



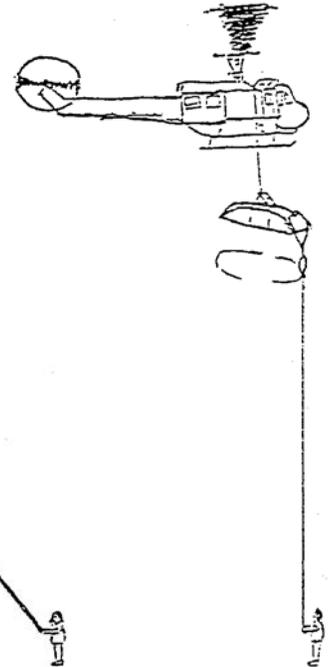
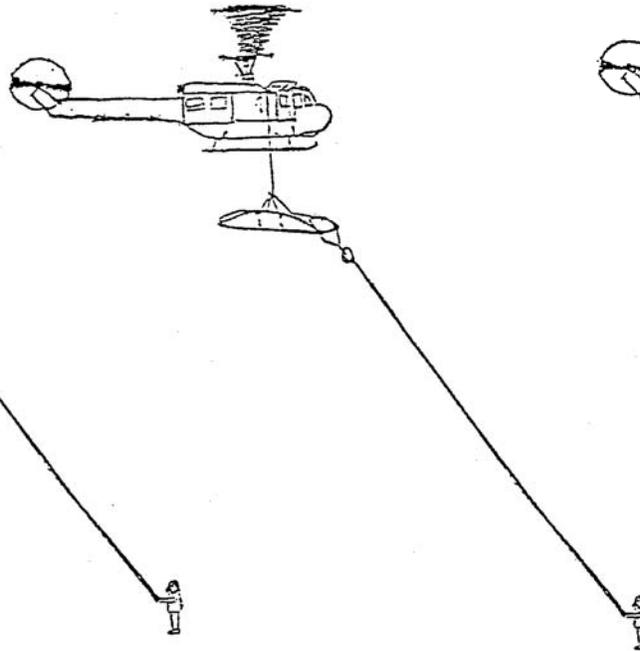
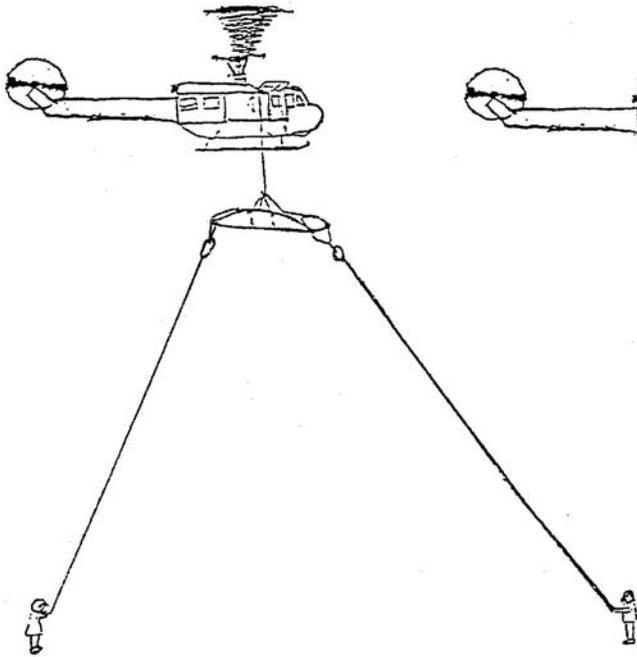
# SKEDCO, INC.

## Recommended Personnel Placement for Helicopter Hoisting of a Stretcher

Preferred Placement

Good Placement

Improper Placement



Ideal placement. Use of two tag lines is the safest way to prevent any litter from spinning. Two tag lines should always be used in training and non hostile situations for best litter control. Maximum visibility for pilot and crew.

Good placement to prevent stretcher spin with minimum tension applied to tag line. Maximum visibility for pilot and ground crew.

While better than no tag line at all, this placement of personnel and equipment tilts the stretcher, increasing the likelihood of spin, and requires greater tension on the tag line to prevent the spin, creating an increased possibility of weak link separation.

**WARNING! A NEW WEAK LINK MUST BE USED EACH TIME A HUMAN LOAD IS HOISTED!**



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## **SK-1010 SKEDCO HELITAG KIT (NSN 6545-01-381-0654) Helicopter Tag Line Kit**

The purpose of a tag line is to prevent dangerous litter spin, which occurs when hoisting a litter by helicopter. This kit is designed prevent spin while preventing other problems normally associated with tag lines, such as tangled rope, deployment difficulties, and storage problems.

The Skedco Helitag Kit contains 300 feet of 7 mm water rescue rope. It has a polypropylene core with a nylon sheath, which allows it to float in the water and have good abrasion resistance. Both ends have a figure 8 knot on a bight that is backed up with a double overhand knot for safety.

The rope is placed in a throw bag, which has a closed cell foam disc in the bottom for extra flotation when used for water applications. The carry handle of the bag is an adjustable strap with a side release buckle to allow securing the kit in an aircraft. The bottom end of the bag has a grommetted hole through which one end of the rope protrudes. This provides a hand loop for a victim in the water to grasp when a litter is not used, so that he or she can be towed in the water to a safe area. The other end of the rope has a loop with a screw link attached to allow a weak link to be utilized. Another screw link is then passed through the nylon weak link to secure the tag line to a V strap, which is attached to the two side grommets at the foot end of the Sked litter, or to the corners at the foot end of a Stokes basket litter, for safe hoisting.

### **KIT CONTENTS**

- |   |                              |   |                          |   |                       |
|---|------------------------------|---|--------------------------|---|-----------------------|
| 1 | 300' x 7MM Water Rescue Rope | 1 | V Strap                  | 1 | rope maintenance card |
| 2 | locking aluminum carabiners  | 1 | Package of 10 weak links | 1 | rope history card     |
| 2 | screw links                  | 1 | Helitag throw bag        | 1 | instruction sheet     |

### **INSTRUCTIONS**

#### **HOISTING**

Loosen the drawstring of the Helitag bag and pull out the end of the rope with a screw link, weak link, screw link, V strap and carabiners attached. Attach the ends of the V strap to the two side grommets at the foot end of the Sked stretcher or to the corners of a basket litter at the foot end (see diagram on back). It is not necessary to pull extra rope from the bag. As the litter is hoisted it is only necessary to maintain enough tension on the rope to keep the litter from spinning. As the litter is hoisted, allow the rope to slide through your hand. When the litter is secured into the helicopter the tag line is released and dropped to the ground. The person on the ground should then stuff the rope back into the bag and close the drawstring. The tag line is now ready for the next use.

#### **DEPLOYMENT FROM THE HELICOPTER**

Loosen the drawstring on the bag and pull out two (2) to three (3) feet of rope. While holding on to the end of the rope, throw the bag down (not out or upward) from the aircraft.

A person in the water can place his hand through or simply hold onto the loop protruding from the bag and be towed to safety or kept afloat while the rescue effort progresses.

If a litter is to be lowered, attach the tag line kit to the appropriate point on the litter and throw the tag line bag down to a person on the ground. The person on the ground will then maintain enough tension on the rope to prevent litter spin during the lowering process.

Please read the rope care instructions and maintain a rope use log to keep your tag line in top and useful condition.

**WARNING! A NEW WEAK LINK MUST BE USED EACH TIME A HUMAN LOAD IS HOISTED!**

# \*\*\* WARNING \*\*\*

## ***Please read before performing helicopter hoist!***

### **Stretcher Spin**

Skedco believes that there is a degree of risk involved any time a person is packaged in a stretcher and hoisted to a helicopter. There is risk not only to the patient in the stretcher, but to the helicopter and crew as well. **All stretchers**, including the SKED stretcher, have an inherent potential to spin when being hoisted by a helicopter. A spinning stretcher presents a variety of dangers to the patient, and cases have been recorded where an improperly packaged patient has been discharged from a stretcher and fallen to the ground. Skedco Inc. was asked for a tag line with a weak link and responded immediately with the **Skedco Helitag Kit (NSN 6545-01-381-0654)**. No personnel should perform a helicopter hoist of a patient without understanding the dangers of stretcher spin and the proper utilization of a tag line.

### **Causes of Stretcher Spin**

The rotor wash from a helicopter creates a natural wind force that can cause a stretcher to spin. Other factors that increase the tendency of a stretcher to spin include:

- Improper loading. Uneven loading will exacerbate the tendency of the stretcher to spin.
- Weather conditions. The stronger the winds, the higher the risk of spin.
- Improper attachment of the tag line. Skedco recommends that the tag line be attached to the center grommet at the foot end of the stretcher. When using the supplied V Strap, it should be attached to the two grommets on the sides at the foot end of the Sked.
- Improper placement and performance of personnel. Personnel should not be located directly below the helicopter. Pulling the tag line tight while below the helicopter will tilt the stretcher, creating a natural air foil, and resulting spin. Skedco Inc. recommends that the tag line handler should (if at all possible) be positioned forward of the aircraft and visible to the pilot and crew, rather than directly below the aircraft. See **Recommended Personnel Placement for Helicopter Hoisting of a Stretcher**, which diagrams proper personnel placement.

### **Use and Risks of a Tag Line**

The utilization of a tag line can prevent the stretcher from spinning. Attaching the line to the stretcher have having ground personnel maintain tension while the stretcher is being lifted will provide the best available protection against stretcher spin. However, the presence of an attached line to the ground presents a potential danger to the aircraft and its crew, particularly in a combat environment. Should the tag line become entangled on the ground the helicopter crew could be placed in a position of having to release the patient to save the aircraft.

Some organizations involved in helicopter hoists choose to utilize a tag line, which does not incorporate a weak link. These organizations recognize that, in the event the aircraft is in jeopardy, the patient must be released from the hoist.

### **SK-1011 Weak Links (NSN 6530-01-445-7291)**

The utilization of the "weak link" in a tag line represents a compromise, providing the best level of protection for the patient and the minimum risk to the aircraft. The weak link is designed to separate at a tension point at which the aircraft is jeopardized. After extensive consultation with military and civilian rescue personnel, Skedco included a weak link in the Helitag kit, which is made to break at 150 pounds on average. Recommendations from US Army Aeromedical Research Laboratories is 150 pounds. Weak links that break at a higher poundage not only present a risk to the aircraft, but also would allow ground personnel to be inadvertently lifted from the ground by the aircraft. Laboratory tests indicate that, when tied in a loop and pulled from both ends, Skedco weak links break at average 150 pounds.

Personnel utilizing the **Skedco Helitag Kit** should recognize that when a weak link breaks it is doing its job. However, the separation of a weak link places renewed risk on the patient. Skedco believes that a spinning litter is preferable to a falling litter. In the case of weak link failure, the litter should be lowered back to the ground, and the conditions that led to the failure analyzed, to determine if further hoisting could be done safely.

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