



# Fire Protection Training

Procedures Handbook 4300

PUMPING

**TOPIC/EQUIPMENT:** PUMP FROM DRAFT, CAL FIRE HYDROSTAT ENGINE MODEL #14, OR #15

**CATEGORY:** Performance Examination

**POINTS POSSIBLE:** Pass/Fail

**TIME ALLOWED:** 1 minute and 20 seconds

**BEHAVIORAL OBJECTIVE:**

*Condition:* Given a CAL FIRE hydrostat engine Model #14 or #15, properly chocked and set up to draft, with spring brake set, transmission in neutral, an empty water tank, a predetermined engine pressure of 150 psi and the following items and conditions: Tank suction valve open, tank fill valve closed, suction inlet valve closed, a preconnected length of 1-1/2" or 1-3/4" hose with nozzle attached laying on the ground.

*Behavior:* The student will, build the complete suction hose, start the engine, prime the pump, obtain a draft, engage the pump, charge a 1-1/2" or 1-3/4" line, deliver an uninterrupted stream of water to a simulated fire using a drafting tank as a water source and break-down the suction hose. The student will then return the apparatus to a response ready condition.

*Standard:* Following steps and procedures, in proper sequence according to the attached score sheet, .



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## **MATERIALS NEEDED:**

- One (1) CAL FIRE Model #14 or #15 hydrostat engine
- One (1) Length 1- $\frac{1}{2}$ " hose or;
- Two (2) Lengths 1- $\frac{3}{4}$ " hose
- One (1) 1- $\frac{1}{2}$ " combination nozzle with bale shutoff
- Three (3) Sections hard suction hose
- One (1) Suction hose strainer
- One (1) Shovel or hard sided bucket
- One (1) 15' Length rope
- One (1) Stop watch
- One (1) Performance exam per student
- Two (2) Red pens for scoring
- One (1) Clip board
- One (1) Tally sheet
- Complete wildland safety PPE per operator and firefighter assistant

## **PROCEDURES:**

The examination will begin when the student either verbally or by conduct performs any step of the examination. The examination will end when the student either verbally or by conduct indicates the examination has been completed. At this time the evaluator will check to see that the engine pressure is properly set and that valves and controls are in the proper position.

## **SCORING:**

Points will be deducted for each step omitted, performed improperly or performed out of sequence. Lettered procedures may be performed in any sequence within the numbered step without a loss of points. Steps designated by a Pass/Fail must be performed or the student fails the examination. A score of zero (0) will be given if during the examination the student performs any step or procedure that would jeopardize the safety of personnel or the equipment (i.e., relief valve not set, no fire stream produced, transmission left in gear, tank suction valve not closed, etc.)

## **SPECIAL NOTES:**

Before the examination begins the student will be allowed to ask any clarifying questions and inspect the equipment. Once the examination begins the evaluator shall not answer any questions or intercede in any way unless safety violations occur that would injure personnel or damage equipment. The engine shall be set up with the water tank empty, or 1- $\frac{3}{4}$ ". The examination will begin with the student, in full wildland safety clothing, seated in the cab of the engine with the door closed and seat belt on.

# Score Sheet

PUMP FROM DRAFT – CAL FIRE  
HYDROSTAT ENGINE  
MODEL #14, OR #15

DATE \_\_\_\_ / \_\_\_\_ / \_\_\_\_ TEST # \_\_\_\_ RETEST # \_\_\_\_ UNIT # \_\_\_\_

STUDENT'S NAME \_\_\_\_\_

EVALUATOR'S NAME \_\_\_\_\_

## **STEPS AND PROCEDURES**

## **POINTS**

1. Place foot on service brake	<u>5</u>
2. Start engine and allow it to idle	<u>Pass/Fail</u>
TIME START	
3. Place valves in appropriate positions	<u>Pass/Fail</u>
a. Close tank suction valve completely	_____
b. Open suction inlet valve completely	_____
4. Engage primer for no longer than 30 seconds	<u>Pass/Fail</u>
5. Return to cab and place foot on service brake	<u>5</u>
6. Set transfer valve in proper position	<u>10</u>
7. Adjust throttle to indicate 2000 RPM (+/- 200 RPM) on tachometer	<u>Pass/Fail</u>
8. Engage midship pump lever until 100 psi (+/- 20 psi) is registered on pump pressure gauge	<u>Pass/Fail</u>
9. Return to pump panel and loudly state "Water Coming"	<u>5</u>
10. Slowly open discharge valve completely	<u>5</u>
11. Return to cab and place foot on service brake	<u>5</u>
12. Adjust pump lever to indicate 150 psi (+/- 20 psi) on pump pressure gauge	<u>10</u>

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PUMP FROM DRAFT – CAL FIRE  
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- |  |                  |
|--|------------------|
| 13. Turn pilot valve switch to the "ON" position | <u>Pass/Fail</u> |
| 14. Set relief valve at 150 psi (+/- 20 psi)     | <u>Pass/Fail</u> |

Student raises hands to indicate completion of timed portion of exam. If student has not produced an effective fire stream, a score of "0" will be given.

TIME STOPS ENTER TIME: \_\_\_\_\_

EXAMINATION CONTINUES BUT IS NOT TIMED

- |  |                  |
|--|------------------|
| 15. Return to pump panel, loudly state "Shut Down"                   | <u>5</u>         |
| 16. Slowly close discharge valve completely                          | <u>5</u>         |
| 17. Return to cab and place foot on service brake                    | <u>5</u>         |
| 18. Disengage pump   | <u>5</u>         |
| 19. Return engine to idle  | <u>5</u>         |
| 20. Idle engine for a minimum of one minute                          | <u>5</u>         |
| 21. Turn pilot to the OFF position                                   | <u>Pass/Fail</u> |
| 22. Turn off engine  | <u>5</u>         |
| 23. Student will open tank suction valve and drain hard suction hose | <u>5</u>         |
| 24. Break down the suction hose assembly and store as directed       | <u>5</u>         |

**ENTER TOTAL TIME:** \_\_\_\_\_

**POINTS POSSIBLE:** 100

**POINTS DEDUCTED:** \_\_\_\_\_

**FINAL SCORE** \_\_\_\_\_

**COMMENTS:**

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