

# MILITARY STANDARD

MIL-STD-1386-20  
(NAVY)

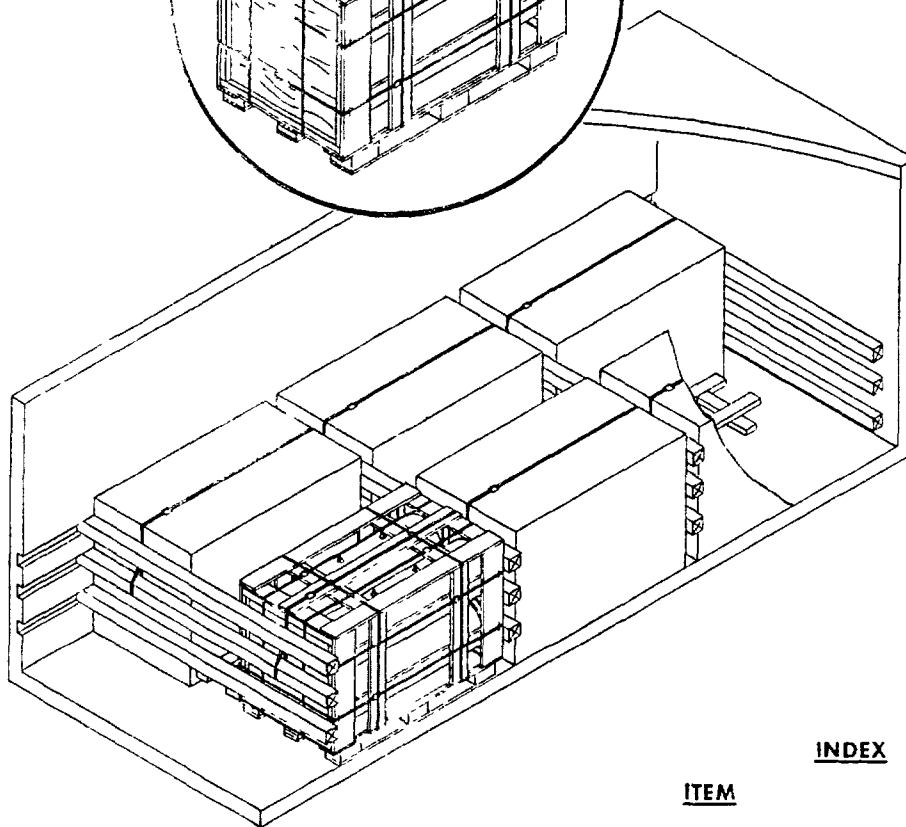
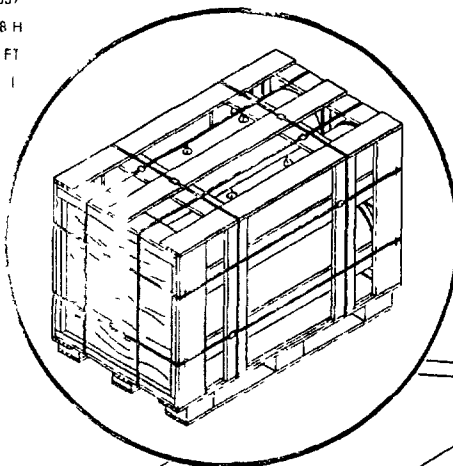
## LOADING OF HAZARDOUS MATERIALS AND ASSOCIATED ITEMS IN MILVAN CONTAINERS

10 NOVEMBER 1972

ROCKET LAUNCHER, LAU-69/A  
DOMESTIC UNIT LOAD

### UNIT LOAD DATA

UNIT LOAD DRAWING WR-53/839  
DIMENSIONS 65 3/4 L x 37 3/4 W x 44 7/8 H  
CUBE 64.5 CU FT  
OTHER TABLE I



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### NOTES

- UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
- FOR CROSS REFERENCE TO ASSOCIATED PALLIZING, TRUCK LOADING AND CARLOADING MILITARY STANDARDS, REFER TO THE INDEX TO STANDARDS, MIL-HDBK-236

**AUTHORIZED FOR TRAILER-ON-FLAT CAR (TOFC), CONTAINER ON-FLAT CAR (COFC), CONTAINERSHIP AND HIGHWAY SHIPMENTS**

**APPROVED BY  
US COAST GUARD**

*J. Schuring* CAPT USCG  
DATE 10 November 1972

**APPROVED BY  
BUREAU OF EXPLOSIVES**

*A. G. Brannock*  
DATE 10/31/72

*W. S. Brown* 11/1/72  
TECHNICAL DIRECTOR AGENT (TDA) DATE

ORIGINATOR

*J. R. Caron*  
SIGNATURE

MILVAN CONTAINER (NAVY)

**GENERAL NOTES**

1. THIS DOCUMENT GIVES DETAIL INSTRUCTIONS FOR LOADING THE MILVAN CONTAINER WITH DOMESTIC UNIT LOADS OF ROCKET LAUNCHERS, LAU-69/A. THE LAUNCHERS SHALL BE PALLETIZED IN ACCORDANCE WITH WF-53/839.
2. THE LAU-69/A SHALL BE EQUIPPED WITH A MECHANICAL LOAD-BRACING SYSTEM THAT MEETS THE REQUIREMENTS OF THE BUREAU OF EXPLOSIVES PAMPHLET 6 C.
3. IN ADDITION TO THE BELT RAILS REQUIRED BY PAMPHLET 6 C, THE MILVAN CONTAINER HAS BELT RAILS AT THE 72 AND 83" HEIGHTS FROM THE CONTAINER FLOOR.

**CAUTION**

WHEN POSITIONING CROSSMEMBERS MAKE A VISUAL CHECK TO INSURE THAT CROSSMEMBERS ARE LOCKED SECURELY IN PLACE.

4. CONTAINERS ARE EQUIPPED WITH 25 CROSSMEMBERS. UNUSED CROSSMEMBERS MUST REMAIN WITH THE CONTAINER AND SHALL BE FASTENED INTO BELT RAILS FOR SHIPMENT.
5. THE DUNNAGE SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1 x 4 MATERIAL IS ACTUALLY 3/4 THICK BY 3 5/8 WIDE AND 2 x 4 MATERIAL IS ACTUALLY 1 5/8 THICK BY 5 1/2 WIDE.
6. WHEN THE VOID BETWEEN THE CROSSMEMBER AND THE UNIT LOAD IS GREATER THAN ONE INCH USE FILL MATERIAL TO SHIM BETWEEN CROSSMEMBER AND UNIT LOAD AS SHOWN IN DETAIL C.
7. SWAY BRACE, DETAIL D, IS ASSEMBLED IN PLACE. PIECE 1 IS POSITIONED INBOARD OF THE CORNER PALLET SKIDS WITH PIECES 2 AGAINST PALLET SKIDS NAIL TO PIECE 1 WITH THREE 10d NAILS PER JOINT. CUT PIECE 3 TO FIT BETWEEN PIECES 2 AND NAIL TO PIECE 1 WITH THREE 10d NAILS.
8. APPLICABLE MATERIAL SPECIFICATIONS:
  - DUNNAGE LUMBER - FED. SPEC. MM-L-751
  - NAILS - FED. SPEC. FF-N-105, COMMON CEMENT COATED, ALTERNATE, ANNULAR RING OR CHEMICALLY ETCHED TYPE
  - STRAPPING - FED. SPEC. QQ-5-781, TYPE 1, CLASS
9. AFTER BLOCKING AND BRACING HAS BEEN INSPECTED ATTACH SHIPPING DOCUMENTS INSIDE THE CONTAINER IN AN ACCESSIBLE AREA AND CLOSE AND SEAL CONTAINER DOORS.

**TOFC/COFC, CONTAINERSHIP AND HIGHWAY**

1. THE LOADED MILVAN CONTAINER SHALL BE ON A 20-FT MILVAN CHASSIS EQUIPPED WITH DOUBLE BOGIES WHEN BEING MOVED IN TOFC SERVICE.
2. WHEN THE MILVAN CONTAINER IS SHIPPED TOFC OR COFC, THE RAIL CAR SHALL COMPLY WITH THE REQUIREMENTS OF THE BUREAU OF EXPLOSIVES PAMPHLET 6 C.
3. THE LOADED CONTAINER MAY BE TRANSPORTED OVER PUBLIC HIGHWAYS ON THE MILVAN CHASSIS USING THE FOLLOWING CONFIGURATIONS:
  - A. ONE CONTAINER ON 20-FT MILVAN CHASSIS WITH A DOUBLE BOGIE LOCATED IN THE NEXT TO LAST HOLE AND PULLED BY A SINGLE OR DOUBLE DRIVE AXLE TRAILER.
  - B. TWO CONTAINERS ON A 40-FT MILVAN CHASSIS WITH BOGIES LOCATED IN THE REARMOST POSITION AND PULLED BY A DOUBLE DRIVE AXLE TRAILER.
4. THE LOADED CONTAINER MAY ALSO BE TRANSPORTED OVER PUBLIC HIGHWAYS USING SUITABLE COMMERCIAL EQUIPMENT OF ADEQUATE CAPACITY AND PULLED BY A DOUBLE DRIVE AXLE TRACTOR. CONTAINERS MUST BE ADEQUATELY SECURED TO THE EQUIPMENT.
5. THE LOADED CONTAINERS MAY BE SHIPPED TOFC/COFC. WHEN SHIPPING TOFC THE FOLLOWING CONSIDERATIONS ARE AUTHORIZED:
  - A. ONE CONTAINER ON 20-FT MILVAN CHASSIS EQUIPPED WITH DOUBLE BOGIES.
  - B. TWO CONTAINERS ON 40-FT MILVAN CHASSIS EQUIPPED WITH DOUBLE BOGIES.

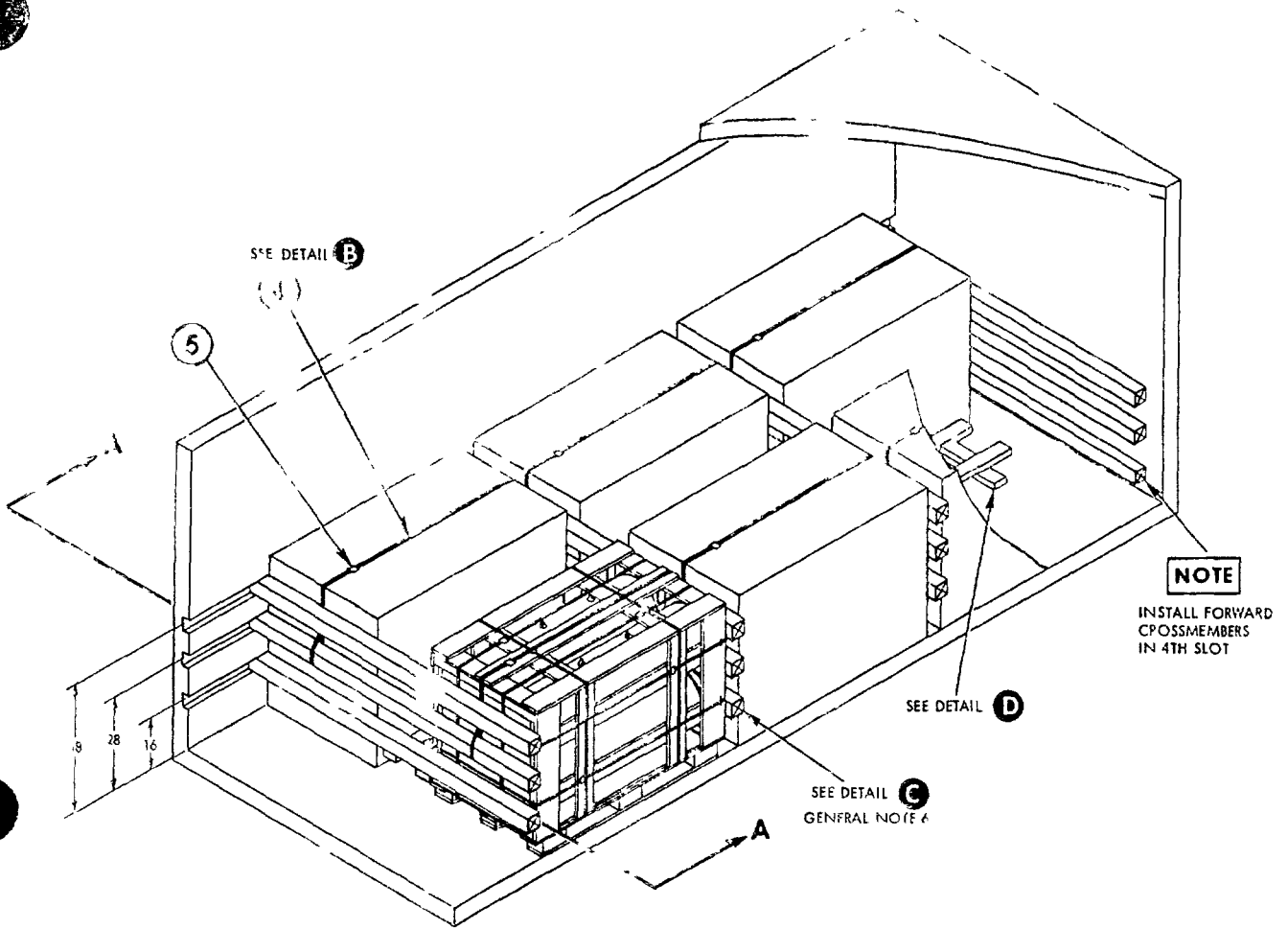
**WARNING**

CHASSIS/CONTAINERS COUPLED INTO A 40-FT TRAILER CONFIGURATION MUST BE PLACED AT THE B-END OF THE TOFC RAILCAR. THE REAR END OF THE 40-FT UNIT WILL OVERHANG THE END OF THE CAR IF IT IS PLACED AT THE A END. 20-FT AND 40-FT UNITS CAN BE LOADED ON THE SAME CAR.

**TABLE I**

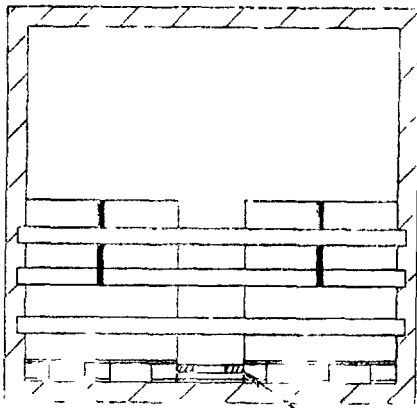
	ROCKET MOTOR	ROCKETS
UNIT LOAD WEIGHT	1163 LBS	1563 LBS
LOAD WEIGHT	6978 LBS	9378 LBS
CONTAINER WEIGHT	12,808 LBS	15,408 LBS
CONTAINER WEIGHT DO NOT EXCEED THIS LIMITATION	EXPLOSIVES B	EXPLOSIVES A

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**CONTAINER LOAD DATA**

NUMBER OF UNIT LOADS . . . . . 6  
 NUMBER OF CROSSMEMBERS REQ'D . . . . . 12  
 DUNNAGE WEIGHT . . . . . 130 LBS  
 CONTAINER WEIGHT . . . . . 5,785 LBS  
 OTHER DATA . . . . . SEE TABLE I



SECTION A-A

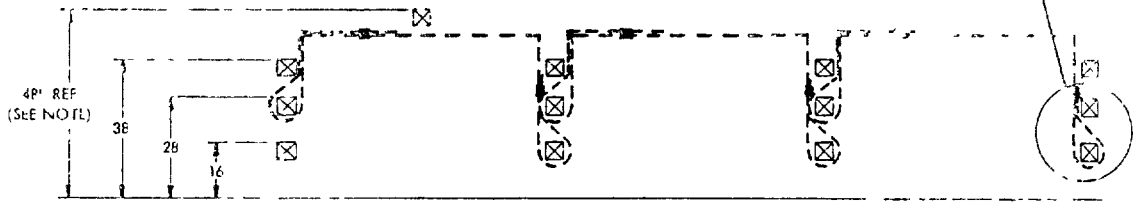
PIECE NO.	DESCRIPTION	SIZE	NO. OF PIECES REQ'D	NAIL TO	NUMBER	SIZE
5	SEAL	FOR 1 1/4 STRAP	12	-	-	-
4	STRAP	1 1/4 x .053 x	6	-	-	-
3	SPACEP	2 x 4 TO SUIT	6	1	3	10d
2	STRINGER	2 x 4 x 60	6	1	3 PER JOINT	10d
1	SUPPORT	2 x 4 x 28	6	SEE 2	-	-
PIECE NO.	DESCRIPTION	SIZE	NO. OF PIECES REQ'D	NAIL TO	NUMBER	SIZE

LIST OF MATERIALS & NAILING DATA

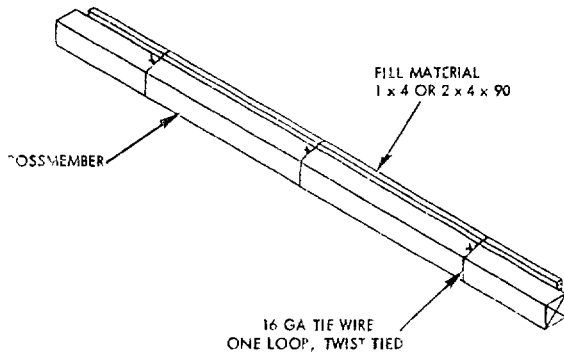
UNITED STATES NAVY

ONE SEAL MUST BE NOTCHED, ALTER TWO SEALS BUTTED TOGETHER AND DOUBLE CRIMPED

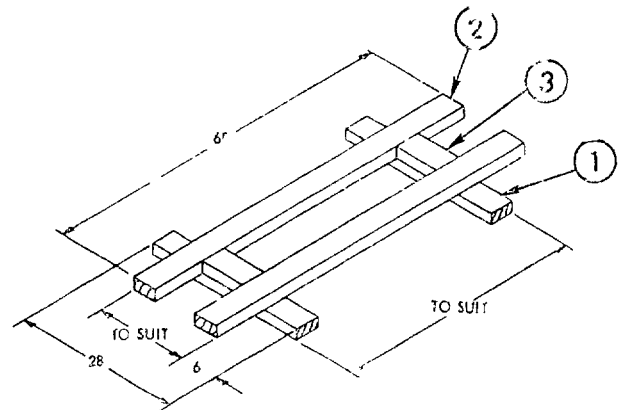
NOTE: A CROSS MEMBER INSTALLED ON THE 48 INCH BELT RAIL MAY BE USED AS A SUBSTITUTE FOR HOLD DOWN STRAP IF INSTALLATION AT THIS HEIGHT IS POSSIBLE. USE (1) CROSSMEMBER AT CENTER OF EACH BAY. SHIM BETWEEN UNIT LOAD AND CROSSMEMBER IF NECESSARY.



**DETAIL B**  
STRAPPING DIAGRAM  
(INDICATES ATTACHMENT POINTS FOR HOLD DOWN STRAPPING)



**DETAIL C**  
FILL MATERIAL  
SEE GENERAL NOTE 6



**DETAIL D**  
FILL MATERIAL  
SEE GENERAL NOTE 6