

State of Oregon  
Department of Public Safety Standards and Training

# Rope Rescue Technician Task Book

Rope Rescue Technician Task Book Assigned To:	
Name	DPSST Fire Service #
Agency Name	Date Initiated

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<http://www.oregon.gov/DPSST>

# Rope Rescue Technician Signature Page

A copy of this signature page and documentation of the applicants training must be included with the DPSST Rescue Technician application when applying for NFPA Rope Rescue Technician certification. Do not send the entire Task Book. Only a certified Rescue Technician in that specialty area may sign off the Task Book.

**Attest:** The information contained in this Task Book is true and correct to the best of my knowledge. I understand that a false or misleading statement on this document is subject to penalty under ORS 162.055, et al, and ORS 162.305 and may be cause to deny or revoke a fire service professional certification.

<b><u>Rope Rescue Technician Task Book Assigned To:</u></b>		
<hr/> <b>Signature</b>	<hr/> <b>Printed Name</b>	<hr/> <b>DPSST Fire Service #</b>
<hr/> <b>Agency Name</b>	<hr/> <b>Date Initiated</b>	
<hr/> <b>Signature of Certified Technician</b>	<hr/> <b>Printed Name of Certified Technician</b>	<hr/> <b>Date Completed</b>

**Rescue Technician Evaluators:** Each Evaluator must document the following information:

<b>Evaluator:</b> Level of Rescue Technician certification: <input type="checkbox"/> Rope <input type="checkbox"/> Surface Water <input type="checkbox"/> Vehicle & Machinery <input type="checkbox"/> Confined Space <input type="checkbox"/> Structural Collapse <input type="checkbox"/> Trench			
<b>Sections of chapter signed off by Evaluator:</b> <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4			
<hr/> <b>Signature of Evaluator</b>	<hr/> <b>Printed name of Evaluator</b>	<hr/> <b>DPSST Fire #</b>	<hr/> <b>Date</b>

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Task Book Qualification Record Books (Task Book) have been developed for various certification levels within the Oregon Department of Public Safety Standards and Training (DPSST) system. Each Task Book lists the job performance requirements (JPRs) for the specific certification level in a format that allows a candidate to be trained and evaluated in the skills of that position. Successful performance of all tasks, as observed and recorded by a certified Rescue Technician in that discipline, will result in the candidate's eligibility for DPSST certification.

To become certified at a specific level, the applicant must successfully complete all the job performance requirements. Before a job performance requirement may be taken, all requisite knowledge and skills must be satisfied. Only requisite knowledge and skills may be signed off in the classroom setting by the instructor. Only a certified Rescue Technician in that specialty rescue area may sign off all relative Task Book evaluations at the candidates agency. When all prescribed requirements are completed, an application for certification may be submitted to DPSST. All certificates are mailed to the Training Officer at the agency.

**Note to agencies:** It is highly recommended that an agency considering a Rescue Technician program reviews NFPA 1670 and follows those standards. These JPRs are general guidelines. As such they are not intended to replace specific sequences of apparatus or equipment operation that may be outlined by manufacturer specifications. At all times, standard operating procedures of the agency in which the evaluation is being conducted will govern. The agencies should have available for evaluators a copy of manufacturer specifications and the agency's standard operational guidelines.

The JPRs covered in this Task Book meet or exceed all NFPA published standards for this certification level at the time of this publication. Mention of NFPA and its standards do not, and are not intended as adoption of – or reference to – NFPA standards.

## HOW TO EVALUATE PERFORMANCE

Each JPR has a corresponding box to the right in which to confirm a candidate's success in a sequence. The evaluator shall indicate successful passing by the candidate of each JPR by initialing and dating. The candidate needs only perform the skill once to complete. These skills are to be tested after the candidate has completed the training program and by using the equipment of the agency. Testing in the training program does not constitute completion of the skill in a Task Book. Requisite knowledge and skills may be signed off in the training program.

- 3-3.7 Transfer a victim to emergency medical services (EMS), given local medical protocols, so that all pertinent information is passed from rescuer to EMS provider, and the victim can be transported to a medical care facility.

# Task Book Qualification Record

For the Certification Level of

## Rope Rescue Technician

Prior to becoming certified in this position, the candidate shall successfully complete the following Job Performance Requirements (JPR). The evaluator shall initial and date the appropriate box to indicate successful completion of each. For each JPR there are requisite knowledge and skill requirements. These requirements must be met before candidate may proceed.

- 2-1 Because technical rescue is inherently dangerous and rescue technicians are frequently required to perform rigorous activities in adverse conditions, regional and national safety standards shall be included in agency policies and procedures. Rescue technicians shall complete all activities in the safest possible manner and shall follow national, federal, state, provincial, and local safety standards as they apply to the rescue technician.
- 2-2 Before beginning training activities or engaging in rescue incidents the following requirements shall be complied with:
- (1) Age requirements established by the authority having jurisdiction. (AHJ)
  - (2) Medical requirements established by the AHJ.
  - (3) Minimum physical fitness as required by the AHJ.
  - (4) Emergency medical care performance capabilities for entry-level personnel developed and validated by the AHJ.
  - (5) Minimum educational requirements established by the AHJ.
  - (6) Minimum requirements for hazardous material incident and contact control training for entry-level personnel, validated by the AHJ.
- 2-3 For certification, the rescue technician shall perform all of the job performance requirements in Chapter 3 and all job performance requirements listed in at least one of the specialty areas (Chapters 4-9).

### 3-2 Site Operations

- 3-2.1 Identify the needed support resources, given a specific type of rescue incident, so that a resource cache is managed, scene lighting is adequate for the tasks to be undertaken, environmental concerns are managed, personnel rehabilitation is facilitated, and the support operation facilitates rescue operational objectives.
- (a) **Requisite Knowledge:** Equipment organization and tracking methods, lighting resource type and availability, shelter and thermal control options, and rehab criteria.
- (b) **Requisite Skills:** The ability to track equipment inventory, identify lighting resources and structures for shelter and thermal protection, select rehab areas, and manage personnel rotations.
- 3-2.2 Size up a rescue incident, given background information and applicable reference materials, so that the type of rescue is determined, the number of victims is identified, the last reported location of all victims is established, witnesses are identified and interviewed, resource needs are assessed, search parameters are identified, and information required to develop an incident action plan is obtained.
- (a) **Requisite Knowledge:** Types of reference materials and their uses, availability and capability of the resources, elements of an action plan and related information, relationship of sizeup to the incident management system, and information gathering techniques and how that information is used in the sizeup process.
- (b) **Requisite Skills:** The ability to read technical rescue reference materials, gather information, relay information, and use information gathering sources.
- 3-2.3 Manage incident hazards, given scene control barriers personal protective equipment, requisite equipment, and available specialized resources, so that all hazards are identified, resource application fits the operational requirements, hazard isolation is considered, risks to rescuers and victims are minimized, and rescue time constraints are taken into account.
- (a) **Requisite Knowledge:** Resource capabilities and limitations, types, and nature of incident hazards, equipment types and their use, isolation terminology, methods, equipment and implementation, operational requirement concerns, common types of rescuer and victim risk, risk-benefit analysis methods and practices, and types of technical references.

(b) **Requisite Skills:** The ability to identify resource capabilities and limitations, identify incident hazards, assess victim viability (risk-benefit), utilize technical references, place scene control barriers, and operate control and mitigation Equipment.

3-2.4 Management resources in a rescue incident, given incident information, a means of communication, resources, tactical worksheets, personnel accountability protocol, applicable references, and standard operating procedures, so that references are correctly utilized, personnel are accounted for, deployed resources achieve desired objectives, incident actions are documented, rescue efforts are coordinated, the command structure is established, task assignments are clearly communicated and monitored, and actions are consistent with applicable regulations.

(a) **Requisite Knowledge:** Incident management system, tactical worksheet application and purposes, accountability protocols, resource types and deployment methods, documentation methods and requirements, availability, capabilities and limitations of rescuers and other resources, typical communication problems and needs, communications requirements, methods and means, types of tasks and assignment responsibilities, policies and procedures of the agency, and technical references related to the type of rescue incident.

(b) **Requisite Skills:** The ability to implement an incident management system. Complete tactical worksheets, use reference materials, evaluate incident information, match resources to operational needs, operate communications equipment, manage incident communications, and communicate in a clear and concise manner so that objectives are met.

3-2.5 Conduct a search, given hazard-specific personal protective equipment, equipment pertinent to search mission, an incident location, and victim investigative information, so that search parameters are established, victim profile is established, the entry and exit of all people either involved in the search or already within the search area are questioned and the information is updated and relayed to command, the personnel assignments match their expertise, all victims are located as quickly as possible, applicable technical rescue concerns are managed, risks to searchers are minimized, and all searchers are accounted for.

(a) **Requisite Knowledge:** Local policies and procedures and how to operate in the site-specific search environment.

(b) **Requisite Skills:** The ability to enter, maneuver in, and exit the search environment and provide for and perform self-escape/rescue.

3-2.6 Perform ground support and operations for helicopter activities, given a rescue scenario/incident, helicopter, operational plans, personal protective equipment, requisite equipment, and available specialized resources, so that rescue personnel are familiar with operational characteristics of the aircraft and demonstrate operational proficiency in establishing and securing landing zones and communicating with aircraft personnel until the assignment is complete.

(a) **Requisite Knowledge:** Ground support operations relating to helicopter use and deployment, operation plans for helicopter service activities, type-specific personal protective equipment, aircraft familiarization and hazard areas specific to helicopter, scene control and landing zone requirements, aircraft safety systems, and communications protocols.

(b) **Requisite Skills:** The ability to provide ground support operations, review standard operating procedures for helicopter operations, use personal protective equipment, establish and control landing zones, and communicate with aircrews.

3-2.7 Terminate the incident, given isolation barriers and specialized teams and equipment so that all personnel are accounted for and removed from the scene, hazards are eliminated or controlled, further entry is denied, the victim is transported to the appropriate care facility, the scene is rendered safe, rescue personnel are returned to a state of readiness, appropriate reporting and documentation of the incident is completed, and a critique and critical incident stress debriefing is conducted with rescue personnel.

(a) **Requisite Knowledge:** How to secure a scene, forms for documentation, resources for critical incident stress debriefing, and local medical transportation protocol.

(b) **Requisite Skills:** The ability to provide scene security, complete reporting documentation of the incident, and apply local medical transportation protocol.

### 3-3 Victim Management

3-3.1 Access a victim, given tool kits, personal protective equipment, and other equipment designed to allow physical approach to the victim so that hazards are managed, the rescuer can approach the victim, the access point is determined, the means of access is maintained and secured, and an escape route is identified.

- (a) **Requisite Knowledge:** Recognition and methods to manage potential hazards within the rescue environment, methods and means to gain access, use of appropriate personal protective equipment and tool kit(s) used to gain access to the victim, and factors used to identify escape routes.
  - (b) **Requisite Skills:** The ability to manage hazards, use provided tools, use personal protective equipment, and choose safe entry and escape routes and techniques and tools (specific to the rescue environment) to make access to the victim.
- 3-3.2 Assess a victim, given personal protective equipment to include protection for airborne and bloodborne pathogens and a basic first aid kit, so that required resources can be identified and obtained, injuries are identified, risks to rescuers are minimized, victim viability is established, and treatment priorities are established.
- (a) **Requisite Knowledge:** Victim assessment procedures, universal precautions for infectious disease, emergency medical care, considerations related to mechanisms of injuries, issues relating to protocol, and types of resources and availability.
  - (b) **Requisite Skills:** The ability to use personal protective clothing, use personal protective equipment, follow established assessment procedures, relate mechanism of injury to assessment, and evaluate scene hazards.
- 3-3.3 Stabilize the victim, given a basic first aid kit, so that the victim's airway is established and maintained, ventilation is adequate, circulation is maintained, severe bleeding is controlled, spinal immobilization precautions are taken, and the victim is treated for shock.
- (a) **Requisite Knowledge:** Emergency medical care and uses for personal protective equipment.
  - (b) **Requisite Skills:** The ability to initiate emergency medical care and use personal protective equipment.
- 3-3.4 Triage victims, given triage tags and local protocol, so that rescue versus recovery factors are considered, triage decisions reflect resource capabilities, severity of injuries is determined, and victim care and rescue priorities are established in accordance with local protocol.
- (a) **Requisite Knowledge:** Types and systems of triage according to local protocol, resource availability, methods to determine injury severity, ways to manage resource, and prioritization requirements.



- (b) **Requisite Skills:** The ability to use triage materials, techniques, and resources and to categorize victims properly.
  
- 3-3.5 Package an ill or injured victim, given a basic first aid kit and other specialized equipment if available, so that environmental conditions are considered, illnesses or injuries are managed, and the potential for further injury is minimized.

  - (a) **Requisite Knowledge:** Effects of environmental conditions on packaging, emergency medical care, packaging equipment and methods, ways to minimize additional injuries, immobilization techniques, and application of victim personal protective equipment.
  - (b) **Requisite Skills:** The ability to select and apply packaging equipment, protect a victim, immobilize injuries, and apply personal protective equipment to a victim.

- 3-3.6 Move a victim to low-angle environment, given victim transport equipment, litters, other specialized equipment if available, and victim removal systems appropriate to the specific rescue environment, so that the victim is moved without undue further injuries, risks to rescuers are minimized, the integrity of the victim's securement within the transfer device is established and maintained, the means of attachment to the rope rescue system is secure, and the victim is removed from the hazard.

  - (a) **Requisite Knowledge:** Types of transport equipment and removal systems, selection factors with regard to specific rescue environments, methods to reduce and prevent further injuries, types of risks, common to rescuers, ways to establish and maintain victim securement, transport techniques, rope rigging applications and methods, and types of specialized equipment and their uses.
  - (b) **Requisite Skills:** The ability to secure a victim to transport equipment, assemble and operate environment-specific victim removal systems, and choose an incident-specific transport device.

- 3-3.7 Transfer a victim to emergency medical services (EMS) given local medical protocols, so that all pertinent information is passed from rescuer to EMS provider, and the victim can be transported to a medical facility.

  - (a) **Requisite Knowledge:** Medical protocols for victim transfer, uses for checklists, triage tags or report forms utilized for this purpose by the authority having jurisdiction, risks, laws and liabilities related to victim transfer, and information needs of the EMS provider.

- (b) **Requisite Skills:** The ability to report victim conditions and history to the EMS provider and to complete reports and checklists, and verbal communication skills.

### 3-4 Maintenance

- 3-4.1 Inspect and maintain hazard-specific personal protective equipment, given clothing or equipment for the protection of the rescuers, including respiratory protection, cleaning and sanitation supplies, maintenance logs or records, and such tools and resources as are indicated by manufacturer's guidelines for assembly or disassembly of components during repair or maintenance, so that damage, defects, and wear are identified and reported or repaired as needed, equipment functions as designed, and preventive maintenance has been performed and documented consistent with the manufacturer's recommendations.

- (a) **Requisite Knowledge:** Functions, construction, and operation of personal protective equipment; use of record-keeping systems of the authority having jurisdiction; requirements and procedures for cleaning, sanitizing and infectious disease control; use of provided assembly and disassembly tools; manufacturer and agency recommendations; pre-use inspection procedures; and ways to determine operational readiness.

- (b) **Requisite Skills:** The ability to identify wear and damage indicators for personal protective equipment; evaluate operational readiness of personal protective equipment; complete logs and records; use cleaning equipment, supplies, and reference materials; and select and use tools appropriate to the task.

- 3-4.2 Inspect and maintain rescue equipment, given maintenance logs and records, tools and resources as indicated by the manufacturer's guidelines, an equipment replacement protocol, and organizational standard operating procedure, so that the operational status of equipment is verified and documented, all components are checked for operation, deficiencies are repaired or reported as indicated by standard operating procedure, and items subject to replacement protocol are correctly disposed of and changed.

- (a) **Requisite Knowledge:** Functions and operations of rescue equipment, use of record-keeping systems, manufacturer and organizational care and maintenance requirements, selection and use of maintenance tools, replacement protocol and procedures, disposal methods, and organizational standard operating procedures.

- (b) **Requisite Skills:** The ability to identify wear and damage indicators for rescue equipment, evaluate operation readiness of equipment, complete logs and records, and select and use maintenance tools.

### 3-5 Ropes/Rigging

- 3-5.1 Tie knots, bends, and hitches, given ropes and webbing, so that the knots are properly dressed, recognizable, and safetied as required.

- (a) **Requisite Knowledge:** Knot efficiency, proper knot utilization, rope construction, rope terminology, and methods of safety.

- (b) **Requisite Skills:** Tie representative knots, bends, or hitches for the following purposes:

- 1) End of the line loop
- 2) Midline loop
- 3) Securing rope around desired objects
- 4) Joining rope or webbing ends together
- 5) Gripping rope

- 3-5.2 Construct a single-point anchor system, given life safety rope, edge protection, and other auxiliary rope rescue equipment if available, so that the chosen anchor system fits the incident needs, meets or exceeds the expected load, and does not interfere with rescue operations, the critical angle is not exceeded, a safe and efficient anchor point is chosen, the need for redundant anchor points is assessed and used as required, the anchor system is inspected and loaded prior to being placed into service, and the integrity of the system is maintained throughout the operation.

- (a) **Requisite Knowledge:** Application of knots, safe rigging principles, anchor selection criteria, system safety check procedures, rope construction, and rope rescue equipment applications and limitations.

- (b) **Requisite Skills:** The ability to select rope and equipment; tie knots; rig systems; evaluate anchor points for desired strength, location, and surface contour; and perform a system safety check.

- 3-5.3 Construct a simple rope mechanical advantage system, given life safety rope, carabiners, pulleys, rope grab devices, and auxiliary rope rescue equipment if available, so that the system constructed can accommodate the load, is efficient, and is connected to an anchor system and the load.

- (a) **Requisite Knowledge:** Principles of mechanical advantage, capabilities and limitations of various simple rope mechanical advantage systems, applications of knots, safe rigging principles, and system safety check procedures.
  - (b) **Requisite Skills:** The ability to select rope and equipment, tie knots, choose and rig systems, attach the mechanical advantage system to the anchor system and load, and perform a system safety check.
- 3-5.4 Direct a team in the operation of a simple rope mechanical advantage system, given rescue personnel, and established rope rescue system incorporating a simple rope mechanical advantage system, a load to be removed, and an anchor system, so that the movement is controlled, the load can be held in place when needed, operating methods do not stress the system to the point of failure, appropriate commands are used to direct the operation, and potential problems are readily identified, communicated, and managed.
- (a) **Requisite Knowledge:** Principles of mechanical advantage, capabilities and limitations of various simple rope mechanical advantage systems, proper operation of simple rope mechanical advantage systems, personnel assignments, and operational commands.
  - (b) **Requisite Skills:** Direct personnel effectively, use operational commands, analyze system efficiency, identify safety concerns, and perform system safety check.
- 3-5.5 Construct a lowering system, given an anchor system, life safety rope(s), descent control device, and auxiliary rope rescue equipment if available, so that the system can accommodate the load, is efficient, is capable of holding the load in place or lowering with minimal effort over the desired distance, and is connected to an anchor system and the load.
- (a) **Requisite Knowledge:** Capabilities and limitations of various descent control devices, capabilities and limitations of various lowering systems, applications of knots, safe rigging principles, and system safety check procedures.
  - (b) **Requisite Skills:** The ability to tie knots, perform rigging, properly attach to descent control device, anchor system, and load, and perform a system safety check.
- 3-5.6 Direct a lowering operation, given appropriate rescue personnel, an established lowering system, and a load to be moved, so that the movement is controlled, the load can be held in place when needed, operating methods do not stress the system to the point of failure, rope commands are used to direct the operations, and potential problems are readily identified, communicated, and managed.

(a) **Requisite Knowledge:** Applications and use of descent control devices, capabilities and limitations of various lowering systems, proper operation of lowering systems, personnel assignments, and operational commands.

(b) **Requisite Skills:** The ability to direct personnel effectively, use operational commands, analyze system efficiency, manage movement of the load, identify safety concerns, and perform a system safety check.

3-5.7 Construct a belay system, given life safety rope, anchor systems, personal protective equipment, and auxiliary rope rescue equipment if available, so that the system is capable of arresting a fall, a fall will not result in system failure, the system is not loaded unless actuated, actuation of the system will not injure or render the belayer ineffective, the belayer is not rigged into the equipment components of the system, and the system is suitable to the site and is connected to an anchor system and the load.

(a) **Requisite Knowledge:** Principles of belay systems, capabilities and limitations of various belay devices, application of knots, safe rigging principles, and system safety check procedures.

(b) **Requisite Skills:** The ability to select a system, tie knots, perform rigging, attach to anchor system and load, don and use task-specific personal protective equipment, and perform a system safety check.

3-5.8 Operate a belay system during a lowering or raising operation, given an operating lowering or hauling system, a belay system, and a load, so that the belay line is not loaded during operation of the primary rope rescue system, the belay system, and a load, so that the belay line is not loaded during operation of the primary rope rescue system, the belay system is prepared for actuation at all times during the operation, the belayer is attentive at all times during the operation, the load's position is continually monitored, and the belayer moves rope through the belay device as designed.

(a) **Requisite Knowledge:** Application and use of belay devices, proper operation of belay systems in conjunction with normal lowering and hauling operations, and operational commands.

(b) **Requisite Skills:** The ability to tend a belay system as designed, tie approved knots, assess system effectiveness, properly attach a belay line to a belay device, don and use task-specific personal protective equipment, perform a system safety check, and manage and communicate belay system status effectively.

3-5.9 Belay a falling load, given a belay system and a dropped load, so that the belay line is not taut until the load is falling, the belay device is actuated when the load falls, the fall is arrested, the belayer utilizes the belay system as designed, and the belayer is not injured or rendered ineffective during actuation of the belay system.

(a) **Requisite Knowledge:** Application and use of belay devices, effective emergency operation of belay devices to arrest falls, personal protective equipment, and operating procedures.

(b) **Requisite Skills:** The ability to operate a belay system as designed, tie approved knots, use task-specific personal protective equipment, recognize and rapidly react to a falling load, and communicate belay system actuation.

3-5.10 Conduct a system safety check, given a rope rescue system and rescue personnel, so that a physical/visual check of the system is made to ensure proper rigging, a load test is performed prior to life-loading the system, and verbal confirmation of these actions is announced and acknowledged before life-loading the rope rescue system.

(a) **Requisite Knowledge:** System safety check procedures, construction and operation of rope rescue systems and their individual components, proper personal protective equipment, equipment inspection criteria, signs of equipment damage, principles of safe rigging, and equipment replacement criteria.

(b) **Requisite Skills:** The ability to apply and use personal protective equipment, inspect rope rescue system components for damage, assess a rope rescue system for improper configuration, secure equipment components, inspect all rigging, and perform a system safety check.

#### 4 Rope Rescue

4-1.1 Construct a multiple-point anchor system, given life safety rope and other auxiliary rope rescue equipment where available, so that the chosen anchor system fits the incident needs, the system strength meets or exceeds the expected load and does not interfere with rescue operations, equipment is visually inspected prior to being put in service, the critical angle is not exceeded, the nearest safe anchor points are chosen, the anchor system is system safety checked prior to being placed in service, the integrity of the system is maintained throughout the operation, and weight will be distributed between more than one anchor point.

(a) **Requisite Knowledge:** Critical angles and effects and risks of exceeding the critical angle, safety issues in choosing anchor points, system safety check methods that allow for visual and physical assessment of system components, methods to evaluate the system during operations, integrity concerns, weight distributions issues and methods, knots and applications, selection and inspection criteria for hardware and software, formulas needed to calculate safety factors for load distribution, and the concepts of static loads versus dynamic loads.

(b) **Requisite Skills:** The ability to determine incident needs as related to choosing anchor systems, select effective knots, calculate expected loads, evaluate incident operations as related to interference concerns and set-up, choose anchor points, perform system safety check, and evaluate system components for compromised integrity.

4-1.2 Construct a compound rope mechanical advantage system, given a load, an anchor system, life safety rope, carabiners, pulleys, rope grab devices, and auxiliary rope rescue equipment if available, so that the system constructed can accommodate the load, reduces the force required to lift the load, operational interference is factored and minimized, the system is efficient, a system safety check is completed, and the system is connected to an anchor system and the load.

(a) **Requisite Knowledge:** Determination of incident needs as related to choosing compound rope systems, the elements of efficient design for compound rope systems, knot selection, methods for reducing excessive force to system components, evaluation of incident operations as related to interference concerns and set-up, rope commands, safe rigging principles, system safety check procedures, and methods of evaluating system components for compromised integrity.

(b) **Requisite Skills:** The ability to determine incident needs as related to choosing compound rope systems, select effective knots, calculate expected loads, evaluate incident operations as related to interference concerns and set-up, perform system safety check, and evaluate system components for compromised integrity.

4-1.3 Construct a fixed rope system, given an anchor system, life safety rope, and auxiliary rope rescue equipment if available, so that the system constructed can accommodate the load, is efficient, and is connected to an anchor system and the load, a system safety check is performed and the results meet the incident requirements for descending or ascending operations.

(a) **Requisite Knowledge:** Knot selection, calculating expected loads, incident evaluation, operations as related to interference concerns and set-up, safe rigging principles, system safety check procedures, and methods of evaluating system components for compromised integrity.

(b) **Requisite Skills:** The ability to select effective knots, calculate expected loads, use safe rigging principles, evaluate incident operations as related to interference concerns and set-up, perform system safety check, and evaluate system components for compromised integrity.

4-1.4 Direct the operation of a compound rope mechanical advantage system, given rope rescue system incorporating a compound rope mechanical advantage system and a load to be moved, so that a system safety check is performed; the movement is controlled; the load can be held in place when needed; operating methods do not stress the system to the point of failure; operational commands are clearly communicated; and potential problems are readily identified, communicated, and managed.

(a) **Requisite Knowledge:** Methods to determine incident needs, types of interference concerns, rope commands, system safety check protocol, procedures for continued evaluation of system components for compromised integrity, common personnel assignments and duties, common and critical commands, methods for properly controlling a load's movement, system stress issues during operations, and management methods for common problems.

(b) **Requisite Skills:** The ability to determine incident needs, evaluate incident operations as related to interference concerns, complete a system safety check, continually evaluate system components for compromised integrity, direct personnel effectively, communicate commands, analyze for system efficiency, manage load movement, and identify safety concerns.

4-1.5 Complete an assignment while suspended from a rope rescue system, given a rope rescue system, an assignment, life safety harnesses, litters, bridles, and specialized equipment necessary for the environment, so that risks to victims and rescuers are minimized, the means of attachment to the rope rescuer system is secure, selected specialized equipment does not unduly increase risks to rescuers or victims.

(a) **Requisite Knowledge:** Task-specific selection criteria for life-safety harnesses, personal protective equipment selection criteria, variations in litter design and intended purpose, safe rigging principles, considerations and practices for high-angle environments, and common hazards posed by improper maneuvering and harnessing.



(b) **Requisite Skills:** The ability to select and use proper rescuer harness and personal protective equipment for common environments, attach the life safety harness to the rope rescue system, maneuver around existing environment and system specific obstacles, perform work while suspended from the rope rescue system, and evaluate surroundings for potential hazards.

4-1.6 Move a victim in a high-angle or vertical environment, given a rope rescue system, victim transfer devices, and specialized equipment necessary for the environment, so that risks to victims and rescuers are minimized, undesirable victim movement within the transfer device is minimized, the means of attachment to the rope rescue system is secure, the victim is removed from the hazard, selected specialized equipment facilitates efficient victim movement, and the victim can be transported to the local EMS provider.

(a) **Requisite Knowledge:** Task-specific selection criteria for patient transfer devices, various carrying techniques, personal protective equipment selection criteria, design characteristics and intended purpose of various transfer devices, safe rigging principles, types of methods to minimize common environmental hazards and hazards created by improper practices, and considerations and practices for high-angle environments.

(b) **Requisite Skills:** The ability to choose patient transfer devices, select and use personal protective equipment appropriate to the conditions, attach a transfer device to the rope rescue system, reduce hazards for rescuers and victims, and determine specialized equipment needs for victim movements.

4-1.7 Direct a team in the construction of a highline system, given rescue personnel; life safety rope; auxiliary rope rescue equipment, where available, minimally rated for two-person loads; and suitable anchor systems, so that personnel assignments are made and clearly communicated, the system constructed can accommodate the load, tension applied within the system will not exceed the rated capacity of any of its component parts, system safety check is performed, movements on the system is efficient, and loads can be held in place or moved with minimal effort over the desired distance.

(a) **Requisite Knowledge:** Determination of incident needs as related to operation of highline systems, capabilities and limitations of various highline systems (including capacity ratings), incident site evaluations as related to interference concerns and obstacle negotiation, safe rigging principles, system safety check protocol, common personal assignments and duties, common and critical operational commands, and common highline problems and ways to minimize these problems during construction.

(b) **Requisite Skills:** The ability to determine incident needs as related to construction of highline systems, evaluate an incident site as related to interference concerns and setup, identify the obstacles or voids to be negotiated with the highline, select an appropriate highline system for defined task, perform system safety checks, use safe rigging principles, and communicate with personnel effectively.

4-1.8 Direct a team in the operation of a highline system, given rescue personnel, an established highline system, a load to be moved, and personal protective equipment, so that the movement is controlled, the load is held in place when needed, operating methods do not stress the system to the point of failure, personnel assignments are made and tasks are clearly communicated, operational commands are distinctly communicated to personnel, and potential problems are readily identified, communicated, and managed.

(a) **Requisite Knowledge:** Ways to determine incident needs as related to the operation of highline systems, capabilities and limitations of various highline systems, incident site evaluation as related to interference concerns and obstacle negotiation, system safety check protocol, procedures to evaluate system components for compromised integrity, common personnel assignments and duties, assignment considerations, common and critical operational commands, common highline problems and ways to minimize or manage, and ways to increase the efficiency of load movements.

(b) **Requisite Skills:** The ability to determine incident needs, complete a system safety check, evaluate system components for compromised integrity, select personnel, communicate with personnel effectively, manage movement of the load, and evaluate for potential problems.

4-1.9 Ascend a fixed rope, given a properly anchored fixed rope system, a system to allow ascent of a fixed rope, a structure, a belay system, a life safety harness worn by the person ascending, and personal protective equipment, so that the person ascending is secured to the fixed rope in a manner that will not allow him or her to fall, the person ascending is secured to the rope means of ascent control device(s) with at least two points of contact, injury to the person ascending is minimized, the person ascending can stop at any point on the fixed rope and rest suspended by his or her harness, the system will not be stressed to the point of failure, the person ascending can convert their ascending system to a descending system, and the system is suitable for the site and will facilitate reaching the desired objective.

(a) **Requisite Knowledge:** Task-specific selection criteria for life-safety harnesses and systems for ascending a fixed rope, personal protective equipment selection criteria, design and intended purpose of ascent control devices utilized, rigging principles, considerations and practices for high-angle environments, converting ascending systems to descending systems, and common hazards posed by improper maneuvering and harnessing.

(b) **Requisite Skills:** the ability to select and use proper rescue harness, a system for ascending a fixed rope, and personal protective equipment for common environments; attach the life safety harness to the rope rescue system; configure ascent control devices to form a system for ascending a fixed rope; make connections to the ascending system: maneuver around existing environment and system-specific obstacles; convert the ascending system to a descending system while suspended from the fixed rope; and evaluate surroundings for potential hazards.

4-1.10 Descend a fixed rope, given a properly anchored fixed rope system, a system to allow descent of a fixed rope, a belay system, a life safety harness worn by the person descending, and personal protective equipment, so that the person descending is secured to the fixed rope in a manner that will not allow him or her to fall, the person descending is secured to the rope by means of a descent control device, the speed of descent is controlled, injury to the person descending is minimized, the person descending can stop at any point on the fixed rope and rest suspended by his or her harness, the system will not be stressed to the point of failure, and the system is suitable for the site and will facilitate reaching the desired objective.

(a) **Requisite Knowledge:** Task-specific selection criteria for life safety harnesses and systems for descending a fixed rope; personal protective equipment selection criteria; design, intended purpose, and proper operation of descent control devices utilized; safe rigging principles; considerations and practices for high-angle environments; and common hazards posed by improper maneuvering and harnessing.

(b) **Requisite Skills:** The ability to select and use proper rescuer harness, a system for descending a fixed rope, and personal protective equipment for common environments, attach the life safety harness to the rope rescue system; make proper attachment of the descent control device to the rope and life safety harness; operate the descent control device; maneuver around existing environment and system-specific obstacles; and evaluate surroundings for potential hazards.