SOUTH PORTLAND FIRE DEPARTMENT
STANDARD OPERATING GUIDELINES

SOG #:	6.535	**Effective Date:**	2/4/2015
Title:	Rope Rescue Operations Guide	**# of pages:**	3
Category:	Special Operations	**Classification:**	Red

1. PURPOSE: To provide safe guidelines for use of rope in rescue situations including operational suggestions.

2. PROCEDURES:

Statement of Intent:
The use of rope to rescue or remove a victim shall be considered as an option if other methods are not practical. All other methods shall be considered prior to attempting a rope rescue.

Application:
This SOG shall be applied to rescues or recoveries involving ropes in confined spaces and rescue from above or below grade including slopes of greater than 30 degrees, or when unable to walk without holding on to the ground due to ice, lose ground. Other incident specific SOGs may also apply.

<u>Rope Types</u>
All rope used directly in rescue activities shall be Class 1, 3 or Class 5 rope.

Class 1 rope shall be used in the following situations:
- Whenever a rescuer or victim will be or could be suspended from the rope. This includes vertical situations and slopes greater than 45 degrees.
- As a lifeline or retrieval line for victims in confined space areas.
- Class 1 rope is **not** to be used during training.

Class 2 rope is used only for training situations as a substitute for Class 1 rope.

Class 3 rope may be used in the following situations:
- Tag lines for rescue litters
- Accessory lines used with or without hardware to modify the direction or action of primary lifelines provided that failure of these lines would not compromise primary lifelines.
- Slopes of less than 45 degrees where the primary purpose is to assist operations rather than function as the primary support. This use is referred to as a “scurry “line.

Class 5 ropes shall be used as appropriate for its designation.

Personnel

Rope Master

- At all rope rescue or recovery incidents Command shall appoint one person to function as the rope master. This person shall have the following responsibilities and authority:
    - Coordinate and monitor all rigging activities with primary concern for the safety and integrity of all components including anchors, harnesses and all rappelling, lowering and mechanical advantage systems.
    - Authority to immediately halt any unsafe operation.
    - This person should not also be involved in the physical rescue.

Safety Officer

- Command shall assume or assign a Safety Officer to double check harnesses, anchors, rigging, safety lines, belay system, and haul system. The Safety Officer shall stop any unsafe acts and report to Rope Master.

Edge Attendant

- Command shall assign an Edge Attendant. The Edge Attendant shall be in a harness and tied off to an anchor point if needed. The Edge Attendant will track patient's statues and any rescuers that are going over the edge. They shall be in charge of communications and commands when hauling or belaying.

Terms

- **Stop**: Any one can say stop to stop all activity. They will say why they stopped ie: to reset the haul system, or other reason. The person manning the progress capture device will lock off the system when every the word Stop is heard.
- **Locked**: Lock will be said after system has been locked off and slack has been taken out of lines.
- **Prepare to belay**: Will be called out when the system is ready to lower and everyone is ready to go.
- **Belay**: Will be called out when system is being lowered.
- **Prepare to haul**: Will be called out when the system is ready to haul and everyone is ready to go.
- **Haul**: Will be called out when system is being raised.
- **Take up slack**: Called to take out slack in any line to prepared to raise, lower or locked off.
- **Slack**: Called to allow slack in the line to unlock or get off rope.
- **Off rope**: Called when a rescuer or patient is off the line.
- **On rope**: Called when a rescuer or patient is on the line, and the line should be locked off.
- **Rock**: Called out to warn everyone when a object or debris if falling toward a rescuer or patient to keep them from looking up or getting hit.

Rescuers

- All effort should be made to minimize the number of rescuers on a rope that have gone over the edge.

Resources:

- When conducting a rope rescue, additional manpower must be called and all available rope rescue equipment must be brought to the scene. Do not attempt to complete a rescue using only equipment available on one company. The rope equipment carried on individual companies is intended for rapid access only while additional equipment is enroute to the scene.

Techniques:

- The following describes various techniques as standards for operation. Altering methods or using alternates should only be used after careful consideration and appropriate training and experience.

Rappelling:

- Rappelling shall only be used by rescuers to gain rapid access to a victim or exit an unsafe area. Lowering of rescuers is preferred method to rappelling.

Rescuer lowering:

- This may be used to gain access to a victim or exit an unsafe area. May also be used to lower a rescuer for a victim pick-off and lowering victims to a place of safety. Whenever possible an additional safety belt/harness should be used for the victim. Descent friction may be controlled by figure 8, brake bar, ID or other friction devices.

Litter raising or lowering:

- A litter may be used to raise a victim to safety or lower one to a place of safety. Descent friction may be controlled by figure 8, brake bar, ID or other friction devices. When raising and lowering a rope grab device must be used to enable the load to be locked of to work or to resets of the haul system.

Safety

- Any personal within 10 feet of an edge shall be in a harness and attached to an anchor point with a safety line or fall protection.
- Whenever practical each rescuer and victims should be attached to a Class 1 safety ropes. This line should be as separate as possible from the main system and should not be planned to bear load during the rescue. Planning to suspend a rescuer or victim from a safety rope during a system change over is not acceptable. When lowering a descent friction device may be used to control the decent using a figure 8, brake bar, ID or other friction devices. If hauling use progress capture device.

Mechanical advantage systems

- 1:1 System: Should be the choice for horizontal confined space operations, most low angle and other situations where visual contact with the victim is difficult and the

victim may become entangled in obstructions. This system allows better "feel" during retrieval to reduce the chance of victim injury due to excessive pulling force.

- 3:1 Z- rig System: Good choice for raising a single victim or rescuer over an edge when a high anchor point is not available. Adequate choice for raising two people when sufficient manpower is available for the hauling team. This system allows all extra rope to be above the edge for monitoring, adjustment and maximum reach. Drawbacks include the need to frequently reset due to short pull distances.
- 4:1 System w/ cam pulley: Normal choice for raising a victim and rescuer together when a high anchor is available allowing the system to descend straight into the hole. Attachment points may be reversed to provide a 5:1 piggyback system for raising over an edge similar to a Z-rig.
- Note: Mechanical advantage systems should be backed up by a friction device or rope grab to allow a single rescuer to hold operations during a reset or emergency.

Records and reports

- All rescue rope and rescue rope equipment is to be inspected monthly.
- Whenever any Class 1, 2 or 3 rope or rope rescue equipment is used for training or an incident, the officer or firefighter in charge shall complete a Rope & Rope Rescue Equipment Use Report. Equipment taken out in the station for familiarization purposes does not require a report.

3. REFERENCES:
   - None

By Order Of:

Kevin W Guimond

Kevin W. Guimond
Fire Chief