

BLACKWOOD FIRE COMPANY OPERATING GUIDELINE

7.12 Use of Tower Ladder 84 for Public Education Rope Displays

Demonstration of rope techniques and skills are popular activities during public relations or education events and also enhance the firefighter's confidence and skills on rope. This activity can be accomplished safely, but is not without risk. This policy should be adhered to at all times and should be in the possession of the Safety Officer for reference during rappel activities.

7.12.1 Procedure:

7.12.1.1 Personnel Selection

Members of all Gloucester Township Fire Companies and members of the Gloucester Township Police Department are eligible for participation in this activity. Participation by personnel from any other emergency service agencies will require prior approval from the Chief. It shall be the responsibility of the Safety Officer to ensure participating members have the necessary training and physical ability to safely participate.

Personnel may be trained to this task per this procedure. The Safety Officer should be experienced in this operation and able to complete all phases of the set up and brief personnel in the operation. Training should be conducted at no more than 10' above the ground for new personnel and then proceed to greater heights as confidence and skills are attained. Training for belay firefighters should also take place at this level.

7.12.1.2 Personnel Assignments

- Designate a Safety Officer
- Designate a Turntable Operator
- Designate 1 or 2 rappelling firefighters.
- Designate a belay firefighter for each.

7.12.2 Site Set Up

- Choose an area closed to vehicular and pedestrian traffic.
- Choose an area free from overhead obstructions such as trees or wires. The area will ideally allow for the boom to be placed perpendicular to the rig and simply raised into position without rotation.
- Designate a 25' landing and safety zone. Ensure the area is properly marked with traffic cones, banner guard or other means. Assign one or more members to secure the area if needed when large crowds are present. **SAFETY OFFICER INSPECTION REQUIRED**

7.12.3 Safety Equipment

- Minimum PPE includes leather gloves, helmets and work or firefighting boots.

7.12.4 Equipment Required

- 1 or 2 life safety ropes minimum 100' long. Use only designated life safety ropes of ½" diameter.
- 1 or 2 Class II (Gemtor or Tower Ladder Harness) or Class III (CMC from R-84) safety harnesses.
- 4 Locking Carabiners
- 2 Figure 8 Descenders

7.12.5 Equipment Set Up

- Remove at least 100' of rope from bags and carefully inspect for damage including cuts, severe wear, burn marks, and chemical damage. Remove any rope showing damage from service until inspected.
- Inspect carabiners for cracks, dents, rust and smooth operation of lock and hinge. Inspect the Figure 8 descender for cracks, dents; rust or excessive wear (indicated by sharp edges).
- Inspect harnesses for cuts, wear, burn marks, frayed threads and chemical damage. Inspect D rings and buckles for dents, rust or cracks. Remove any harness showing damage from service.
- After ensuring the area is clear, the turntable operator should bring the platform to approximately 6' off the ground in the landing zone, and then remove both hands and his foot from the platform controls. Once positioned, the turntable operator will not to move the platform until so directed by the Safety Officer.
- The apparatus operator should carefully inspect the lifting rings under the bucket for cracks, excessive wear or damage other than paint cracking or surface rust. Rope should not be tied directly to the lifting rings.
- A figure 8 on a bight knot with a safety should already be tied on the life safety rope, tie one if necessary.
- Tie a butterfly knot approximately 3' from the end of the rope for a back up.
- Leave no more than 12" slack and attach one knot from each rope to each hook with a locking carabiner. To avoid binding on the lifting rings when the platform is raised, the carabiners **MUST** be positioned with the opening facing the rear of the truck. **SAFETY OFFICER INSPECTION REQUIRED** (For instance; the end of the red rope would be clipped to the driver's side ring, and the butterfly knot would be clipped to the officer's side ring. The end of the yellow rope would be clipped to the officer's side ring, and the butterfly knot would be clipped to the driver's side ring.)



- Inspect and don a minimum class II rescue harness and tighten securely at the waist and legs. Harness should be tight enough to be slightly uncomfortable without being suspended from rope. The attachment D ring should be centered near the wearers' belt buckle.

7.12.5.1 Prior to ascent:

Rappelling firefighters should be thoroughly briefed on:

- Hand signals
- Proper use of the Class II or III harness.
- Proper rigging of the Figure 8.
- Techniques for maintaining control of their descent speed.
- The need to rappel feet first and to maintain hand contact with the rope.
- The need to remain aware of obstacles below, their relative distance from the ground, and their speed of approach.

Belay firefighters should be thoroughly briefed on:

- Hand signals
- Maintaining a safe landing zone
- Emergency actions to prevent an uncontrolled descent
- Observing the position of the platform and rope to ensure the descent is unobstructed.

7.12.5.2 Preparing for ascent:

- Rappel firefighters secure their ropes to the Figure 8 so the control end of the rope is in the dominant hand.
- Remove as much slack as possible and secure the Figure 8 to the harness and lock the carabiner. **SAFETY OFFICER INSPECTION REQUIRED**
- Rappel firefighter grip rope securely and hold against hip.
- Belay firefighters loosely grip the rope allowing it to play out as the platform is raised.
- Safety officer ensures all personnel are prepared and ready.

7.12.5.3 Positioning for Rappel

- Safety officer signals turntable operator to raise main. Raise main to **60 degrees or less** and extend to desired height, ensuring the descent will be unobstructed. **CAUTION: Raising the main above 60 degrees can bind the carabiners against the lift rings and cause them to fail.**
- Safety officer ensures that rope passes to ground unobstructed with adequate clearance for rappelling firefighters.
- Safety officer clearly signals turntable operator with clenched fists and crossed arms overhead signaling Stop and Clear.
- Turntable operator acknowledges and removes hands and foot from controls.
- Safety officer signals belay firefighters to give OK signal to rappel firefighters by touching hand to top of head.
- Rappel firefighters begin descent by carefully allowing rope to slide through control hand.
- Members will rappel in a feet first orientation only. Inverted rappelling (head first) is not authorized.
- Members will maintain hand contact with the rope at all times.
- Belay firefighters remain constantly alert for signs of uncontrolled descent. If signs are noted the belay firefighter pulls down on the line with both hands to stop the descent. The belay firefighter may return control to the rappel firefighter by loosening his grip on the rope or may lower the rappel firefighter in a controlled fashion by loosening his grip until a controlled speed is achieved.
- Sudden stops can shock load the rope and should be avoided except in an emergency.
- Upon reaching ground the rappel firefighters should continue into a deep squat position and then stand up to place slack on the line
- The rappel firefighters should quickly remove the figure 8 using gloved hands due to heat build up.

7.12.6 Take Up / Equipment Restoration

- The Safety Officer will signal the turntable operator to retract and then lower the boom.
- Personnel will remain clear of the boom as it approaches the ground.
- The turntable operator will stop the platform approximately 6' above the ground, and remove both hands and his foot from the controls. The turntable operator will not move the boom until so directed by the Safety Officer.
- The rappel firefighters remove all equipment and conduct post use inspections as detailed above in the preparation section.

- Untie all knots used.
- Reverse the rope by packing the former knot end in the bag first.
- Tie a figure 8 on a bight knot with a safety at the end of the rope and attach an unlocked carabiner. Replace the additional carabiner and anchor strap in each rope bag.
- Once all equipment has been removed and all personnel are clear of the platform area, the Safety Officer will signal the turntable operator to restore the aerial.

New Operating Guideline March 2011