UNITIZATION PROCEDURES FOR 5.56MM OR 7.62MM CARTRIDGES PACKED IN SURE-PAK CONTAIN-ERS FOR INTRA-THEATER GROUND MOVEMENT ONLY

NOTICE: THE PROCEDURES DELINEATED IN THIS DRAWING ARE FOR INTRA-THEATER GROUND MOVEMENT ONLY.

U.S. ARMY MATERIEL COMMAND DRAWING

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GENERAL NOTES

- A THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED UNITIZATION PROCEDURES ARE APPLICABLE TO LOADS OF UNLINKED AND LINKED 5.56MM OR 7.62MM CARTRIDGES LOADED IN SURE-PAK
 CONTAINERS. SUBSEQUENT REFERENCE TO PALLET UNIT HEREIN MEANS THE
 SURE-PAK WITH AMMUNITION ITEMS. <u>CAUTION</u>: REGARDLESS OF THE QUANTITY OF CARTRIDGES TO BE SHIPPED, THE MAXIMUM NET WEIGHT OF THE SURE-PAK MUST NOT EXCEED 2,000 POUNDS.
- THE LOADS SHOWN ON PAGES 4 AND 6 ARE BASED ON A 48" LONG BY 40" WIDE BY 30-1/2" HIGH SURE-PAK CONTAINER WITH AN INSIDE HEIGHT OF 19", ALL WITH A MAXIMUM NET WEIGHT OF 2,000 POUNDS. ANY OF THE SURE-PAK CONTAINERS LISTED IN THE MATERIAL SPECIFICATIONS BELOW MAY BE USED, BUT MAY RESULT THE USE OF MORE FILL MATERIAL TO OCCUPY THE VOID.
- D. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS DRAWING. THE DELINEATED PROCEDURES ARE INTENDED FOR INTRA-THEATER GROUND MOVEMENT

STORAGE - - - - 19-48-4118-1-2-3-4-14-22PA1002 TACTI CAL VEHI CLE - 19-48-4901/4-CA1702 TRUCKLOADI NG - - 19-48-4117-11PA1003

- E. AMMUNITION SHOULD BE RELOADED AND TRANSPORTED IN ORIGINAL FACTO-RY PACKAGING WHENEVER POSSIBLE; HOWEVER THERE ARE SITUATIONS WHERE THIS IS NOT POSSIBLE. IN ORDER TO ENSURE THE HIGHEST LEVEL OF EXPLOSVIES SAFETY PRACTICABLE, USE THE FOLLOWING PACKAGING PRIORI-TIES WHEN PLANNING AMMUNITION TRANSPORT. FIRST, USE FACTORY PACKAGING IF AT ALL POSSIBLE. THE SECOND OPTION IS TO LOAD AMMUNITION IN METAL CANS, AS DEPICTED ON PAGES 6 AND 7. THE THIRD AND LEAST DE-SIREABLE METHOD OF SECURING AMMUNITION FOR TRANSPORT IS TO USE SANDBAGS TO PACK UNLINKED OR LINKED AMMUNITION DIRECTLY INTO SURE-PAK CONTAINERS, AS DEPICTED ON PAGES 4 AND 5.
- F. WHEN LOADING CARTRIDGES, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD. THE UNBLOCKED SPACE ACROSS THE WIDTH OR LENGTH OF A SURE-PAK CONTAINER OR ANY DIMENSION IN A METAL BOX IS NOT TO EXCEED 1/2", AND UNBLOCKED SPACE IN THE HEIGHT OF THE SURE-PAK IS NOT TO EXCEED 1". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY ADDING FILLER MATERIAL SUCH AS CARDBOARD, EMPTY WATER BOTTLES, EMPTY BOXES, SHREDDED CLOTH, OR OTHER SIMILAR NON-COMBUSTIBLE MATERIAL.
- G. METAL BOXES THAT MAY BE USED FOR SHIPMENT OF AMMUNITION USING THE PROCEDURES HEREIN ARE LIMITED TO M2 SERIES CONTAINERS.
- FILLER MATERIAL IS DEFINED HEREIN AS ANY AVAILABLE MATERIAL WITH SUF-FICIENT CUSHIONING TO PROTECT THE AMMUNITION ITEMS. SOME POTENTIAL SOURCES OF FILLER MATERIAL INCLUDE BUT ARE NOT LIMITED TO EMPTY WATER BOTTLES, SHREDDED UNIFORMS (CLEAN WITHOUT SHARP PROJECTIONS), DISCARDED CARDBOARD CARTONS, EGG CARTONS, WOOD SCRAPS (WITHOUT NAILS), TOILET PAPER AND PAPER TOWEL CARDBOARD TUBES, NEWSPAPER, SHREDDED COPY PAPER, AND DISCARDED BANDOLEERS. <u>CAUTION</u>: ALL FILLER MATERIAL MUST BE NON-STATIC PRODUCING AND FREE FROM PROJEC-TIONS AND SHARP EDGES, AS WELL AS FREE FROM FOOD RESIDUE AND EX-CESS WATER OR LIQUID RESIDUE.
- CARE SHOULD BE TAKEN WHEN LOADING SURE-PAK CONTAINERS TO ENSURE AN EVENLY BALANCED LOAD. ARRANGE THE LOAD IN SUCH A MANNER THAT THE CENTER OF GRAVITY IS CLOSE TO THE PHYSICAL CENTER OF THE SURE-
- K. IF THE SURE-PAK CONTAINERS ARE TIGHTLY PACKED AND LOADED WITH AM-MUNITION ITEMS TO WITHIN 1" OF THE TOP AT THE SIDEWALLS, THE SURE-PAKS MAY BE STACKED FOR SHORT TERM STORAGE UP TO THREE HIGH. IF, HOWEVER, THE SURE-PAK CONTAINER LOAD CONSISTS OF MORE THAN ONE INCH OF FILL MATERIAL ON THE TOP OF THE LOAD, THE SURE-PAK CONTAINERS WILL NOT BE STACKED, AND SHOULD BE MARKED AS SUCH. THE ONLY EXCEPTION TO THIS REQUIREMENT IS IF THE FILL MATERIAL IS AS STRONG AS OR STRONGER THAN THE CARTRIDGES BEING LOADED. SUCH AS THE USE OF EMPTY M2A1 CANS. IN THIS CASE, THE SURE-PAK CONTAINERS MAY BE STACKED AS OUTLINED ABOVE
- EACH SURE-PAK CONTAINER MUST BE SECURED WITH A MINIMUM OF TWO WEB STRAPS ORIENTED AROUND THE 40" LENGTH AND THE HEIGHT OF THE LOAD. THE TWO STRAPS SHOULD BE EVENLY SPACED ACROSS THE LENGTH OF THE LOAD. CARE MUST BE TAKEN TO ENSURE THAT STRAP RATCHETS WILL NOT INTERFERE WITH EITHER STACKING OF THE SURE-PAK CONTAINERS OR LONGITUDINAL LOADING FOR TRANSPORT. IF WEB STRAPS ARE NOT AVAILABLE, SIMILAR STRENGTH PLASTIC STRAPPING IAW ASTM D3950 MAY BE
- M. PORTIONS OF THE SURE-PAK CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE TOP AND SIDEWALL, HAVE NOT BEEN SHOWN IN SOME LOAD VIEWS FOR CLARITY PURPOSES.
- N. THE QUANTITY OF CARTRIDGES SHOWN IN THE LOADS HEREIN MAY BE REDUCED FOR SHIPMENT, IF DESIRED. ADDITIONAL FILL MATERIAL MUST BE INSTALLED IN ORDER TO MEET THE REQUIREMENTS IN GENERAL NOTE "F".
- CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454 KG.

MATERIAL SPECIFICATIONS

SURE-PAK CONTAINER -: SHIPPING AND STORAGE SYSTEM; SURE-PAK KIT INCLUDING TOP, BASE, SLEEVE AND 8 LOCKING CLIPS; 8115-01-556-2579 (30-1/2" HIGH), 8115-01-556-2580 (36-1/2" HIGH), OR 8115-01-556-2581 (51-1/2" HIGH).

SANDBAG - - - - -: BAG, SAND; 8105-01-564-3928 OR EQUIVALENT

STRAPPING, WEB - - -: TIE DOWN, CARGO, VEHICLE, 2" NOMINAL STRAP, 2,000 POUND MINIMUM WORKING LOAD LIMIT, 3990-01-204-3009 OR EQUIVALENT.

HARDBOARD - - - - -: ANSI/AHA A135.4, CLASS 1

FIBERBOARD - - - - -: ASTM D4727.

TAPE. DUCT - - - -: COMMERCIAL GRADE.

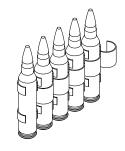
HONEYCOMB FILLER - -:

FIBERBOARD, FACING PAPER WEIGHT 69 POUNDS/1,000 SQUARE FEET, SORE PAPER WEIGHT 33 POUNDS/1,000 SQUARE FEET, 1/2" CORE CELL CENTERS, INTERNATIONAL HONEYCOMB CORPORA-

FOAM CUSHIONING MATERIAL -

COMMERCIAL ITEM DESCRIPTION A-A-59136, CLASS 1, TYPE III, GRADE A, OR COMMERCIAL EQUIVALENT.





TYPICAL 5.56MM UNLINKED CARTRIDGE

AN A063 CARTRIDGE IS SHOWN AS TYPICAL ONLY. SEE THE CHART BELOW FOR APPLICABLE DODICS AND DIMENSIONAL DATA.

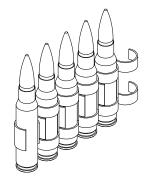
TYPICAL 5.56MM LINKED CARTRIDGE

A PORTION OF LINKED A064 CARTRIDGES IS SHOWN AS TYPICAL. SEE THE CHART BELOW FOR APPLICABLE DODICS AND DIMENSIONAL DATA.

5.56MM CARTRIDGE									
DODIC	LENGTH	DIAMETER	WEIGHT	LINKED	LINKED QTY				
A063 A064 A072 AB57	2. 260" 2. 260" 2. 260" 2. 260"	0. 378" 0. 378" 0. 378" 0. 378"	191 GRAINS 191 GRAINS 177 GRAINS 190 GRAINS	N Y N N	NA 200 NA NA				

DIMENSIONAL DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY.





TYPICAL 7.62MM UNLINKED CARTRIDGE

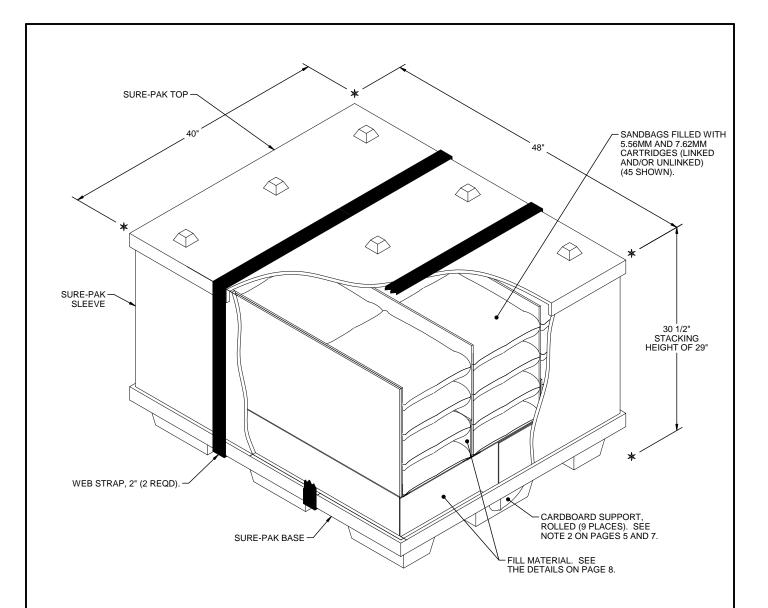
AN AA11 CARTRIDGE IS SHOWN AS TYPICAL ONLY. SEE THE CHART BELOW FOR APPLICABLE DODICS AND DIMENSIONAL DATA.

TYPICAL 7.62MM LINKED CARTRIDGE

A PORTION OF LINKED A131 CARTRIDGES IS SHOWN AS TYPICAL. SEE THE CHART BELOW FOR APPLICABLE DODICS AND DIMENSIONAL DATA.

7.62MM CARTRIDGE									
DODIC	LENGTH	DIAMETER	WEIGHT	LINKED	LINKED QTY				
A131 AA04 AA11	2. 800" 2. 800" 2. 830"	0. 454" 0. 454" 0. 454"	392 GRAINS 383 GRAINS 390 GRAINS	Y Y N	100 100 NA				

DIMENSIONAL DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY.



PALLET UNIT FILLED WITH SANDBAGS

SEE GENERAL NOTE "F" ON PAGE 2. UPPER FILL MATERIAL NOT SHOWN FOR CLARITY.

TOTAL WEIGHT - - - - - - - - - 2,050 LBS (APPROX) CUBE - - - - - - - - - 57.2 CU FT (APPROX)

BILL OF MATERIAL
14" x 26" SANDBAGS 45 REQD 6 LBS
CARDBOARD AS REQD 49 LBS
WEB STRAP ASSEMBLY. 2" 2 REQD 11 LBS



FIGURE 1



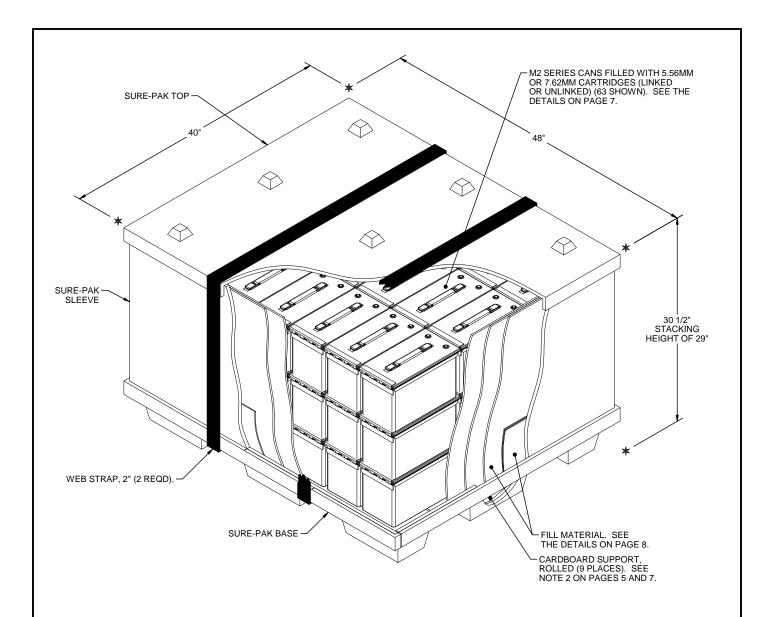
FIGURE 2



FIGURE 3

SURE-PAK CONTAINER LOADING PROCEDURES

- 1. SET UP SURE-PAK BASE AND SLEEVE, ENGAGING THE FOUR BOTTOM LOCK-
- 2. INSTALL CARDBOARD IN THE BOTTOM OF THE SURE-PAK BASE TO FILL VOID AREAS. SEE FIGURE 4 ON PAGE 8.
- INSTALL CARDBOARD, BENT AT 90°, AROUND THE BOTTOM INTERIOR EDGE OF THE SURE-PAK, ENSURING THAT THE CARDBOARD EXTENDS AT LEAST 8" ONTO THE SURE-PAK BASE AND 8" UP THE SURE-PAK SIDEWALL. SEE FIGURE 5 ON PAGE 8.
- 4. LAY CARDBOARD TO COVER ANY OPEN ACCESS TO THE SURE-PAK BASE.
- USE CARDBOARD TO CREATE SEPARATORS ALONG THE LENGTH OF THE SUREPAK. SEE FIGURE 6 ON PAGE 8.
- 6. FILL SANDBAGS WITH CARTRIDGES TO THE SPECIFIED WEIGHT ON PAGE 4.
- COVER THE FIRST SANDBAG FILLED WITH CARTRIDGES WITH A SECOND SANDBAG. SEE FIGURE 2 BELOW.
- TIE THE FIRST SANDBAG AND THEN THE SECOND SANDBAG LEAVING 4-5 INCHES OF MATERIAL ABOVE THE TIE LOCATION. SEE FIGURE 3 AT BELOW.
- 9. BEGIN LOADING SANDBAGS INTO THE SURE-PAK. LOAD A COMPLETE LAYER OF SANDBAGS AND ALLOW THE CARTRIDGES IN SANDBAGS TO FILL THE AVAILABLE SPACE BEFORE STARTING A HIGHER LAYER. INSERT MORE CARDBOARD ALONG THE SIDE WALLS OF THE SURE-PAK IF NECESSARY TO ENSURE A TIGHT LOAD. BEGIN LOADING THE REMAINING LAYERS OF SAND-BAGS IN A SIMILAR MANNER UNTIL SURE-PAK IS FULL.
- 10. DO NOT EXCEED 2,000 POUNDS NET WEIGHT FOR THE SURE-PAK CONTENTS.
- WHEN THE SURE-PAK IS FILLED, ADD CARDBOARD OR OTHER VOID FILLER AS NEEDED TO FILL THE TOP OF THE SURE-PAK. SEE GENERAL NOTE "H" ON PAGE 2.
- 12. INSTALL THE SURE-PAK TOP.
- 13. INSTALL TWO WEB STRAPS (MINIMUM) AROUND THE SHORT DIMENSION OF THE SURE-PAK. SEE PAGE 8 FOR DETAILS.



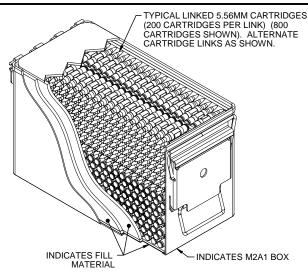
BOXED CARTRIDGE PALLET UNIT

SEE GENERAL NOTE "F" ON PAGE 2 AND BOX LOADING DETAILS ON PAGE 7. UPPER FILL MATERIAL NOT SHOWN FOR CLARITY.

63 M2	SER	11	ES	E	30)	(ES	6	?	30.	75	ı	LBS	F	PER	? E	30>	(-	-	-	-	-	-	-	-	1, 938	LBS
																										61	
PALLET	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	LBS

CUBE - - - - - - - - - - - - 57.2 CU FT (APPROX)

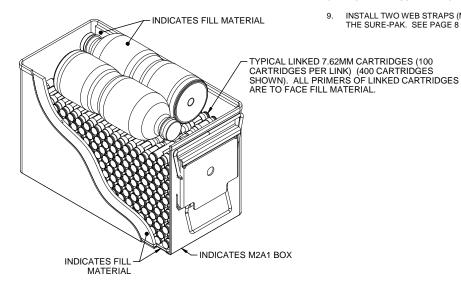
BILL OF	MATERI AL
CARDBOARD	- AS REQD 50 LBS
WEB STRAP ASSEMBLY, 2"	2 REQD 11 LBS



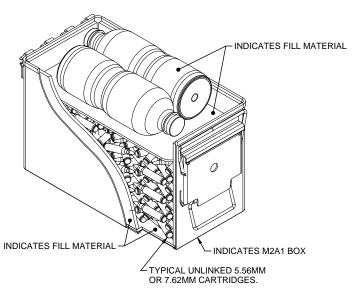
TYPICAL M2A1 BOX LOAD OF LINKED 5.56MM CARTRIDGES

SURE-PAK CONTAINER LOADING PROCEDURES

- SET UP SURE-PAK BASE AND SLEEVE, ENGAGING THE FOUR BOTTOM LOCK-ING DEVICES.
- INSTALL CARDBOARD IN THE BOTTOM OF THE SURE-PAK BASE TO FILL VOID AREAS. SEE FIGURE 4 ON PAGE 8.
- INSTALL CARDBOARD, BENT AT 90°, AROUND THE BOTTOM INTERIOR EDGE
 OF THE SURE-PAK, ENSURING THAT THE CARDBOARD EXTENDS AT LEAST 8"
 ONTO THE SURE-PAK BASE AND 8" UP THE SURE-PAK SIDEWALL. SEE FIGURE
 5 ON PAGE 8.
- 4. LOAD BOXES INTO THE SURE-PAK WITH THE HINGES FACING SAME DIRECTION. SEE THE DETAILS AT LEFT AND BELOW FOR TYPICAL LOADING OF 5.56MM OR 7.62MM CARTRIDGES INTO BOXES. M2 SERIES BOXES MAY BE USED TO LOAD EITHER UNLINKED OR LINKED CARTRIDGES AS LONG AS THE BOXES ARE NOT DAMAGED. CARDBOARD MUST BE INSTALLED AT A MINIMUM AGAINST ALL SURE-PAK SIDEWALLS AND FROM THE BASE TO THE INTERNAL HEIGHT OF THE BOX, ALLOWING SPACE TO PLACE THE TOP. SEE FIGURE 7 ON PAGE 8.
- INSTALL EXTRA FILL MATERIAL AS NEEDED THROUGHOUT LOADING, ENSUR-ING THAT THE SURE-PAK LOAD IS RELATIVELY TIGHT.
- 6. DO NOT EXCEED 2,000 POUNDS NET WEIGHT FOR THE SURE-PAK CONTENTS.
- WHEN THE SURE-PAK IS FILLED, ADD CARDBOARD OR OTHER VOID FILLER AS NEEDED, TO FILL IN THE TOP OF THE SURE-PAK, SEE GENERAL NOTE "H" ON PAGE 2.
- 8. INSTALL THE SURE-PAK TOP.
- 9. INSTALL TWO WEB STRAPS (MINIMUM) AROUND THE SHORT DIMENSION OF THE SURE-PAK. SEE PAGE 8 FOR DETAILS.



TYPICAL M2A1 BOX LOAD OF LINKED 7.62MM CARTRIDGES



TYPICAL M2A1 BOX LOAD OF UNLINKED 5.56MM OR 7.62MM CARTRIDGES

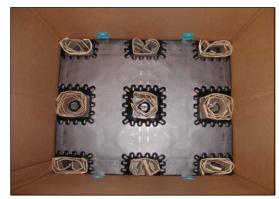


FIGURE 4



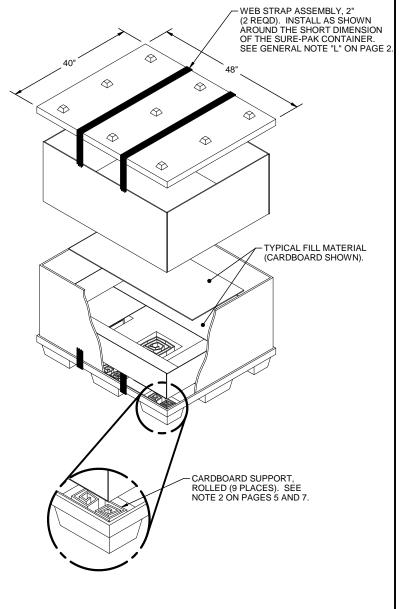
FIGURE 5



FIGURE 6



FIGURE 7



TYPICAL STRAPPED SURE-PAK CONTAINER

THE DETAIL ABOVE DEPICTS A SURE-PAK CONTAINER WITH THE MINIMUM REQUIRED FILL MATERIAL (CARDBOARD SHOWN) AND THE REQUIRED WEB STRAPS. THE SANDBAGS OR M2A1 CANS FILLED WITH 5.56MM OR 7.62MM CARTRIDGES HAVE NOT BEEN SHOWN FOR CLARITY PURPOSES.