Rapid Lesson Sharing

Event Name: Drip Torch Malfunction

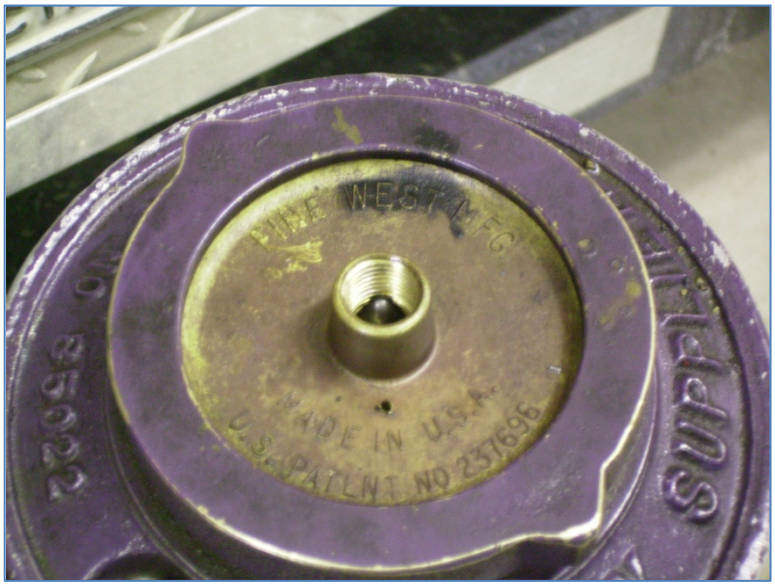
Date: 3/14/12

Location: Range 29 Fire

1. What Happened?

We were on a large wildfire yesterday where we needed to do a significant burnout and one of our drip torches would not flow fuel. It acted clogged, but when we disassembled, air flowed freely through every part. We put it out of service, used another, and this morning had time to delve into it further.

When we grabbed it yesterday, the fuel tube was slightly loose in the brass disk/cap, so it was hand tightened. Disassembled, everything flowed, but assembled, it wouldn't work. Further examination showed that the fuel hole in the cap, with the screen on the tank-side, has a simple ball check-valve that prevents backflow (see diagram on next page).When the ball moves to the forward flow position, there is a cutout to allow fuel to flow past the ball. This cutout is into the side of the threaded female side where the fuel tube screws in. In tightening the loose fuel tube, it simply threaded in far enough to block this cutout, so the ball completely blocked forward flow.



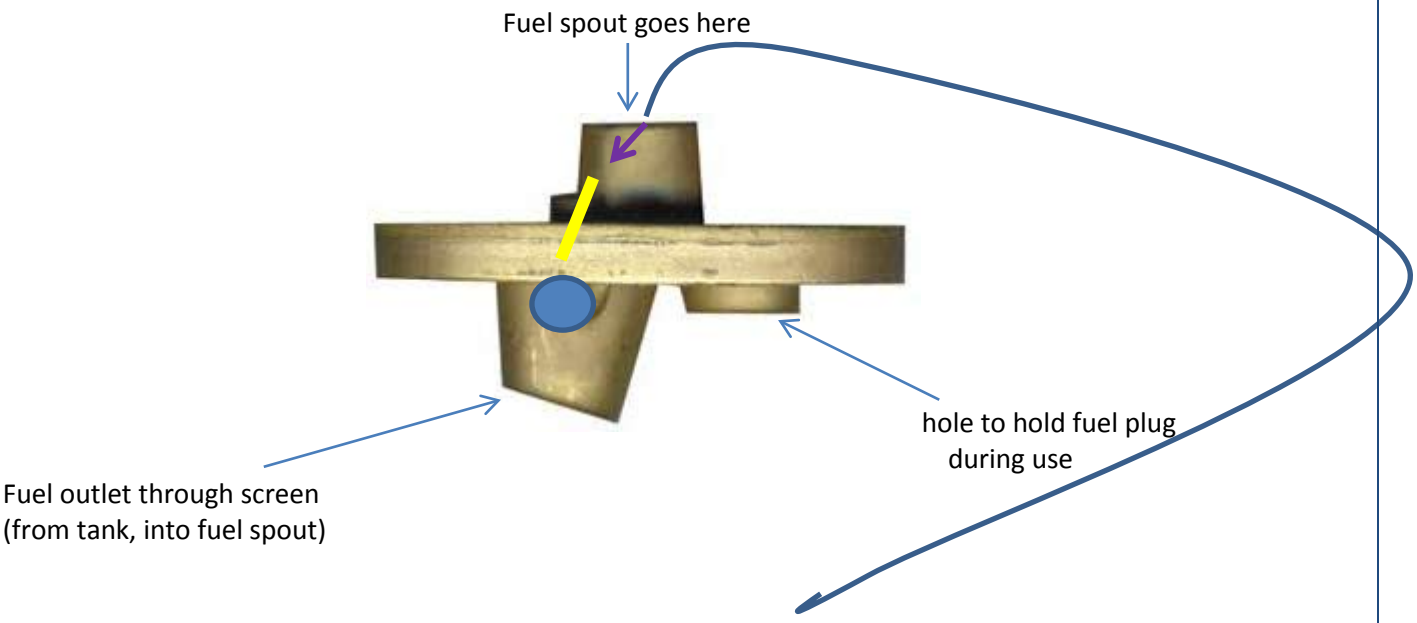
2. Lessons

A quick check would be to unscrew the fuel tube from the brass cap a turn or two and see if that fixes it.

Remember, drip torches are crucial equipment that need to be functional in all operational situations. Regular maintenance and testing of crucial equipment helps to avoid failures at critical times. When did you last test your drip torches?

Non-Flowing Drip Torch

Diagram Shows the Brass Fuel Tank Cap



- Yellow line represents approximate path fuel flows into spout, coming in through the side of the threads via a small cutout into the threads.
- Blue circle below it represents ball that creates check valve/backflow preventer.
- When the fuel spout was screwed in too far, the threads simply obstructed the cutout through the side of the threads, blocking the fuel pathway.
- Problem was readily resolved by carefully grinding two to three threads off the threaded end of the fuel spout tube.

3. Submitted By

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