FELTON FIRE PROTECTION DISTRICT

STANDARD OPERATING PROCEDURES

ARTICLE: II SOP: 2406

SECTION: 2400 Response Procedures

SUBJECT: Rope Rescue Operations

PURPOSE: To establish operational procedures for High and Low Angle Rope Rescues. The objective of Rope Rescue Operations is to safely and efficiently deploy the rescuer(s), package the victim(s), and return the rescuer.

SCOPE: All personnel

PROCEDURE:

1. Size up: Officer in charge will perform a size up of the incident. If the size up determines a rope system is needed to accomplish the safe and effective rescue of a patient, the following will serve as practical guide line to accomplish the rescue safely.
2. Crew Assignments: The Incident Commander will use ICS and deploy resources as the incident dictates. Mandatory assignments are IC, Safety Officer and Technical Safety Officer (TSO), when possible and as needed assignments may include: Rescuer(s), Edge Person, Haul/Lowering Team, Rigging Team, Safety, Main and Safety line tenders.
3. Determine Anchor point(s): A suitable anchor will be needed for the rope rescue. A “Bomb Proof” anchor is preferred over a multi point anchor on a small or light weight object. Examples of “Bomb Proof” anchors include, but are limited to the following: Fire apparatus, base/trunk of a large tree after proper inspection for suitability, solid/non moveable rock or rock out cropping, passenger vehicles, large post or beam.

\*If a vehicle is used as the anchor, the engine must be turned off and the key removed from the ignition switch. This will prevent someone from moving the anchor.

\*\*In a rural setting, an anchor may not be in line with the spot the rescuers will be traveling. A change of direction pulley may be needed, but the anchor of the pulley must still be able to take the full load of the rescue.

1. Rack, Pulley, Mariners (RPM): Attach one RPM to the anchor for the main line and one RPM to a separate anchor for the safety line. Add second safety line for the Edge Tender to the gathering plate on the RPM assigned for safety line. (The person working as the Edge Person will be secured to this line to prevent falling.) \* For lowering, the friction device on the main line will consist of a break bar rack with a minimum of 3 bars. No figure 8’s will be used for rope purposes.

\*\* For lowering or raising on the safety line the friction device will consist of a set of 3 rap prusiks.

1. Class III Harness: Rescuer(s) being connected to the system and to be lowered or raised up on the rope system must wear a Class III Harness. Once the harness is secured on the rescuer, the rescuer must be checked in ensure the harness and ropes are safely and accurately applied.

\* All rescuers must be attached to a main line as well as a safety line.

\*\* The Safety Officer or the TSO will perform the safety check.

\*\*\* The rescuer will be the last thing to be attached to the systems before going over the side.

1. Safety Checks: Prior to operation of the system, all anchor points, all safety line and main line components, and rescuer(s) will be checked to ensure that every part of the system is properly assembled, tied and secured correctly. This check is done by the TSO or someone other than the person who constructed the rope system as designated by the Safety Officer.
2. Lowering: Once system is assembled, rescuer(s) ready and safety check completed, the rescuer(s) may begin the decent to the victim(s).

\*Note: For the most effective patient/victim care possible, the previous 6 steps should be completed concurrently as rapidly as staffing will allow for. Doing so ensures the rescuer(s) arrival at the patient/victim in a timely manner.

1. Equipment: Getting a rescuer to the patient for initial patient contact, as rapidly as possible, is the primary goal of the rescue operation. If it is determined during the size up that equipment, such as, medical first aid kit, AED, trauma dressings, Stokes Litter, c-spine equipment, are needed this equipment could be lowered with initial rescuer(s). If it is undetermined to what extent the patient/victim is injured, the rescuer(s) may be lowered and an assessment of the patient/victim completed prior to the equipment being sent.
2. Changeover from Lowering to Raising System: Once all lowering operations are completed, the Rigging Team will changeover the Main Line from a lowering system to a hauling system. A mechanical advantage system, such as a 3:1 (Z-Rig) will be used at a minimum. If the hauling operation requires greater mechanical advantage, additional pulleys may be added to the system to create more of a mechanical advantage.

\* Do not exceed a 6:1 mechanical advantage.

\*\*Note: The rigging team members must think ahead and plan for a changeover on the system. Selecting a second anchor for the 3:1 and setting the anchor up with a pulley and other required components in place will aid in a quicker and more effective changeover. Care must be taken to ensure the safety of the Haul Team, providing adequate space for the hauling operation to take place.

\*\*\* No powered mechanical advantages under any circumstances shall be used (Electric winch, capstan winch, direct haul with vehicle or machinery)

1. Commands: Commands are designed to coordinate the operation, ensure consistent operations and ensure instant response in case of emergency.
   1. The Edge Tender is the one calling the commands when a rescuer(s) are on the line.
   2. Readiness Check: Prior to beginning the operation the Edge Tender will call out to each team leader and the team leader must respond back affirmatively. For example: 1) “Safety line ready”, “ Ready” , 2) “Main Line ready”, “Ready”, 3) “Rescuer Ready”, “Ready”. Once all are “Ready” the command to “lower” or “Haul” may be made. A pre-determined stop signal can be given by any individual at any time. In the vent of emergency, the Edge Tender will call “Stop”. \

\*When there is a stop in the operation, such as a re-set the main line or a stop for any reason, the “Ready” checks are done again. This happens every time there is a stop in the operation and will continue until the rescuer(s) are off line.

* 1. Method: Line of sight and a loud clear voice is best. Distance may require the use of portable radios. However, radios have a lag time built into their function and this may delay a critical command to “Stop” or “Go”. This is especially important because this may be our only means of communication with the rescuer(s) and we must know how to overcome these weaknesses while on the rescue.

1. Securing Patient/Victim(s): It is essential to properly secure the patient/victim(s) for the rescue operation. Due to the angle (high or low), the injured or non-ambulatory patient/victim must be secure in the Stokes litter to prevent shifting and/or falling. Depending on nature of the injury, the patient may be packaged with or without c-spine precautions. If the patient is not injured and is ambulatory, the rescuer may, with consent of the patient/victim, choose to use the victim rescue harness and perform the rescue without the Stokes litter. If the patient needs c-spine precautions (c-collar, back board, straps), internally lash the back board to the Stokes litter, then use an external lashing over the patient. If the patient does not need c-spine precautions, use an internal chest and pelvic lash to secure the patient to the Stokes litter followed with an external lashing over the patient.
2. Patient Hand Off: When the patient/victim has reached the Edge Tender, care will be turned over to a fire fighter or to the ambulance medic crew.

\* The patient/victim will not be disconnected from the rope system until they are firmly on the ground and away from any fall hazards.

1. Example of Organizing a Low Angle Rope Rescue
   1. Size up
      1. Location of patient
      2. Topography
      3. Resource needs and personnel
   2. First Engine company (additional personnel and apparatus, as needed)
      1. Rigging: Attach RPM, Main line and Safety line, anchors
      2. Provide edge protection
      3. Package and attach rescuer
      4. Safety check
      5. Lower rescuer to patient/victim
   3. Initial Patient Contact
      1. Patient assessment
      2. Ambulatory or non-ambulatory
      3. Package patient, as needed
   4. Changeover lowering to raising system
      1. Prepare mechanical advantage
      2. Load and secure patient in Stokes litter or patient/victim harness, attach to Main and Safety line
      3. Attach rescuer(s) to Main line and Safety line
      4. Retrieve rescuer(s) and patient topside.
   5. Transfer patient for transport
      1. Once topside, move the Stokes litter to a safe location. Ensure there is adequate working room and no chance of the litter sliding back downhill, disconnect the Stokes litter
      2. Remove the lashing
      3. Move the patient from the Stokes litter to the ambulance gurney
   6. Collect and inspect gear
      1. Collect all equipment used on the incident
      2. Place all gear out of service until inspected
      3. Inspect all equipment, noting problems (wear, abrasions, breaks/bends, etc.) Gear that is worn and no longer useable will be removed from service and replaced.
      4. Inspect and reload the rope bags
      5. Store the gear back to its place on the apparatus
      6. Complete rope use log

Dated: May 2012