DEPARTMENT OF THE ARMY TECHNICAL MANUAL

Air Transportability Guidance

EXTERNAL TRANSPORT OF THE 106-MM RECOILLESS RIFLE MOUNTED ON THE M151A1C 1/4-TON TRUCK BY UH-1B HELICOPTER

Headquarters, Department of the Army, Washington, D.C.
20 December 1965

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1. Purpose and Scope

a. This manual provides transportability guidance for the external transport of the 106mm recoilless rifle mounted on the M151A1C 1/4 ton truck (hereinafter referred to as "item") by UH-1B helicopter. The test prescribes procedures, materials, and manpower to prepare the item for external transport.

b. Users of this manual are encouraged to submit recommended changes or comments to improve the document. Comments should be keyed to the specific page, paragraph, and line of the text in which a change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to Commanding Officer, U.S. Army Transportation Engineering Agency, ATTN: TCTEA-TG, Fort Eustis, Va. 23604.

2. Applicability

These instructions apply when the item is to be transported externally by UH-1B helicopter. The UH-1B helicopter, powered by the L-9 Lycoming engine, can transport this item.

3. Responsibilities

Commanders of the transported and transporting units are responsible for the following:

a. Transported Unit.

(1) Preparing unit equipment for air transport, with supervision and assistance

as required from appropriate field support units.

(2) Effecting advance coordination with the transporting unit. This coordina tion will include a request for the cargo slings required.

(3) Providing manpower and the neces sary materials, not including slings, required to prepare the item for trans port.

(4) Providing guidance to the helicopter commander relative to safety and to any technical peculiarities of the item which may affect its safe and reliable air transport.

b. Transporting Unit.

(1) Supplying the cargo slings requested.

(2) Operating helicopter-associat ed equip-ment.

(3) Inspecting the helicopter for service-ability appropriate to the mission and complying with pertinent aviation directives.

4. Load Description

The approximate dimensions and weight of the item follow:

Length ..... 148 inches
Width ..... 72 inches
Height ..... 64 inches
Weight ..... 3,310 pounds (includes 3 boxes of 106-mm recoilless rifle ammunition and 3/4 tank of gasoline, 14 gallons, in 18-gallon fuel tank)

5. Preparation and Rigging

a. Materials.

(1) Eight 8-foot slings (FSN 3940-6755003).

(2) Four 4-foot slings (FSN 3940-6755002).

(3) One 10-inch sling (ring) (FSN 3940675-5001).

(4) Four small clevis assemblies (FSN 1670-360-0304).

(5) Two-inch pressure-sensitive tape (FSN 8135-266-5016).

(6) Cellulose wadding cushioning material (FSN 8135-558-0823).

(7) Cord, nylon, natural, type III, 550 pound (FSN 4020-240-2146).

(8) Three 15-foot webbed straps (A1A tiedown devices).

b. Procedures.

(1) Lower and lock windshield.

(2) Position and strap down 3 boxes of ammunition (fig. 1).

(3) Secure rifle on mount.

(4) Pad and tape rifle barrel projections (fig. 2).

(5) Secure ramrod sections for rifle barrel across seats with 550-pound nylon cord.

(6) Inspect slings for serviceability.

(7) Attach small clevis assembly to the hub of each wheel.

(8) Basket-hitch (fig. 3) two 8-foot slings (one to another) from each wheel clevis; basket hitch one 4-foot sling to each of the four sling legs. Tape above and below hitches.

(9) Combine the free ends of the front sling legs to form a single loop and reverse chocker hitch (fig. 4) this loop to the 10-inch ring; attach rear legs in the same manner.

(10) Cluster and tape the sling legs (breakaway technique) to prevent fouling of the cargo sling during lift-off.

(11) Tape left front sling (breakaway technique) to top of steering wheel to prevent fouling during lift-off.

(12) Pad the sling legs with cellulose wadding and tape the wadding in place where the slings contact the truck body.

(13) Insure that the truck brakes are released and that the transmission is in neutral before the hookup operation begins.

(14) Four men can prepare and rig the item for transport in approximately 30 minutes.

Caution: **Hookup personnel should wear goggles and hard hats.**

***Warning*: A charge of static electricity is nearly always present on the helicopter. Use of some type of discharge apparatus to ground the hook and discharge electricity is necessary to prevent shock when the hook is touched. After discharge of electricity, the hook is grasped quickly and firmly and held, if possible, until the hookup is completed. If contact with the hook is lost after initial grounding, the hook must be grounded again before it is touched. Do not use the item as a ground contact.**

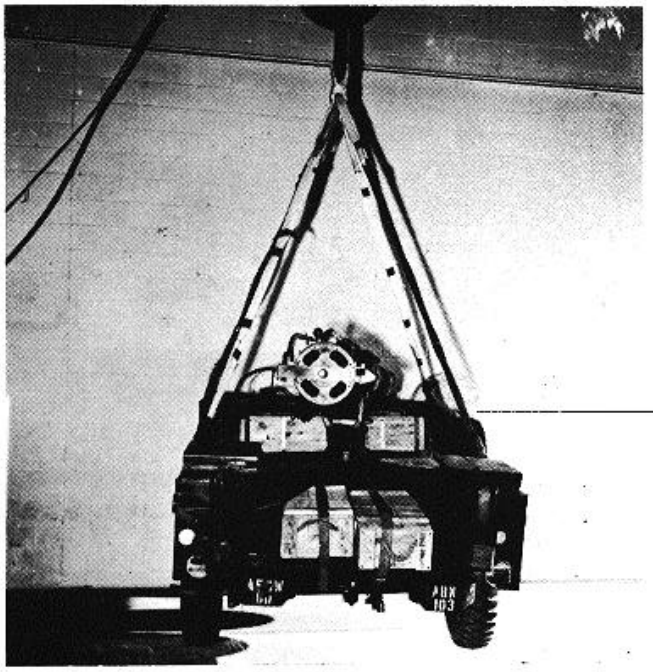


Figure 1. Rear view of the M151A1C 1/4-ton truck with mounted 106-mm recoilless rifle. Note tape at hitches.

Note. **It is emphasized that times given for the operations described in this manual are for guidance purposes only and may vary, dependent upon existing conditions.**

6. Flight

Recommended maximum airspeed for transporting this load is 120 knots indicated airspeed at 1,500 feet. Higher speeds tend to induce load instability.

7. Derigging

Reverse the procedures used in rigging. Two men can derig the item in approximately 10 minutes.

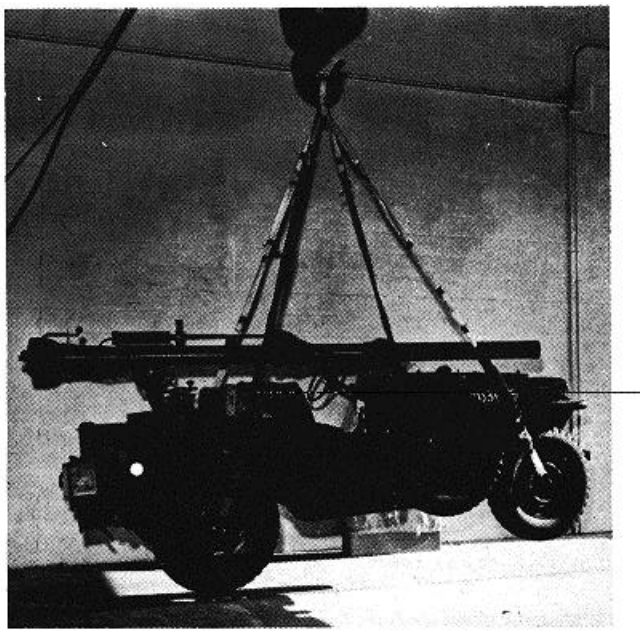
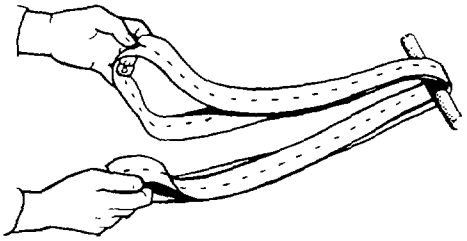
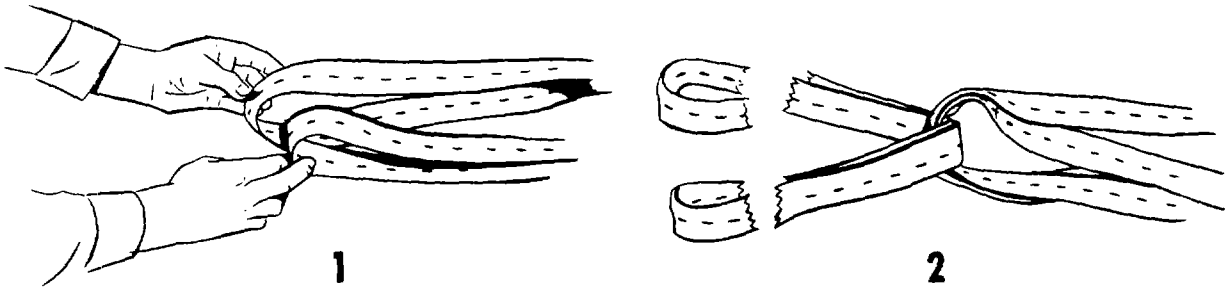


Figure 2. Side view of the M151A1C 1/4-ton truck with mounted 106-ramm recoilless rifle. Note padding protecting the rifle projections

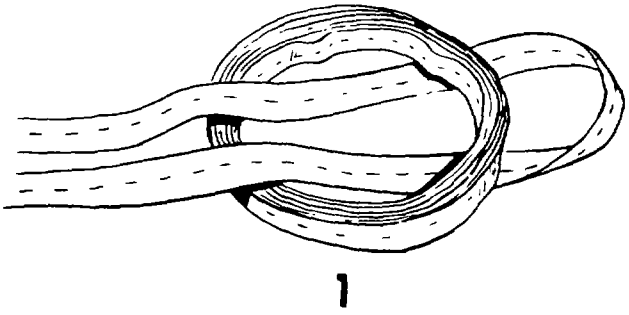


SLING TO FIXTURE



SLING TO SLING

Figure 3. Formation of basket



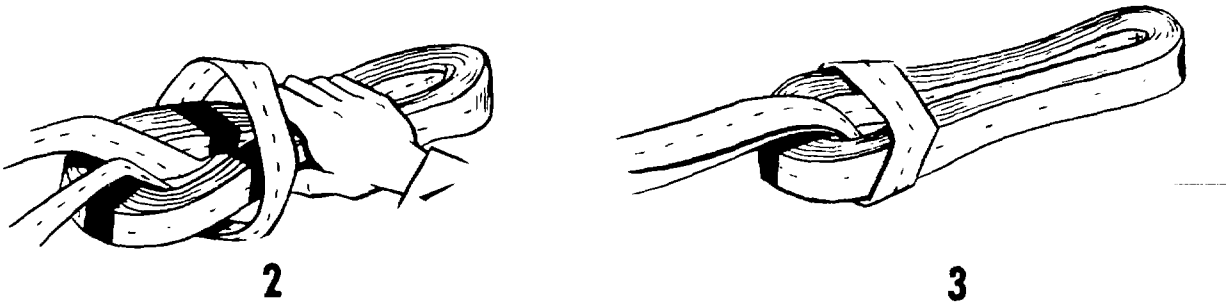


Figure 4. Formation of reverse choker hitch.

Figure 5. External lift of M151A1C 1/4-ton truck with mounted 106-mm recoilless rifle by UH-LB helicopter.

APPENDIX

REFERENCES

1. Field Manuals

FM 1-100 Army Aviation

2. Technical Manuals

TM 9-1000-205-12	Operator and Organizational Maintenance Manual: 106-mm Recoilless Rifle M40A1 with Cal. .50 Spotting Gun M8C on Mount M79 or M92 with Tripod M27; and 1.06-mm Recoilless Rifle M40A1C Used on Multi-106-mm Full-Tracked Self-Propelled Rifle M50.
TM 9-1300-206	Care, Handling, Preservation and Destruction of Ammunition
TM 9-2320-218-10	Operator's Manual; Truck, Utility: 1/4-Ton, 4 x 4, M151
TM 55-1520-211-10	Operator's Manual: Army Models UH-1A and UH-1B Helicopters
TM 57-210	Air Movement of Troops and Equipment

3. Army Regulations

AR 385-40	Accident Reporting and Records

By Order of the Secretary of the Army:

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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