

Eastern Shore Regional Fire Training Center



Rappel Tower Standard Operating Procedures

Approved March 26, 2014

Objective: This SOP establishes responsibilities of personnel while operating at the ESRFTC rappel tower.

Scope: This SOP applies to all personnel, career or volunteer, operating at the ESRFTC rappel tower. All personnel are required to have a good working knowledge of this SOP.

1. Qualifications/Training:

All personnel utilizing the anchor points on the roof of the burn building for rappel or any other training operations must meet the following minimums:

- 1.1 *H.T.R Rope Rescue I-NFPA 1983* – As the HTR program in the Commonwealth of Virginia is currently under review, this requirement is meant for personnel to have at least rappelled, or was taught to rappel in the course taken. A good working knowledge of rigging is required.
- 1.2 *H.T.R Rope Rescue II-NFPA 1983* – Preferred but not required, unless operating as the *Rig Master/Rappel Safety Officer*. A good working knowledge of rigging is required.
- 1.3 *VDFP Intro to Technical Rescue Module I* – Preferred but not required.
- 1.4 *VDFP Intro to Technical Rescue Module II* – Preferred but not required.

2. Required Officers/Positions:

As rope rescue/rappelling is a low occurrence-high risk activity, the following positions must be filled during training. There is also a certain level of training each position must be certified/competent at.

- 2.1 *Rappel Safety Officer* – This position must be trained to a minimum of Rope Rescue II, or have been certified by an accredited agency for at least 5 years at the Rope Rescue I level, and be on a recognized Technical Rescue Team. The Rappel Safety Officer has overall authority to halt any and all operations they deem unsafe. Once the situation has been identified and corrected, operations may resume. **The authority of the Rappel Safety Officer shall be absolute.**
- 2.2 *Rigging/Edge Master* – This position must be trained to a minimum of Rope Rescue II, or have been certified by an accredited agency for at least 5 years at the Rope Rescue I level, and be on a recognized Technical Rescue Team. The “Rig Master” shall have positive control over all roof/edge operations and will work with the Rappel Safety Officer during all operations to assure personnel safety.

3. Medical/EMS Stand-by:

During high angle operations/training it is recommended that an EMS crew be on stand-by, but is not required. However, it is required that during any high angle operations/training that the 9-1-1 Center be notified. Also they shall be asked to assign a “training” channel for the operation/training so that channel is monitored for immediate contact in case of emergency.

4. Safety:

This section shall cover as many aspects of safety when it comes to rope rescue operations/training. However, it is still the responsibility of the visiting company to assure their personnel's safety.

- 4.1 **System Safety Check** – Prior to any system being used, it shall be safety checked and pre-tensioned. This ensures all knots, rigging, and hardware is being used correctly and allows all components of the rope system to be tested under an actual load. There shall be two types of System Safety Checks utilized:
 - 4.1.1 **Buddy System** – The “buddy System” is a safety check method where a person who did not participate in rigging the system inspects all parts of the rope system. This should be performed by the Rigging/Edge Master or other competent person. No matter who conducts the safety check, they shall use the “touch method” when inspecting the system. This assures the person doing the inspection places their hands on every component to ensure nothing is overlooked.
 - 4.1.2 **Hands-Off Test** – The final step of the safety check is to conduct the “hands-off test”. This method is designed to ensure that the safety features built into the system will actually operate. The premise behind this test is that if everyone let's go of the system while it was under load, the system would stop the falling load with no human intervention. To conduct the test,
 - A. Grasp the working end of the rope system
 - B. Ensure all personnel have let go of the system
 - C. Apply tension to the system
 - D. The system has passed the hands-off test if the system locks up when tension is pulled.
 - 4.1.3 **Personal Safety Check** – Once your rope system has been checked and approved for use, you must ensure your personal equipment is in safe order. All rescuers should be checked to ensure that their harness is on properly and that they are connected to the rope system correctly. When performing a personal safety check, look for the following:
 - A. The rescuer is wearing the proper PPE
 - B. Carabineers are locked and in the correct position
 - C. The harness is of the correct type for the operation and is tight fitting
 - D. Descending devices are properly weaved and loaded
 - E. The rescuer is properly connected into the mainline and belay line system
 - 4.1.4 **Edge Protection** – Under normal circumstances when a rope fails, it is because you failed the rope; you didn't protect or care for it, or use it in the manner for which it was designed. “Edge pro” is used as a barrier between the rope and/or webbing and the surface it is moving over or coming in contact with. It shall be the policy of this facility to use “Edge Pro” anytime a rope or webbing system comes in contact with any abrasive surface.
 - 4.1.5 **Back-Up/Belay Systems** – A backup is a means to ensure that the failure of one component of a rope system will not cause the failure of the entire system. With that being said, the following shall be adhered to:
 - A. A two-line system shall be used at all times. The load will be on the “main-line”, and a belay line will also be used.
 - B. Belay lines shall utilize TTWP(Tandem Triple Wrapped Prusiks), with some type of LRH(Load Releasing Hitch).

- C. When it all possible the main-line and belay line should be rigged to two separate anchor points. However, the anchor points on the roof of our burn building are rated “Bomb-Proof”. Rigging both or multiple lines to this structure is acceptable.

5. Equipment – Hardware & Software:

NFPA 1983 discusses three types of ropes. They are life safety rope, escape rope, and throw lines. Note that while escape ropes and throw lines are discussed, they do not meet the NFPA 1983 performance criteria of life safety rope. A life safety rope is a rope that is specifically designed and dedicated to support a life load during a rescue, firefighting, or other emergency situation or during training. All equipment used at this facility shall meet or exceed the NFPA 1983 standard, or other more current standard.

- 5.1 **Rope Construction** – All ropes used at this facility shall meet or exceed the most current version of NFPA 1983. Preferably meeting the following:
 - A. Be of nylon, polyester, or other synthetic fiber
 - B. Static kernmantle construction, meaning ropes must be constructed of a “core” and a “sheath”
 - C. Be of continuous filament fiber, meaning the kern of the rope is made from continuous nylon filament for the entire length of the rope
- 5.2 **Webbing Construction** – All webbing used shall meet or exceed the current version of NFPA 1983 or other related standard.
- 5.3 **Hardware Construction** – All hardware used shall meet or exceed the current version of NFPA 1983 or other related standard. The type of hardware used is up to the user, however there are a few recommendations:
 - A. Aluminum DCD’s and carabineer’s are acceptable for 1 person loads.
 - B. Steel or stainless steel hardware is recommended for 2 person loads or liter operations.

6. User Supplied Equipment/Record Keeping:

Any and all equipment used in the training of rope rescue personnel shall be provided by the end user. The following will be adhered to:

- A. Users must complete the “Training Operations Form” for the type of training being conducted.
- B. Assign the appropriate officers/positions for the type of training being conducted.
- C. Follow all guidelines listed in this SOP.
- D. Receive and sign for a copy of this SOP.
- E. Keep accurate log books for all rope rescue equipment.
- F. Provide ESRFTC personnel or their designee proof of VDFP compliance in the matters of training of personnel.
- G. Provide the ESRFTC personnel or their designee access to the user’s equipment log book.

All equipment used shall meet or exceed the most current version of NFPA 1983 or other related standard for rope rescue.

Appendices

- Before Training Checklist
- Training Operations Form



EASTERN SHORE REGIONAL FIRE TRAINING CENTER

Before Training Checklist

This form must be completed and signed by the person in charge of the training evolution prior to operations being conducted. This form must be filled out for each day of training.

Date of Training: _____

Department Name: _____

Officer/Person in Charge: _____

____ Assure all personnel participating are trained to the appropriate level

____ All required officer positions have been assigned

____ 9-1-1 Center notified of training and TAC channel assigned for operations

____ Conduct a "floor check" around building for foreign object debris

____ Assure both types of "System Safety Checks" have been completed

____ Assure personnel have completed a "Personal Safety Check"

____ All edge protection is in place

____ Belay systems have been tested

____ Personnel have been assigned to belay positions

____ Conduct a pre-evolution briefing to assure all personnel understand their responsibility

____ Assure there is NO SMOKING around rope rescue equipment

Date of Agreement: _____

Department Representative (Printed)

ESRFTC Representative (Printed)

Department Representative (Signature)

ESRFTC Representative (Signature)



EASTERN SHORE REGIONAL FIRE TRAINING CENTER

Training Operations Form

This form must be completed and signed by the person in charge of the training evolution prior to operations being conducted. This form must be filled out for each day of training.

1. Date of Training: _____
2. Department Name: _____
3. Officer/Person in Charge: _____
4. Provide a brief description of the drill/training being conducted.

The department listed above agrees to adhere to all rules & regulations of the ESRFTC. In addition, the Officer/person in charge must sign below agreeing that they or their department will not hold the ESRFTC responsible for injury/death from rope rescue training at this facility. Furthermore, by signing below all parties agree that a copy of the Rappel Tower SOP has been received by the persons/department conducting the training and that they have a clear understanding of its contents.

Date of Agreement: _____

Department Representative (Printed)

ESRFTC Representative (Printed)

Department Representative (Signature)

ESRFTC Representative (Signature)