



**MONTGOMERY COUNTY FIRE AND RESCUE SERVICE  
DRIVER/OPERATOR TRAINING PROGRAM**

**EMERGENCY VEHICLE DRIVER/OPERATOR  
TRAINING COMPETENCIES - ENGINE**

**Trainee Name:** \_\_\_\_\_ **ID#** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Mentor:** \_\_\_\_\_

**Supervisor Name:** \_\_\_\_\_

*I have reviewed and confirmed that all competencies are completed for this trainee:*

\_\_\_\_\_  
**Supervisor Signature** **Date**

The following competencies are intended to meet or exceed the requirements of NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications.

Section	Competencies	Evaluator Initials	Date Completed
<b>1.0 Vehicle Pre-Use Inspection and Driving Preparation</b>			
1.1	Trainee will explain the purpose of emergency vehicle pre-use inspections and routine maintenance		
1.2	Trainee will explain the safety precautions for emergency vehicle pre-use maintenance and inspections.		
1.3	Trainee will explain the process of a complete emergency vehicle inspection, schedule routine maintenance, and complete required documentation.		
1.4	Trainee will identify major motor vehicle components.		
1.5	Trainee will explain or demonstrate routine maintenance conducted at the station on an emergency vehicle.		
1.6	Trainee will explain safety checks and adjustment that should be made to prepare for emergency vehicle driving.		
1.7	Trainee will demonstrate starting the emergency vehicle.		
1.8	Trainee will explain and demonstrate precautions to take before moving an emergency vehicle.		
1.9	Trainee will conduct a pre-trip inspection at the station using the model inspection checklist.		
1.10	Trainee will demonstrate researching existing defects and completed maintenance items using existing reporting systems.		
1.11	Trainee will explain the apparatus and equipment defect reporting procedures for assigned station.		
1.12	Trainee will identify vehicle height, weight, length and width.		
1.13	Trainee will identify where to locate vehicle fluid specifications and capacities.		

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<b>2.0 Operating an Emergency Vehicle</b>			
2.1	Trainee will explain the purpose and demonstrate engagement of visual and audible warning equipment.		
2.2	Trainee will explain basic emergency vehicle control tasks.		
2.3	Trainee will explain urban emergency vehicle defensive driving skills.		
2.4	Trainee will explain considerations for lane selection and hazards of navigating through intersections.		
2.5	Trainee will explain considerations and requirements to operate a vehicle in emergency mode through intersections.		
2.6	Trainee will explain considerations for selecting locations to turn emergency vehicles around in a variety of situations.		
2.7	Trainee will explain the safe operating procedure for following another emergency vehicle.		
2.8	Trainee will explain the safe operating procedures for passing another emergency vehicle.		
2.9	Trainee will explain the safe operating procedures for highway operations.		
2.10	Trainee will explain considerations for selecting travel speeds during an emergency response, i.e. road conditions, weather, traffic, policy.		
2.11	Trainee will explain the operation of traction or stability control systems.		
2.12	Trainee will identify and explain the operation of auxiliary braking systems.		
<b>3.0 Handling Dangerous &amp; Unusual Driving Situations</b>			
3.1	Trainee will identify considerations and actions for driving in adverse conditions.		
3.2	Trainee will identify potential contingency situations, the causes, prevention measures, and proper actions when they occur.		
3.3	Trainee will identify the common causes of skids, prevention measures, and proper actions to take if they occur.		
3.4	Trainee will explain how to handle on the road mechanical failures or emergencies.		
3.5	Trainee will explain considerations for parking during a mechanical breakdown.		
3.6	Trainee will explain the use and limitations of on-spot and traditional tire chains.		
3.7	Trainee will demonstrate the installation of snow chains on the assigned engine company.		
<b>4.0 Driving Course</b>			
4.1	Trainee will complete all practical and didactic components of the MCFRTA Class B Emergency Vehicle Operator Course and achieve certification of such a course per MCFRS requirements.		
<b>5.0 Driving Experience</b>			
5.1	Trainee must complete a minimum of 12 hours driving time on public roadways while assigned to an operations unit. These hours will be documented using a Non-Emergency Public Roadway Driver Training Log and Driving Behavior Evaluations		
<b>6.0 Apparatus Fire Pump and Components</b>			
6.1	Pump Preventive Maintenance		

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	a) Trainee will demonstrate proficiency in back-flushing the pump.		
	b) Trainee will explain how to perform preventive maintenance on the pump control panel.		
6.2	Trainee will explain the controls and pump panel indicators for the apparatus fire pump.		
	Trainee will identify the location and purpose of the pump gear box.		
6.3	a) Trainee will describe monthly in-station maintenance of the pump gear box including the oil types and quantities.		
	b) Trainee will explain the procedure to use during emergency operations and how to pump through the Q max pump.		
6.4	Trainee will describe the Hale Qmax pump packings and maintenance items associated with these packings.		
	Trainee will describe the operation of the Total Pressure Master Relief Valve (TPM).		
6.5	a) Demonstrate the operation of the TPM		
	b) Demonstrate maintenance and operational inspection of the TPM		
	c) Explain why the TPM valve should be reset to "0" after each use		
	d) Explain the relief stages and indicators of each stage		
6.6	Trainee will describe the operation of the master intake valves, overrides, and maintenance requirements		
6.7	Trainee will describe the operation of the Thermal Relief Valve (TRV) and indicators that it has activated		
	Trainee will explain the operation of the priming systems found on MCFR pumping apparatus; Environmentally Sensitive Primer (ESP) and Trident Air Primer		
6.8	a) Trainee will describe the difference in the operation of the ESP versus conventional rotary vane primers		
	b) Trainee will describe the differences between the types of primers found on apparatus within MCFRS		
	c) Trainee will identify the operating characteristics and limitations of the ESP and Trident Air Primers.		
	d) Trainee will describe methods and purpose for priming individual intakes in addition to the main pump		
	e) Trainee will identify the type of primer on their assigned apparatus and associated controls.		
<b>7.0 Pressurized Water Supply - Hydrants</b>			
	Trainee will demonstrate the ability to supply another engine company.		
7.1	a) From a hydrant with a Humat Valve connected.		
	b) From a hydrant without a Humat Valve.		
	c) From a hydrant with multiple supply lines.		
	d) Identify options when encountering a damaged, blocked, or ineffective hydrant.		
7.2	Trainee will calculate the available water from a hydrant.		

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7.3	Trainee will demonstrate both Tandem and Dual Pumping operations.		
7.4	Trainee will demonstrate proficiency in spotting hydrants using each preconnected soft sleeve(s) applicable to the assigned apparatus.		
<b>8.0 Engine Company Operations - Attack Engine</b>			
8.1	Trainee will identify all pump panel and control components including the auxiliary cooler and circulating valves.		
8.2	Trainee will demonstrate knowledge of all nozzles carried on the apparatus:		
	a) Size and type.		
	b) GPM Rating.		
	c) Nozzle pressure required.		
8.3	Trainee will calculate the nozzle reaction for a given fire stream.		
8.4	Trainee will demonstrate the ability to place the initial attack line in service using apparatus tank water.		
	a) Proper apparatus position.		
	b) Placing the pump in gear.		
	c) Supplying an attack line – minimum 1 ½" @ 100GPM		
8.5	Trainee will demonstrate proficiency laying supply line.		
	a) Forward		
	b) Split		
	c) Reverse		
	d) Dual		
8.6	Trainee will demonstrate the ability to transition from onboard water tank to an external supply source without interrupting the attack line.		
8.7	Trainee will demonstrate the ability to manage multiple attack lines flowing simultaneously with differing flow and pressure requirements.		
8.8	Trainee will demonstrate the ability to establish their own water supply via hydrant and transition from onboard tank water to the external supply without interrupting the attack line.		
8.9	Trainee will identify the necessity and demonstrate expanding the water supply of the attack engine.		
	a) Monitor intake pressure while charging additional discharges.		
	b) Hand lay line back to supply engine.		
	c) Have supply engine reverse lay from attack engine.		
8.10	Trainee will demonstrate the ability to deploy and direct repacking of all hoseloads on the apparatus.		
8.11	Trainee will demonstrate the ability to place a leader line in service.		
8.12	Trainee will demonstrate knowledge of the types, quantities, storage options, and appropriate application of the foam concentrates.		

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8.13	Trainee will demonstrate the ability to deploy a Class B foam handline.		
	a) Assembling the necessary and compatible appliances.		
	b) Know the appropriate proportions and settings of the eductor.		
	c) Know how much water is needed to make finished foam at 1% and 3% given the foam concentrate supply.		
8.14	Trainee will demonstrate knowledge of the onboard Class A foam proportioning system and deploy a Class A foam solution handline.		
	a) Describe the operating characteristics, pressure limitations, and flow limitations.		
	b) Function of each button, what information can be displayed, and how to interpret the information.		
	c) Permissible operating ranges and proper application rates for attack, overhaul, and other potential scenarios.		
	d) Purpose and interpretation of the bar graph display.		
	e) Identify which discharges will supply foam solution.		
8.15	Trainee will demonstrate the ability to flush onboard and portable foam systems, replenish the concentrate, and make the systems ready.		
<b>9.0 Standpipe and Sprinkler Supply</b>			
9.1	Trainee will demonstrate the ability to supply a FDC at the correct pressures for a given floor for an Automatic Sprinkler and a Standpipe system.		
	a) Reverse lay from connection.		
	b) Hand lay to the connection.		
	c) Pump both sides of the connection.		
	d) Prioritize between standpipe and sprinkler systems with separate connections		
	e) Differentiate between the test head and FDC		
9.2	Trainee will identify options for supplying systems with a damaged or inaccessible FDC.		
<b>10.0 WMATA Systems Supply</b>			
10.1	Trainee will identify a WMATA standpipe and sprinkler FDC.		
10.2	Trainee will explain pertinent information contained on the WMATA FDC.		
10.3	Trainee will demonstrate proficiency in the proper sequence for supplying the WMATA FDC for tunnel operations.		
10.4	Trainee will identify which systems in the WMATA system are wet or dry.		
10.5	Trainee will explain the duties and responsibilities for a water supply engine at an emergency exit shaft.		
<b>11.0 Elevated Master Streams</b>			
11.1	Trainee will demonstrate the ability to set up and charge the supply lines to pump an elevated master stream.		

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11.2	Trainee will calculate pump pressure to deliver an effective elevated master stream.		
11.3	Trainee will calculate pump pressure to supply a flying standpipe.		
<b>12.0 Static Water Supply – Drafting and Rural Water Supply</b>			
12.1	Trainee will demonstrate knowledge of the rural water supply policy.		
12.2	Trainee will demonstrate knowledge of types of rural water supply sources and methods for locating static sources.		
12.3	Trainee will demonstrate obtaining and maintaining a draft to supply an attack or relay engine.		
	a) Positions apparatus appropriately.		
	b) Selects and assembles appropriate appliances		
	b) Operate from static water source (stream, pond, pool).		
	c) Operate from folding tank.		
	d) Operate from multiple folding tanks.		
12.4	Trainee will demonstrate operation from a dry hydrant.		
12.5	Trainee will setup a fill site.		
<b>13.0 Compressed Air Foam System – NOTE: the presence of CAFS equipment within the fleet requires this section be completed by all trainees.</b>			
13.1	Trainee will demonstrate knowledge of the CAFS air compressor.		
	Describe the operating characteristics of the CAFS air compressor and identify its location within the pump housing		
	Trainee will identify the designed operating pressure range, required RPM, and output volume for: a) each discharge; and b) the entire system.		
	Trainee will describe the correlation between the CAFS compressor and pump impeller RPM.		
	Explain the function, location, and maintenance requirements for the water/oil heat exchanger.		
	Explain the function, location, and maintenance requirements of the water/oil heat exchanger strainer, including safety precautions when inspecting.		
	Explain the function, location, and maintenance requirements for the air/oil separator.		
	Demonstrate the CAFS compressor on/off button and identify the operating modes available, their effects on the compressor, and application of each of the following modes: a. On; b. Standby; and c. Off.		
13.2	Trainee will identify and explain how often the following maintenance items should be checked:		
	a) inline foam concentrate strainers		
	b) air compressor air filter		

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13.3	Trainee will explain the CAFS Pro Controller.		
	a) describe how the on/off button operates		
	b) explain what ranges the air compressor can operate in		
	c) identify the following items from the informational control items on the CAFS Pro Controller and the function of each		
	1) air flow		
	2) air/water ratio		
	3) compressor temperature		
	4) hours clock		
13.4	Trainee will describe how to go from a wet to dry foam solution and the proper situations for adjustments.		
13.5	Trainee will describe limitations to CAFS operations.		
13.6	Trainee will explain the 4 situations where CAFS cannot be used		
13.7	Trainee will identify the discharges that are CAFS capable, Class "A" foam solution capable, and which are only plain water capable.		
13.8	Trainee will identify functional characteristics of the AutoFill feature and its relation to CAFS		
13.9	Trainee will demonstrate CAFS operations for overhaul using the appropriate intake and auto fill feature.		
13.10	Trainee will explain what slug flow is and how to prevent it		
13.11	Trainee will explain what chatter is and how to prevent it		
13.12	Trainee will demonstrate knowledge of FCGO 17-14.		
<b>14.0 Policy and Procedures</b>			
14.1	Trainee will demonstrate knowledge of Engine Company assignments, responsibilities, and functions of all applicable policies and general orders, including and not limited to:		
	Policy #24-01 Incident Response Policy		
	Policy #25-07 Natural Gas Incident Response.		
	Policy #24-02 Vehicle Collision Investigation and Reporting Policy		
<b>15.0 Tools &amp; Equipment</b>			
15.1	Trainee will demonstrate proficiency in the operation of all power tools carried on the engine.		
<b>16.0 Atmospheric Monitoring Equipment</b>			
16.1	Trainee will demonstrate proficiency in the operation of atmospheric monitoring devices.		
	a) natural gas		
	b) multi-gas		
	c) single gas		

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	d) radiation		
<b>17.0 Electric Powered Equipment</b>			
17.1	Trainee will demonstrate proficiency in the knowledge and use of the following electrical components (as applicable):		
17.2	Onboard Generator		
	a) Capacity		
	b) Operation		
17.3	Apparatus Flood Lights		
17.4	Portable Lights		
17.5	Fans		
17.6	Reels		
17.7	Trainee will demonstrate proficiency in the knowledge and location of the circuit breakers.		
<b>18.0 Apparatus Positioning</b>			
18.1	Trainee will explain the factors to consider when positioning this type of apparatus on the following incidents:		
	a) EMS Incident		
	b) Vehicle Collision		
	c) Technical Rescue Incidents		
	d) Single Family Dwelling Fire		
	e) Hazardous Materials Incident		
	f) Commercial Building Fire		
<b>19.0 Apparatus Inventory</b>			
19.1	Trainee will demonstrate knowledge of apparatus inventory.		