MONTGOMERY COUNTY FIRE AND RESCUE SERVICE
DRIVER/OPERATOR TRAINING PROGRAM

Practical **A**pplication **G**uide **S**heet

Engine: Aerial Master Stream

Candidate Performance Competency: The driver candidate shall demonstrate proficiency in the supply of an aerial master stream.

- The candidate will establish a water supply using a heavy-water hookup.
- The candidate will deploy the necessary hose to supply an actual or simulated aerial device and supply water to the master stream appliance.
- The candidate will perform the hydraulics calculations necessary to deliver the desired master stream flow. The evaluator will provide the candidate the tip size and base pressure for the waterway as applicable.
- The candidate will perform the calculations necessary to identify residual hydrant capacity.

Task	Value	Score
Position and Prepare the Hydrant		
1. Position Engine as not to impede incoming units and spot hydrant with desired intake.	2	
2. Stop Engine and apply parking brake. **(CFP)**	1	
3. Engage pump. Look and listen for signs of engagement.	1	
4. Place wheel chock on downhill side of front or rear tire. **(CFP)**	1	
Establish Water Supply and Prepare the Pump		
5. Flush the hydrant.	1	
6. Complete a heavy-water hookup to the hydrant and charge the supply. **(CFP)** a. Soft sleeve to the hydrant steamer • Pierce Engine – side intake • Crimson Engine – rear intake b. Gate valve on one or both 2 ½" hydrant outlets with 4" supply to additional intakes	10	
7. Open applicable intake bleeders to bleed air and then close. Open applicable MIV and note final static intake pressure from hydrant. Static Intake Pressure:_____psi	5	
8. Ensure the pump is primed by auto or manual primer.	1	
9. Close Tank To Pump valve.	1	

Task	Value	Score
10. Ensure all onboard foam systems are turned off. **(CFP)**	3	
11. Candidate will request the base pressure and master stream nozzle information from the Evaluator.	5	
12. Select a large diameter discharge and deploy supply line to the aerial apparatus gated wye/siamese. • Crimson – candidate must verbalize the setting for the outboard relief valves as determined during pump checkout. Normally ≈ 210psi; candidate must test their Engine prior to taking test. If sufficient pressure can't be achieved without relief valve opening candidate must use another discharge and CMF must be notified. Outboard Relief Valve Pressure: _____psi	10	
13. Adjust TPM to appropriate pressure. **(CFP)**	2	
14. At the request of the Evaluator/Aerial Operator, charge the supply to the gated wye/siamese. **(CFP)**	2	
15. Adjust throttle to desired discharge pressure, accounting for base pressure, elevation, appliance, and friction loss. **(CFP)** Discharge Pressure: _____psi	10	
16. At the request of the Evaluator/Aerial Operator, assist with opening additional valves on the waterway and/or appliances.	1	
17. Ensure that there is a means for water to be constantly circulating through the pump for cooling in the event that both lines are shut down. TRV should not activate. **(CFP)**	5	
18. Adjust throttle once water is flowing.	2	
19. Adjust TPM as needed. **(CFP)**	2	
20. Deploy a second supply line to the aerial apparatus gated wye/Siamese, charge, and open gate on appliance.	10	
21. Adjust throttle as needed once water is flowing.	2	
22. Adjust TPM as needed. **(CFP)**	2	
23. With water flowing, candidate will note intake pressure. Residual Intake Pressure: _____psi	2	
24. Candidate will verbalize the approximate amount of additional water supply available based upon percentage drop. **(CFP)** (static – residual) ÷ static = % drop <10% drop ≈ 2x additional available <25% drop ≈ 1x additional available ≥25% drop ≈ less than 1x is available Additional Water Available:_____	10	
25. Monitor pump panel, pump, engine compartment gauges and radio. Be prepared to shut down in an emergency.	2	
Return to Service:		

Task	Value	Score
26. Throttle down to idle. Close discharges and intake(s). Disengage pump.	5	
27. Reset TPM to zero. **(CFP)**	1	
28. Ensure that Engine is ready for service.	1	
Total Points	100	

Critical Fail Points

Failure to successfully perform any of the following components will result in an automatic failure of this evolution regardless of total score.

a) Not delivering the requested product

b) Improper setting of the TPM at any stage of the evolution

c) Improper discharge pressure

d) Incomplete or incorrect heavy water hookup

e) Delivering water to Aerial before Aerial Operator requests it

f) Failure to turn OFF onboard foam systems

g) Loss of water/pressure in the Aerial appliance supply line

h) Inability to use calculation to estimate residual water supply

i) Failure to use wheel chock, engage the parking brake, or otherwise safely park the vehicle

j) Activation of TRV

Evaluator: Initial beside the final outcome of the exam below.

____ PASS ____ FAIL – Overall Points ___ FAIL – Critical Failure Point

_____ _____

Evaluator Name **Date**

Evaluator Signature