	NORTHERN WAKE FIRE DEPARTMENT **STANDARD OPERATING PROCEDURES**
TITLE: Rope Rescue Procedures and Use	**SECTION/TOPIC: Operations**
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I. Purpose

A. This standard operating procedure addresses response to and operations during a rope, vertical, or high-angle rescue situation; including information on equipment use and maintenance. See Appendix A for "Rope Maintenance and use Log"

B. The purpose of this procedure is to establish guidelines for conducting safe rope rescues. Because of the infinite number of potential sites and situations that could be encountered, this procedure will not define a specific evolution to use, but will give guidelines to follow for conducting safe and effective operations

II. Scope

A. This SOP pertains to all personnel in the Northern Wake Fire Department. For a wide variety of reasons, victims become stranded, and we may be called to assist in getting these victims to safety. Sometimes it involves a simple walk-down and, at times, it involves a very long and complex technical high angle/rope rescue. This procedure will apply to all Northern Wake Fire Department personnel operating in a training or rescue incident.

III. Objective

A. Identify what duties Northern Wake Fire Personnel are able to perform,
B. Identify proper response procedures for Northern Wake Fire Department,
C. Identify general precautions for Northern Wake Fire Personnel,
D. Identify Proper Safety Gear to be worn by Northern Wake Fire Personnel.
E. Identify Inspection and Cleaning Procedures by Northern Wake Personnel.

IV. Definitions

A. **Rope Rescue-** Rope rescue is defined as any rescue attempt that requires rope and related equipment to safely gain access to, and remove patients from, hazardous geographic areas with limited access such as mountains, high rise buildings, above or below grade structures, by means of rope system. Technical evacuations require the dispatch of the Technical Rescue Team (TRT).

B. **Life Safety-** The protection used by responders and for civilian rescues to avoid injury, casualty, and life-threatening situation due to the risk hazard of a fall from height of greater than 4' feet (OSHA 1910.28). Does not apply in a fire suppression job function/task other than working from aerial apparatus or deemed necessary by Company Officer, Safety Officer, and Incident Commander.

C. **Life Safety General Use-** Equipment item or manufactured systems designed for general use loads, technical use loads, and escape based on design loads that are calculated and understood. Shall only be used in a life safety capacity.

D. **Life Safety Technical Use-** Equipment item or manufactured systems designed for technical use loads, and escape based on design loads that are calculated and understood. Shall only be used in a life safety capacity.

E. **Life Safety Cord-** Cord or manufactured systems, (Prussic, Purcell, etc.) designed for general use loads, technical use loads, and escape based on design loads that are calculated and understood. Shall only be used in a life safety capacity.

F. **Life Safety Tubular Webbing-** One-inch or two-inch tubular webbing designed for general use loads, technical use loads, and escape based on design loads that are calculated and understood. Shall only be used in a life safety capacity.

G. **Life Safety Harness-** An equipment item: an arrangement of material secured about the body used to support a person.

H. **Life Safety Hardware-** Non-fabric components of protective clothing or equipment including, but not limited to, those made of metal or plastic. Shall only be used in a life safety capacity.

I. **Slope Profile and Angle Definitions-**

i. Flat, Slope between 0°-15°, Single Life Safety Line, Non-Technical Rescue Operations
ii. Low Angle, Slope between 15°-40°, Single Life Safety Line, Non-Technical Rescue Operations
iii. Steep Angle, Slope between 40°-60°, Two Life Safety Line, Technical Rescue Operations
iv. High Angle, Slope Between 60°-90°, Two Life Safety Line, Technical Rescue Operations

V. General Rules and Regulations

A. **Northern Wake Fire Department Operational Guidance**

i. Northern Wake Fire Department is limited to operational capabilities of flat or low-angle rescues. **MUST REQUEST A TECHNICAL RESCUE TEAM FOR STEEP AND HIGH-ANGLE RESCUES.**
ii. Current Capabilities allow for:
    a. Walk-out Assist
    b. Low-Angle Raises and Lowers of Personnel
    c. Stokes Basket Raises and Lowers while maintaining ground contact.
iii. **No LIFE shall be suspended, in a Steep Angle or High Angle, from a rope if not in contact with the ground. Personnel and stokes basket must maintain contact with the ground, or the stokes basket must be carried by personnel to assist it with the angle.**
iv. Northern Wake Fire Department Personnel may act as Recon Team, if able, to provide information to Command and incoming crews, or to provide patient care.
v. Stokes Baskets shall not be suspended from rope equipment. (ie. Using the aerial device to lift the stokes basket and lower a victim.)
vi. Rescues that present a significant risk to the safety of Northern Wake personnel a Technical Rope Rescue Team will be contacted.
    a. Technical Rope Rescue Teams;
        i. City Of Raleigh Fire Department
        ii. Town Of Cary Fire Department
        iii. City of Durham Fire Department

B. **Response to and Operations during events requiring Rope and Rope Equipment:**

TACTICAL CONSIDERATIONS

Arrive On-Scene. Take Command. Size-Up;

i. The first arriving Company Officer should establish Command after arriving on the scene.

ii. Command shall secure any witnesses as soon as possible after arriving on scene.

iii. Northern Wake Fire Department Personnel may only use Northern Wake Rope Equipment to;

1. Assist with Northern Wake Fire Department Personnel ascent or decent on flat or low angle surfaces to a victim or patient.
2. Raise or lower a patient in a stokes basket, while maintaining contact with the ground, on a flat or low angle surface.
3. Walk-Out assist with a stokes basket. The Northern Wake Fire Department Personnel and Patient must remain in contact with the ground.

iv. Locate the Victim.

1. In some cases, Command will have to send a Recon Team to the area of the victim to determine the exact location of victim and nature of injuries. Command will establish Rescue Division and Rescue Supervisor. If the terrain is greater than 40° inclination, Command shall request a Technical Rescue Team.

v. Assessing the Need for Additional Resources.

1. Rescue Supervisor shall request additional resource with rope equipment if;
    - Additional anchors or systems are needed.
    - If outside the Northern Wake Fire Department capabilities outlined as flat or low angle slope.
    - Additional Personnel.

vi. Assess the Hazards.

1. Command shall designate a Safety Officer to ensure safe practices are being followed.

vii. Decide on an Action Plan.

1. With the recommendation from Rescue Division, Command will have to decide on an action plan.
2. Any event outside the scope of Flat or Low Angle slopes, as defined in this policy, a Technical Recue Team will be requested.
    - Examples of Steep and High Angle events, but not all inclusive:
        - Worker stuck on a water tower outside the reach of ground ladders or aerial device.
        - Arborist stuck in a tree outside the reach of ground ladders or aerial device.
        - Victim on a cell tower outside the reach of ground ladders or aerial device.
3. If deployment of the Technical Rescue Team in the Action Plan is decided, Northern Wake will defer tactics to the Technical Rescue team as subject matter experts and provide support as requested by the Technical Rescue Team Supervisor through Command.

C. **Post Event or Training Use Documentation;**

i. Use of any Northern Wake Rope Equipment shall be documented in the Maintenance and Usage Log for the used equipment by the Company Officer on duty, or his designee.
ii. Inspect rope and equipment per manufactures recommendations.

D. **Additional Considerations**

iii. HEAT. Consider rotation of crews.
iv. COLD. Consider effects of hypothermia on victim and rescuers.
v. RAIN/SNOW. Consider the effects of rain on the hazard profile.
vi. TIME OF DAY. Is there sufficient lighting for operations extending into the night?
vii. Consider the effect on family and friends; keep family informed.
viii. Consider news media; assign a P.I.O.

E. **General Cautions**

i. Make sure all knots are tied and dressed correctly.
ii. Maintain at least 15:1 safety margin when not belayed.
iii. Belay loads when safety margin is less than 15:1
iv. Rescuers shall not operate with less than a 10:1 safety margin.
v. Personnel shall not approach an edge without being tied in, maintaining contact with the ground and communicating with rescuers below.
vi. Rescuers shall wear appropriate clothing:

1. Approved Type I, II, III Harness or Ladder Belt for assisted ascent or decent.
2. Helmet
3. Safety Toe Shoes or Boots
4. Long Pants or Bunker Pants
5. Eye Protection (Safety Glasses)
6. Gloves

F. **Rope Inspection/Cleaning Procedures;**

i. To be performed after every emergency and non-emergency use. The inspection will identify the readiness of the equipment and any issues found prior to returning equipment to service.

- During Inspection members will check for the following;
    1. Debris/Foreign objects in or on rope.
    2. Obvious fraying
    3. Obvious tears
    4. Glazing of Rope
    5. Report any/all drops from > 6ft.
    6. Chemical staining (ie. Petroleum products, Antifreeze Etc.)
    7. Soft spots
    8. Cracks or deep abrasions to rigging equipment
    9. All rigging hardware functions freely as intended per the manufacturer.

- Cleaning Procedure;
    1. Always follow manufacturers recommendations.
    2. Use a cloth, damp with water, to wipe hardware. Allow to dry before returning to rigging kit.
    3. Use low pressure water on rope, no pressure washer.
    4. Allow all rope to air dry, out of direct sunlight, before returning to service.

Appendix A Rope Maintenance and Usage Log

Northern Wake Fire Department

Inventory ID#: _____
Apparatus Location: _____

Date Of Service: _____
Type: _____
Length (FT): _____
Diameter (MM): _____
Rope Color: _____

Manufacturer: _____
Model: _____
Tensile Strength: _____
Lot Number: _____

	Date	Location	Use (Training or Incident)	Cleaned after use (Y/N)	Damage	Pass/Fail	Member Initial
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
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27							
28							

a. Include activities such as operations, trainings, inspections, and washing.
b. Detail use of the Life Safety Equipment, such as for rappel, rappel rescue, main line, and system belay.
c. Did something happen that may have damaged the Life Safety Equipment such as rock fall, impact load, severe abrasion, or other abuse?
d. Pass(P)-no issue found, fail (F)-issue found, washed (W)-no issue found, inspection and washed per procedures