

UNIT LOAD CONSTRUCTION GUIDELINES UNDERWAY REPLENISHMENT OF CONTAINER, M2A1 AMMUNITION BOX

USE THIS DRAWING TO CONSTRUCT UNIT LOADS FOR UNDERWAY REPLENISHMENT OF M2A1 AMMUNITION BOXES WHICH HAVE A GROSS WEIGHT NOT EXCEEDING 38 LB. PER CONTAINER.

CONSTRUCT UNIT LOAD ACCORDING TO LOAD CONFIGURATION #1 OR #2 WHEN THE CONTAINER HAS A GROSS WEIGHT OF 22 LB OR LESS. EXAMPLE: DETONATING DELAY ELEMENTS, MK 26 THRU MK 32.

WHEN THE GROSS WEIGHT OF THE CONTAINER IS GREATER THAN 22 LB BUT NOT IN EXCESS OF 28 LB, USE LOAD CONFIGURATION #3. EXAMPLE: MJU-22 DECOY FLARE.

WHEN THE GROSS WEIGHT OF THE CONTAINER IS GREATER THAN 28 LB BUT NOT IN EXCESS OF 38 LB, USE LOAD CONFIGURATION #4. EXAMPLE: MK 143 MERCURY BATTERY.

THE LOAD CONFIGURATIONS SHOWN BELOW WERE DEVELOPED USING THE CONSTRUCTION PARAMETERS LISTED BELOW. ANY LOAD CONSTRUCTED WHICH DOES NOT EXCEED THESE PARAMETERS IS APPROVED FOR USE.

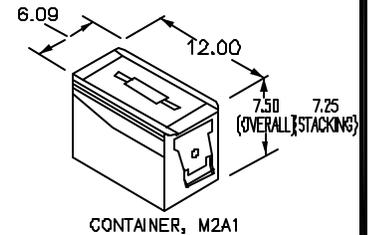
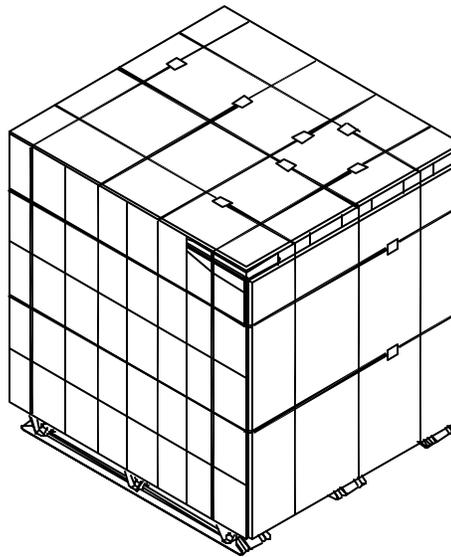
CONSTRUCTION PARAMETERS FOR:

	LOAD CONFIGURATION #1	LOAD CONFIGURATION #2	LOAD CONFIGURATION #3	LOAD CONFIGURATION #4
MAXIMUM GROSS WEIGHT OF ONE CONTAINER	22 LB.	22 LB.	28 LB.	38 LB.
MAXIMUM GROSS WEIGHT OF UNIT LOAD	3219 LB.	2600 LB.	2486 LB.	2262 LB.
MAXIMUM NO. OF CONTAINERS	140	112	84	56
MAXIMUM NO. OF CONTAINER LAYERS	5	4	3	2
WEIGHT OF PALLET (APPROX)	94 LB.	94 LB.	94 LB.	94 LB.
WEIGHT OF WOOD PANELS AND STRAPPING (APPROX)	45 LB.	42 LB.	40 LB.	37 LB.

THE MAXIMUM CONSTRUCTION PARAMETERS LISTED ABOVE MAY BE INCREASED ONLY WHEN THE PROPOSED INCREASE IN THESE PARAMETERS PASSES ALL TESTING & IS APPROVED FOR USE.

NOTES:

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
2. SEE SWO20-AC-SAF-D10 FOR THE FOLLOWING INFORMATION:
 - A. CROSS REFERENCE TO ASSOCIATED TRUCK LOADING, CONTAINER LOADING & CAR LOADING MILITARY STANDARDS.
 - B. HAZARD CLASSIFICATION.
3. DO NOT STACK MORE THAN 4 UNIT LOADS IN STORAGE.
4. FOR UNIT LOAD QUALIFICATION, SEE PHST CENTER TEST REPORT NO. B6242.



LOAD CONFIGURATION #1

B	SEE NSWC IHD DET EARLE EGP I04012	1/30/04	S/JM	S/RS
A	SEE NSWC IHD DET EARLE EGP I03072	10/22/03	S/AVS	S/JR
-	ORIGINAL ISSUE SUPERSEDES MIL-STD-1323-159, -189, -202, -318, -322, -338, & -397	9/20/00	S/AVS	S/KZ
REV.	REVISION DESCRIPTION	DATE	TDA	SYSCOM

TECH DATA MANAGEMENT SUPERVISOR	EP/ S/AVS	9/20/00	DISTRIBUTION STATEMENT A APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED REQUIREMENTS FOR CONSTRUCTION OF THIS LOAD SHALL CONSIST OF THIS DOCUMENT & THE LATEST ISSUE OF MIL-STD-1323 (NAVY). THIS LOAD IS AUTHORIZED & RELEASED FOR SHIPPING & STORAGE, TRANSFER-AT-SEA & FOR SHIPMENT BY COMMON CARRIER.	
SYSTEMS ENG. SUPERVISOR	S/DWH	9/20/00		
S/ K. H. ZIMMS		9/20/00		
NAVSEASYSKOM (BY DIRECTION)				

DEPARTMENT OF THE NAVY NAVAL SEA SYSTEMS COMMAND ARLINGTON, VA 22242-5160	CAGE CODE 53711	DWG NO. 6214253	REV. B
SIZE A	PAGE 1 OF 4		

PALLETIZING PROCEDURE FOR FULL UNIT LOAD

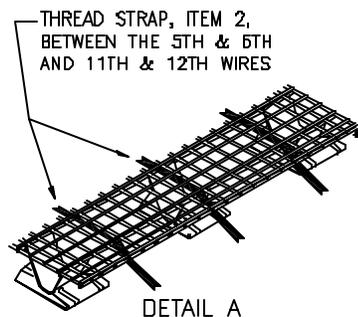
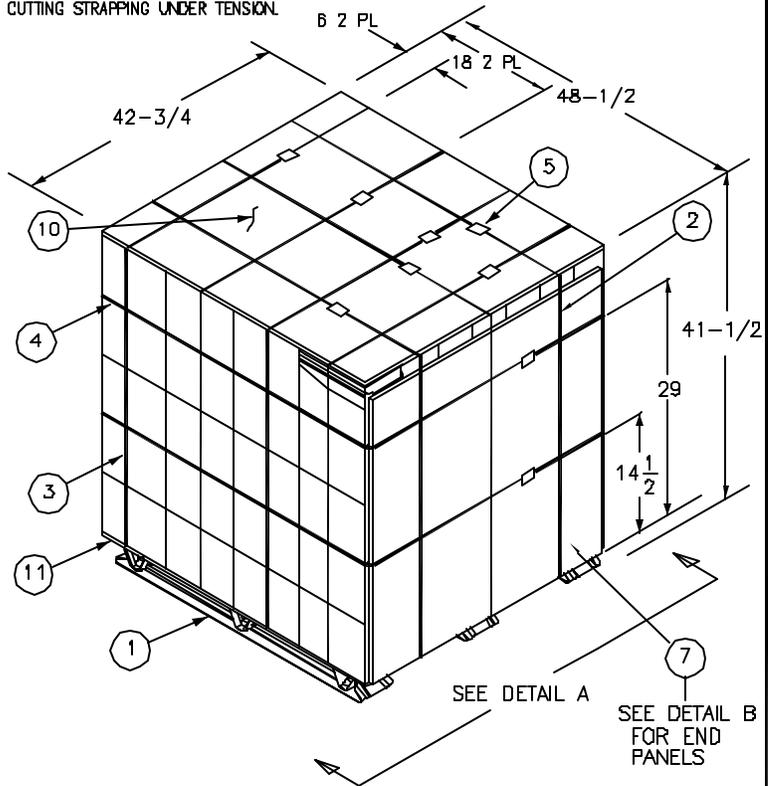
- (A) CONSTRUCT TWO END PANELS AS SHOWN IN DETAIL B.
- (B) THREAD LONGITUDINAL STRAPS, ITEM 2, THROUGH DECK WIRES OF PALLET, ITEM 1, AS SHOWN IN DETAIL A.
- (C) PLACE BOTTOM PANEL, ITEM 11, ON PALLET DECK.
- (D) POSITION 28 CONTAINERS PER LAYER ON BOTTOM PANEL, ITEM 11, WITH CLOSURE LATCHES ALL FACING SAME DIRECTION.
- (E) PLACE TOP PANEL, ITEM 10, OVER UNIT LOAD AS SHOWN.
- (F) POSITION LATERAL STRAPS, ITEM 3, UNDER PALLET DECK AND AROUND UNIT LOAD. TENSION AND SECURE EACH STRAP WITH ONE DOUBLE NOTCHED SEAL, ITEM 5. THESE STRAPS SHALL BE SECURED BEFORE LONGITUDINAL STRAPS ARE SECURED.
- (G) POSITION LONGITUDINAL STRAPS, ITEM 2, AROUND END PANELS AND OVER UNIT LOAD. TENSION AND SECURE EACH STRAP WITH ONE DOUBLE NOTCHED SEAL, ITEM 5.
- (H) POSITION GIRTHWISE STRAPS, ITEM 4, AROUND THE END PANELS AT POSITIONS INDICATED. TENSION AND SECURE EACH STRAP WITH ONE DOUBLE NOTCHED SEAL, ITEM 5.

WARNING

WEAR LEATHER GLOVES AND EYE PROTECTION (WITH SIDE SHIELDS) OR GOGGLES TO PREVENT INJURY WHEN PERFORMING STRAPPING OPERATIONS. RAPIDLY UNCOILING STRAPPING MAY CAUSE INJURY. DIRECT STRAPPING AWAY FROM PERSONNEL WHEN CUTTING STRAPPING UNDER TENSION.

NOTES:

1. STRAPPING SHALL CONFORM TO ASTM D3953, FLAT, TYPE 1, HEAVY DUTY, FINISH B, GRADE 2.
2. SEALS SHALL CONFORM TO ASTM D3953, CLASS H, FINISH B, GRADE 2, STYLE I, II OR IV.
3. WOOD SHALL CONFORM TO VOLUNTARY PRODUCTS STANDARD PS-20-99.
4. PLYWOOD SHALL CONFORM TO CID A-A-55057, TYPE A OR B.
5. ALL PALLETS, CONTAINERS AND DUNNAGE CONSTRUCTED FROM WOOD, ALSO KNOWN AS SOLID WOOD PACKING MATERIAL (SWPM), SHALL BE CONSTRUCTED FROM WOOD CERTIFIED ACCORDINGLY BY AN ACCREDITED AGENCY RECOGNIZED BY THE AMERICAN LUMBER STANDARD COMMITTEE (ALSC) IN ACCORDANCE WITH ALSC WOOD PACKING MATERIAL (WPM) PROGRAM POLICY, AND WOOD PACKING MATERIAL ENFORCEMENT REGULATIONS (SEE URL [HTTP://WWW.ALSC.ORG/](http://www.alsc.org/)). THIS CERTIFICATION ATTESTS THE WOOD HAS BEEN HEAT TREATED OR FUMIGATED WITH METHYL BROMIDE. HEAT TREATMENT IS DEFINED AS WOOD HEATED TO A CORE TEMPERATURE OF 56° CENTIGRADE FOR 30 MINUTES. FUMIGATION OF WOOD SHALL BE ACCOMPLISHED USING METHYL BROMIDE AND CERTIFIED ACCORDINGLY BY AN ACCREDITED AGENCY RECOGNIZED BY THE NATIONAL WOOD PALLET AND CONTAINER ASSOCIATION, INCORPORATED (NWPCA) IN ACCORDANCE WITH NWPCA METHYL BROMIDE FUMIGATION POLICY AND METHYL BROMIDE FUMIGATION ENFORCEMENT REGULATIONS. (SEE URL [HTTP://WWW.NWPCA.COM/](http://www.nwpc.com/)). WOOD PALLETS AND CONTAINERS SHALL ALSO BE PERMANENTLY AND DURABLY MARKED WITH THE CAGE CODE OF THE PALLET/CONTAINER MANUFACTURER AND THE MONTH AND YEAR OF THE CONTRACT. ON PALLETS, THE MARKING SHALL BE APPLIED TO THE STRINGER OR BLOCK ON DIAGONALLY OPPOSITE SIDES OF THE PALLET AND BE CONTRASTING AND CLEARLY VISIBLE. CONTAINERS SHALL BE MARKED ON A SIDE OTHER THAN THE TOP OR BOTTOM, AND BE CONTRASTING AND CLEARLY VISIBLE. WOOD DUNNAGE SHALL BEAR AT LEAST ONE CERTIFICATION MARK OF THE ACCREDITED ALSC OR NWPCA AGENCY, AND BE CONSPICUOUS TO THE VIEWER.
6. FIVE LAYERS SHALL HAVE 2 GIRTHWISE STRAPS AND ALL OTHERS SHALL HAVE 1 GIRTHWISE STRAP.

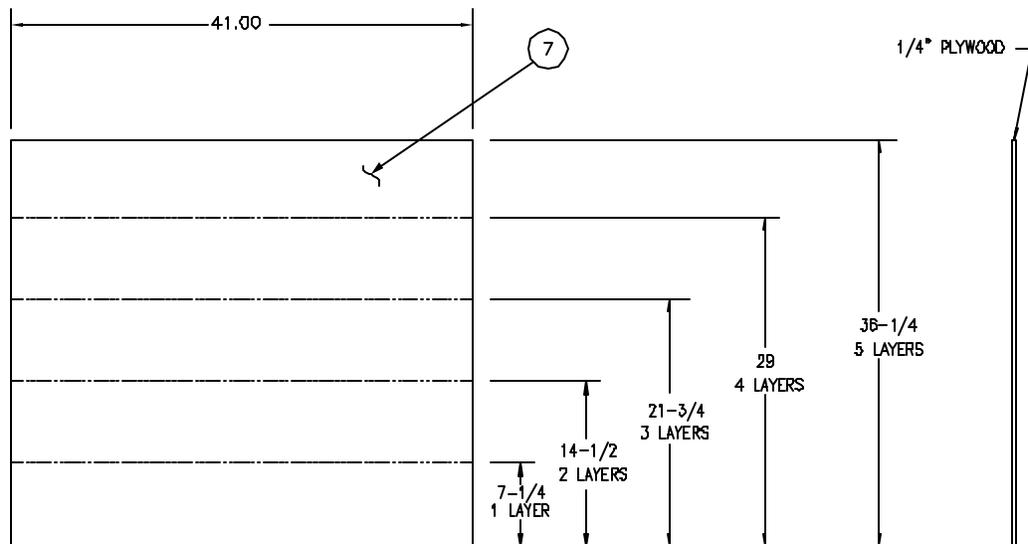


11	1	PANEL, BOTTOM	PLYWOOD (SEE NOTE 4)	1/4 X 42-3/4 X 48
10	1	PANEL, TOP	PLYWOOD (SEE NOTE 4)	1/4 X 42-3/4 X 48
9				
8				
7	2	PANEL, END	PLYWOOD (SEE NOTE 4)	1/4 X (SEE DETAIL B)
6				
5	9	STRAP SEAL	SEE NOTE 2	3/4" SIZE
4	AR	STRAP, GIRTHWISE	SEE NOTES 1 & 8	3/4 X .031 (OR .035) X 17 FT
3	4	STRAP, LATERAL	SEE NOTE 1	3/4 X .031 (OR .035) X 15 FT
2	3	STRAP, LONGITUDINAL	SEE NOTE 1	3/4 X .031 (OR .035) X 16 FT
1	1	PALLET, MK 3 MOD 0	10001-564200	40 X 48 X 4-3/4
ITEM	REQ'D	DESCRIPTION	MAT'L/DWG.	DIMENSIONS

LIST OF MATERIALS

PALLETIZING PROCEDURE FOR PARTIAL UNIT LOAD

- (A) LESS THAN FULL UNIT LOADS ARE AUTHORIZED, HOWEVER COMPLETE LAYERS MUST BE MAINTAINED.
- (B) A LESS THAN FULL UNIT LOAD MAY CONSIST OF 1, 2, 3 OR 4 COMPLETE LAYERS.
- (C) WHEN PALLETIZING LESS THAN FULL UNIT LOADS, ADJUST THE HEIGHT OF THE END PANELS AND THE LENGTH OF STRAPS, ITEMS 2 AND 3, FOR THE APPROPRIATE HEIGHT. STRAP THE UNIT LOAD USING THE PRINCIPLES SHOWN ON PAGE 2.
- (D) USE EMPTY M2A1 CONTAINERS OR SIMILAR WOODEN CONSTRUCTION TO FILL VOIDS IN PARTIAL UNIT LOADS. EMPTY M2A1 CONTAINERS USED AS FILLER BOXES MUST BE CLEARLY MARKED IN ACCORDANCE WITH MIL-STD-129 TO INDICATE THEY ARE EMPTY. WOOD FILLERS SHALL CONFORM TO NOTES 3, 4 AND 5 ON PAGE 2.
- (E) FILLER BOXES SHALL BE POSITIONED AT CENTER OF LOAD, IF POSSIBLE, TO REDUCE IMBALANCE AND CRUSHING. IN A MULTI-LAYER UNIT LOAD, FILLER BOXES SHALL BE PLACED IN UPPER LAYERS.



DETAIL B

END PANELS
(2 REQ'D.)

WARNING

WEAR LEATHER GLOVES AND EYE PROTECTION
(WITH SIDE SHIELDS) OR GOGGLES TO PREVENT INJURY
WHEN PERFORMING STRAPPING OPERATIONS.
RAPIDLY UNCOILING STRAPPING MAY CAUSE INJURY.
DIRECT STRAPPING AWAY FROM PERSONNEL
WHEN CUTTING STRAPPING UNDER TENSION.

DEPALLETIZING PROCEDURE

- (A) CUT AND REMOVE ALL STRAPPING.
- (B) REMOVE TOP PANEL AND END PANEL ASSEMBLIES.
- (C) REMOVE CONTAINERS.

MARKING

1. IN ADDITION TO ANY SPECIAL MARKING REQUIRED BY CONTRACT OR ORDER, THE UNIT LOAD SHALL BE MARKED IN ACCORDANCE WITH 28620-ACV00561 AND THE FOLLOWING NOTES.

2. LINEAR BAR CODE LABELS:

A. IN ADDITION TO 2D BAR CODE LABELS OF ACV00561, APPLY NIIN AND LOT NUMBER LINEAR BAR CODE LABELS AS FOLLOWS:

- 1) THE LINEAR BAR CODE LABELS SHALL BE APPLIED ON THE FAR RIGHT VERTICAL STRAPS ON THE SHORT DIMENSION OF THE UNIT LOAD. LABELS SHALL BE APPLIED TO THE UNIT LOAD STRAPPING STARTING 18 INCHES ABOVE THE PALLET DECK. A DUPLICATE SET OF LABELS SHALL BE APPLIED ON EITHER ADJACENT SIDE.
- 2) NIIN BAR CODE LABEL: THE NINE-DIGIT NATIONAL ITEM IDENTIFICATION NUMBER (NIIN), OWNERSHIP CODE AND AMMUNITION CONDITION CODE SHALL BE ENCODED AS A SINGLE "MESSAGE". THE NIIN SHALL BE ENCODED WITHOUT THE DASHES. A SPACE (ENCODED) SHALL BE PLACED BETWEEN THE NIIN AND THE OWNERSHIP CODE AND BETWEEN THE OWNERSHIP CODE AND AMMUNITION CONDITION CODE.
 - a) OWNERSHIP CODE: THE OWNERSHIP CODE SHALL BE AS FOLLOWS:
 1. FOR ARMY-OWNED AMMUNITION- "1".
 2. FOR MARINE CORPS-OWNED AMMUNITION- "4".
 3. FOR NAVY OWNED-AMMUNITION- "5".
 4. FOR AIR FORCE-OWNED AMMUNITION- "6".
 5. FOR COAST GUARD-OWNED AMMUNITION- "7".
 - b) AMMUNITION CONDITION CODE: THE AMMUNITION CONDITION CODE (C/C) SHALL BE "A" FOR NEW PRODUCTION ASSETS.
- 3) LOT/SERIAL NUMBER BAR CODE LABEL: THE LOT NUMBER, SERIAL NUMBER, SHELF-LIFE EXPIRATION DATE AND QUANTITY SHALL BE ENCODED ON THE SAME "MESSAGE". A SLASH (ENCODED) SHALL BE PLACED BETWEEN THE LOT NUMBER AND THE SERIAL NUMBER, WHEN BOTH LOT AND SERIAL NUMBERS ARE ASSIGNED. THE SHELF-LIFE EXPIRATION DATE IS A 4 DIGIT DATA ELEMENT REPRESENTING THE MONTH (01 THROUGH 12) AND LAST TWO DIGITS OF THE YEAR. THE SHELF-LIFE SHALL BE ENCODED BETWEEN THE SERIAL NUMBER AND THE QUANTITY, IF A SHELF-LIFE IS ASSIGNED. A SPACE (ENCODED) SHALL BE PLACED BETWEEN THE SERIAL NUMBER AND THE SHELF-LIFE DATE AND BETWEEN THE SHELF-LIFE DATE AND THE QUANTITY.

B. LINEAR BAR CODE REQUIREMENTS:

- 1) BAR CODE MARKINGS SHALL BE APPLIED BY MEANS OF A LABEL.
 - a) LABELS SHALL MEET THE REQUIREMENTS FOR GRADE A, STYLE 1, COMPOSITION B LABEL AS SPECIFIED IN MIL-PRF-61002. THE PERFORMANCE REQUIREMENTS FOR SOLVENT AND DETERGENT RESISTANCE ARE NOT REQUIRED.
 - b) LABELS SHALL BE THREE-QUARTERS (3/4) OF AN INCH IN HEIGHT.
 - c) BAR CODE LABELS SHALL HAVE A WATERPROOF, UNTINTED/TRANSPARENT, PLASTIC, PROTECTIVE LAMINATE SUCH AS ASTM D5486, TYPE III, CLASS 2 TAPE OR EQUIVALENT PROTECTION, SHALL BE APPLIED TO OR SHALL BE INHERENT TO THE LABEL.
2. THE BAR CODE SYMBOLOGY AND HUMAN READABLE INFORMATION (HRI) THAT ARE TO BE APPLIED SHOULD BE THE STANDARD DOD SYMBOLOGY AS DESCRIBED IN ANSI/AIM BC1 (UNIFORM SYMBOLOGY SPECIFICATION CODE 39). THE ANSI/AIM BC1 IS A DOCUMENT PUBLISHED BY AIM USA AND MAY BE OBTAINED DIRECTLY FROM AIM USA BY WRITING TO 634 ALPHA DRIVE, PITTSBURGH PA 15328-2802 OR CALL (412) 963-8588. THE HRI SHALL BE AN EXACT INTERPRETATION OF THE DATA ENCODED IN THE BAR CODE AND SHOULD NOT CONTAIN ANY SPACES OR DASHES, THE PREFERRED LOCATION FOR THE HRI IS BELOW THE BAR CODE MARKINGS.

3. BAR CODE RESTRICTIONS:

- a) DENSITY OF THE BAR CODE SHALL BE 9.4 CHARACTERS PER INCH UNLESS OTHERWISE SPECIFIED.
- b) HEIGHT OF BAR CODE SHALL BE 0.25 INCH OR GREATER. THE HEIGHT OF THE BARS MAY EXTEND TO THE EDGE OF THE LABEL.
- c) DISTANCE BETWEEN THE BAR CODE AND THE HRI WILL BE BETWEEN 0.003 AND 0.010 INCH. THE PREFERRED DISTANCE IS 0.003.
- d) HEIGHT OF THE HRI SHALL BE BETWEEN 0.09 AND 0.15 INCH. THE PREFERRED HEIGHT IS 0.09.