

APPROVED BY

MTMTS

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TEA, MTMTS

DATE 31 JAN 1968

# HAWK

## LOADING & BRACING ON FLAT BED OR "LOW-BOY" TRAILER OF LAUNCHER, SELF-PROPELLED, XM754

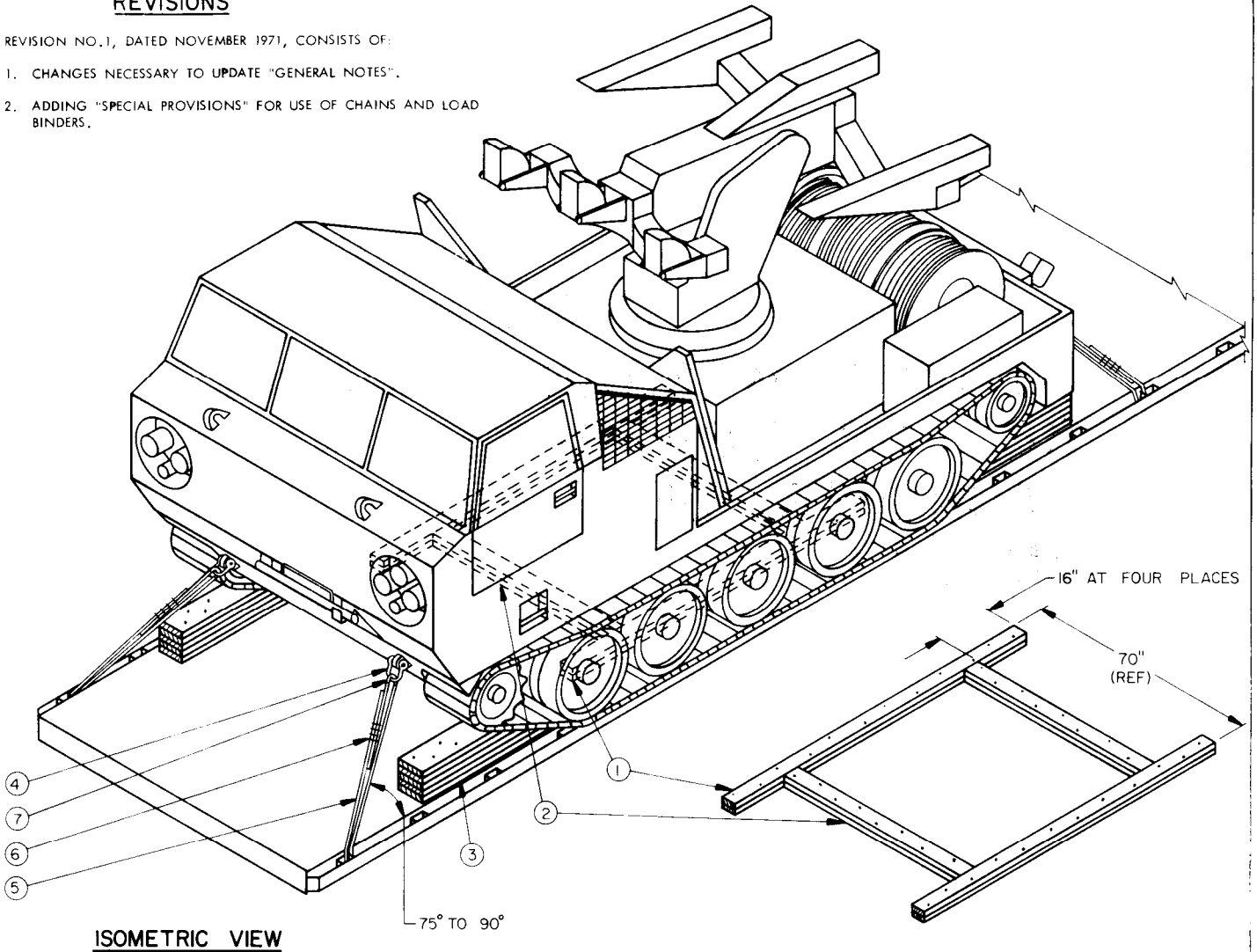
DRAFTSMAN JEE	PROJ ENG D1W/ecs	AMC/PMC S. W. O'Connell	SUBMITTED
CHECKER WBY/JDS	AMC AMMO CTR 928	AMSMI-5 Bill	<i>W. B. Harding Col.</i> COMMANDING OFFICER, SIMONA ARMY DEPOT
REVISIONS			APPROVED
I	NOV 71	<i>M. J. ...</i>	<i>Andrew W. Reid</i> ARMY MISSILE COMMAND
			APPROVED BY ORDER OF COMMANDING GENERAL U. S. ARMY MATERIEL COMMAND
			<i>Paul ...</i>
			U. S. ARMY MATERIEL COMMAND
			13 MARCH 1968
			CLASS DIVISION DRAWING FILE
			19 48 7541 GSE 11HA42

DO NOT SCALE

## REVISIONS

REVISION NO. 1, DATED NOVEMBER 1971, CONSISTS OF:

1. CHANGES NECESSARY TO UPDATE "GENERAL NOTES".
2. ADDING "SPECIAL PROVISIONS" FOR USE OF CHAINS AND LOAD BINDERS.

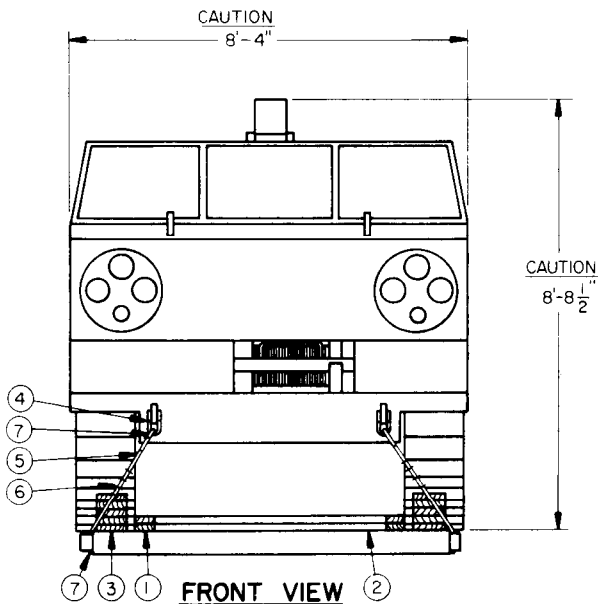


**ISOMETRIC VIEW**

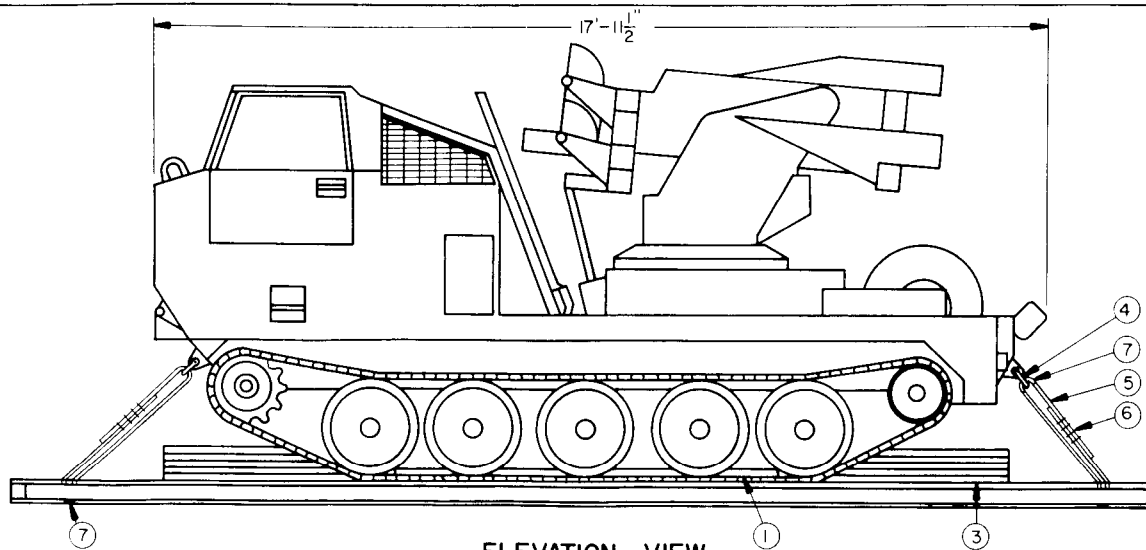
**SIDE BLOCKING ASSEMBLY**

### KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" X 8'-0" (DOUBLED) (2 REQD.). PRE-POSITION. NAIL FIRST PIECE TO TRAILER FLOOR W/1-12d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST IN A LIKE MANNER. SEE "SIDE BLOCKING ASSEMBLY" DETAIL. SEE GENERAL NOTE "K".
- ② LATERAL BRACING, 2" X 4" BY CUT TO FIT (DOUBLED) (2 REQD.). PRE-POSITION AS SHOWN. NAIL FIRST PIECE TO TRAILER FLOOR W/1-12d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST IN A LIKE MANNER. SEE "SIDE BLOCKING ASSEMBLY" DETAIL.
- ③ CHOCK BLOCK (4 REQD.). SEE DETAIL ON PAGE 3.
- ④ SHACKLE, SIZE 7/8" (4 REQD.). INSTALL ONE EACH AT TWO FRONT AND TWO REAR TIEDOWN POINTS ON VEHICLE. **NOTE:** NOT REQUIRED IF VEHICLE IS ALREADY EQUIPPED WITH SHACKLES WHEN OFFERED FOR SHIPMENT.
- ⑤ STEEL WIRE ROPE, 1/2" DIAMETER, 11.5 TONS (4 REQD.). INSTALL CABLE TO APPROXIMATE THE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM TIEDOWN FACILITY ON TRAILER THRU LADING TIEDOWN DEVICE AND BACK TO TRAILER TIEDOWN FACILITY. SEE GENERAL NOTES "E", "G", AND "H". **NOTE:** CABLE OF A LARGER SIZE MAY BE USED IF SPECIFIED CABLE IS NOT AVAILABLE.
- ⑥ CLIP, SIZE 1/2" (24 REQD.). FOUR (4) PER CABLE AND ONE (1) PER THIMBLE. SEE GENERAL NOTE "E".
- ⑦ THIMBLE, STANDARD, SIZE 1/2" (8 REQD.). ONE (1) PER TRAILER TIEDOWN FACILITY AND ONE (1) PER LADING TIEDOWN DEVICE. SECURE TO WIRE ROPE MARKED ⑤ W/1-CLIP PER THIMBLE. SEE GENERAL NOTE "E".

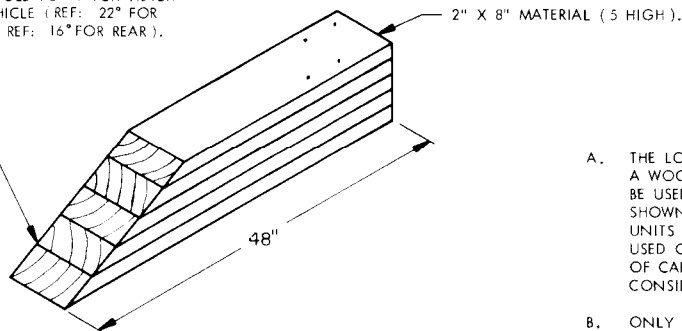


**FRONT VIEW**



**ELEVATION VIEW**

CUT ANGLE TO MATCH TRACK ON VEHICLE (REF: 22° FOR FRONT, REF: 16° FOR REAR).



**CHOCK BLOCK**

LOCATE BEVELLED END OF BLOCK AGAINST TRACK. NAIL FIRST PIECE TO TRAILER FLOOR W/ 4-12d NAILS. NAIL EACH ADDITIONAL PIECE W/ 4-20d NAILS.

**GENERAL NOTES**

- A. THE LOAD AS SHOWN IS BASED ON A FLAT BED OR "LOW-BOY" TRAILER 8'-0" WIDE WITH A WOOD OR A WOOD AND METAL FLOOR. TRAILERS WITH ALL METAL FLOORS WILL NOT BE USED. ONLY ONE UNIT OF LADING IS SHOWN; HOWEVER, MULTIPLES OF UNITS, AS SHOWN OR DISSIMILAR IN NATURE, MAY BE LOADED ON A TRAILER. THE NUMBER OF UNITS TO BE LOADED ON A TRAILER WILL BE DEPENDENT ON THE SIZE OF THE TRAILER USED OR THE QUANTITIES OF UNITS TO BE SHIPPED WITH THE VIEW OF FULL UTILIZATION OF CARRIER EQUIPMENT. **CAUTION:** THE LOAD AS SHOWN MAY REQUIRE "CLEARANCE" CONSIDERATION BECAUSE OF EXCESSIVE LADING WIDTH AND HEIGHT.
- B. ONLY TRAILERS CAPABLE OF SAFELY TRANSPORTING THE LADING TO DESTINATION WITHOUT DAMAGE WILL BE SELECTED. TRAILERS SELECTED MUST HAVE "SOUND" FLOORS WHICH PROVIDE NAIL RETENTION PROPERTIES EQUAL TO OR BETTER THAN SPECIFIED DUNNAGE LUMBER, AND A SUFFICIENT NUMBER OF TIE DOWN FACILITIES OF A STRENGTH EQUAL TO OR BETTER THAN SPECIFIED LADING TIE DOWN ASSEMBLIES.
- C. SHIPMENT GROSS WEIGHT, AXLE DISTRIBUTION OF LADING WEIGHT AND OVERALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.
- D. LADING DATA:  
 ITEM DIMENSIONS ----- 17'-11-1/2" LONG X 8'-4" WIDE X 8'-8-1/2" HIGH.  
 ITEM GROSS WEIGHT ----- 22,650 POUNDS (APPROX).
- E. REFER TO ORD DWG 19-48-C-ORDJU-588, "WIRE ROPE AND ANNEALED WIRE APPLICATION METHODS FOR SECURING LADING ON RAIL & MOTOR CARRIER EQUIP", FOR PROPER TIE DOWN APPLICATION, EXCEPT NUTS ON 1/2" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 85 TO 95 FOOT POUNDS.
- F. SEE "SPECIAL PROVISIONS" ON PAGE 4 FOR SPECIFICATIONS WHICH MUST BE APPLIED IF CHAINS AND LOAD BINDERS ARE USED.
- G. WIRE ROPE CABLE MUST BE TENSIONED SUFFICIENTLY TO CAUSE SLIGHT VEHICLE BODY DEPRESSION. TENSIONING CAN BE ACCOMPLISHED BY EMPLOYING TWO (2) CABLE "GRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- H. **CAUTION:** IT IS RECOMMENDED THAT CABLE TIE DOWNS BE INSTALLED TO APPROXIMATE ANGLE SHOWN; HOWEVER, IF PLACEMENT OF TRANSPORTER TIE DOWN FACILITIES PREVENTS THIS, CARE MUST BE EXERCISED TO ENSURE THAT CABLE TIE DOWNS ON THE SAME SIDE OF LADING ARE INSTALLED SO THEIR RETENTION FORCES ACT IN OPPOSITE LONGITUDINAL DIRECTIONS.
- J. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE.
- K. **NOTICE:** A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	53	36
2" X 8"	65	87
NAILS	NO. REQD	POUNDS
12d (3-1/4")	100	1-3/4
20d (4")	64	2-1/2
ROPE, STEEL WIRE, 1/2" DIA	48 FT REQD	21 LBS
CLIP, 1/2"	24 REQD	10 LBS
THIMBLE, STANDARD, 1/2"	8 REQD	2 LBS
SHACKLE, 7/8"	4 REQD	9 LBS

**MATERIAL SPECIFICATIONS**

**LUMBER:** DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS. REF: FED SPEC MM-L-751.

**NAILS:** COMMON, CEMENT COATED OR CHEMICALLY ETCHED. REF: FED SPEC FF-N-105. ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.

**ROPE:** STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 11.5 TONS, 6 X 19, FLEXIBLE IWRC, MACWHYTE WIRE ROPE CO. (OR EQUAL). REF: FED SPEC RR-W-410.

**CLIP:** "U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL).

**SHACKLE:** MIL-S-5675A.

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
LAUNCHER	1	22,650 LBS
XM754		
DUNNAGE		355 LBS
TOTAL WEIGHT		23,005 LBS

SPECIAL PROVISIONS:

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED WIRE ROPE CABLE TIE-DOWN DUNNAGE MATERIALS, PROVIDING THE FOLLOWING CONDITIONS ARE MET:

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED. CAUTION: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PREVENT DAMAGE TO THE LADING OR DEFORMATION OF LADING TIE-DOWN FACILITIES.
2. TWO (2) LINES OF 3/8" CHAIN, OR FOUR (4) LINES OF 1/4" CHAIN, MAY BE SUBSTITUTED FOR EACH WIRE ROPE TIE-DOWN MARKED ⑤. CHAINS SHALL BE INSTALLED AT THE SAME LOCATIONS SHOWN FOR WIRE ROPE CABLES AND IN THE SAME MANNER AS DIRECTED IN GENERAL NOTE "H" ON PAGE 3.
3. IF DESIRED, CHAINS OF A LARGER SIZE THAN SPECIFIED ABOVE MAY BE USED.
4. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR AND ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION.
5. THE TENSIONING DEVICE OF EACH LOAD BINDER MUST BE SAFETY-WIRE TIED TO PREVENT ACCIDENTAL OPENING OR LOOSENING IN TRANSIT.
6. ANTI-CHAFING MATERIAL MUST BE PLACED AND SECURED BETWEEN CHAINS AND LADING AT ALL POINTS OF CONTACT, EXCEPT AT DEFINITIVE TIE-DOWN POINTS.