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## Standard Guide for Training for ~~Level III Rope Rescue (R3)~~ Advanced Rope Rescuer Endorsement<sup>1</sup>

This standard is issued under the fixed designation F2955; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 ~~This guide is intended to be used guide, in conjunction with, and as an add-on to, Guides F2751, F2752, and F2954 (or equivalent for other environments), to address the specific knowledge and skills defines the basic training required for a rescuer person who participates in rope rescue at a higherthe highest level of responsibility and complexity.complexity, as part of a larger rescue duty.~~

1.1.1 ~~Specifically, this guide is intended to define the training that would prepare an endorsed Level III Rope Rescuer (LRT-R3) or equivalent defines the knowledge, skills, and abilities required for a person to support or direct a rope rescue team in advanced rope rescue functions;functions including pre-planning and size-up of rope rescue operations, designing and directing the construction of rope systems for moving a victim in low and high angle environments, directing the construction and operation of highline and related rope systems, and performing advanced rope rigging functions, in conjunction with other rescue duties.~~

1.1.2 ~~This guide establishes the minimum training standard for an endorsed LRT-R3 Rescuer as related advanced rope rescue endorsed person in regard to general, field, and rope rescue-specific knowledge and skills.~~

1.2 ~~An endorsed LRT-R3 Rescueradvanced rope rescuer performs rope rescues in low and high angle all terrain and is capable of directing LRT-R1 and LRT-R2 Rescuers;basic and intermediate rope rescuers.~~

1.2.1 ~~An advanced rope rescuer endorsement applies only to rescues on the surface of the land; additional endorsements are required to perform this level of rope rescue in other environments. This guide alone does not providedefine the minimum training requirements for performing or assisting inwith rescues that occur in partially or fully collapsed structures, in or on water, in confined spaces, or underground (such as in caves, mines, and tunnels).~~

1.2.2 ~~This guide alone does not providedefine the minimum training requirements for climbing Class 5<sup>2</sup> or higher rock and/or ice to perform a rescue.~~

1.3 ~~An endorsed LRT-R3 Rescueradvanced rope rescuer is required to have knowledge and skill sets pertaining to technically advanced subject evacuation. These includethe advanced roped evacuation components of rescue. These include, but are not limited to, advanced knots and rigging, functioning as a litter tenderattendant in a high angle lowering or raising operation, and directing a rope rescue team in the rescue of a subject suspended in a high angle environment.~~

1.4 ~~Type III teams, as defined in ClassificationAn advanced rope rescuer may be part F1993, which may utilize personnel trained to this guideof a rope rescue team as defined in Classification F1993are Kind A (wilderness), Kind B (urban), and Kind C (mountainous).~~

1.4.1 ~~Further training may be required before an endorsed LRT-R3 Rescuer canadvanced rope rescuer may actually participate on a particular kind of rope rescue team, depending on the authority having jurisdiction (AHJ) regulations or policies.regulations or policies of the authority having jurisdiction.~~

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety-safety, health, and healthenvironmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee F32 on Search and Rescue and is the direct responsibility of Subcommittee F32.03 on Personnel, Training and Education.

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<sup>2</sup> Classification per Yosemite Decimal System in Eng and Van Pelt, eds., p. 564.

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>3</sup>

- F1633 Guide for Techniques in Land Search (Withdrawn 2017)<sup>4</sup>
- F1768 Guide for Using Whistle Signals During Rope Rescue Operations
- F1773 Terminology Relating to Climbing, Mountaineering, Search and Rescue Equipment and Practices
- F1993 Classification System of Human Land Search and Rescue Resources
- F2047 Practice for Workers' Compensation Coverage of Emergency Services Volunteers
- F2209 Guide for Training of Land Search Team Member
- F2751 Guide for Training of a Land Search and Rescue Team Member
- F2752 Guide for Training for Basic Rope Rescuer Endorsement
- F2954 Guide for Training for Level III Rope Rescuer (R2) Intermediate Rope Rescuer Endorsement
- F3068 Guide for Contents and Use of a Position Task Book (PTB)
- F3222 Terminology Relating to F32 Land Search and Rescue Standards and Guides

### 2.2 Other Document:

"Mountaineering: The Freedom of the Hills," 8th ed., Ronald C. Eng and Julie Van Pelt, eds., Mountaineers Books, Seattle, WA, 2010, p. 564.

## 3. Terminology

3.1 For definitions of terms used in this guide, see Terminology Guide F1773 F1633, Guide Terminology F1633 F1773, Classification F1993, Practice F2047, Terminology F3222, and other references within this guide.

3.2 Except where noted, this document shall use terminology as found in Guides F2751, F2752, and F2954.

### 3.3 Definitions of Terms Specific to This Standard:

3.3.1 Rope Rescuer, Level III (LRT-R3), advanced rope rescuer, n—~~a member or a leader member~~ of a rope rescue team who, at a minimum, meets the requirements of this guide. ~~These requirements define the advanced rope rescue knowledge, skills, and capabilities.~~

3.3.2 low angle, n—terrain whose average slope has an angle of 30 to 50° from horizontal.

3.3.3 high angle, n—terrain whose average slope has an angle of greater than 50° from horizontal.

## 4. Significance and Use

4.1 This guide establishes a minimum standard for training rope rescuers ~~as it relates in regard~~ to their rope rescue specific knowledge and skills. A person trained to this guide is an endorsed Level III Rope Rescuer (LRT-R3 Rescuer) advanced rope rescuer.

4.1.1 Every person who is identified as an endorsed LRT-R3 Rescuer advanced rope rescuer shall have met the requirements of this guide.

4.1.2 This guide is ~~only~~ the third level of training for rope rescue personnel and, in conjunction with Guides F2209, F2751, F2752, and F2954, only establishes the minimum knowledge and skills required for a person to perform or lead advanced rope rescue. No other ~~advanced~~ skills are included or implied.

4.1.3 In addition to meeting the requirements of this guide, an endorsed LRT-R3 Rescuer advanced rope rescuer shall also be adequately trained to operate ~~effectively~~ safely and safely effectively in the environment in which he or she is expected to work ~~(that is, (i.e., wilderness, urban, industrial, and so forth).etc.).~~

4.1.4 Nothing in this guide precludes an AHJ from adding additional requirements for its own members.

4.2 Endorsement to Level III Rope Rescue (LRT-R3 Rescuer) Advanced rope rescue endorsement is an indication that a person possesses adequate field skills and knowledge to make mission-critical decisions. A person so endorsed is qualified to support or direct a rope rescue team in an area with high fall exposure and/or falling hazard potential, including high angle environments.

4.3 This guide by itself is not a complete training document. It is only an outline of the topics required for training or evaluating an endorsed LRT-R3 Rescuer advanced rope rescuer. It may, however, be used in the development of, or as part of, a complete training document or program.

4.3.1 This guide does not stand ~~alone.~~ Alone and must be used with the referenced documents to provide the specific information needed by an endorsed LRT-R3 Rescuer advanced rope rescuer or for an AHJ authority having jurisdiction (AHJ) to properly evaluate a training program or text.

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>4</sup> The last approved version of this historical standard is referenced on www.astm.org.

4.4 Though this guide establishes only minimum standards, it does not imply that an ~~endorsed LRT-R3 Rescuer~~advanced rope rescuer is a “trainee,” “probationary,” or other similar term member of an organization. ~~It is the responsibility of the AHJ to determine the requirements and qualifications for member ratings.~~

4.4.1 Determining the requirements and qualifications for land rescue team members is the responsibility of the AHJ.

4.4.2 Nothing in this guide precludes an AHJ from adding additional requirements for its own members.

4.5 Because technical rope rescue is inherently dangerous, and rope rescuers are frequently required to perform rigorous activities in adverse conditions, regional and national safety standards shall be included in agency and organization policies and procedures. ~~An endorsed LRT-R3 Rescuer~~Personnel endorsed as advanced rope rescuers shall complete all activities based on an analysis of risk versus benefit, and shall follow applicable and mandated all applicable national, federal, state, provincial, and local safety standards.

4.6 This guide can be used to evaluate a document to determine if its content includes the topics necessary for training an ~~endorsed LRT-R3 Rescuer~~advanced rope rescuer. Likewise, this guide can be used to evaluate an existing training program to see if it meets the requirements of this guide.

4.7 The knowledge and skills ~~requirements~~defined in the following sections are not presented in any particular order and do not represent a training sequence.

4.8 Except where a physical skill needs to be shown, it is up to the AHJ to determine the best way to evaluate a person’s knowledge. This may be by written exam, oral exam, demonstration, or by some combination of the three.

4.8.1 An advanced rope rescuer shall document his or her training by completion of a position task book, compliant with Guide F3068, or by field demonstration under qualified supervision.

4.8.2 Unless stated otherwise, an ability or proficiency in a skill shall be demonstrated for initial qualification and then as often as required by the AHJ.

## 5. General Knowledge and Skills

### 5.1 *General Requirements:*

5.1.1 As a prerequisite, an ~~endorsed LRT-R3 Rescuer~~advanced rope rescuer shall possess ~~some~~ training, certification, or an endorsement in the environment in which he or she is expected to work (urban, wilderness, mountainous, ~~and so forth~~ etc.).

5.1.2 For ~~Land Rescue Personnel, meeting the requirements of Guides~~land rescue personnel, endorsement in accordance with Guide F2751, F2752, and F2954 shall be considered sufficient for meeting the requirements of 5.1.1.

5.1.3 The AHJ shall verify that the endorsee possesses both attitude and aptitude for working and directing a rope rescue team at height, for example, he or she must be comfortable with exposure, ~~have height~~ (e.g., comfort with exposure, the ability to move safely and effectively in the working environment, have the over the surface of terrain common to the normal area of operations, the ability to lead a team in a vertical environment, and have the ability to serve as a safety officer in rope rescue operations.operations). [s.iteh.ai/catalog/standards/sist/5acfa8e1-5bd7-4005-af7a-74512c8d0d65/astm-f2955-19](https://www.astm.org/catalog/standards/sist/5acfa8e1-5bd7-4005-af7a-74512c8d0d65/astm-f2955-19)

### 5.2 *Personal Equipment:*

5.2.1 An ~~endorsed LRT-R3 Rescuer shall possess and carry,~~advanced rope rescuer shall carry and appropriately use, at a minimum, sufficient Personal Protective Equipmentpersonal protective equipment (PPE) and rope rescue equipment to maintain personal safety while ~~working on or around a rope rescue.~~suitability of participating in rope rescue operations. The suitability of the equipment shall be verified by the AHJ to include, but not be limited to, the following:

5.2.1.1 Head protection (helmet).

5.2.1.2 Hand protection (gloves).

5.2.1.3 Eye protection (glasses/goggles/shield).

5.2.1.4 Adequate clothing.

5.2.1.5 Harness.

5.2.1.6 Connectors (carabiners).

5.2.1.7 Slings/lanyards (for personal use).

5.2.1.8 Ascending equipment.

5.2.1.6 Eye protection (glasses/goggles/shield).

5.2.1.7 Adequate clothing.

5.2.1.8 Connectors (carabiners).

5.2.1.9 Descending equipment.

5.2.2 Additional rope rescue equipment necessary for an ~~endorsed LRT-R3 Rescuer~~advanced rope rescuer to safely participate ~~in, in, lead, or lead~~direct a rope rescue varies by type of rope rescue, team assignment, season, environment, and terrain.

5.2.3 An ~~endorsed LRT-R3 Rescuer~~advanced rope rescuer shall explain the reasons to carry, and explain or demonstrate the use of, all personal rope rescue equipment required by the AHJ.

5.2.4 An ~~endorsed LRT-R3 Rescuer~~advanced rope rescuer shall be able to inspect PPE and personal rope rescue equipment for the purpose of identifying wear, damage, and operational readiness.

5.2.5 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall demonstrate the ability to perform rope rescue equipment maintenance procedures, including cleaning, as well as maintenance of equipment logs and records.

*5.3 Team Equipment:*

5.3.1 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall have an expert knowledge of team rope rescue equipment identified and commonly used by the AHJ (not including equipment required for climbing Class 5 or higher rock and/or ice). Such equipment may include, but is not limited to, the following:

- 5.3.1.1 Medical equipment.
- 5.3.1.2 Patient packaging equipment.
- 5.3.1.3 Ropes.
- 5.3.1.4 Slings.
- 5.3.1.5 Rope grab devices.
- 5.3.1.6 Litters.
- 5.3.1.7 Communications equipment.
- 5.3.1.8 Lowering devices.
- 5.3.1.9 Hauling or raising devices.
- 5.3.1.10 Connectors and other hardware.

5.3.2 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall explain the reasons to carry, and explain or demonstrate the use of, all team rope rescue equipment required by the AHJ including, at a minimum, those items listed in 5.2.1 and 5.3.1.

5.3.3 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall be able to inspect team rope rescue equipment used by the AHJ to ~~identify~~ for the purpose of identifying wear, damage, and operational readiness for, at a minimum, those items listed in 5.2.1 and 5.3.1.

5.3.4 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall demonstrate the ability to perform appropriate maintenance procedures on rope rescue equipment used by the AHJ. These shall include cleaning and packing, as well as maintenance of applicable logs and records for, at a minimum, those items listed in 5.2.1 and 5.3.1.

*5.4 Communications:*

5.4.1 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall be familiar with, and conversant in, the use of whistle signals as found in Guide F1768, or as required by the AHJ.

5.4.2 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall be familiar with, and conversant in, the use of hand signals as required by the AHJ.

## 6. Rope Rescue Concepts and Capabilities

*6.1 Rope Rescue Concepts:*

6.1.1 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall demonstrate an understanding of the principles of physics involved in constructing rope rescue systems, including, but not limited to, the following:

- 6.1.1.1 System safety factors.
- 6.1.1.2 Critical (force-multiplying) angles.
- 6.1.1.3 Causes and effects of force multipliers.
- 6.1.1.4 Identification of the weakest component or link in any rescue system.

*6.2 Rope Rescue Capabilities:*

6.2.1 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall be self-sustaining and shall be able to safely and effectively direct a rope rescue operation in the team's normal area of operations for a period of at least 12 ~~hours-h.~~

6.2.2 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall demonstrate the ability to safely and effectively direct a team in performing rope rescue duties within an incident management system.

6.2.3 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall be able to perform any of the common rope rescue team functions including, but not limited to, the following:

- 6.2.3.1 Raising/lowering system operator.
- 6.2.3.2 Litter attendant.
- 6.2.3.3 Safety officer.
- 6.2.3.4 Belay operator.
- 6.2.3.5 Edge attendant.
- 6.2.3.6 Team leader.

*6.3 Rope Rescue Techniques:*

6.3.1 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall demonstrate the ability to locate and safely access a patient using techniques that require him or her to be raised or lowered on high angle ~~surfaces, which~~ surfaces or other terrain that may expose the rescuer to a significant fall hazard.

6.3.2 An ~~endorsed LRT-R3 Rescuer~~ advanced rope rescuer shall have advanced knot tying ~~skills~~ skills, including the ability to tie the following: