Lesson Title

Types And Construction of Aerial Apparatus

Learning Objectives

I. To learn the different types of aerial apparatus for the purposes of:
- Fire personnel being able to identify each type of aerial apparatus
- Fire personnel being able to tell the different uses and purposes of each aerial apparatus.

II. To be able to identify the different types of construction of each apparatus and the pros and cons of each.

Time Frame

3 Hours

Level Of Instruction

Job knowledge for all levels of the Fire Department.

To operate all fixed systems and equipment on each type of apparatus.

To follow all manufacturers specifications and instructions for each Apparatus.

To follow each departments policies and procedures for the systems And the equipment.

Prequisite Knowledge

Knowledge of manufacturers specifications and operating procedures.

Knowledge of policies and procedures of the local jurisdiction.

Materials Needed

- Computer
- Projector – Videos and/or Slides
- Information Handouts
- Written Exam Sheets
- Manufactures Specifications Sheets for their Particular Apparatus
- Test Specifications for each Apparatus
- The Use of and the Pros and Cons of each Apparatus
- Safety Ratings for each Type of Apparatus

Instructions to the Instructor

1) Contact Manufactures to collect specific data on each particular apparatus.

2) Prepare videos and/or slide presentations for class.

3) Prepare handouts and written information for students.

4) Contact Manufactures for Specific Construction Specifications of each apparatus.

5) Prepare materials and yourself for the class and become familiar with your information.

References

IFSTA – Aerial Apparatus Driver/Operator handbook – Chapter 2

IFSTA Study Guide – Aerial Apparatus Driver/Operator

NFPA 1002 Manual

KME Manufacturing Company

LTI Ladder Trucks

Suthpen Ladder Trucks

American Test Center – Testing and inspection of aerial devices

Emergency One Aerial Ladders

NFPA 1901 & 1904 Standards

Course Goals

- ✓ To provide the
- ✓ information to the students about the different types and construction of aerial apparatus.

- ✓ To offer the materials so that each student can become familiar with each type of aerial apparatus.

Student Assessment and Evaluation

Assess each student's ability to recall information that was presented in the class by the means of a written exam. The exam should be of multiple choice questions covering the basics of aerial apparatus types and construction.

Course Evaluation

Each student would be given a form to complete that would evaluate the following:

1) The Instructor
2) The information given
3) Any suggestions for improvement that could be made to the class.

LESSON PLAN DEVELOPED BY STATION 3 B-SHIFT FOR THE ATHENS-CLARKE COUNTY FIRE DEPT. TRAINING DIVISION.

Types And Construction of Aerial Apparatus Exam

1. Which of the following NFPA standards contain the design requirements for an aerial apparatus?
    a. 1970
    b. 1901
    c. 1700
    d. 1001

2. Which of the following is ***not*** a category in which NFPA classifies aerial devices?
    a. Aerial towers
    b. Elevating platforms
    c. Aerial ladders
    d. Water towers

3. Which of the following is ***not*** a primary use of aerial ladders?
    a. Gaining access to upper levels
    b. Ventilation
    c. Providing medical care
    d. Rescue

4. What is the primary function of the turntable?
    a. Rotates an aerial ladder 90 degrees in 120 seconds.
    b. Combines the safe work area of a platform with a safe, climbable aerial ladder.
    c. Provides continuous rotation of the aerial device on a horizontal plane.
    d. Deploys elevated master streams in a 360 degree radius.

5. Aerial ladders that exceed 110 feet (*34 m*) must be able to rotate _____ degrees in _____ seconds.
    a. 90; 120
    b. 90; 180
    c. 180; 120
    d. 360; 180

6. NFPA 1901 requires that aerial ladders have a minimum reach of _____ .
    a. 50 ft.
    b. 75 ft.
    c. 100 ft.
    d. 135 ft.

7. Where are the 2 required control stations located on elevating platforms?
    a. One on the bed section and on in the platform
    b. One in the cab of the vehicle and one on the turntable
    c. One at the street level and one in the platform
    d. One at the rear of the apparatus and one on the pump panel

8. The working height of a North American-made aerial ladder ranges from _____ .
    a. 75 to 100 ft.
    b. 50 to 135 ft.
    c. 55 to 85 ft.
    d. 90 to 174 ft.

9. Hydraulic fluid that move into the system is supplied from the hydraulic _____ .
    a. Tank
    b. Pool
    c. Reservoir
    d. Storage basin

10. Hoses must be rated to burst at a pressure that is at least _____ times stronger than normal operating pressure.
    a. 2
    b. 4
    c. 6
    d. 10

ATHENS – CLARKE COUNTY FIRE DEPARTMENT
WEEKLY VEHICLE INSPECTION

COMPANY NUMBER	MILEAGE	ENGINE HOURS	DATE

	GENERAL		RESCUE BOAT
	CLEAN INTERIOR – EXTERIOR OF APPARATUS, WIPE ENGINE		INFLATION OF HULL
	INVENTORY EQUIPMENT		LIFE JACKETS
	CHECK FLUIDS AND RUN ALL POWER EQUIPMENT		TRAILER TIRES – TREAD, PRESSURE
	SHAKE ALL DRY CHEMICAL EXTINGUISHERS – CHECK LEVELS		PADDLES
	FLOOD LIGHTS WORKING PROPERLY		FUEL – HOSES – CHECK AND CLEAN BATTERY
	OXYGEN KIT - MASKS		RUN MOTOR
	ENGINE		**PORTABLE CASCADE**
	CHECK AND CLEAN BATTERY		CHECK AND CLEAN BATTERY
	BELTS		FLUID LEVELS
	POWER STEERING FLUID		FUEL LEVELS
	BRAKE FLUID		TIRE PRESSURE
	TRANSMISSION FLUID		RUN ENGINE
	ALL GAUGES WORKING PROPERLY		GAUGES WORKING PROPERLY
	PUMP		INSPECT LIGHTS
	STRAINERS		**COMMENTS**
	PUMP TRANSMISSION		
	PRIMING OIL – PUMP, VENT HOLE		
	RELIEF VALVE, TRANSFER VALVE		
	CLAPPER VALVE		
	NOZZLES OPERATING PROPERLY		
	ALL GAUGES WORKING PROPERLY		
	RESCUE		
	THERMAL IMAGING CAMERA		
	OPERATE EXTRICATION TOOLS		**MISSING EQUIPMENT**
	GENERATOR – BREAKER BOX		
	A.E.D.		
	LADDER		
	HYDRAULIC FLUID LEVEL		
	RAISE LADDER – CHECK CONTROLS		
	GENERATOR – BREAKER BOX		
	INSPECT BREATHING AIR TANKS		
	BRAKE TRAVEL		
	L.F. / R.F.		
	L.R. / R.R.		
	L.R.R. / R.R.R.		

INSPECTED BY:	SHIFT:	OFFICER:

ATHENS – CLARKE COUNTY FIRE DEPARTMENT
DAILY VEHICLE INSPECTION REPORT

COMPANY NUMBER	MILEAGE	ENGINE HOURS	DATE

	VISUAL INSPECTION
	CLEANLINESS OF APPARATUS
	BODY DAMAGE
	ENGINE COMPARTMENT - ENGINE
	FLUID LEAKS
	OIL LEVEL
	BELTS - HOSES
	FLUID LEVELS
	VEHICLE CAB
	PORTABLE RADIOS (A –B – C)
	FLASHLIGHTS
	SIREN – AIR HORN
	FUEL LEVEL
	WIPER BLADES – WASHER FLUID
	RUN ENGINE
	CHECK GAUGES
	CHECK BRAKING SYSTEM
	BREATHING APPARATUS
	BOTTLES FULL
	P.A.S.S. DEVICE
	STRAPS – HARNESS
	VOICE ACTIVATED MICROPHONE

	VEHICLE EXTERIOR
	HEADLIGHTS – TAIL LIGHTS
	TURN SIGNALS – BRAKE LIGHTS
	EMERGENCY LIGHTS
	SPOT LIGHTS – FLOOD LIGHTS
	TIRE CONDITION

TIRE PRESSURE

FRONT		REAR			
LEFT	RIGHT	L.O	L.I	R.O	R.I

LADDER

R.R.O	R.R.I	L.R.O	L.R.I

	PUMP
	ENGAGE PUMP TRANSMISSION
	GAUGES
	TRANSFER VALVE
	RELIEF VALVE
	WATER LEVEL

	MISCELLANEOUS
	WATER COOLER – CUPS
	STREET BOOK

	LADDER
	OUTRIGGERS
	LADDER RETRACTED AND IN CRADDLE
	TURNTABLE CONTROLS

COMMENTS – CORRECTIONS MADE

INSPECTED BY:	SHIFT:	OFFICER: