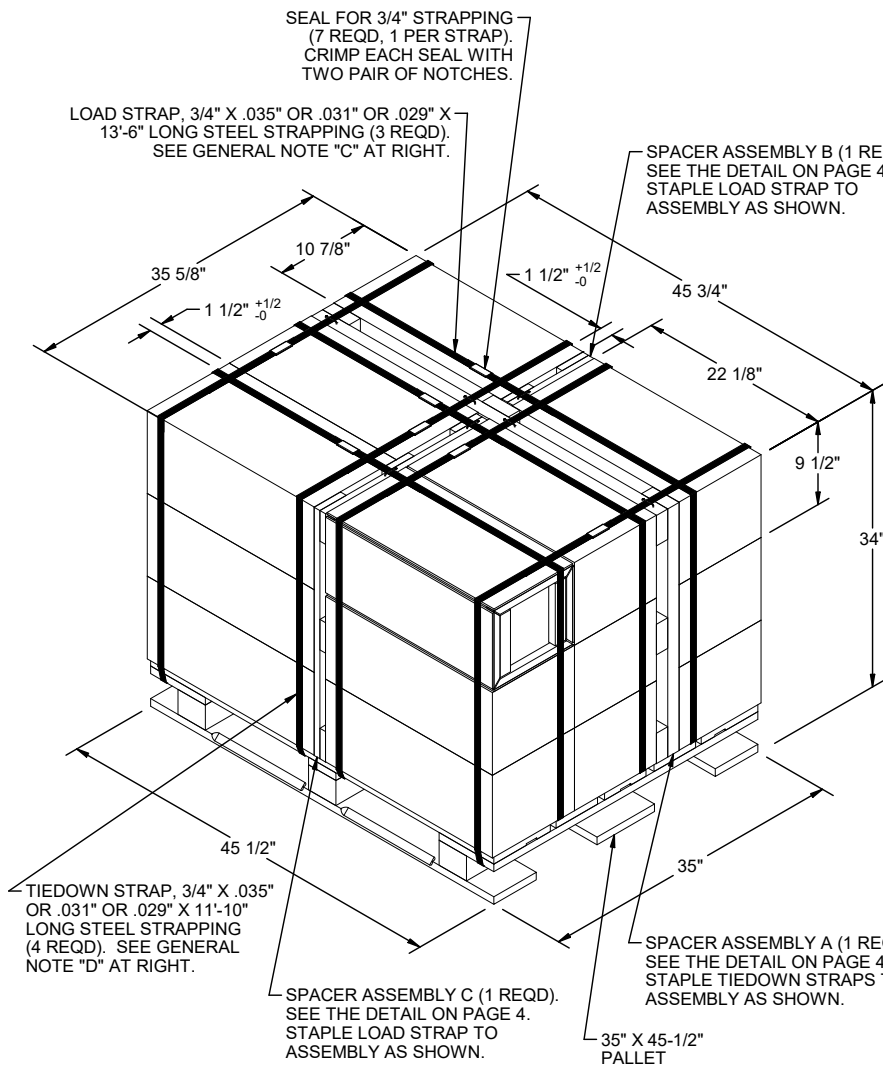
1. CHANGING BOX DIMENSIONS.
2. CHANGING UNITIZATION PROCEDURES TO CONFIRM TO 1. ABOVE.

REVISION NO. 2, DATED SEPTEMBER 2023, CONSISTS OF CHANGES PER ECP R21K3011 AND ECP R23K3004 INCLUDING:

1. UPDATING TO CURRENT DRAWING FORMAT.
2. ADDING ITEM BY NATIONAL STOCK NUMBER TO "PALLET UNIT DATA" CHART.
3. REVISING GENERAL NOTES.
4. UPDATING STRAPPING THICKNESSES.

**GENERAL NOTES**

- 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 MUST BE PRE-POSITIONED ON THE PALLET DECK PRIOR TO PLACING BOXES ON THE PALLET. NOTE THAT THE LOAD STRAPS WILL BE LOCATED AS SHOWN. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS.
- D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE DECK/STRINGER 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. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS REVISION TO THIS APPENDIX, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS REVISION.
- G. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING SIMULATORS 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.
- H. IF DIMENSIONAL VARIATION IN THE LENGTH OF THE BOX PERMITS, SPACER ASSEMBLIES "B" AND "C" DEPICTED IN THE UNIT AT LEFT MAY BE OMITTED, IF AND ONLY IF THE OMISSION OF SPACER ASSEMBLIES WILL RESULT IN THE UNIT LOAD COMPLETELY FILLING OUT THE PALLET.
- J. THE STYLE 1A PALLET DELINEATED IN THE DETAIL AT LEFT NEED NOT HAVE CHAMFERS OR STRAP SLOTS AS SPECIFIED WITHIN MILITARY SPECIFICATION MIL-DTL-15011 WHEN USED FOR THE UNITIZATION OF ITEMS COVERED BY THIS APPENDIX.
- K. ALL WOODEN DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH GENERAL NOTE "AA" IN THE BASIC PROCEDURES, AND HEAT TREATED IN ACCORDANCE WITH GENERAL NOTE "JJ" IN THE BASIC PROCEDURES.
- L. FOR DETAILS OF WOODEN BOX SEE ARDEC DRAWING 9344296.

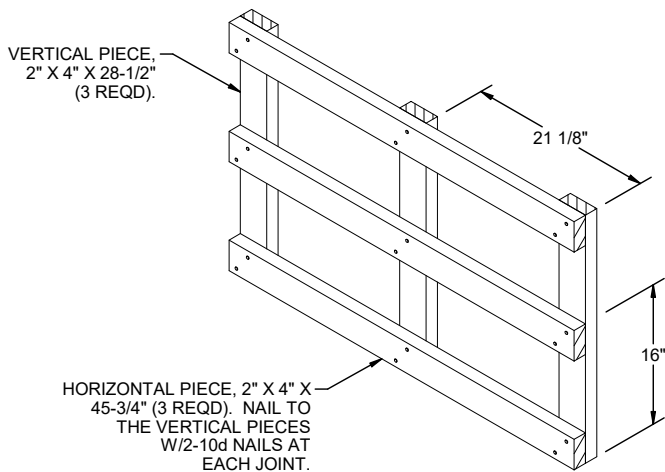


**PALLET UNIT**

SEE GENERAL NOTE "B" AT RIGHT.

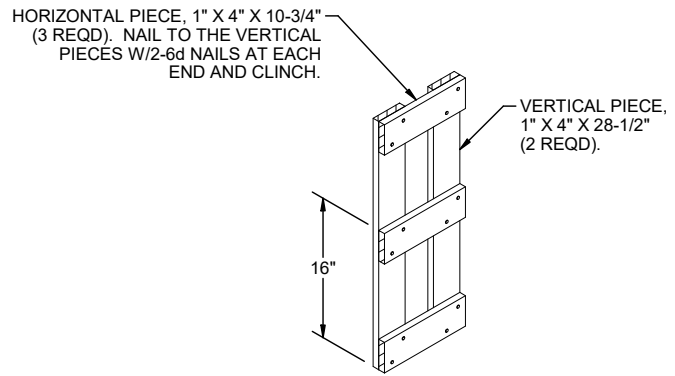
18 BOXES OF SIMULATOR (150 PER BOX) @ 38 LBS	-----	684 LBS
DUNNAGE	-----	45 LBS
PALLET	-----	65 LBS
<hr/>		
TOTAL WEIGHT	-----	794 LBS (APPROX)
CUBE	-----	32.1 CU FT (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" x 4"	20	7
2" x 4"	18	12
NAILS	NO. REQD	POUNDS
6d (2")	30	1/4
10d (3")	18	1/4
<hr/>		
PALLET, 35" x 45-1/2"	1 REQD	65 LBS
STEEL STRAPPING, 3/4"	87.83' REQD	5.91 LBS
SEAL FOR 3/4" STRAPPING	7 REQD	NIL
STAPLE	7 REQD	NIL



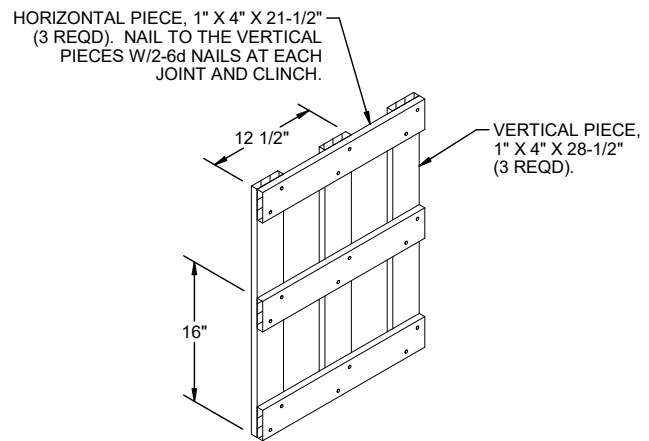
**SPACER ASSEMBLY A**

(ONE REQD)



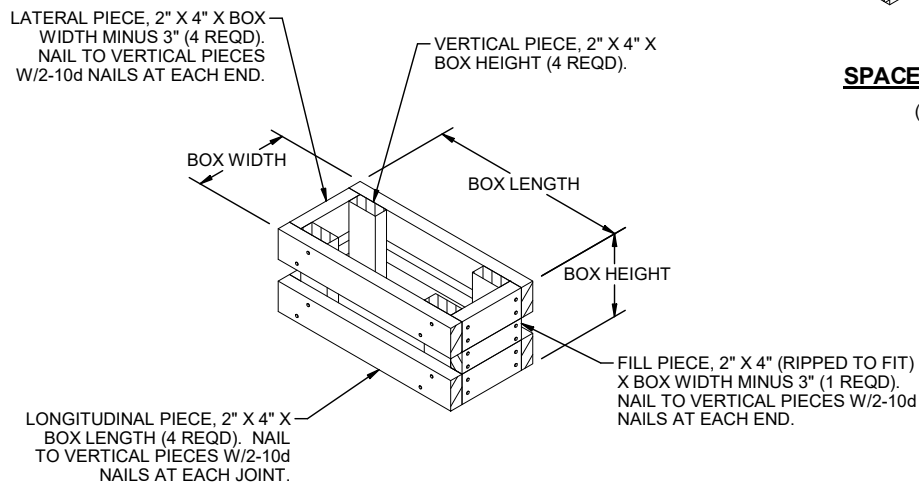
**SPACER ASSEMBLY B**

(ONE REQD)



**SPACER ASSEMBLY C**

(ONE REQD)



**FILLER ASSEMBLY**

FOR MINUS ONE BOX. INSTALL WITH FILL PIECE FACING OUTWARD ON PALLET UNIT.