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Resort Rescue Technician Syllabus

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For the most recent standards versions & supporting documentation visit

https://www.technicalrescue.org/documents

Purpose and Scope

The purpose of this document is to provide clear guidance and establish minimum standards for ITRA Resort Rescue Technician (RRT). While techniques, procedures, styles, and components may vary between courses and instructors, the goal of the rope discipline is not to prescribe a single method. Instead, it aims to set a foundational standard for the knowledge and skills expected at each level.

Course Information

- Name: ITRA Resort Rescue Technician (**RRT**)
- Typical Length: 5 days

Description

Resort Rescue Technicians are expected to be able to perform as a team on sloped terrain, with a non-ambulatory, litter/ toboggan bound patient at an advanced level as well as perform complex aerial tramway based operations.

Requirements

- Comfortable at heights
- Physical fitness and health to perform vigorous activities which may be required during the assessment such as:
    - Carry equipment and move through various environments based on the focus of the rope rescue industry. (wilderness/mountain/industrial/caving/tactical etc)
    - Ascend and descend a rope with equipment.
    - Carry the weight of a **standard load**, as part of a team, in a litter as required.
- Disclosure of any medical issues to your instructor(s) and/or assessor(s).
- Instructors and assessors may have their own requirements, often based on insurance requirements and liability, to be eligible for courses and assessments, such as minimum age requirements and medical conditions.

- **Resort training in basic lift evacuation**

Materials and Resources

Specific resources shall be provided by your ITRA instructor based on the industry of rope rescue you work in. (industrial/mountain/caving/tactical etc…)

Resources listed below are examples of references used by the ITRA rope rescue discipline. This is not an exhaustive list.

- NPS Technical Rescue Handbook 12th edition
- Rope lab Physics for roping technicians
- International Technical Rescue Symposium
- https://roperescuetraining.com/
- https://www.ropebook.com/
- EMBC Rope Rescue Summary Report 2016
- https://www.alpine-rescue.org/
- CMC Field Guide - Rope Rescue Technician Manual 6th Edition
  - Apple Store
  - Google Play
- Petzl Technical Notices
- OSHA 1910
- NSAA Aerial Evacuation Resource Guide 2020

Learning outcomes, competencies, and expectations

Having a consistent international standard of competency helps rope rescue technicians work safely and effectively. Rope rescue is a constantly evolving field, with many factors affecting how a rescue is carried out. ITRA doesn't require specific techniques or equipment but instead provides guidance, sets expectations, and outlines minimum standards.

> *Example: Different teams may use varying communication methods, but under guidance in the Syllabus, all technicians are to be trained in at least one effective communication system and understand the underlying principles.*

Each ITRA instructor brings their own unique style, preferences, and expertise, contributing to the overall training experience.

Knowledge & Skills Overview

Instructors have the freedom to teach knowledge topics in various ways. They may use manuals, presentations, videos, lectures, hands-on practice, or demonstrations. Every topic in this syllabus can be tested during an assessment, through a workbook, or on a written exam.

- Instructors may teach additional or higher-level topics beyond a current level or not listed in the syllabus. Such things shall not be tested during an ITRA assessment.
- Techniques for skill-based tasks may vary (e.g., using a munter hitch with a backup vs. a clutch or maestro device). Guidance for these tasks is provided in level-specific PSCs to ensure safe practices while allowing stylistic preferences.

PSC Overview

Performance: The required task that must be performed**.**
Standard: The expectations of how that task should be performed.
Conditions: The various criteria to perform the task.
Comments: Additional information relating to the task.

Definitions and additional information for document terms in bold text can be found in the ITRA Rope Rescue Terms & Definitions & Rope Rescue Safety Standards

Assessor Guidance

Information on assessments can be found in the ITRA Assessment Charter and ITRA Rope Rescue Sub-Charter.

Resort Rescue Technician Syllabus

General Knowledge

#100	General	Introduction to ITRA
#317	General	Hazardous Energy Control- Lock out/Tag out (LOTO)

Rope Knowledge

#2101	RRT	Structure & Organization of Rope Rescue Operations
#294	RRT	Rope rescue medical considerations
#2102	RRT	Basic rope rescue physics
#2103	RRT	Basic understanding of rope rescue systems
#257	RRT	Safety systems and protocols for rope rescue
#111	RRT	Basic equipment for rope rescue
#254	RRT	Rope rescue hazard identification and management
#175	RRT	Rescue communications
#110-K	RRT	Rescue knots
#113-K	RRT	Mechanical Advantage
#289	RRT	Intermediate rope rescue physics
#288	RRT	Advanced rope rescue physics
#290	RRT	Rope rescue system analysis
#379	RRT	Rigging contingency planning
#311	RRT	Vehicle anchors
#315	RRT	Load releasing hitches
#501	RRT	Alternative anchor systems
#2202	RRT	Pre rigged pulley system
#2203	RRT	Back Ties and guy lines
#2301	RRT	Skate blocks
#2302	RRT	Advanced anchors
#2303	RRT	Awareness of regulatory bodies and standards

Rope Skills

110	RRT	Rescue Knots
113	RRT	Mechanical Advantage Rigging
220	RRT	Independent Belay
258	RRT	Protection of Rope Systems
259	RRT	Single-Point Anchors
260	RRT	Multi-Point Anchors
261	RRT	Edge lines
262	RRT	On-Rope Ascending
263	RRT	On-Rope Descending
273	RRT	On-Rope Change Over: Ascending to Descending

272	RRT	On-Rope Change Over: Descending to Ascending
264	RRT	On-Rope Self-Rescue
269	RRT	Patient Packaging
270	RRT	Litter Rigging: Inclined Slope
284	RRT	Litter Attendant Rigging: Inclined Slope
265	RRT	Lowering System: Inclined Slope
266	RRT	Raising System: Inclined Slope
267	RRT	Lowering System: Vertical Environment
268	RRT	Raising System: Vertical Environment
271	RRT	Litter Rigging: Vertical Environment
274	RRT	On-Rope Ascending: Knot Pass
275	RRT	On-Rope Descending: Knot Pass
277	RRT	Raising System: Knot Pass
278	RRT	Lowering System: Knot Pass
286	RRT	Lowering to Raising System
287	RRT	Raising to Lowering System
291	RRT	Pick-Off Rescue: Unsuspended Patient
316	RRT	Improvised Harness
295	RRT	Retrievable system
293	RRT	Difficult Edge: Descending
280	RRT	Difficult Edge: Ascending
380	RRT	Team-based Pick-Off: Suspended
292	RRT	Pick-Off Rescue: Suspended Victim
339	RRT	Guiding Line Offset
369	RRT	Breaking Into A Fixed Rope
401	RRT	Horizontal aid
402	RRT	Cableway travel
304	RRT	Fall arrest systems

Knowledge

#100 Introduction to ITRA

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- ITRAs mission statement
- Worldwide representation and rescue disciplines
- ITRA Certification vs certificate of attendance

#317 Hazardous Energy Control- Lock Out/ Tag Out (LOTO)

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Hazardous energy can be contained in machinery or equipment
- Types of hazardous energy- electrical, mechanical, hydraulic, pneumatic, chemical and thermal
- OSHA 1910 (US)

#111 Basic Equipment For Rope Rescue

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

Carabiners types and applications

- Multi-axis loading
- Cross loading

Equipment & Rope Pre-Use Inspections and safety checks

Gloves

Rescue Litters

- Relevance and use

Harnesses

- Types, proper fit, and use
- Patient vs rescuer

Helmets

Mechanical components

Prusiks

Rope grabs

Ropes

- Static vs Dynamic
- Accessory cordage
- Kernmantle

Soft materials

- Nylon
- Polyester
- Technora
- Dyneema

Slings

- Types and sizes

Webbing

- Types and sizing

#2101 Structure & Organization of Rope Rescue Operations

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Local Response Protocols
- Zones of operations
- Team roles and responsibilities
- Obtaining safe access to a patient
- Stages and phases of a rescue
- SOPS & Best Practices
- Inter-agency Communication

#294 Rope rescue medical considerations

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Impact of medical decisions
    - Critical vs stable
- Rescuer considerations
    - Fatigue
    - Dehydration
    - Food
    - Rescue Rotation
- Suspension trauma
- Impending issues
    - Panic attacks
    - Nausea & Vertigo
    - Proper patient orientation (head upslope)
- Airway awareness
    - Ability to roll the patient
    - Management of vomiting
- Environmental

#2102 Basic rope rescue physics

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Kns, lbs, or kgs
- Minimum Breaking strengths (MBS)
- Safety factors
    - Static System Safety Factor (SSSF)
- Factor of Safet (FoS)
- Basic understanding of friction
    - Ropes in the environment
    - Ropes with components

Basic awareness of forces

- Basic static and dynamic forces
- Max Arresting Forces on a Slope (MAF)
- Basic angles and forces on anchor points
    - 0° to 120° degrees

#2103 Basic Understanding Of Rope Rescue Systems

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Redundancy, fail safes, backups and belays
- Awareness of single rope technique (SRT)
- Two rope systems
    - Separate Mainline and Belay Line
    - Twin tension systems (TTRS)
- Hands-free systems

#257 Safety protocols for rope rescue

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Safety checks
    - System checks
    - Buddy checks
- Safety roles and responsibility
- Zone Management
    - Safe zones
    - Hazard zones
- Factor of Safety (FoS) / Safety Factor (SF)

#254 Rope Rescue Hazard Identification And Management

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

Environmental Hazard

- Overhead hazards
- Sharp edges
- Weather considerations

Human Factors & Errors

- Rigging mistakes
- Training & competency

Scene Management

- Environment considerations
- Humans

#175 Rope Rescue Communications

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Verbal
  - Closed loop communication
- Whistles
- Radio use
- Hand Signals

#110-K Rescue Knots

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

Basic understanding of **estimated breaking strengths** of textiles with knots

- Rope & accessory cord
- Webbing

Types of knots

- **Hitches, Loops, Bends, and Termination knots, Friction Hitch,**
- **Variable Friction Hitch, Tensionless Hitch**.

#113-K Mechanical Advantage Rigging

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- T method

- Theoretical mechanical advantage
- Simple mechanical advantage systems
  - 1,2,3,4,5:1

#259-K Single Point Anchors

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Basket
- Girth Hitch (choker)

#260-K Multi Point Anchors

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Fixed leg multipoint anchor

#258-K Protection of Rope Systems

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Types and application of edge & rope protection
- (RAP) Remove Avoid Protect

#265-K & 266-K Raising & Lowering Systems: Inclined Slope

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Securing while not in use
- Working spaces

#288 Advanced Rope Rescue Physics

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Knowledge of class 1, 2, and 3 levers.
- Tension & Compression
    - Compressional and tensile forces of Guy Lines & Back Ties
- Awareness of Friction Coefficients
    - Effects on lowering and hauling
- Effects of anchor point angle greater than 120 degrees

#2301 Skate blocks

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Knowledge of single, double, and tracking line (hybrid) variants.
- Practical applications

#2302 Advanced Anchors

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Span anchors
- Ideal vs actual equalization of anchor legs

#2303 Awareness of Regulatory Bodies & Standards

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Regulatory bodies common to your region
- Awareness of EN, CE, Notified Body, NFPA, and ANSI
- Common testing standards of equipment
- Equipment regulations
- Statistical sampling (3 sigma testing)

#289 Intermediate Rope Rescue Physics

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Fall Factor (FF)
- Max Arresting Force (MAF)
- Resultant and vector forces
- Change of direction forces & dynamic deflections
- Basic AHD resultant forces
- Dynamic Safety factor

#290 Rope Rescue System Analysis

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Anchors points
- The weakest point in a system
- FoS
- Estimated breaking strengths of knots
- Plan for recovery from a failed component

#379 Rigging Contingency Planning

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Releasable system to recover a person from a fixed-line.
- Non-intervention rescue

#311 Vehicle Anchors

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Safe and unsafe points on a standard vehicle

- Securing the vehicle (Chocking tires, Raising Hood, Removing Keys..)
- Acceptable components to use for anchor material(s)

#315 Load Releasing Hitches

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Munter mule overhand, radium release hitch, mariners or similar
- Construction and application

#501 Alternative Anchor Systems

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Rescue Picket/Ground Anchor Systems
- Deadman anchors
- Meat/Human Anchors

#2201 Adv Mechanical Advantage

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Compound & Complex MA systems
    - Compound: 6:1, 9:1
    - Complex 5:1, 9:1
- Ideal, Theoretical, & Actual MA

#2202 Pre-Rigged Pulley Systems

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Types and uses

#2203 Back ties & guy lines

Performance:

Given a written assessment, demonstrate knowledge of the following topics.

Knowledge:

- Use of and proper angle range
    - Back ties for anchor points
    - Guy lines for AHDs

#110 Rescue Knots

Performance:

Correctly tie a knot from each of 6 categories.

Standard:

Tie one from each of the following categories.

1. End of rope **Terminating Knot.**
2. **Bend** joining two ropes together.
3. **Midloop** Knot in the middle of the rope.
4. **Friction Hitch** attached to another rope.
5. **Variable Friction Hitch** attached to a carabiner.
6. Tensionless Hitch.

Knots must be:

- Properly tied, dressed, and set.
- If required, tied with a tail of approximately 10 cm (4 inches).
- If required, tied with a **safety knot**. Knots requiring a safety knot include the Bowline and Sheet Bend.

Recognized knots include:

1. Figure 8, Bowline, Poachers, Scaffold.
2. Double Fisherman, Flemish/Figure 8 Bend
3. Alpine Butterfly, In-Line Figure 8

4. 3-Wrap Prusik, Klemheist, Valdotain Tresse (VT), Schwabisch Hitch, Distel Hitch
5. Munter/Italian Hitch
6. Tensionless Hitch

Conditions:

Comments:

For the purposes of assessment, the knots listed are limited for safety reasons and to ensure commonly utilized knots are used.

Additional knots may be used with prior arrangement.

#113 Mechanical Advantage Rigging

Performance:

Rig commonly used simple mechanical advantage systems.

- 2:1
- 3:1
- 4:1
- 5:1

Standard:

Systems must be:

- Rigged as a mechanical advantage and not a change of direction.
- Integrate a properly functioning progress capture ability.

Candidate must:

- Demonstrate the ability to tie or lock off the system if left unattended.

Conditions:

May be assessed in conjunction with other task items.

Assessor Guidance:

A **suitable** anchor point to rig off of and a cache of appropriate equipment and rigging material will be available.

Comments:

#220 Independent Belay

Performance:

Rig and operate an independent belay.

Standard:

System must:

- Be able to arrest the fall of a **standard load**.

Candidate must:

- Operate the independent belay system during a lower or a raise for at least 5 meters.
- Maintain less than 1 meter of slack in the system.
- Demonstrate the ability to rest the load, tie, or lock off the system.
    - continue operation of the components after it has been at rest.

A minor discrepancy will be awarded for the following:

- More than 1 meter but less than 2 meters of rope slack in the rope system.

A major discrepancy will be awarded for the following:

- More than 2 meters of slack in the rope system.
- Failure to be able to resume belaying after load has been at rest or loaded unintentionally.

Conditions:

- Can be assessed in conjunction with other task items.
- May be performed on a flat ground, an **inclined slope,** or **vertical** environment.
- The independent belay line may be tensioned, as long as the load is primarily on the main line, or un-tensioned.

Assessor Guidance:

A suitable anchor point to rig off of and a cache of appropriate equipment and rigging material will be available.

Techniques for facilitating this task can include:

1. The assessor or other volunteer rappelling on a single fixed line, while the candidate operates an independent belay line.
2. The assessor lowers a suspended mass, while the candidate operates a belay line attached to that same mass.

Comments:

The intention of this task is to have the candidate demonstrate the ability to properly belay a **standard load or rescue load** not using a mirrored or twin-tensioned system. This way the candidate has the skills necessary if a device breaks or goes missing if they normally rely on a mirrored or twin-tensioned typed system(s).

#258 Protection of Rope Systems

Performance:

Properly protect rope(s) at an edge in a **vertical** environment from potential hazards.

Standard:

Candidate must:

- Mitigate risks and protect the rope(s) from hazards.
    - Use rope protection material(s)
    - Properly tether protection materials to prevent unintended movement.

Conditions:

Appropriate rope protection material will be provided.

Rope protection must remain in position once set and not shift to a position where protection is no longer afforded.

Assessor Guidance:

May have students perform this task in conjunction with other tasks that are not pre-rigged. The assessor may also rig a rope rescue system for them to protect such as a fixed line, lowering system, or hauling system.

Hazard examples: Sharp edges, and high-friction points that may cause failure of equipment/materials.

Comments:

May be performed in conjunction with other tasks.

#259 Single-Point Anchors

Performance:

Build a single-point anchor off a fixed object.

Standard:

Candidate must:

- Ensure the anchor, choice of hardware, and anchor-tying material can support a **rescue load.**
- Create a **master point** extended approximately 1 meter away from the fixed object.

Conditions:

An anchor location and material will be provided. Anchors, choice of hardware, and specific anchor-tying material (such as rope, cordage, webbing, and pre-sewn slings) may depend on local protocols.

If items such as cams, nuts, ice screws, or pickets are used for this task, the candidate must still make a master point away from the fixed object. For example, the placement of a single camming device does not suffice for the completion of this task.

Assessor Guidance:

May have students perform this task in conjunction with other tasks that are not pre-rigged. Anchors, choice of hardware, and anchor-tying material may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#260 Multi-Point Anchors

Performance:

Rig a multi-point anchor off fixed objects.

Standard:

Candidate must:

- Ensure the anchor, choice of hardware, and anchor-tying material can support a **rescue load.**
- Demonstrate the ability to create a **master point** in a specific location specified by the assessor.
- Make a reasonable attempt to distribute tension in the legs of the anchor.

Anchor system must:

- Not be lost if one leg of the system were to fail.
- Have no extension if one leg of the system were to fail.
- Be correctly focused on the expected direction of the load.
- Must be stronger or equal in strength to the weakest leg of the anchor.

Conditions:

An anchor location and material will be provided. A combination of equipment & gear may be used as available.

Assessor Guidance:

May have students perform this task in conjunction with other tasks that are not pre-rigged. Anchors, choice of hardware, and anchor-tying material may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#261 Edge lines

Performance:

Rig an edge line in an area or terrain that has a fall zone in a **vertical** environment.

Standard:

Candidate must:

- Protect their line/system with rope protection as necessary
- Must accomplish the following
    - Fall Prevention
    - Travel Restraint
- Allow for unhindered movement within the safe working area.
- Create a system that properly positions and has a termination for the edge attendant to be in a fall zone but does not allow them to fall over the edge.

System must:

- Be **suitably strong** and capable of restraining any anticipated force it may see.

Conditions:

An anchor location and material will be provided. A combination of equipment & gear may be used as available.

No more than 1 meter of slack may be introduced into the rope(s)/system while attached in a fall zone.

Assessor Guidance:

May have students perform this task in conjunction with other tasks that are not pre-rigged. Anchors, choice of hardware, and anchor-tying material may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#262 On-Rope Ascending

Performance:

Ascend a fixed rope in a **vertical** environment.

Standard:

Candidate must:

- Safely rig an ascending system onto a fixed rope.
- Perform a function test to ensure the **ascent device** is rigged properly.
- Ascend a minimum of 5 meters in a controlled manner.
- Descend back down the same rope 1 meter without removing or changing equipment.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.
- Add catastrophe knots if required by local protocols/expectations.
- Not required to be in a free-hanging environment but can be.
- The movement of 1 meter back down on the ascending device(s) must be performed without removing any equipment from the rope during the maneuver.

Assessor Guidance:

May have students perform this task in conjunction with other tasks such as #273 (Change over on-rope ascent to descent), #272 (Change over on-rope descent to ascent), and #263 (Personal Descending).

Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

This may be performed in conjunction with other tasks.

#263 On-Rope Descending

Performance:

Descend a fixed rope in a **vertical** environment.

Standard:

Candidate must:

- Safely rig a descent device onto a fixed-line.

- Perform a function test to ensure the device is rigged properly.
- Descend a minimum of 5 meters in a controlled manner.
- Demonstrate stopping, locking/tying off the device they are using, and temporarily go hands-free.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.
- Add **catastrophe knots** if required by local protocols/expectations.
- Not required to be in a free-hanging environment but can be.

Assessor Guidance:

May have students perform this task in conjunction with other tasks such as #273 (On-Rope Change Over Ascent to Descent), #272 (On-Rope Change Over Descent to Ascent), and #262 (Personal Ascending).

Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#273 On-Rope Change Over: Ascend to Descend

Performance:

Change over from ascend mode to descend mode while on a fixed line in a **vertical** environment.

Standard:

Candidate must:

- Start from a suspended position on a rope system connected with an appropriate **ascent device**.
- Change to an appropriate descending system.
- Add catastrophe knots if required by local protocols/expectations.
- Maintain two points of attachment onto the rope(s) at all times during the changeover until a function test of the **descent device** is performed.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.
- Not required to be in a free-hanging environment but can be.

Assessor Guidance:

May have students perform this task in conjunction with other tasks such as #262 (Personal ascending), #272 (On-Rope Change Over Descent to Ascent), and #263 (Personal Descending).

Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#272 On-Rope Change Over: Descend to Ascend

Performance:

Change over from descending mode to ascend mode while on a fixed line in a **vertical** environment.

Standard:

Candidate must:

- Start from a suspended position on a rope system connected with an appropriate **descent device**.
- Change to an appropriate **ascent device**.
- Ascend a minimum of 1 meter.
- Add catastrophe knots if required by local protocols/expectations.
- Maintain two points of attachment onto the rope(s) at all times during the changeover until a function test of the **ascent device** is performed.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.

- Not required to be in a free-hanging environment but can be.

Assessor Guidance:

May have students perform this task in conjunction with other tasks such as #273 (On-Rope Change Over Ascent to Descent), #263 (Personal Descending), and #262 (Personal Ascending).

Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#264 On-Rope Self-Rescue

Performance:

Perform a self-rescue from an inoperable **descent device**.

Standard:

Candidate must:

- Descend a fixed rope into a knot while remaining suspended off the ground.
- Free the jammed **descent device** to allow removal of the knot.
- Remove the knot and continue descending.
- Maintain two points of attachment during the maneuver until the device is cleared and a function test of the **descent device** is performed.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.
- Not required to be in a free-hanging environment but can be.

Assessor Guidance:

May have students perform this task in conjunction with other tasks such as #263 (Personal Descending).

Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#269 Patient Packaging

Performance:

Package a patient into a litter.

Standard:

Candidate must:

- Not cause additional injury as a result of their packaging techniques.
- Patients must be packaged in a manner where there is no possibility of sliding out of the litter regardless of orientation.
- Minimize unwanted movement in the litter.

Conditions:

- A live patient, manikin, or similar humanoid-shaped object may be used.
- An appropriate litter and packaging material will be provided.
- Manufactured and improvised rigging systems may be used.

Assessor Guidance:

The choice of litter and materials may depend on local protocols.

If there are questions about appropriate packaging the manufacturer's documentation should be consulted as a minimum recommendation.

Comments:

May be performed in conjunction with other tasks.

#270 Litter Rigging: Inclined Slope

Performance:

Rig and attach a litter to a rope rescue system for use on an **inclined slope**.

Standard:

Candidate must:

- Appropriately connect the litter to the rope system.

Conditions:

- A cache of appropriate equipment and rigging material will be available.
- May be rigged on flat ground to demonstrate competency

Assessor Guidance:

The choice of litter and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#284 Litter Attendant Rigging: Inclined Slope

Performance:

Rig attendant attachment points for use with a litter on an **inclined slope**.

Standard:

Candidate must:

- Rig secure attachment points for a minimum of 3 attendants.
- Rig attachment points in a manner that each rescuer can safely go hands-free.
- Allow attendants to control excess movement to the litter.

Conditions:

- A cache of appropriate equipment and rigging material will be available.
- May be rigged on flat ground to demonstrate competency.
- Litter attachment points must be able to withstand a minimum force of 6 kN.
- Railings on metal basket litters (stokes litters) shall be considered structural elements for the purposes of attachment points.

Assessor Guidance:

- The choice of litter and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#265 Lowering System: Inclined Slope

Performance:

Rig and operate a rope system to lower a **standard load** in an **inclined sloped** environment.

Standard:

Candidate must:

- Properly Rig a system to lower the load
- Demonstrate the ability to control a load, consisting of a litter with attendant(s), during a descent on an **inclined slope** for at least 5 meters.
- Demonstrate the ability to safely go hands-free with the **descent device**.
- If performed as part of a team exercise, the candidate must be the one physically controlling the speed of the lowering.

System Must:

- Be able to arrest the fall of a **standard load** in instances such as failure of a mainline, a slip, fall, and/or unexpected/undesired movement of the rope.

Conditions:

- The task must be conducted by lowering a litter with attendant(s).
- Depending on the technique and rope system used, assistance may be granted to manage part of the rope rescue system.
- A cache of appropriate equipment and rigging material will be available.

Assessor Guidance:

The choice of equipment and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#266 Raising System: Inclined Slope

Performance:

Rig and operate a rope system to raise a **standard load** in an **inclined sloped** environment.

Standard:

Candidate must:

- Properly Rig a mechanical advantage system to raise the load
- Demonstrate the ability to control a load, consisting of a litter with attendant(s), during a raise on an **inclined slope** of at least 5 meters.
- Demonstrate the ability to safely go hands-free with whatever device/system they are using.
- If performed as part of a team exercise, the candidate must be the one controlling the speed of the raising.

System Must:

- Be able to arrest the fall of a **standard load** in case of an **undesired event**.

Conditions:

- The task must be conducted by raising a litter with attendant(s).
- Depending on the technique and rope system used, assistance may be granted to manage part of the rope rescue system.
- A cache of appropriate equipment and rigging material will be available.

Assessor Guidance:

The choice of equipment and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#267 Lowering System: Vertical Environment

Performance:

Rig and operate a system to lower a **standard load** in a **vertical** environment.

Standard:

Candidate must:

- Properly select and Rig a system to lower the load
- Demonstrate the ability to control the load in a litter during a lowering in a **vertical** environment of at least 5 meters.
- Demonstrate the ability to safely go hands-free with the **descent device**.
- If performed as part of a team exercise, the candidate must be the one physically controlling the speed of the lowering.

System Must:

- Be able to arrest the fall of a **rescue load** in instances of an **undesired event.**

Conditions:

- The task may be conducted by lowering another individual/candidate, litter, or other suitable weight. The use of a rescue litter is not required.
- Depending on the technique and rope system used, assistance may be granted to manage part of the rope rescue system.
- A single-rope or two-rope rescue system, such as single main and belay or twin tension, may be used depending on local protocols, expectations, and insurance.
- A cache of appropriate equipment and rigging material will be available.
- A high directional may be used.
- This task must be performed in a **vertical** environment

Assessor Guidance:

The choice of equipment and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

This task does not supersede the Level 1 task #265.

#268 Raising System: Vertical Environment

Performance:

Rig and operate a system to raise a **standard load** in a **vertical** environment.

Standard:

Candidate must:

- Properly select and Rig a mechanical advantage system to raise the load
- Demonstrate the ability to raise the load in a **vertical** environment at least 5 meters.
- Physically raise the load without additional assistance beyond the mechanical advantage system.
- Demonstrate the ability to safely go hands-free with whatever device/system they are using.
- If performed as part of a team exercise, the candidate must be the one controlling the speed of the raising.

System Must:

- Be able to arrest the fall of a **rescue load** in instances of an **undesired event.**

Conditions:

- The task may be conducted by raising another individual/candidate, litter, or other suitable weight. The use of a rescue litter is not required.
- Depending on the technique and rope system used, assistance may be granted to manage part of the rope rescue system.
- A single-rope or two-rope rescue system, such as single main and belay or twin tension, may be used depending on local protocols, expectations, and insurance.
- A cache of appropriate equipment and rigging material will be available.
- A high directional may be used.
- This task must be performed in a **vertical** environment

Assessor Guidance:

The choice of equipment and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

This task does not supersede the Level 1 task #266.

#271 Litter Rigging: Vertical Environment

Performance:

Rig/Attach a litter into a rope rescue system for use in a **vertical** environment.

Standard:

Candidate must:

- Appropriately connect the litter to the rope system.

Conditions:

- Rigging orientation will be determined by the assessor.
- A cache of appropriate equipment and rigging material will be available.
- May be rigged on flat ground to demonstrate competency
- A single-rope or two-rope rescue system, such as single main and belay or twin tension, may be used depending on local protocols, expectations, and insurance.

Assessor Guidance:

- The assessor shall notify the candidate of the preferred orientation, vertical or horizontal before the assessment of the task begins.
- The choice of litter and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#274 On-Rope Ascending: Knot Pass

Performance:

Pass a knot while ascending a fixed rope in a **vertical** environment.

Standard:

Candidate must:

- Safely rig an ascending system onto a fixed rope.
- Perform a function test to ensure the **ascent device** is rigged properly.
- Maintain two points of attachment onto the rope(s) at all times during a knot pass or changeover until a function test of the ascent device is performed.
- Ascend a minimum of 5 meters in a controlled manner.
    - Pass a knot that is at least 4 meters above the ground
- Remain suspended off the ground, solely supported by the ropes while passing the knot

Conditions:

- A fixed rope system will be made available.
- The rope system must be in a **vertical** environment.
- Not required to be in a free-hanging environment but can be.

Assessor Guidance:

- May have students perform this task in conjunction with other on-rope skills.
- Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

This may be performed in conjunction with other tasks.

#275 On-Rope Descending: Knot Pass

Performance:

Pass a knot while descending a fixed rope in a **vertical** environment.

Standard:

Candidate must:

- Safely rig a **decent device** onto a fixed rope.
- Perform a function test to ensure the **descent device** is rigged properly.
- Maintain two points of attachment onto the rope(s) at all times during the knot pass or changeover until a function test of the **descent device** is performed.

- Descend a minimum of 5 meters in a controlled manner.
    - Pass a knot during their descent before they reach the ground.
- Remain suspended off the ground, solely supported by the ropes while passing the knot

Conditions:

- A fixed rope system will be made available.
- The rope system must be in a **vertical** environment.
- Not required to be in a free-hanging environment but can be.

Assessor Guidance:

- May have students perform this task in conjunction with other on-rope skills.
- Anchors, choice of hardware, and materials may depend on local protocols.

Comments:

May be performed in conjunction with other tasks.

#277 Raising System: Knot Pass

Performance:

Pass a knot through a rope rescue system while raising a **standard load**.

Standard:

Candidate must:

- Demonstrate the ability to pass a knot through a rope rescue system that is being used to raise a load.
- Maintain no more than 1m of slack in the ropes during the knot pass.
- Maintain a **standard load** suspended solely by the ropes for the duration of this task.
- Ensure no sudden drops or slips greater than 25cm during the knot pass.
- Be the only one physically controlling the ropes.

System Must:

- Be able to arrest the fall of a **rescue load** in instances of an **undesired event.**

Conditions:

- Single-rope or two-rope rescue systems may be used (such as a single main + belay or TTRS).
- Knots will be at least 0.5m away from the device(s) but no more than 3m away from the device (s) to start the task.
- If a two-rope system is used, knots must be passed through both ropes.
- If a two-rope system is used, knots may be parallel to each other while under tension.

Assessor Guidance:

The system will already be built for this task by the assessor or it can be performed in conjunction with other tasks such as #267 & #268.

Comments:

#278 Lowering System: Knot Pass

Performance:

Pass a knot through a rope rescue system while lowering a **standard load**.

Standard:

Candidate must:

- Demonstrate the ability to pass a knot through a rope rescue system that is being used to lower a load.
- Maintain no more than 1m of slack in the ropes during the knot pass.
- Maintain a **standard load** suspended solely by the ropes for the duration of this task.
- Ensure no sudden drops or slips greater than 25cm during the knot pass.
- Be the only one physically controlling the ropes.

System Must:

- Be able to arrest the fall of a rescue load in instances of an **undesired event**.

Conditions:

- A single-rope or two-rope rescue system, such as single main and belay or twin tension, may be used depending on local protocols, expectations, and insurance.
- Knots will be at least 0.5m away from the device(s) but no more than 3m away from the device (s) to start the task.
- If a two-rope system is used, knots must be passed through both ropes.
- If a two-rope system is used, knots may be parallel to each other while under tension.

Assessor Guidance:

The system will already be built for this task by the assessor or it can be performed in conjunction with other tasks such as #267 & #268.

Comments:

#285 Litter Attendant Rigging: Vertical Environment

Performance:

Rig attendant attachment points for use with a litter in a **vertical** environment.

Standard:

Candidate must:

- remain connected to the rope system during a raise or lower in a **vertical** environment.
- be able to maneuver the litter around any expected obstacles.
- be able to go hands-free safely.

Conditions:

- Litter orientation will be determined by the assessor.
- A cache of appropriate litter and rigging material will be available.
- May be rigged on flat ground, with the litter suspended slightly above the ground, to demonstrate competency

Assessor Guidance:

- Assessor shall notify the candidate of the preferred orientation, vertical or horizontal, before the learning objective assessment begins.

- The choice of litter and materials may depend on local protocols.
- A single-rope or two-rope rescue system, such as single main and belay or twin tension, may be used depending on local protocols, expectations, and insurance.

Comments:

May be performed in conjunction with other tasks.

#286 Lowering to Raising System

Performance:

Demonstrate the ability to change a rope system from lowering to raising.

Standard:

Candidate must:

- Convert a rope rescue system configured to perform lowering to a raising system.
- Maintain a **standard load** suspended solely by the ropes for the duration of this task.
- Maintain no more than 1m of slack in the system during the duration of the task.
- Ensure no sudden drops or slips greater than 25cm

System Must:

- Be able to arrest the fall of a **rescue load** in instances of an **undesired event**.

Conditions:

- One assistant may be provided to help with hauling or operating the independent belay system as directed by the candidate.
- A single-rope or two-rope rescue system may be used.

Assessor Guidance:

- This task may be performed in conjunction with other tasks.

Comments:

#287 Raising to Lowering System

Performance:

Demonstrate the ability to change a rope system from raising to lowering.

Standard:

Candidate must:

- Convert a rope rescue system configured to perform a raising to a lowering system.
- Maintain a **standard load** suspended solely by the ropes for the duration of this task.
- Maintain no more than 1m of slack in the system during the duration of the task.
- Ensure no sudden drops or slips greater than 25cm

System Must:

- Be able to arrest the fall of a **rescue load** in instances of an **undesired event.**

Conditions:

- One assistant may be provided to help with hauling or operating the independent belay system as directed by the candidate.
- A single-rope or two-rope rescue system may be used.

Assessor Guidance:

- This task may be performed in conjunction with other tasks.

Comments:

#291 Pick-Off Rescue: Unsuspended Patient

Performance:

Perform a rescuer-based pickoff of an unsuspended and unsecured Patient.

Standard:

Candidate must:

- Correctly identify the fall line and deploy a rope to access the patient.

- Approach a patient on a ledge or simulated ledge by ascending or descending in a **vertical** environment
- Attach the unsecured Patient to the rope rescue system.
- Finishing the task by descending with the patient simultaneously to the ground.

Patient criteria:

- Weight of a **standard load**
- May have a harness or attachment point pre-rigged and may be secured to a separate rope system for safety.

Conditions:

- The Patient may be on a ledge between two **vertical** environments or secured mid-wall of a **vertical** environment.
- The lower must be a distance of at least 5m in a **vertical** environment from the pick-off point to the ground
- Candidates may not lower the patient independently from themselves, they must go to the ground together.
- A single-rope or two-rope rescue system may be used.

Assessor Guidance:

- This task is to simulate an unsecured patient in a fall zone, such as stuck on a cliff side.
- If the patient is initially secured, this should be done with a pre-rigged releasable system which shall be released after the candidate secures the patient.
- A harness may be worn by the patient at the beginning of the assessment based on local guidelines, SOPS, and insurance requirements.
- Fixed line(s) shall not be pre-rigged for the candidate.

Comments:

#316 Improvised Harness

Performance:

Rig an improvised seat and chest or full-body harness.

Standard:

Candidate must:

- Rig an improvised harness using cordage or webbing.
- Secure the harness so it cannot slip off with a shift in body position
- Explain the expected use/situations in which an improvised harness would be used.

Conditions:

- The harness must not create an immediate medical issue such as compressing the diaphragm or neck.
- The harness may be tied on either themselves, another candidate, or on a manikin.
- Tubular webbing, sewn webbing/slings, or cordage may be used for this task.

Assessor Guidance:

- If an improvised harness is used during a scenario, steps must be taken to limit suspension time in order to prevent medical issues.

Comments:

For safety reasons, it is not recommended that improvised harnesses are used during the assessment of other learning objectives.

#295 Retrievable System

Performance:

Rig a fixed line(s) and system that can be retrieved remotely.

Standard:

Candidate must:

- Be able to retrieve all components of the system remotely.

- Explain the dangers involved with the chosen system and actions taken to mitigate the potential dangers.

System must:

- Ropes must be protected at the anchor point with additional components.
- Ropes must not be in direct contact with the anchor.
- If a two rope system is used, both lines must be rigged independently.

Conditions:

- Failure to account for potential dangers which can result in a premature release of the rope shall constitute a failure to perform the task.

Assessor Guidance:

N/A

Comments:

N/A

#280 Difficult Edge: Descending

Performance:

Descend over a **difficult edge** without the use of a high anchor point.

Standard:

Candidate must:

- Transition over a difficult edge while beginning a descent.

System must:

- The rope(s) must be anchored so they lay parallel to the ground.
- No high directional, deviation, vector or other method of suspending the ropes may be used.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.

Assessor Guidance:

N/A

Comments:

May have students perform this task in conjunction with other tasks

#293 Difficult Edge: Ascending

Performance:

Ascend over a **difficult edge** without the use of a high anchor point.

Standard:

Candidate must:

- Transition over a difficult edge while ascending.

System must:

- The rope(s) must be anchored so they lay parallel to the ground.
- No high directional, deviation, vector or other method of suspending the ropes may be used.

Conditions:

- A fixed rope system will be made available. This rope system must be in a **vertical** environment.

Assessor Guidance:

N/A

Comments:

May have students perform this task in conjunction with other tasks

#380 Team-based Pick-Off: Suspended

Performance:

Rig a rope rescue system for a team-based pickoff of a suspended patient.

Standard:

Candidate must:

- Given a rope rescue system, rig connection points for the rescuer and patient and explain how they are used.
- Explain the procedures to be used to pick off the suspended patient.

Conditions:

- May be demonstrated on flat ground.
- The attachment end(s) of a rope system will be made available.
- A single-rope or two-rope rescue system may be used.

Assessor Guidance:

- This task is intended to have the candidate demonstrate the knowledge to perform as a rescuer in a team-based pick-off. For assessment purposes, the desired objective is to have the candidate understand both the system operation and rescuer procedures.

Comments:

May have students perform this task in conjunction with other tasks such as #267 (Lowering System) and #268 (Raising System)

#292 Pick-Off Rescue: Suspended Victim

Performance:

Perform a rescuer-based pickoff of a suspended victim.

Standard:

Candidate shall demonstrate:

- Approach the patient by ascending or descending in a **vertical** environment.
- Attach the suspended victim to the rescuer's rope system.
- Transfer the patient's weight from their system to the rescuer’s system.

- Complete the task by descending with the patient simultaneously to the ground at least 5 meters from the pick-off point in a **vertical environment**.

Patient criteria:

- Shall consist of a **standard load**.
- A patient attachment point such as a harness must be pre-rigged and secured to a separate independent rope system.

Conditions:

- If the patient is attached with a releasable device, it must not be manipulated to lower the patient.
- Candidates must not lower the victim independently from themselves, they must go to the ground together.

Assessor Guidance:

- The choice of equipment and materials may depend on local protocols.

Comments:

#339 Guiding Line Offset

Performance:

Demonstrate the ability to construct and operate a guiding line offset in combination with a lowering system.

Standard:

Candidate must:

- Rig a guiding line offset to assist in the lowering of a rescue **load**.
- Properly apply appropriate initial tension to the guiding line (using mechanical advantage if applicable).
- Explain how the potential swing resulting from a failure of the guideline is minimized.

Conditions:

- May be built at ground level between two points if not selected to be operational by the assessor.

  If chosen to be operational by the assessor, the following criteria shall be followed:
- A lowering system shall be pre-rigged.
- Candidates shall be given a competent operator to lower the load.
- Candidates may be given assistance for hauling if needed.
- Candidates may be given a litter attendant if needed.
- The candidate must be the one controlling the guiding line tension.

Assessor Guidance:

- The guiding line can be either handheld or tensioned off a fixed anchor point depending on location and terrain.
- At least one of #283, #373, #339 or #378 must be rigged and operated a minimum of 5 meters horizontal distance and 3 meters vertical distance with a **standard load**.

Comments:

May be performed in conjunction with other tasks.

#369 Breaking Into A Fixed Rope

Performance:

Convert a fixed, tensioned rope into a raising or lowering system.

Standard:

Candidate must:

- Create slack at the end of a tensioned rope where it is connected to an anchor system.
- Demonstrate the ability to install a raising system or lowering system onto the slack section of the rope.
- Ensure no sudden drops or slips of the load.
- Limit the potential of a shock load to the system of no more than 1 meter.
- be the only one physically controlling the ropes.

Conditions:

- The system must remain weighted with a **standard load**.

Assessor Guidance:

- Assessor shall notify the candidate if they are to convert to a raising or lowering system before the assessment of the task begins.

Comments:

The purpose of this task is for the candidate to demonstrate the ability to recover an individual on a fixed line, that is not releasable and has become stuck.

#401 Horizontal Aid

Performance:

Traverse horizontally along anchors.

Standard:

Candidate must:

- Maintain a minimum of two points of contact
- Ensure no sudden drops
- Limit the potential of a shock load to 100cm

Conditions:

- Can be performed on sheave train or other suitable location allowing for progression greater than 1 meter in multiple steps
- Anchors can be pre placed

Assessor Guidance:

- Ensure location is suitable for rescue and simulation of sheave train

Comments:

Rescue plans must be communicated by candidates prior to the start of evolution.

#402 Cableway Travel

Performance:

Utilizing appropriate device travel down cable from tower to carrier

Standard:

Candidate must:

- Apply the system correctly
- Load the system with no sudden drops
- Limit the potential for shock load to 100cm
- Travel to nearest carrier

Conditions:

- Must be performed on Cableway from tower to carrier

Assessor Guidance:

- Ensure location is suitable for rescue by the team

Comments:

- Rescue plan must be communicated by the candidate prior to start of evolution

#304 Fall arrest systems

Performance:

Utilize in situ or team placed equipment to accomplish 100% tie off to structure.

Standard:

Candidate must:

- Utilize Y lanyard to climb a minimum of 5 meters up and down a tower access ladder
- Utilize in situ equipment relevant to the operation site

Conditions:

- Apply the system correctly

- System cannot be used as work positioning
- Limit the potential for shock load relevant to the technique being used

Assessor Guidance:

Ensure location is suitable for rescue by the team

Comments:

- Rescue plan must be communicated by the candidate prior to start of evolution
- Technique is critical for effective use of lanyards and includes choice of attachment to structure and climber. Follow all applicable regulations for the region.