



# Pennsylvania State Fire Academy

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## Minimum Standard for Accreditation (MSA)

January 2002

**Course Title:** Aerial Apparatus Operations Extended (AELX)

**Length of Course:** 24 Hours

**Lecture/Lab Breakdown:** 8/16

**Prerequisites:** IST

**Referenced Texts:** IFSTA "Aerial Apparatus" latest edition; IFSTA "Aerial Apparatus Study Guide", latest edition - NFPA "Fire Officer's Guide to Aerial Apparatus" NFPA Standard #1914, "*Testing Fire Department Aerial Ladders*" (1997)

**Course Goal:** This course will introduce the student to the basic operating principles of fire service aerial equipment.

**Description of Course:** This course will give a more extensive treatment of the subject of aerial device operation than is afforded by the 16 hour version, AELA. Through both classroom and hands-on practice, students will become familiar with basic design and operational theory of aerial devices, safety considerations, spotting and stabilizing, device operation, elevated master stream, and rescue. An introduction to basic truck company operations is also included.

**Description of Methodology to be used: (Brief)** A combination of lecture, discussion, demonstration, and supervised practice.

**Student Equipment/Supply Needs:** Pen/pencil, notebook suitable for both classroom and field use, complete set of fire fighter protective clothing (SCBA not required).

**Equipment/Audiovisual/Supply requirements:** Classroom with adequate seating, chalkboard/flip chart, AV equipment as appropriate for audiovisuals selected. Following drill areas: Clear area for basic operations; building face where spotting and practice "sets" in proximity to building can be made; restricted areas for more complicated spotting scenarios; area where practice "rescues" can be made; area for elevated master stream practices. Pumper and water supply for elevated master stream practices. Stokes litter, webbing, life safety rope, rollers, etc., for patient removal exercises. Where class is held for a general audience, every effort should be made to obtain at least one representative example of each major category (aerial ladder, aerial tower, articulated elevated platform) for demonstration and student operation purposes during some point in the class. When the class is held for a specific department or company, the apparatus used by that particular department or company should be used. Where multiple aerial devices are used simultaneously, an assistant instructor for each device should be provided during practical operations. Times shown are based on a class of 20 students.

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**Equipment/Audiovisual/Supply requirements: (continued)** A great number of audiovisual productions exist on this topic. Instructors/ Educational Training Agencies may choose those which, in their opinion, best reinforce the objectives.

### **COURSE OUTLINE**

<b><u>Time</u></b>	<b><u>Content</u></b>
1:25	Registration/Introduction to Aerial Operations/Safety
:75	Basic Aerial Apparatus Design
2:00	Spotting/Stabilizing
1:50	Basic Operational Procedures
2:25	Student Practices - Basic Operations
:25	Summary and Review - Basic Operations
2:00	Tactical Considerations in Aerial Spotting
2:50	Spotting Scenarios and Student Practices
1:50	Rescue/Patient Removal Principles
2:50	Student Exercises - Rescue and Patient Removal
1:00	Elevated Master Stream Principles
3:50	Elevated Master Stream Practices
1:00	Aerial Apparatus Testing/Maintenance
1:00	Truck Company Operations
1:00	Test - Summary and Conclusion

**Competency Evaluation Mechanism (Brief description-attach copy):** Directed questioning by instructor or instructor/ETA developed written test (20-40 questions) on knowledge objectives; instructor assessment of student mastery of practical skills.

**Course Objectives (specific):** Upon completion of this course, the student shall, to the satisfaction of the instructor:

1. Identify and describe the distinguishing characteristics of three (3) types of aerial apparatus.
2. Identify and relate the function of the hydraulic system and its major sub-components.
3. Identify at least three (3) considerations in safety spotting an aerial apparatus for work.
4. Identify at least four (4) conditions contributing to unsafe stabilization of an aerial device and at least one (1) method of overcoming each.
5. Describe the effect of load, angle, and topography on safe aerial device operation.

(continued)

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6. Given an aerial device supplied to the class or with which the student is familiar, correctly position, stabilize and operate the aerial device within the parameters afforded by the scenario and the manufacturer's manual for the device.
7. Demonstrate or describe the procedure for (a) Rigging a ladder pipe for operation, (b) Rigging an aerial platform (tower or articulated) for elevated master stream service.
8. Calculate the base pressure for any given aerial device.
9. State at least three (3) safety procedures necessary before turning an elevated master stream into a structure.
10. Demonstrate safe, effective removal of victims (ambulatory and non-ambulatory) from upper stories via aerial device.
11. Relate the nine (9) basic fireground functions normally performed by a truck company; describe at least one organizational system for effectively providing these services.
12. Describe the major features of an aerial apparatus maintenance program.
13. List the major elements of an effective apparatus maintenance program.
14. Perform an operator readiness inspection on a given aerial device in accordance with the manufacturer's recommendations for the device in question.
15. Describe the major elements of an annual service test for aerial apparatus as outlined in NFPA Standard #1914 (1991).

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