

## I. INTRODUCTION

- A. Purpose: To provide Department personnel with information and instruction for securing a victim into a stokes litter and attaching it to a rescue system.
- B. Scope: This instruction applies to all sworn personnel.
- C. Author: The Deputy Chief of the Special Operations Bureau is responsible for the content, revision, and periodic review of this instruction.
- D. Objectives: To assist Department personnel in utilizing proper techniques when securing a victim into a stokes litter and attaching to a rescue system.
- E. Definitions: See glossary.

## II. RESPONSIBILITY

- A. All sworn personnel are responsible for the information contained in this section.
- B. Company officers/training captains are responsible for training personnel and ensuring proficiency with the information contained in this section.

## III. POLICY

- A. All sworn personnel shall be able to tie the following interior and exterior lashings in order to secure a victim in a stokes litter:
  - 1. Pelvic lashing
  - 2. Chest lashing
  - 3. Exterior lashing
  - 4. Interior lashing with miller board

- B. All sworn personnel shall be able to rig a stokes litter for the following rescue situations:
  - 1. Vertical
  - 2. Low angle-head first-three rescuers
- C. The pelvic lashing shall be used any time the foot of the litter is lower than the head.
- D. The chest lashing shall be used on all victims during a high angle rescue.
- E. Exterior lashing shall be used at all times.
- F. Rescuers and victims shall always be attached to the rope system itself, not just the litter, during steep and high angle operations.

#### IV. PROCEDURES

- A. Litter lashing provides for the securing of a victim to and in a litter. The litter lashing is divided into two categories, interior and exterior. The condition of the victim and the rescue system to be used, will help dictate which type of lashing needs to be in place to insure the safety of the victim.

- 1. Interior lashing secures the victim to the litter in a way that prevents the victim from sliding out the ends of the litter.

- a. Pelvic lash:

- (1) Place the victim in the stretcher.
- (2) Place the end of a 12-foot, blue webbing under the victim's thighs.



Pull the webbing end until the middle of the webbing is between the victim's legs. Grasp the middle of the webbing, forming a bight, and place it on the victim's stomach.

- (3) Lace both webbing ends under and then over the bight. Pull the ends until the webbing is snug. Tie a half hitch with each webbing end against the bight.
- (4) Locate anchor points on each side of the litter that are under the top rail and above the victim's pelvic area. Secure the webbing ends with a round turn and two half hitches.

b. Chest lash

- (1) Using a 12-foot blue webbing, tie a sling with an overhand follow-through.
- (2) Tie a rescuer's chest harness onto the victim with the sling. See V4-C6-S6.



- (3) Attach the bight of the chest harness to one of the carabiners attaching the pre-rig to the litter.

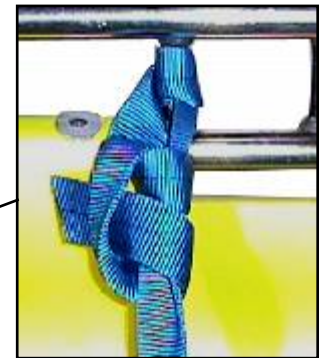


- c. Interior lashing with the victim secured to a miller board or equivalent.
- (1) Secure the victim to the backboard in the prescribed manner and place it into the litter.
  - (2) Using a 12-foot blue webbing, tie a sling using an overhand follow through and then double in half.
  - (3) Place the doubled sling down through the handhold at the head of the backboard, then under the backboard, and then up through the hand hold on the opposite side.
  - (4) Attach both ends of the sling into the carabiners attaching the pre-rig to the litter.



2. Exterior lashing secures the victim within the litter and prevents the victim from falling out.
- a. Exterior lashing
- (1) Place the end of a 22-foot, red webbing across the middle of the victim's shins, under the main frame of the litter. Pull through, evenly on each side of the litter.
  - (2) While keeping the webbing under the top rail of the litter, cross the webbing ends at the knee level and wrap around the cross tubing exiting near the victim's mid-thigh.

- (3) Keep the webbing under the top rail of the litter and cross the webbing ends at hip level and wrap around the cross tubing exiting near the victim's stomach.
- (4) Keep the webbing under the top rail of the litter and cross the webbing ends at the armpit level and exit under a cross tube near the victim's shoulders.
- (5) Tie one end of the webbing to the cross tube at or near the victim's shoulders using a round turn and two half hitches. Pull the slack from the webbing toward the other end and tie that end off with a round turn and two half hitches as well.



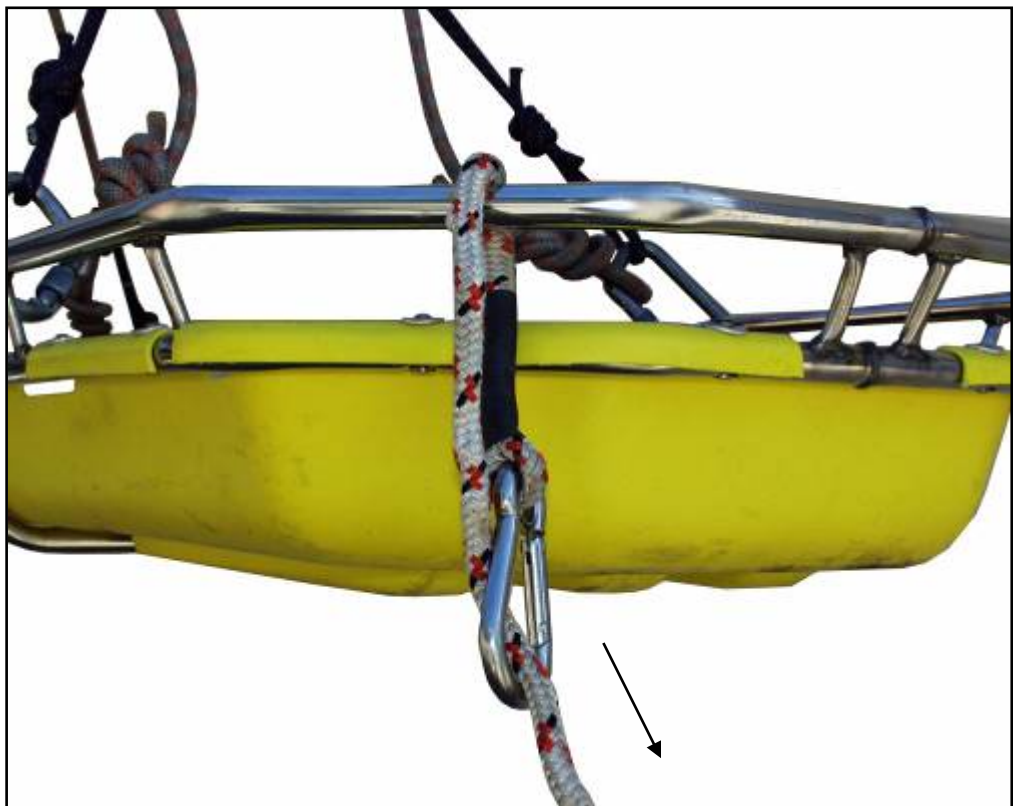
- B. Litter rigging with the pre-rig
  - 1. Vertical or high angle rescue
    - a. Attach the four point pre-rig to the top rail of the litter with the carabiner gates facing downward and inward.
    - b. Adjust the prusik loops to level the litter.
    - c. Attach the main and belay lifelines to the steel “O” ring of the pre-rig.

## C. Tag lines

Tag lines should be used to prevent the litter from twisting and/or coming in contact with obstructions during vertical rescues. For short distances under 80 feet, the drop bag rope may be used. For longer applications the lifeline may be used.

### 1. Foot attachment

- a. Controlled by one person.
- b. Pull the tag line only enough for the litter to just clear the obstacle.
- c. Attach to the top rail of litter with a running loop using the hook of the drop bag rope. If using a lifeline, attach it with an unlocked carabiner.





D. Low angle rescue, head first

This method is used when the litter is to be moved over an area which presents a slope other than vertical or near vertical between the anchor point and the victim. Generally within about a 15 to 40 degree angle.

1. Attachment of the litter to the main and belay lifelines.
  - (a) Tie a figure 8 on a bight with a safety tie-off at the ends of the main and belay lifelines. (Use as small a bight as possible.)
  - (b) Using a 12-foot blue webbing, tie a sling with an overhand follow through.
  - (c) Lay the doubled sling inside the stretcher at the head. Keep the not away from the center.
  - (d) Pull the doubled sling under the top rail and through the middle of the litter forming a bight.



- (e) Wrap each end of the sling two times around the top rail of the litter forming two additional bights. Adjust the sling so the knot does not touch the litter or carabiner. Ensure that all three bights are attached to the carabiner.



- (f) Attach the sling carabiner to the steel “O” ring which was removed from the pre-rig assembly.
- (g) Attach the main and belay lifelines to the steel “O” ring with separate carabiners.



## 2. Litter Rescuer Attachment

The pre-rig used in a vertical rescue application is simply converted to a low angle pre-rig in the following manner:

- a. Place the pre-rig assembly next to the litter and separate into two halves.
- b. Untie the middle figure 8 on a bight on one of the pre-rig halves and extend it along the side of the litter.
- c. Attach one end of the extended pre-rig to the steel "O" ring with a carabiner. Wrap the pre-rig around the top rail of the litter several times towards the foot of the litter. This end will attach to the rescuer's sit harness at the foot of the litter.
- d. Attach the middle of the other half of the pre-rig to the steel "O" ring at the head of the litter and extend one end to each side of the litter, leaving the carabiners attached.
- e. Two rescuers will connect their sit harnesses to the ends of the pre-rig. The prusiks can be used to adjust the amount of slack in the pre-rig rope.
- f. The rescuer at the foot of the litter should remove the prusik from the pre-rig, wrap it around the top rail of the litter and connect it to the sit harness carabiner.
- g. Optional Attachment: The two front rescuer's may utilize a webbing sling that attaches to the top rail of the litter with a girth hitch and rests on top of the outside shoulder (like a hose strap). A 12-foot blue webbing or an emergency rescue strap™ works well for this.



This allows the rescuer to have additional control and weight distribution by using the legs to help carry the litter's weight. The rescuer is able to turn and kneel down to quickly lower the litter.

Low angle litter attachment



Side attendant with optional webbing sling attached to the litter.



Rear rescuer attachment

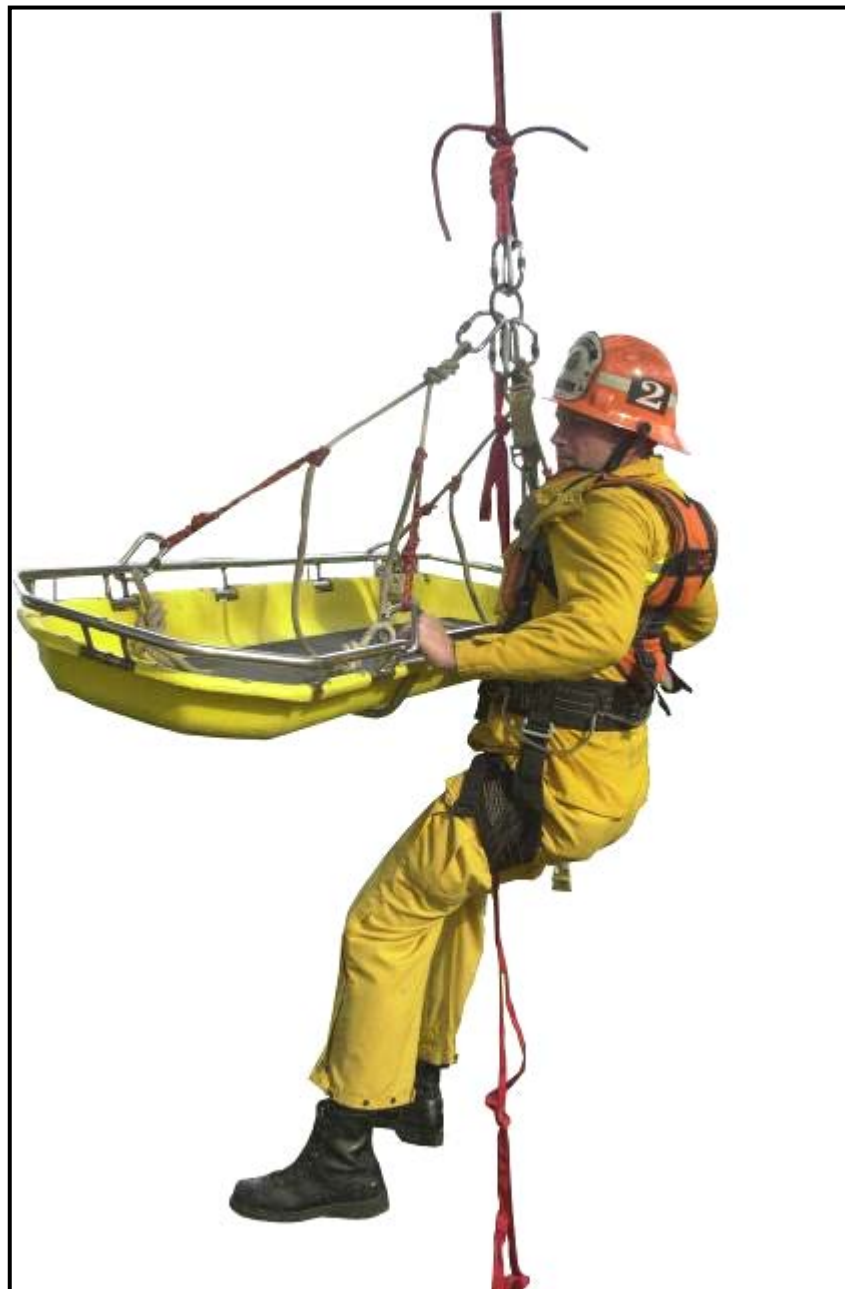


Three rescuer low angle attachment with main and belay lifelines attached.

D. High angle litter, rescuer attachment

In situations where tag lines cannot be used to prevent the stretcher from twisting or coming into contact with obstructions, or when the victim's medical condition requires constant monitoring, a litter attendant will be required. The litter shall be rigged as followed:

1. Secure the victim into the litter using the interior pelvic and chest lashing and the exterior lashing.
2. Attach the pre-rig to the litter.
3. Tie a long tail bowline or inline figure 8 on the main lifeline, leaving a 10 foot tail.
4. Tie a long tail bowline or inline figure 8 on the belay lifeline, leaving a 10 foot tail to match the main lifeline.
5. Tie a figure 8 stopper knot at the end of the main lifeline.
6. Tie a figure 8 on a bight at the end of the belay lifeline.
7. Attach both long tailed bowlines/inline figure 8 to the steel "O" ring of the pre-rig with carabiners.
8. The figure 8 on a bight at the end of the belay lifeline is attached to the rescuer's sit and chest harness and is the belay for the rescuer.
9. A three-wrap prusik is attached to the main lifeline below the steel "O" ring and then to the rescuers sit harness.
10. Attach the etrier to the steel "O" ring with a carabiner. This evolution is for personnel with advanced skills in rope rescue techniques.



High angle litter, rescuer attachment

F. Adjusting the rescuer's position on the litter rigging.

The rescuer maintains a position on the litter rigging with their waist even with the litter main rail. To move higher, step into a loop in the etrier with the leg bent, then grasp the rigging as high as possible in one hand and stand up. This transfers the rescuer's weight off of the sit harness and prusik.

The rescuer can now loosen the prusik and slide it up the lifeline to the desired position. The rescuer can now transfer their weight back to the sit harness, setting the prusik on the lifeline. This can be repeated as necessary.

To lower the rescuer's position below the litter, the rescuer transfers body weight to the etrier. The rescuer can now loosen the prusik and slide down the lifeline to the desired position and then transfer body weight back onto the sit harness and prusik.

Once the rescuer obtains the correct position, the litter is controlled by grasping the top rail of the litter and extending the legs under the litter with the feet against the vertical rescue surface.