

# APPENDIX 7

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

**CARTRIDGE, 7.62MM, PACKED VARIOUS QUANTI-  
TIES PER M19 SERIES METAL CONTAINER, 4 CON-  
TAINERS PER WIREBOUND BOX, UNITIZED 40 BOX-  
ES PER 35" X 45-1/2" PALLET; APPROX BOX SIZE  
17-1/2" L X 11-1/2" W X 8-1/8" 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

<p>APPROVED, COMBAT CAPABILITIES DEVELOPMENT COMMAND ARMAMENTS CENTER <b>HANSEN.JO</b> Digitally signed by HANSEN.JOSEPH.W. <b>SEPH.W.1376</b> 1376495538 495538 Date: 2023.03.28 09:08:14 -05'00' FCDD-ACE-LTP</p>	<p><b>CAUTION: VERIFY PRIOR TO USE AT <a href="https://www.dau.edu/cop/ammo/Pages/Default.aspx">https://www.dau.edu/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>APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND <b>WARD.GINA.</b> Digitally signed by WARD.GINA.M.1369379808 <b>M.1369379808</b> Date: 2023.03.29 08:23:50 -05'00' AMSJM-MLT</p>	<p><b>DO NOT SCALE</b></p>		<h2 style="margin: 0;">MARCH 1983</h2>															
<p>APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND <b>BRAILSFORD.KEITH</b> Digitally signed by BRAILSFORD.KEITH.ANTHONY. <b>H.ANTHONY.10286</b> 1028655661 55661 Date: 2023.04.13 16:53:02 -05'00' DEFENSE AMMUNITION CENTER</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">DESIGN ENGINEER</td> <td style="width: 15%;">BASIC</td> <td style="width: 70%; text-align: center;"><b>GEORGE B. FECKE</b></td> </tr> <tr> <td></td> <td style="text-align: center;">REV.</td> <td style="text-align: center;"><b>QUYEN TRAN</b></td> </tr> </table>	DESIGN ENGINEER	BASIC	<b>GEORGE B. FECKE</b>		REV.	<b>QUYEN TRAN</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">REVISION NO. 14</td> <td style="width: 50%;">MARCH 2023</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>SEE THE REVISION LISTING ON PAGE 2</b></td> </tr> </table>	REVISION NO. 14	MARCH 2023	<b>SEE THE REVISION LISTING ON PAGE 2</b>							
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## REVISIONS

PALLET UNIT DATA				
ITEMS INCLUDED		*HAZARD CLASS AND DIVISION	*COMPATI-BILITY GROUP	APPROX WEIGHT (LBS)
NSN	DODIC			
1305-				
00-752-8087	A111	1.4	S	2,441
01-181-1750	A111	1.4	S	2,433
00-305-0909	A122	1.4	S	3,133
00-301-1679	A124	1.4	S	3,133
00-542-1968	A128	1.4	S	3,185
00-580-0131	A129	1.4	S	3,225
00-892-2150	A131	1.4	S	3,169
01-569-2912	A131	1.4	S	3,169
00-892-2330	A143	1.4	S	3,185
01-569-2917	A143	1.4	S	3,185
00-892-2335	A146	1.4	S	3,185
00-889-2169	A151	1.4	S	3,169
00-460-2600	A159	-----INERT-----		3,253
00-926-4009	A159	-----INERT-----		3,185
01-380-9975	A255	1.4	S	3,185
01-398-1450	AA03	1.4	C	3,265
01-398-1449	AA04	1.4	C	3,185
01-458-6825	AA35	1.4	C	3,261
01-463-1508	AA39	1.4	S	3,325
01-579-4058	AB60	1.4	S	3,325
01-598-5913	AB79	1.4	S	3,185
01-606-7016	AB85	1.4	S	3,186
01-606-7003	AB86	1.4	S	3,185
01-650-7935	AC09	1.4	S	2,993
01-696-9664	AC65	1.4	S	1,892

\*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).

REVISION NO. 1, DATED SEPTEMBER 1984, CONSISTS OF:

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

REVISION NO. 2, DATED NOVEMBER 1986, CONSISTS OF:

ADDING ALTERNATIVE FILLER ASSEMBLY.

REVISION NO. 3, DATED OCTOBER 1987, CONSISTS OF:

ADDING GENERAL NOTE "M" ("STYLE 1A PALLET").

REVISION NO. 4, DATED MAY 1989, CONSISTS OF:

ADDING ALTERNATIVE HORIZONTAL STRAPPING.

REVISION NO. 5, DATED SEPTEMBER 1993, CONSISTS OF:

ADDING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.

REVISION NO. 6, DATED MARCH 1994, CONSISTS OF:

1. ADDING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.
2. DELETING ITEM BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.
3. CHANGING THE WEIGHT OF ITEM BY NATIONAL STOCK NUMBER IN THE "PALLET UNIT DATA" CHART.

REVISION NO. 7, DATED SEPTEMBER 1995, CONSISTS OF:

ADDING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.

REVISION NO. 8, DATED JUNE 2002, CONSISTS OF:

1. ADDING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.
2. CORRECTING THE STRAPPING REQUIREMENTS.

REVISION NO. 9, DATED JANUARY 2005, CONSISTS OF:

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

REVISION NO. 10, DATED FEBRUARY 2014, CONSISTS OF CHANGES PER ECPS R11K2042-1 AND R11K2012 INCLUDING:

ADDING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.

REVISION NO. 11, DATED AUGUST 2016, CONSISTS OF:

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

REVISION NO. 12, DATED FEBRUARY 2020, CONSISTS OF CHANGES PER ECP R19K3007 INCLUDING:

1. ADDING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.
2. DELETING ITEMS BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.
3. UPDATING THE SIGNATURE BLOCKS ON COVER PAGE.

REVISION NO. 13, DATED OCTOBER 2020, CONSISTS OF CHANGES PER ECP R20S3001 INCLUDING:

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

REVISION NO. 14, DATED MARCH 2022, CONSISTS OF CHANGES PER ECP R21K2011 AND R22K3002 INCLUDING:

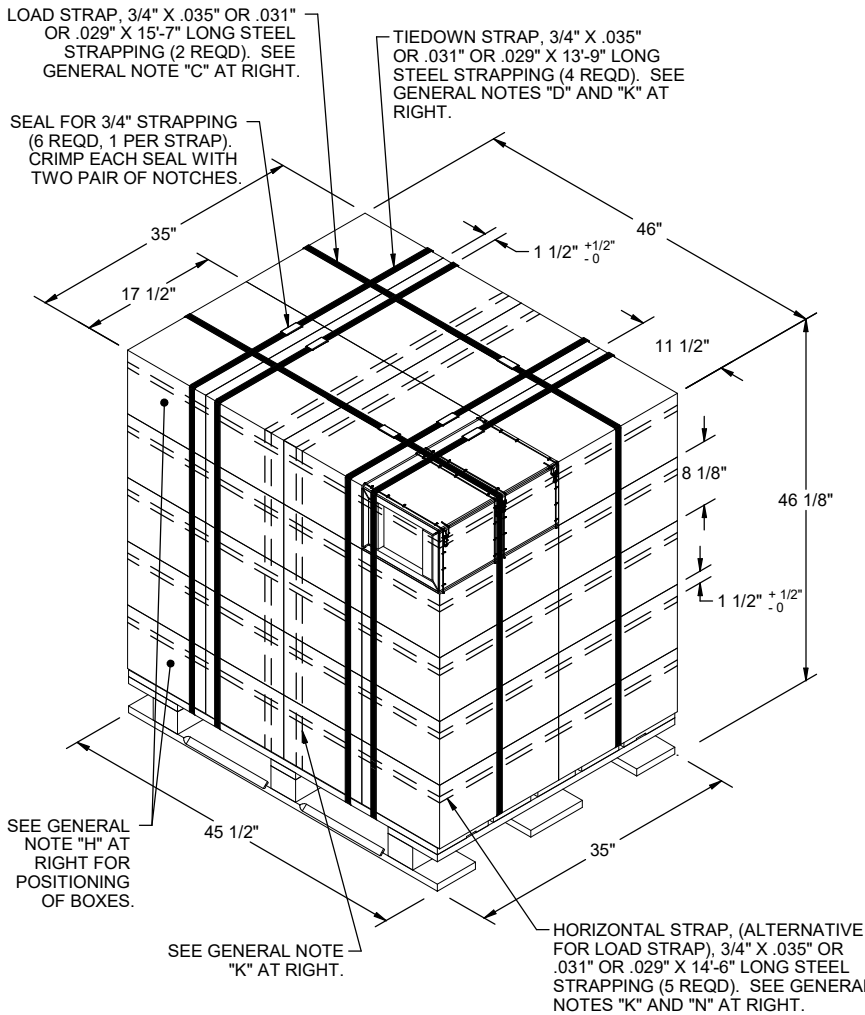
ADDING ITEM BY NATIONAL STOCK NUMBER TO THE "PALLET UNIT DATA" CHART.

**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 WILL BE THREADED THROUGH THE STRAP SLOTS OF A PALLET. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS. SEE GENERAL NOTE "J" BELOW FOR AN EXCEPTION TO THIS REQUIREMENT.
- D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET. NOTE THAT THE STRAPS WILL BE LOCATED AS SHOWN, NEAR THE SIDE CLEATS OF THE END PANELS OF THE BOX. 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 7.62MM 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.
- H. POSITION THE TWO OUTBOARD BOXES ON BOTH OF THE 35" SIDES OF THE BOTTOM LAYER OF THE UNIT WITH THE TOPS DOWNWARD, AND THE TWO OUTWARD BOXES ON BOTH OF THE 35" SIDES OF THE TOP LAYER OF THE UNIT WITH TOPS UPWARDS. NOTE THAT THE SPECIFIC POSITIONING OF THE OUTBOARD BOXES IS ONLY A REQUIREMENT WHEN UTILIZING LOAD STRAPS. IF THE ALTERNATIVE HORIZONTAL STRAPS ARE USED IN ACCORDANCE WITH GENERAL NOTE "N", THE BOXES DO NOT HAVE TO BE POSITIONED AS DESCRIBED ABOVE.
- 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. LOAD STRAPS WILL BE PRE-POSITIONED ON THE PALLET DECK PRIOR TO PLACING THE BOXES ON A PALLET WITHOUT STRAP SLOTS.
- K. IF THE PALLET DOES NOT HAVE STRAP SLOTS, AND THE TOTAL WEIGHT OF A 40-BOX UNIT EXCEEDS 2,800 POUNDS, TWO ADDITIONAL TIEDOWN STRAPS MUST BE ADDED. THIS MODIFICATION MUST ALSO BE USED WHEN USING THE ALTERNATIVE HORIZONTAL STRAPS TO SECURE A UNIT LOAD EXCEEDING 2,800 POUNDS.
- L. 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 12'-5", AND LOAD STRAP LENGTHS MUST BE DECREASED TO 14'-2". THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 38", A GROSS UNIT WEIGHT OF 2,892 POUNDS, AND A UNIT CUBE OF 35.4 CUBIC FEET. ADDITIONALLY, THE UNIT MAY BE MODIFIED AS DESCRIBED WHEN BEING SHIPPED BY MILVAN OR ISO INTERMODAL FREIGHT CONTAINER, VAN TRAILER, OR 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.

(CONTINUED AT LEFT)



**PALLET UNIT**

SEE GENERAL NOTE "B" AT RIGHT.

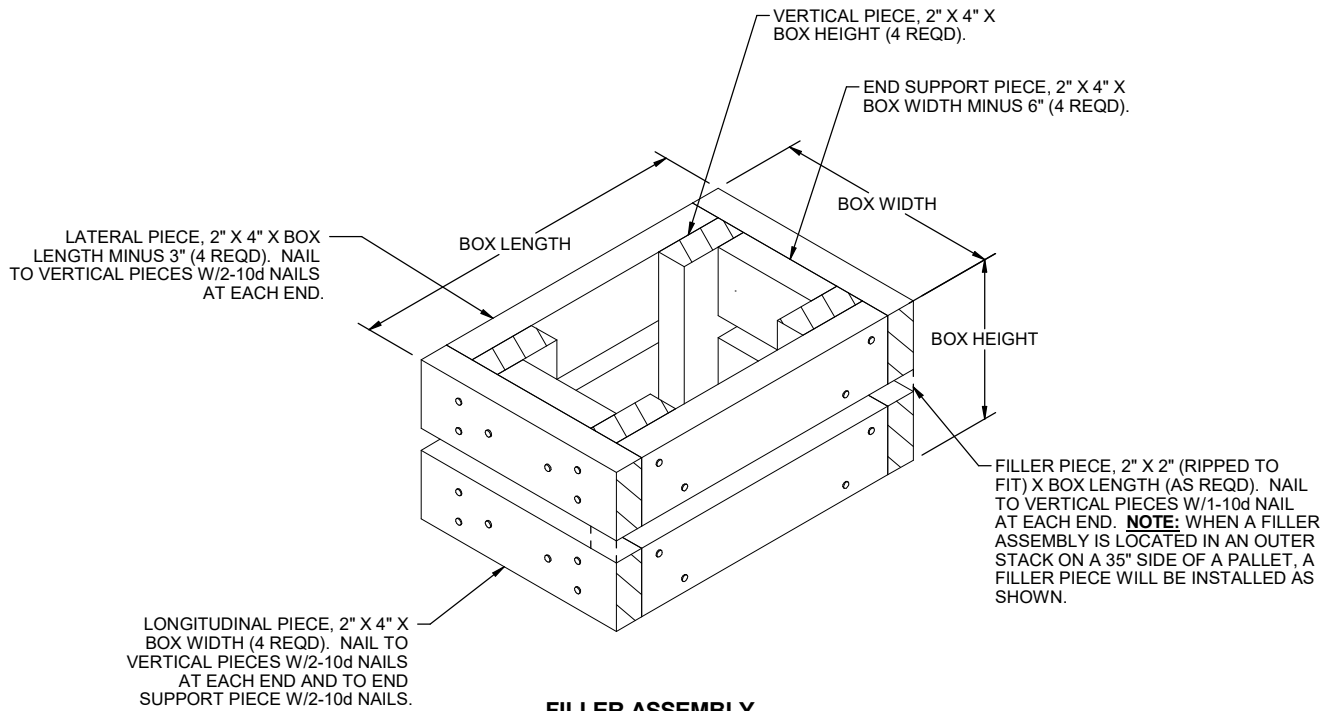
40 BOXES OF 7.62MM CTGS (880 PER BOX) @ 81.3 LBS	- - -	3,252 LBS (APPROX)
DUNNAGE	- - -	8 LBS
PALLET	- - -	65 LBS
<b>TOTAL WEIGHT</b>		<b>3,325 LBS (APPROX)</b>
<b>CUBE</b>		<b>43.0 CU FT (APPROX)</b>

**BILL OF MATERIAL**

PALLET, 35" X 45-1/2"	- - - - 1 REQD	- - - - 65 LBS
STEEL STRAPPING, 3/4"	- 86.17' REQD	- - - - 7.69 LBS
SEAL FOR 3/4" STRAPPING	- - - 6 REQD	- - - - NIL

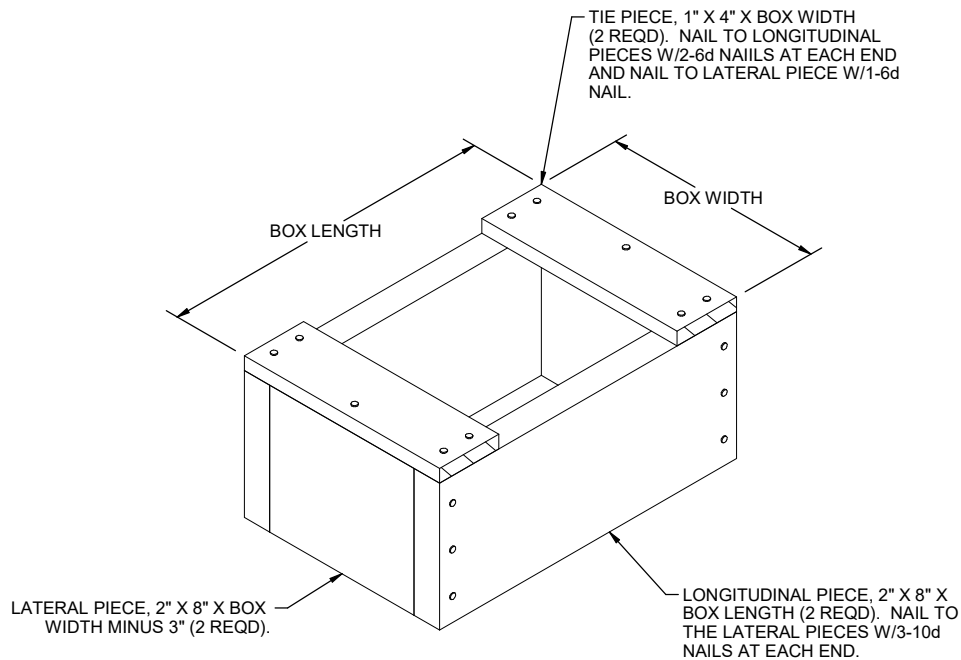
**(GENERAL NOTES CONTINUED)**

- M. IF DEEMED MORE ECONOMICALLY FEASIBLE, THE ALTERNATIVE FILLER ASSEMBLY MAY BE SUBSTITUTED FOR THE FILLER ASSEMBLY TO COMPLETE A LAYER ON A PALLET.
- N. HORIZONTAL STRAPS MAY BE USED IN LIEU OF LOAD STRAPS. NOTE THAT THE STRAPS WILL BE LOCATED AS SHOWN, NEAR THE TOP OF EACH LAYER. HORIZONTAL STRAPS MUST BE TENSIONED AND SEALED PRIOR TO THE APPLICATION OF TIEDOWN STRAPS.
- O. FOR DETAILS OF THE WIREBOUND BOX SEE ARDEC DRAWING 7308305 OR ARDEC DRAWING 12960962.



**FILLER ASSEMBLY**

(FOR MINUS ONE BOX)



**ALTERNATIVE FILLER ASSEMBLY**

(FOR MINUS ONE BOX)  
SEE GENERAL NOTE "M" ON PAGE 3.