Appendix B
Airlift Operations

Aircraft Capabilities

Table 56 provides the lifting characteristics of US Army helicopters which are capable of lifting float bridging equipment.

Table 56. US Army helicopter lift capabilities

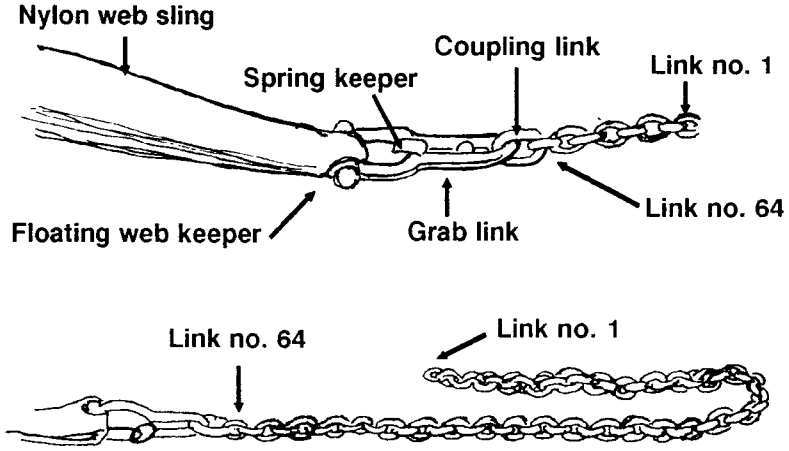
Aircraft	Type of hook system	Approximate payload (lbs)	External load limit (lbs)
CH47A	Single point	11,400	16,000
CH47B	Single point	18,400	20,000
CH47C	Single point	17,500	20,000
CH47D	Single, dual, or multiple point	20,300	25,000 (2 hooks) 26,000 (center hook 17,000 (fore/aft hook)
CH54	Single or multiple point	14,200	25,000

Airlift Equipment

Lifting sling, 15-000 pound

The 15,000-pound lifting sling is normally used for the airlift of floating bridge bays and BEBs. This sling has four 23-foot legs, each leg consisting of a 15-foot nylon web sling and a 6-foot chain leg with 64 links. At one end of each nylon leg is a nylon web ring which is used to attach the sling to the aircraft cargo hook. All four sling legs are held together by the nylon web ring. Sling legs may be added or removed, but the total sling capacity will not exceed 15,000 pounds, regardless of the number of legs used.

Lifting sling, 15,000–pound

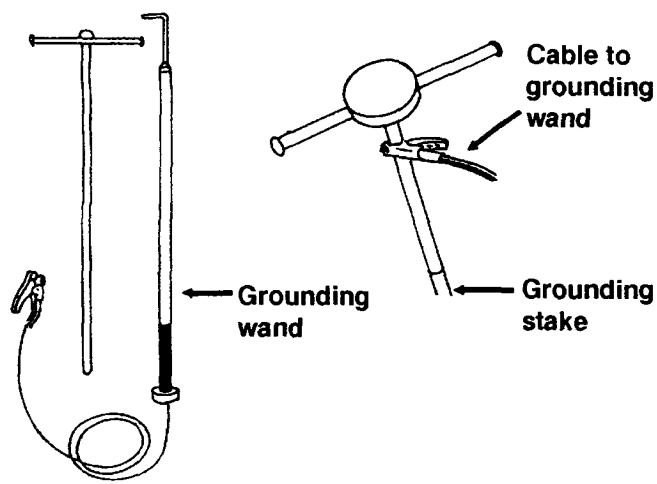


Drogue parachute

The drogue parachute may be either 5 feet or 5 feet 8 inches in diameter. It is used to improve the flight of certain loads, such as ribbon bridge interior bays, and permits them to be flown at higher speeds. Loads requiring a drogue parachute also require a single leg, swivel hook sling to link the parachute to the load.

Static discharge grounding wand

The grounding wand, or rod, is designed to protect the user from static electrical shock during helicopter loading operations. Medium and heavy lift helicopters can produce severe or fatal shocks if not grounded when touched. The stored static electrical energy of any helicopter increases with the helicopter weight, low humidity, and amount of debris blown by the rotor system (such as dust, sand, mist, or snow). The grounding rod consists of a hollowed rod with attached grounding cable and clamp on one end and a hook on the other. A grounding stake is also included. Lineman's 20 kVA gloves are used for additional protection. The grounding stake should be driven firmly into the ground (a minimum of 6 to 8 inches). The cable on the grounding wand should be attached to the grounding stake. Once this is done, the helicopter can be grounded by connecting the helicopter hook to the grounding wand. The user should never hold the wand closer than 3 inches from the body.



External Air Transport Procedures for the Boat, Bridge Erection, Twin Jet, Aluminum Hull (USCSBMK-1) (BEB-SD)

Applicability

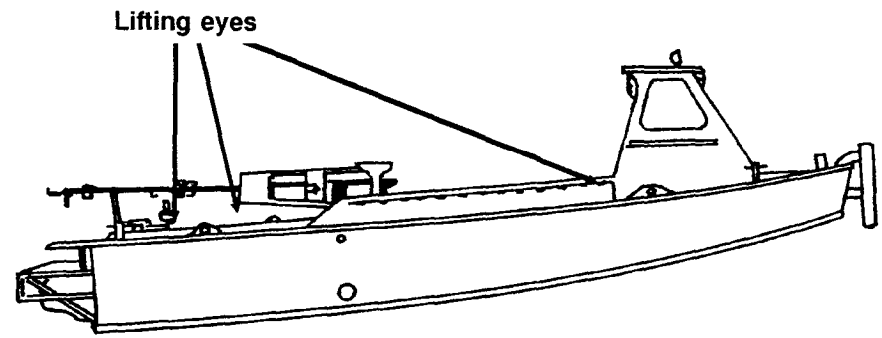
This load is suitable for the CH47A, CH47B, CH47C, CH47D, and CH54 at speeds to 80 knots.

Load description

Boat, bridge erection twin jet, aluminum hull, USCSBMK-1, LIN B83582.

Weight: 8,800 pounds.

Boat, bridge erection, twin jet, aluminum hull (side view)



Preparation
Materials

- Tape, adhesive, pressure-sensitive, 2-inch wide roll, National Stock Number (NSN) 7510-00-266-5016.
- Cord, nylon, Type III, 550 pounds, NSN 4020-00-240-2146.
- Tie-down strap, 15-foot, with lead binder and D-ring, NSN 1670-00-937-0217.
- Cotton webbing, 1/4-inch, NSN 8305-00-368-2411.
- Small clevis assembly, NSN 1030-00-360-0304(4 each).

Note. The shackle provided with the boat (see TM 5-1940-277-10) may be used in lieu of the small clevis assembly.

Personnel. Two people can prepare the load in 20 minutes.

Procedures.

1. Safety tie the beach legs, securing the pins on the diving platform.
2. Secure the hydrojet compliment hatches with nylon cord and engine compartment hatches with a 15-foot, tie-down strap with load binder and D-ring.
3. Safety tie the mast retaining pin.
4. Secure the map locker.
5. Secure all the lights on the mast with tape.
6. Tape all windows and lights on the cab.
7. Ensure that the cab is secured to the floor of the forward compartment using organic cable tie-down assembly.
8. Attach the four small clevis assemblies to the lifting eyes of the boat.

Rigging
Materials

- Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- Sling, helicopter, cargo carrying, external (10,000-pound capacity), NSN 1670-01-027-2902.

Personnel. Two people can rig this load in 10 minutes.

Procedures

1. Place the apex fitting, centered on the engine compartment hatches. Route outer sling legs (1 and 2) to front lifting eyes (bow) and inner sling legs (3 and 4) to rear lifting eyes (stern).
2. Loop the chain end of each sling leg (1 and 2) through the clevis assembly at its corresponding lifting eye and insert link 10 of each chain in its own grab hook.
3. Loop the chain end of each sling leg (3 and 4) through the clevis assembly at its corresponding lifting eye and insert link 16 of each chain in its own grab hook.
4. Secure free-running end of chain with tape.
5. Pull apex fitting up and trace all sling legs to ensure that they are properly routed.
6. Secure the front sling legs (1 and 2) to the cab with one turn tape.
7. Take up all remaining slack in the sling legs and place apex on engine compartment hatches.

Hookup

The hookup person stands on engine compartment hatch, near the center.

Notes.

1. When hooked to the aircraft in flight, this load's long axis will be approximately 75 degrees to the direction of flight.
2. The 15,000-pound capacity sling set may be used to rig this load by placing link 2 in grab hook for sling legs 1 and 2 and link 26 in grab hook for sling legs 3 and 4.

External Air Transport Procedures for the Ribbon Interior Bridge Bay
Applicability

This load is suitable for the CH47B, CH47C, CH47D, and CH54.

Note. THIS INFORMATION IS TENTATIVE IN NATURE. IT HAS NOT BEEN CERTIFIED BY THE DEPARTMENT OF THE ARMY AIRBORNE BOARD.

Load description
Bridge, ribbon interior bay.
Weight: 12,000 pounds.
Preparation
Materials

- Sling, helicopter, cargo carrying, external 15,000-pound capacity.
- Four large air delivery clevises, suspension.
- Tape, adhesive, pressure-sensitive, 2-inch width.

Personnel. Two people can rig the load in 3.5 minutes.
Procedures
1. Secure all latches in the LOCKED position.
2. Forward sling legs (2):
– Connect clevis assemblies (2) to lift provisions.
– Loop the chain end of one sling leg around clevis assembly on the forward end of the bridge. Engage link 7 in the grab link.
– Repeat these procedures on the opposite side.
3. Aft sling legs (2):
– Connect clevis assemblies (2) to lift provisions.
– Loop the chain end of one sling leg around the clevis assembly on the forward end of the bridge. Engage link 7 in the grab link.
– Repeat these procedures on the opposite side.
4. Tape the sling legs to prevent fouling during hookup.
5. Proceed with helicopter hookup.'

External Air Transport Procedures for the Ribbon Ramp Bay

Applicability
This load is suitable for the CH47B, CH47C, CH47D, and CH54.
Note. THIS INFORMATION IS TENTATIVE IN NATURE. IT HAS NOT BEEN CERTIFIED BY THE DEPARTMENT OF THE ARMY AIRBORNE BOARD.

Load description
Bridge, ribbon ramp bay.
Weight: 11,700 pounds.
Preparation
Materials

- Sling, helicopter, cargo carrying, external, 15,000 pound capacity.
- Four large air delivery clevises, suspension.
- Tape, adhesive, pressure-sensitive, 2-inch width.

Personnel. Two people can rig the load in 15 minutes.
Procedures

- Secure all latches in the LOCKED position.
- Forward sling legs (2):
– Connect clevis assemblies (2) to lift provisions.
– Loop the chain end of one sling leg around clevis assembly on the forward end of the bridge. Engage link 5 in the grab link.
– Repeat these procedures on the opposite side.
- Aft sling legs (2):
– Connect clevis assemblies (2) to lift provisions.
– Loop the chain end of one sling leg around clevis assembly on the forward end of the bridge. Engage link 7 in the grab link.
– Repeat these procedures on the opposite side.
- Tape the sling legs to prevent fouling during hookup.
- Proceed with helicopter hookup.

External Air Transport Procedures for an M4t6 Floating Bridge Bay

Applicability
This load is suitable for the CH46 or CH53/D/E helicopter.
Note. It is recommended that this be a dual-point load to enhance load stability.

Load description

Bay, bridge, floating, aluminum, highway type, deck balk superstructure on pneumatic floats (M4T6).

Weight: 5,000 pounds.

Preparation

Materials

- Sling, helicopter, cargo carrying, external, 15,000-pound capacity.

Tape, masking, pressure-sensitive, 2-inch width.

Personnel. Two people can rig the load in 15 minutes.

Procedures

- Secure ropes and loose equipment.
- Clear lift-off site of sharp obstacles that could damage the pontons if they get dragged along the ground. Clear the site area one bay length forward and aft of the bridge bay and one bay width on each side.
- Attachment of sling legs to saddle beams:

– Pass each chain inboard of the balk support and around the saddle beam. Legs should be positioned fore and aft of the interior saddle panels.

– Fasten link 21 of each chain in its grab link to form loops around saddle beam.

– Attach positioning ropes for each leg as shown below.

– Fasten loose chain ends with tape or rope.

- To prevent fouling of the sling before hookup, gather all legs together at the top center of the load and wrap with several turns of tape.
- Proceed with helicopter hookup.

M4T6 Floating bridge