SUMPTER VALLEY RAILROAD RESTORATION

Hostling and Firing Locomotive #19

The #19 locomotive is oil fired and must be carefully done to prevent unnecessary damage to the boiler and firebox. Unlike a coal or wood fire, an oil fire can vary widely in intensity from completely out to a raging inferno in a few seconds. The wide fluctuations in heat can cause damage to the firebox and boiler if allowed to happen. The fire can also go out with warning, allowing unburned oil to continue to fill the firebox with two alternatives: one, it can reignite causing an explosion or two, the unburned oil can run out causing an oil spill on the ground. Needless to say, both are highly undesirable.

The fire, once lit, must be attended at all times. If a qualified watchman is unavailable, the fire should be extinguished and the stack capped until it can be attended again. The fire can change due to variable steam or air pressures, water in the oil supply, oil line blockages, and many other factors.

When initially lighting the oil fire, especially if the firebox is cold, the fire may be difficult to keep lit while minimizing oil drips. Experience has shown that a slightly more intense fire for the first short period can clear the stack of black smoke and reduce the oil drips. The fire must be closely monitored during the first half hour of a cold fireup to ensure there is no unburned oil and the fire has stabilized. The same is true when first crossing over from air to steam atomization and fireup with low steam pressure.

There is also a tendency for the fire to go out when first opening steam valves to the injectors and air compressor. This can be prevented by very slowly opening the valves and closely monitoring the fire to ensure it is still lit. Alternately, the 3 main valves can be opened before firing up so that steam is allowed to build up in the piping.

If the fire has been found to have gone out and was unnoticed for more than a few seconds, do not attempt to relight from the hot firebricks. The firebox may be full of vaporized, unburned oil and an explosion could occur. First, shut off the oil supply valve and open the dampers and open the blower to clear the air inside the firebox. Then relight using a flame source as in a cold fireup.

If there is a fire in the oil pan at the bottom front of the firebox, set a spot fire to draw the draft upward until the oil fire goes out or the oil is consumed.

The firebrick in the firebox serves to protect the bottom portion of the firebox from heat fluctuations and to store heat to help maintain a more even heat within the firebox. Check that the bricks are in their proper location and not fallen down. Cracked bricks will still serve their purpose but should be mostly intact and still in position.

When building pressure, strive for a rise of one pound per minute, or less. This allows for the various components of the firebox and boiler to expand gradually and at the same rate, reducing damage and maintenance issues.

SUMPTER VALLEY RAILROAD

#19 HOSTLER / FIREMAN CHECKLIST

Pre-Fireup

- ☐ Chains down and BLUE FLAG protection in place?
- ☐ Check tender oil and water levels?
- ☐ Drain water from oil bunker?
- ☐ Inspect firebox for warped sheets, firebrick in place, oil burner okay?
- ☐ Place oil pan under front of firebox?
- ☐ Check boiler water level, add water if not showing in sight glass?
- ☐ Blow water from atomizer and blower lines?
- ☐ Whistle valve open until there is steam pressure?
- ☐ Bring up pressure at no more than 1 pound /minute?

Mechanical Checks

- ☐ Check for missing fasteners, hammer test nuts for tightness?
- ☐ Check for leaks; oil, water, steam, air?
- ☐ Check brake rigging and shoes?
- ☐ Check journal pads (drivers, pony truck, trailing truck, tender)?
- ☐ Radio battery charged?
- ☐ Sand dome ¾ full?

Lubrication

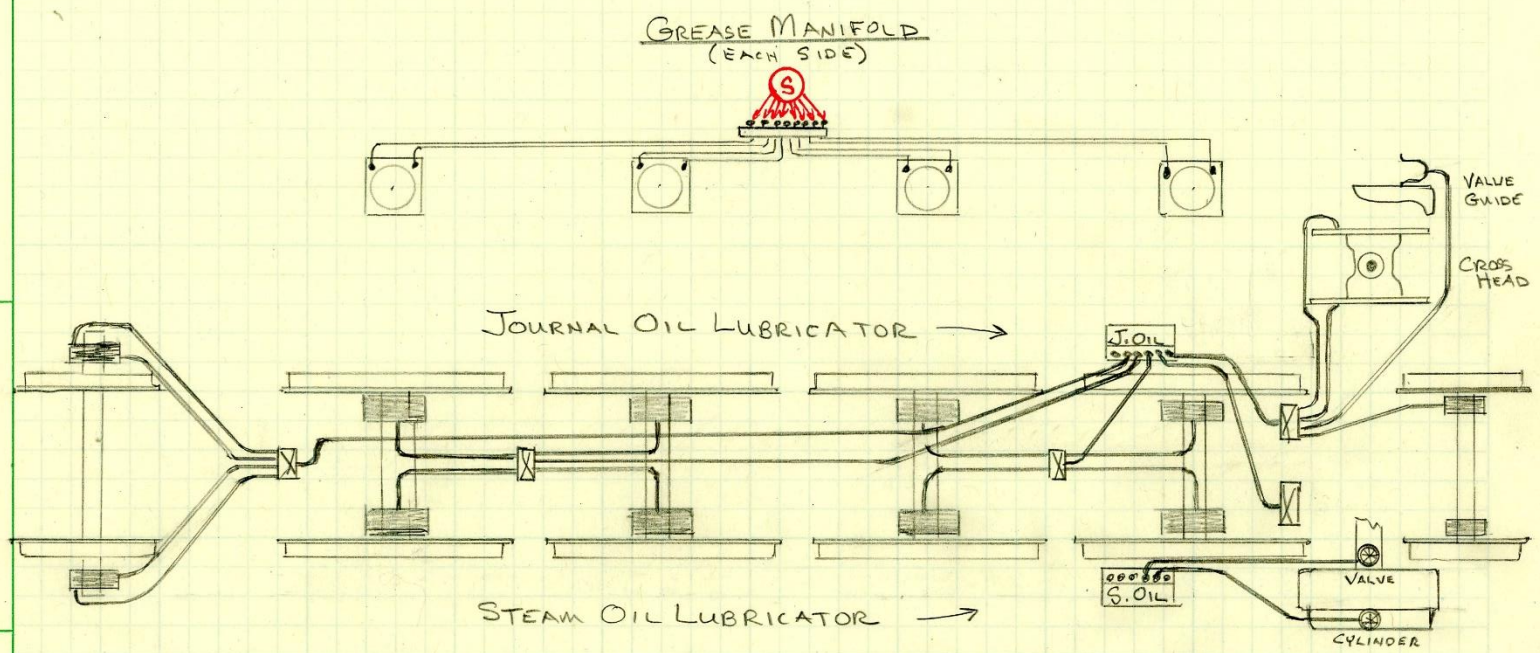
- ☐ Journal oil lubricator filled (to within 2” of top)?
- ☐ Steam valve oil lubricator filled (to within 2” of top)?
- ☐ Air compressor steam oil lubricator filled?
- ☐ Air compressor air cups filled with air compressor oil?
- ☐ Power reverser lubricator filled with ATF?
- ☐ Dynamo oil level checked?
- ☐ Soft grease completed (see diagram)?
- ☐ Hard grease completed (see diagram)?
- ☐ Oil cans filled and wiped down, Fill boiler treatment bottles?

Shutdown

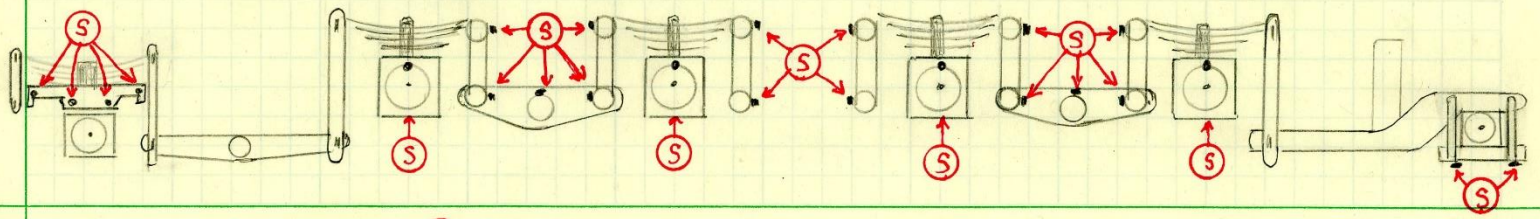
- ☐ Was boiler water above top of glass, glasses blown out?
- ☐ Steam pressure above 140 PSI?
- ☐ Tender Oil shutoff valve closed?
- ☐ Stack Capped?
- ☐ Throttle closed and pinned, reverser centered, cylinder cocks open, chains down, house valves open?
- ☐ All steam valves in cab, whistle, and boiler feed valves closed?
- ☐ Steam drains (air compressor, blower, dynamo) open?
- ☐ All air drains (air reservoirs, eq. reservoir, air strainer, power reverse) open?

Hostler/Fireman Signature _____ Date/Time_____

Locomotive #19 Lubrication

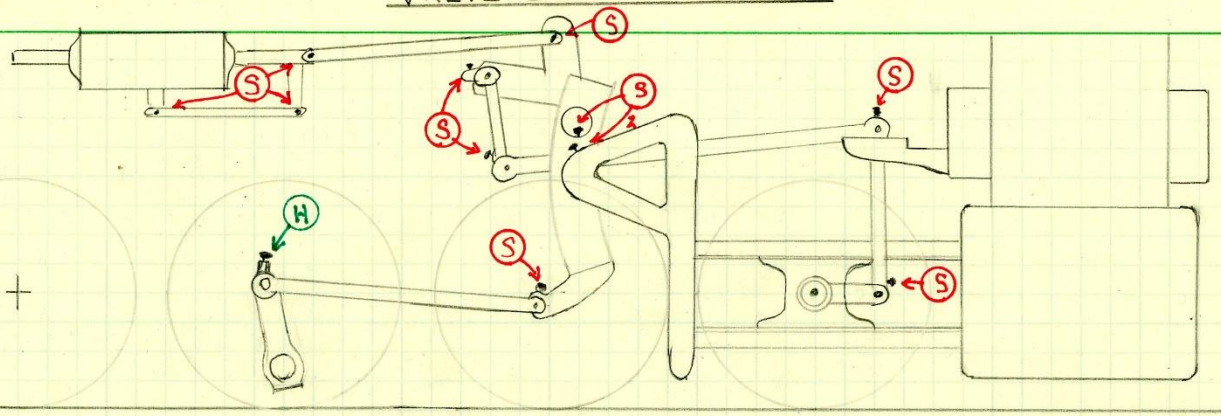


Suspension Grease Points

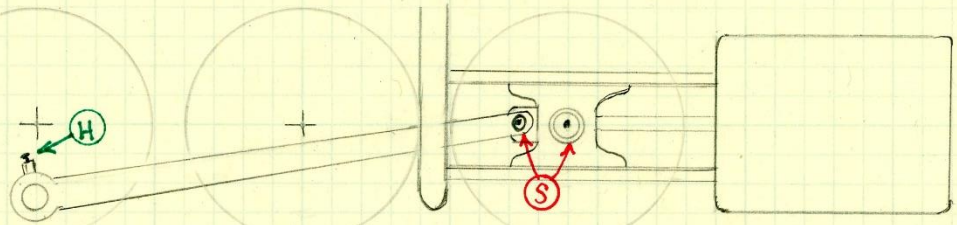


(S) = Soft Grease

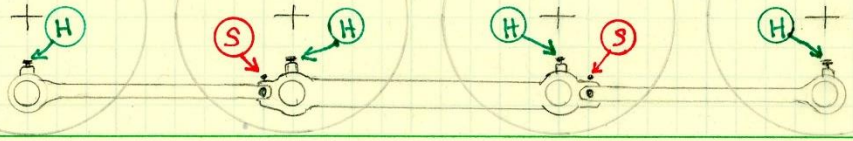
VALVE GEAR + REVERSER



MAIN ROD + CROSSHEAD



SIDE RODS



(S) = SOFT GREASE

(H) = HARD GREASE