

CALIFORNIA STATE RAILROAD MUSEUM

SACRAMENTO SOUTHERN RAILROAD

CIRCULAR –8

GENERAL REQUIREMENTS FOR ENGINEMEN

APRIL 25, 2014

1. **AUTHORITY TO OPERATE ENGINES**

- a. Only properly qualified engineers, firemen or mechanical personnel authorized by the Manager of Railroad Operations, or Director, CSRM will be allowed to operate engines owned by, or under control of the CSRM.
- b.. While moving under their own power, all engines operated under the authority of the CSRM shall have a fireman in the cab, or protection by another crew member for any movement.

2. **IGNITING FUEL-BURNING EQUIPMENT**

- a. Employees, when igniting any type of fuel-burning equipment, such as, fireboxes, stoves, or steam generators, in an enclosed space where the explosive mixtures of vapors can accumulate, must ensure that the equipment is purged or adequate ventilation is provided so that any possible explosive mixture of vapor will be removed.
- b. Additional precautionary measures should also be taken, including safe positioning of the individual, wearing of protecting clothing such as heat-resisting cloth, 100% natural fibers (wool, cotton, or leather). Avoid synthetic clothing.

3. **ENGINE OPERATION**

- a. The engineer is responsible for the safe and efficient operation of the engine in his charge. All persons employed thereon must obey his instructions with regard to the operation of the engine.
- b. Before moving engine(s), engineer and fireman must ascertain that: brakes and compressor are functioning properly, feed and reducing valves are set to correct pressures; other valves are in correct position for service; injectors, sight glass, lights, gauges, whistles, bells, and/or horn and other safety appliances are serviced and functioning properly.
- c. Slipping of drivers and unnecessary working of engines is prohibited.

4. DILIGENT AT ALL TIMES

- a. Engineers must be diligent in all matters pertaining to safety and while moving must keep a lookout, carefully note all signals and watch for obstructions and defects in track and roadway.
- b. Firemen must assist in keeping a close lookout and must instantly give notice to the engineer of any signals and any indications of obstructions or danger.

5. ABSENT FROM STEAM ENGINE

- a. Engineers and firemen must not, at the same time, absent themselves from a steam engine under pressure, or when a member of the crew is in the Red Zone.

Exception: When in shop area under mechanical officer's charge.

- b. Both engineer and fireman may be outside the cab of the locomotive, provided one of them is in the immediate vicinity of the cab of the locomotive under pressure, and:
 - 1) Can and does observe the level of boiler water in the glass.
 - 2) Can and does monitor the fire via its sound.
 - 3) Can immediately enter the cab to operate controls therein.

6. CARE WITH WATER

- a. .Great care must be exercised to prevent water from being thrown from smoke stack of a steam engine when starting.
- b. Overflow from injectors must not be permitted on passenger loading platforms. When injectors are used, side opposite station platform must be used.

7. AVOID SMOKE

Firing of a steam engine must be done in such a manner as to avoid dense smoke. The blower should be used gently to prevent smoke trailing when at stations.

8. INSPECTIONS

At station and other stops of sufficient duration, when practicable, engineer and fireman must make inspection of engine from the ground, giving particular attention to the trucks and brake rigging.

9. SEPARATING UNITS

Units of engines must not be separated until it is known that all electrical cables, air hoses, platform chains, steam connections and other connections have been disconnected.

10. REPORTING ENGINE DEFECTS

Engineer will report any defect of the engine on form provided for that purpose, and notify relieving engineer.

11. ENGINE STANDING UNATTENDED

- a. Diesel
 - 1) Throttle in "idle."
 - 2) Reverse lever in "neutral" and handle removed
 - 3) Generator field switch open or off.
 - 4) Independent brake fully applied.
 - 5) Automatic brake valve handle in "release," "running," or "holding" position.
 - 6) Hand brakes applied and wooden or other appropriate blocking device designed for that purpose placed under front/rear of proper wheel.
 - 7) Isolation switch must be placed in "isolation," or "start" position
 - 8) Windows must be closed and latched.
 - 9) Cab doors must be shut and locked.

- b. Steam
 - 1) Throttle closed and locked.
 - 2) Johnson bar or reverse lever centered.
 - 3) Independent brake fully applied.
 - 4) Automatic brake valve handle in "running" or "holding" position.
 - 5) Hand brake applied, if applicable, and blocking or other appropriate blocking device designed for that purpose placed under front and rear sides of the main driver.
 - 6) Cylinder cocks open.
 - 7) Steam chest relief valve (House valve) open.
 - 8) Blow down valve locked.

12. ENGINE STANDING ATTENDED

When an engine is standing attended, the reverse lever must be centered and the independent brake fully applied.

13. HAND BRAKES

Engine must not be moved with hand brakes applied.

14. TRACTION MOTORS

To prevent burning of traction motors and other electrical equipment damage to Diesel engines, power must not be used to hold train while standing on grade.

15. LOCOMOTIVE BLOW DOWN PROCEDURES

a. Before First trip

- 1) The Engineer and Fireman shall assure each other they have a clear understanding of the work to be done during the blow down, including the hand signals and verbal communication to be used to accomplish the task.
- 2) The verbal instructions shall be words or a phrase that cannot be mistaken for the sounds in words such as "Go," or "No" or "Blow."

b. When doing a Blow-Down

- 1) To begin, there should be a minimum of three inches of water in the sight glass before opening the valve.
- 2) The Engineer shall look out the Engineer's side of locomotive cab, searching the locality for persons or things that would be in the blow-down dispersal area
- 3) The Fireman shall take a position at the blow-down valve control handle, but shall not touch the handle.
- 4) If the dispersal area is clear, the Engineer shall give a "thumbs up" hand signal and give the agreed-upon verbal words or phrase to open the blow-down valve.
- 5) The Fireman shall repeat the hand signal and agreed-upon words or phrase used by the Engineer, as described above.
- 6) The Fireman shall then grasp the handle and open the blow-down valve. It should be held open for about three seconds.
- 7) This process of preparation and exchange of signals and valve opening should be repeated until the desired amount of water has been discharged.
- 8) If possible, the blow-down should be repeated a second time. Opening and closing the blow-down valve gives minerals and solids in the water a chance to collect around the valve between openings.
- 9) Once the desired amount of water has been discharged, the

Engineer should observe the discharge pipe, to ensure the valve has seated and no steam or water is escaping.

End of Circular—8

Richard N. Noonan

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