

# APPENDIX 45P

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

CARTRIDGE, 105MM, PACKED 2 PER WIREBOUND  
BOX, UNITIZED 18 BOXES PER 40" X 48" PALLET;  
APPROX BOX SIZE  $46\frac{7}{16}$ " L X  $13\frac{5}{16}$ " W X  $7\frac{1}{16}$ " H

| PALLET UNIT DATA |        |                                    |          |          |            |         |
|------------------|--------|------------------------------------|----------|----------|------------|---------|
| ITEMS INCLUDED   |        | HAZARD CLASSIFICATION <sup>①</sup> |          |          |            | WEIGHT  |
| NSN              | DOD IC | DOT CLASS                          | CG CLASS | QD CLASS | COMP GROUP | ( LBS ) |
| 1315-01-030-6838 | C521   | B                                  | II-B     | (08)1.2  | C          | 2,334   |

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

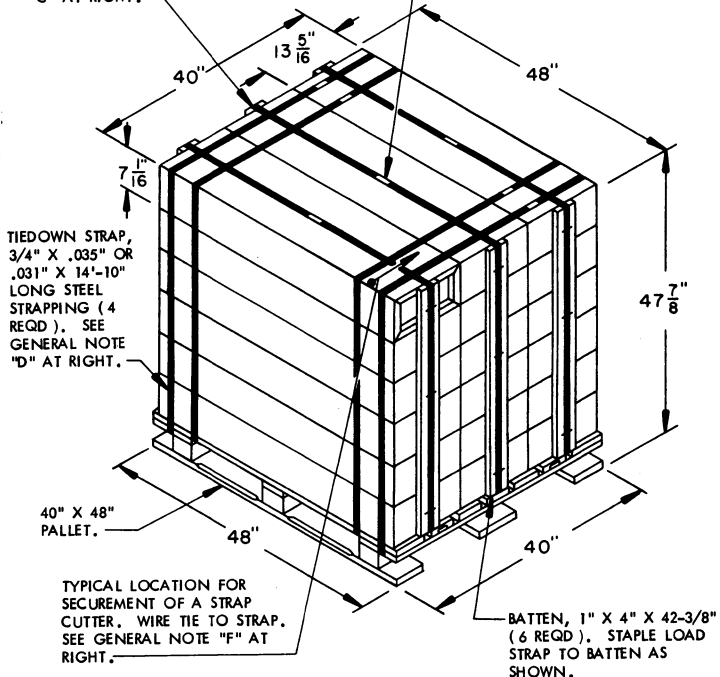
① HAZARD CLASSIFICATION DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY. VERIFICATION OF THE SPECIFIED DATA SHOULD BE MADE BY CONSULTING THE MOST RECENT JOINT HAZARD CLASSIFICATION SYSTEM LISTING OR OTHER APPROVED LISTING(S).

| REVISIONS  |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
|--|--------------------|-----------------|---|--------------------|--------------------|-----------|------------------|---|--|--|--|---|--|----------------------------------|--|----------------------|--|-------|----------|---------|------|-----------|-----------|-----------------|-----------------|
|  |                    |                 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><i>[Signature]</i></td> <td style="width: 50%;"><i>[Signature]</i></td> </tr> <tr> <td style="font-size: small;">CONDUCTOR</td> <td style="font-size: small;">LOG ORDER OFFICE</td> </tr> <tr> <td colspan="2" style="font-size: small;">APPROVED, U. S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND</td> </tr> <tr> <td colspan="2" style="font-size: small;">APPROVED BY ORDER OF COMMANDER GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND RESEARCH'S COMBAND BARBERS</td> </tr> <tr> <td colspan="2" style="font-size: small;">U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>U. S. ARMY DARCOM DRAWING</b></td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>NOVEMBER 1983</b></td> </tr> <tr> <td style="font-size: small;">CLASS</td> <td style="font-size: small;">DIVISION</td> <td style="font-size: small;">DRAWING</td> <td style="font-size: small;">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>4116/45P</b></td> <td style="text-align: center;"><b>20PA1002</b></td> </tr> </table> | <i>[Signature]</i> | <i>[Signature]</i> | CONDUCTOR | LOG ORDER OFFICE | APPROVED, U. S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND |  | APPROVED BY ORDER OF COMMANDER GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND RESEARCH'S COMBAND BARBERS |  | U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL |  | <b>U. S. ARMY DARCOM DRAWING</b> |  | <b>NOVEMBER 1983</b> |  | CLASS | DIVISION | DRAWING | FILE | <b>19</b> | <b>48</b> | <b>4116/45P</b> | <b>20PA1002</b> |
| <i>[Signature]</i>   | <i>[Signature]</i> |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| CONDUCTOR  | LOG ORDER OFFICE   |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| APPROVED, U. S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND  |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| APPROVED BY ORDER OF COMMANDER GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND RESEARCH'S COMBAND BARBERS |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL  |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| <b>U. S. ARMY DARCOM DRAWING</b>   |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| <b>NOVEMBER 1983</b>   |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| CLASS  | DIVISION           | DRAWING         | FILE  |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
| <b>19</b>  | <b>48</b>          | <b>4116/45P</b> | <b>20PA1002</b>   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |
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|  |                    |                 |   |                    |                    |           |                  |   |  |  |  |   |  |                                  |  |                      |  |       |          |         |      |           |           |                 |                 |

**DO NOT SCALE**

LOAD STRAP, 3/4" X .035" OR .031" X 16'-2" 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.



**PALLET UNIT**

SEE GENERAL NOTE "B" AT RIGHT.

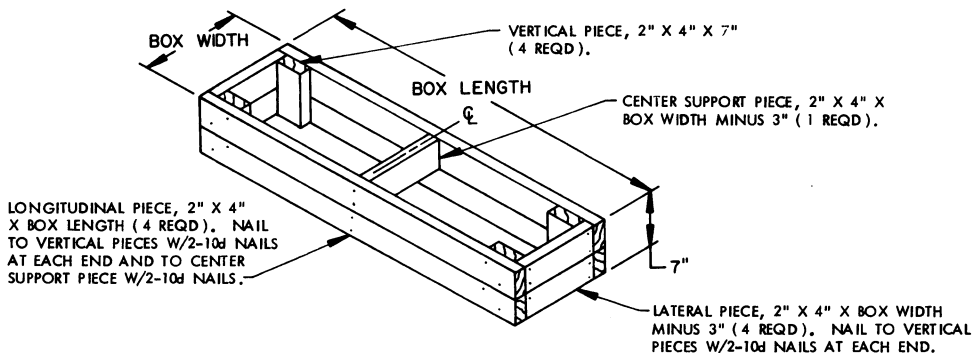
|  |       |                       |
|--|-------|-----------------------|
| 18 BOXES OF 105MM CARTRIDGES ( 2 PER BOX ) @ 124 LBS | ----- | 2,232 LBS ( APPROX )  |
| DUNNAGE  | ----- | 22 LBS                |
| PALLET   | ----- | 80 LBS                |
| TOTAL WEIGHT   | ----- | 2,334 LBS ( APPROX )  |
| CUBE   | ----- | 53.2 CU FT ( APPROX ) |

**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 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/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 DARCOM DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.
  - CARLOADING ----- DRAWING 19-48-4115-5PA1002
  - TRUCKLOADING ----- DRAWING 19-48-4117-11PA1003
  - STORAGE ----- DRAWING 19-48-4118-1-2-3-4-14-22PA1002
- F. FOR METHOD OF SECURING A STRAP CUTTER TO THE PALLET UNIT, SEE DARCOM 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 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.
- 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'-8", AND LOAD STRAP LENGTHS MUST BE DECREASED TO 15'-0". THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 40-3/4". A GROSS UNIT WEIGHT OF 1,959 POUNDS, AND A UNIT CUBE OF 45.3 CU FT. 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.

**BILL OF MATERIAL**

| LUMBER                        | LINEAR FEET        | BOARD FEET |
|-------------------------------|--------------------|------------|
| 1" X 4"                       | 21.19              | 7.06       |
| PALLET, 40" X 48" -----       | 1 REQD -----       | 80 LBS     |
| STEEL STRAPPING, 3/4" -----   | 107.83' REQD ----- | 7.70 LBS   |
| SEAL FOR 3/4" STRAPPING ----- | 5 REQD -----       | NIL        |
| STAPLE -----                  | 18 REQD -----      | NIL        |



**FILLER ASSEMBLY**

( FOR MINUS ONE BOX )