



# Pennsylvania State Fire Academy

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## Minimum Standard for Accreditation (MSA)

Revised April 2010  
Revised March 2012  
Revised November 2012

**Course Title:** Advanced Line Systems Rescue (PA Fish & Boat Commission)

**Course Code:** ALSR (previously FCLS)

**Lecture/Lab Breakdown:** 6 hrs / 10 hrs

**Length of Course:** 16 hours

Level)

**Prerequisites:** WRER (Water Rescue & Emergency Response – NFPA 1670 Operations

**Referenced Texts:** Advanced Line Systems Rescue Instructor Manual

**Course Goal:** Students to become proficient in setting up complex line systems, how to use a type V rescue vest.

**Description of Course:** Advanced Line Systems Rescue course trains rescue personnel in complex rescue systems that expose personnel to potentially life threatening hazards. These systems should only be used when lower risk options have been exhausted and when the team has the training, equipment, and skills to utilize these techniques. The systems taught in the course require rescue personnel to:

- Select the appropriate system or technique for the situation
- Establish and operate the system
- Effect the rescue or recovery
- Swimming skills proficiency

Classroom and practical hands-on training includes: static line systems rescues such as the moveable control point (MCP), 3:1 mechanical advantage (also known as z-drag or z-rig) and zip line (tension diagonal). Tethered rescuer techniques using Type V rescue personal flotation devices (PFD) are also addressed.

**Description of Methodology:** Audiovisual presentation, lecture, demonstration, pool & outdoor practical exercises

**Student Equipment/Supply Needs:** Pen/Pencil, notebook, USCG approved type V personal flotation device (PFD), properly outfitted water rescue helmet, & proper PPE.

**Equipment/Audiovisual/Supply requirements:** Classroom, screen, digital projector. Movable control Point, Ziplines, Rope bags, Knot tying supplies, Boat, Paddles, Throw bags.

Aug 29, 2019

**Special Notes & Conditions:** The training site shall be moving water with sufficient depth and width, reasonably free and clear of dangerous obstructions and hazards to allow the students to practice, as required, the maneuvers outlined in the lecture. The site will be inspected and approved by the instructors prior to the start of the class

**Enrollment/Instructor Requirements:**

Two (2) instructors shall be present for each 12 students in a class. (i.e 1-12 students = 2 instructors; 12-16 students = 3 instructors). Additional safety, logistic and medical personnel highly recommended for course support during practical exercises.

Minimum 18 years of age.

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*Advanced Line Systems Rescue (PFBCLS) (PA Fish & Boat Commission)*  
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## COURSE OUTLINE

	<b>Topic</b>	<b>Time</b>
Unit 1:	ALSR overview	30 mins
Unit 2:	Line and hardware equipment	1 ½ hrs
Unit 3:	Knots	1 ½ hr
Unit 4:	Static line systems and tethers swimmer techniques *Pool and outdoor practical sessions	2 ½ hrs 8 hrs

**Note: (minimum of 16 hours)**

### **Competency Evaluation Mechanism:**

Complete all risk management legal forms, attend all course components, meet swim standard requirements, participate in and demonstrate all skills as detailed on the Advanced Line Systems Rescue Skill Sheet and score of 80% of the written exam.

### **Learning Outcomes (Behavioral Objectives):**

1. Cite three dangers associated with advanced line system & rescue.
2. Identify why Kernmantle rope construction is used in rescue applications.
3. Cite four ways rope can be damaged.
4. List the hardware necessary for advanced line systems rescue.
5. Inspect rope and hardware for damage.
6. Tie and recognize the following knots:
  - Overhand
  - Figure 8 on a bight
  - Double fisherman's
  - Water knot
7. Form a three-wrap prusik hitch on a line:
8. Develop a 3-1 (z-drag) mechanical advantage system.
9. Cite three factors to consider when selecting an anchor point.
10. Establish a static line across a waterway.
11. Demonstrate the dynamic ferry technique.
12. Use a zip-line to cross moving water.
13. Develop and run a moveable control point.
14. Tear down advance line systems.
15. Use a rescue vest:
  - \* Properly don and secure the best
  - \* Enter water & release tether
  - \* Enter water and make a direct contact rescue & pendulum to shore by tenders line

Questions/Comments: Contact the Pennsylvania Fish and Boat Commission