



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

## Practical Application Guide Sheet

### Engine: Supply & Backup Hoseline

**Candidate Performance Competency:** The candidate will complete a multi-task evolution to simulate second due engine company operations for a structure fire.

- The candidate will position the pumper at a hydrant to initiate an uninterrupted water supply via Humat Valve to the forward lay left by the Attack Engine.
- The candidate will complete a heavy-water hookup and supply appropriate discharge pressure to the Attack Engine based upon fire flow provided.
- The candidate will place in service a preconnected 2" Class A Foam Solution backup line with a minimum flow of 200gpm.

Note for testing: The Attack Engine may be simulated with the forward lay terminated with a portable master stream appliance. Prior to commencing the evolution, the nozzle must be properly stabilized and staffed.

Task	Value	Score
<b>Position and Prepare the Hydrant</b>		
1. Position Engine as not to impede incoming units and spot hydrant with soft sleeve intake.	2	
2. Stop Engine and apply parking brake. <b>(CFP)</b>	1	
3. Engage pump. Look and listen for indicators of successful engagement.	2	
4. At the pump panel, confirm the pump is engaged. If applicable, place CAFS Air Compressor in "Off" mode. <b>(CFP)</b>	3	
5. Close "Tank to Pump".	2	
6. Place wheel chock on downhill side of front or rear tire. <b>(CFP)</b>	1	
7. Inspect hydrant for damage, obstructions, missing or loose blind caps, and operating nut/bonnet.	2	
8. Remove 4 ½" blind cap from hydrant, and flush until water is clear or verifying no significant obstructions exist. Close hydrant.	1	
<b>Establish Water Supply to the Attack Engine</b>		
9. Attach Humat Valve to 4 ½" connection on the hydrant with butterfly valve handle in closed position. Attach at least one gate valve on a 2 ½" hydrant outlet in the closed position to facilitate expanding the supply later. <b>(CFP)</b>	2	

Task	Value	Score
10. Remove any kinks in the supply line. If possible, visually verify the supply line is connected to the Attack Engine's intake. Open the hydrant to charge the supply line only after verifying the operator of the Attack Engine is ready for water. <b>(CFP)</b>	1	
11. Prepare the initial water supply to the Supply Engine by connecting the soft sleeve to the 4½" NST threads on Humat Valve outlet. <ul style="list-style-type: none"> <li>• Pierce Engine – side intake</li> <li>• Crimson Engine – rear intake</li> <li>• CAFS engine Auto Fill Valve is not to be used. <b>(CFP)</b></li> </ul>	2	
12. Prepare for supplemental pressurization of the Humat Valve. <b>(CFP)</b> <ol style="list-style-type: none"> <li>a) Remove a suitable length of supply hose from the Supply Engine to reach between the Humat Valve and Supply Engine.</li> <li>b) Connect the supply hose between the Storz intake on the Humat Valve and a large diameter discharge on the Supply Engine.</li> </ol>	2	
13. Open the butterfly valve on the Humat Valve to charge the supply to the Supply Engine.	2	
14. Adjust TPM to approximately 100psi.	2	
15. Open and close applicable bleeder valve to evacuate air from the intake line. Open MIV. Candidate must note the static intake pressure.  Intake Pressure: _____ psi	2	
16. Candidate will calculate the friction loss in the supply line between the hydrant and Attack Engine assuming a 500gpm sustained fire flow.  Friction Loss: _____ psi	2	
17. Candidate will determine if the pressure must be boosted through the Humat Valve to maintain adequate residual pressure at the Attack Engine. <ul style="list-style-type: none"> <li>• Friction loss, elevation gain/loss, and intake pressure at the Supply Engine are all considerations</li> <li>• Minimum relay pressure using 4" supply hose is 20psi</li> <li>• Minimum relay pressure using 3" supply hose is 50psi</li> <li>• Hydrants must always be fully open regardless of pressures</li> </ul>	5	
18. If deemed necessary in Step 16, provide supplemental pressure to the Attack Engine by charging the hose supplying the Humat Valve. Adjust the throttle to achieve the desired discharge pressure.  Discharge Pressure: _____ psi	3	
19. Adjust TPM as needed.	2	

Task	Value	Score
20. Ensure that there is a means for water to be constantly circulating through the pump for cooling in the event that all lines are shut down. TRV should not activate. <b>(CFP)</b>	2	
21. Monitor pump panel, pump, engine compartment gauges, and radio.	2	
22. Candidate will contact the operator of the Attack Engine to verify adequate supply and pressure. Direct communication is preferred over radio contact on the operations or talk-around channels.	2	
<b>Expand the Water Supply</b>		
23. Remove a suitable length of 4" hose from the Supply Engine to reach between the hydrant and Supply Engine. a) Connect the supply hose to the previously installed gate valve on the hydrant b) Connect the supply hose to an appropriate MIV on the Supply Engine. c) The supply to the Attack Engine must not be interrupted	4	
24. Charge the supply hose by opening the hydrant gate valve.	2	
25. Open and close applicable bleeder valve to evacuate air from the intake line. Open MIV.	2	
26. Candidate will manage discharge pressure to maintain appropriate pressure to the Attack Engine.	2	
<b>Deploy a Preconnect</b>		
27. Crew deploys a 2" 300' preconnect from the Supply Engine. Operator confirms clear hosebed and assists hose deployment as necessary.	2	
28. Adjust TPM to appropriate pressure. <b>(CFP)</b>	3	
29. Engage foam pump using default "Attack" setting. <b>(CFP)</b>	2	
30. Open the proper discharge valve on pump panel.	2	
31. Allow foam solution to fill attack line at default "Attack" setting. <b>(CFP)</b>	1	
32. Throttle to proper discharge pressure for deployed attack line. <b>(CFP)</b> Discharge Pressure: _____ psi	5	
33. Adjust discharge valves to manage attack line pressure and discharge pressure to the Humat Valve as needed. <b>(CFP)</b>	5	
34. Adjust TPM to if necessary. <b>(CFP)</b>	2	
35. Check attack line to ensure charging, freedom from obstructions, and remove all kinks missed by crew.	2	
36. Monitor pump panel, pump, engine compartment gauges and radio.	1	

Return to Service		
37. Adjust throttle to idle.	1	
38. Turn Foam Pump off and flush fresh water through hoseline until clear water flows.	3	
39. Close all discharges.	2	
40. Ensure water tank is full.	2	
41. Close butterfly valve on Humat Valve to redirect water supply to the Attack Engine.	1	
42. Close all intakes. Disengage pump and adjust TPM to zero.	2	
43. Upon request by the Attack Engine, close the hydrant.	2	
44. Open applicable bleeders and drains to relieve pressure.	2	
45. Refill Class A Foam tank using EZ-Fill system.	2	
46. CAFS Engines - Clean strainer after every pump operation.	1	
47. Ensure that Engine is ready for service.	2	
<b>Total Points</b>	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) Loss of water/pressure in the supply line, attack line, or main pump
- c) Incorrect connection, preparation, or use of the Humat Valve
- d) Positioning that does not allow use of the soft sleeve for maximum volume
- e) Charging the supply to the Attack Engine before requested
- f) Improperly setting or failure to manage pressures using the TPM at any stage of the evolution; including discharge pressure variations in excess of 30psi
- g) Intake pressure drops below 20psi or pump cavitates through failure to manage water supply versus discharge demands
- h) Failure to generate proper pressures to achieve desired flow
- i) Failure to manage the CAFS compressor prior to increasing engine throttle
- j) Failure to use wheel chock, engage the parking brake, or otherwise safely park the vehicle
- k) Using the Auto Fill Valve on the Supply Engine

- l) Charging the attack hose without clearing the hose bed or charging an incorrect discharge
- m) Not using large diameter/high flow discharge to supply the Humat Valve
- n) Activation of Attack Engine's Intake Relief Valve or failure to manage discharge pressure to the Humat Valve
- o) Failure to complete heavy water hookup without interrupting the water supply to the Attack Engine
- p) 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**