

**Los Angeles
Live Steamers
Railroad Museum
Safety and
Operating Rules**



2013 Edition

SAFETY FIRST

Preface

The purpose of these rules is to help members, guests and visitors safely enjoy our hobby while at the Museum. While most of these rules relate to operation of trains hauling the general public during Museum-sanctioned events and meets, many rules relate to operating trains at any time. All members are responsible for maintaining and safely operating at the Museum.

It is the duty and responsibility of each member of the Museum to know and abide by these rules in accordance with Article VII of the Bylaws, which states:

Any person participating in any event whatsoever at the Corporate Facility shall be considered as acting with full cognizance of the applicable portions of these Bylaws and the Safety Rules and posted Regulations of the Corporation and therefore shall be bound to abide by them.

The specific enforcement of these rules is the responsibility of the Museum Safety Committee and the Board of Directors. Any person may be removed from a train or the Facility, or the use of equipment within the Facility may be restricted, if necessary, to enforce these rules and/or to maintain safety. The Museum Safety Committee may appoint assistants to fulfill its duties.

This 2013 version of the Safety and Operating Rules includes all revisions and updates since the 2003 revision. Minor clean up changes were made in 2020.

These rules are in addition to the Museum's written Policies and Procedures, Safety Program and other publications.

Safety and Operating Rules

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Definitions

The following definitions are used throughout this booklet:

“**Museum**” refers to the Los Angeles Live Steamers Railroad Museum.

“**Facility**” means the Museum area within the fences.

“**General public**” or “**Public**” means people who are not under the general supervision of a member.

“**Guests**” means people who have been invited to a meet or special event.

“**P&P**” means the Museum’s Policies and Procedures.

“**Level I**” means the Museum’s operations during the hours when the general public is being hauled (this includes Sunday operations and special events sponsored by the Museum).

1. Operations

1.1 General

101. No unsafe activity, whether or not expressly prohibited by these rules, shall be permitted at the Museum.
102. Use of the Facility is subject to Museum rules and City of Los Angeles ordinances and Department of Recreation and Parks rules.
103. Only qualified engineers may operate locomotives at any time.
104. Visiting engineers, conductors, and their guests must observe all rules. Copies of these rules shall be made available to visiting operating engineers and conductors.
105. Locomotives and other equipment shall be unloaded and loaded only at facilities provided for such unloading and loading. All vehicles must be removed from the unloading and loading area as soon as possible after unloading and loading.
106. Any steam locomotive needing water at Sutchville Station shall use the station siding and not the main line.
107. Locomotives and cars on sidings must be clear of the switch fouling point when stopped.
108. Trains must take proper precautions against traffic before entering the main line from any siding.
109. All major servicing of locomotives, including oiling, refueling, and taking water must be done off the main line. This rule includes locomotives on passenger trains hauling the general public (see P&P A105). Solid-fuel locomotives are an exception in that they may add fuel to the firebox from the tender.
110. At no time may any passenger be allowed to board or get off a moving train.

111. Photographers and persons with sound recording equipment may obtain permission to photograph or record moving trains under certain conditions.
112. No one under the influence of alcohol, narcotics, or drugs of any kind shall be allowed to ride on any train.
113. During periods of low visibility or after sunset, all trains shall have (i) a lighted headlight (white) able to illuminate the track ahead, indicating the front of the locomotive, and (ii) a red marker light on the last car indicating the rear of the train. Conductors shall have a light (lantern or flashlight) suitable for giving hand signals during these periods. Such lights shall be visible for a distance of at least 150 feet.

1.2 Speed Limits

114. All locomotives must be run at a speed that is safe under current operating conditions and be under complete control at all times.
115. No locomotive shall be operated at excessive speed, and shall not be operated at a speed greater than any speed from which the locomotive and its train can be slowed and stopped within a reasonable distance, depending on traffic, track conditions, visibility, and weight of the train.
116. Locomotives are to operate at a reduced speed in congested areas and in areas with close clearances, such as yards, stations.
117. Subject to foregoing, basic speed limits are as follows:
 - 7-1/2", 4-3/4" and 3-1/2" gauges without public – 8 mph maximum.
 - 7-1/2" gauge with general public passengers– 6 mph maximum.

1.3 Special Rules For Public Rides, Museum-Sanctioned Events and Meets

For additional rules applicable during Sunday public hauling, see Section 4—Special Rules and Duties During Times of Public Hauling

118. During public hauling, Museum-sanctioned events and meets, trains and crews hauling passengers must:
 - A. Operate with qualified engineers and conductors.
 - B. Use only Level I certified equipment that meets or exceeds the Level I requirements.
 - C. Use only Level I certified 7-1/2” gauge cars.
 - D. Have a functioning radio and be in constant communication with the Station Master, Safety Coordinator and other members of the train crew.
119. Subject to ADA regulations and other applicable laws, the engineer is the final authority as to who may or may not ride on his or her train, including the train crew.
120. During public hauling, Museum-sanctioned events and meets passengers must obey the rules set forth in Rule 407.

1.4 Stopping and Reversing on Mainline

121. Any locomotive about to back up must give the correct signal (*see Section 1.5*). The engineer shall look to the rear for clearance or obstructions and receive the correct signal from the conductor. All locomotives backing up shall run at a reduced speed.
122. A locomotive approaching a stopped train on the same track must come to a complete stop no less than 50 feet from the stopped

train. The stopped train may then be approached slowly with caution.

123. Except in an emergency, no train shall stop on any bridge, crossing, switch, or main line track except where signals require.
124. A train stopped on the main line must call out the conductor to protect the rear with a red flag or light that may be clearly seen by a following the engineer for a distance of at least 150 feet.
125. Trains shall be stopped immediately when any hazard to the passengers or equipment is detected.
126. Engineers and conductors are equally responsible for the proper alignment of switches (turnouts). All main line manual switches must be returned to their normal position as soon as a train has cleared the fouling point. Normal position is for through main line traffic.

1.5 Whistles and Hand Signals

127. Engineers shall use locomotive whistle or horn signals whenever practical to give, ask for, or acknowledge information about his or her train movement. When double-heading, the lead locomotive will give the whistle or horn signals when possible.
128. Engineers shall not blow the locomotive whistle or horn unnecessarily. The whistle or horn is a signaling device and should only be used as such. The whistle or horn shall not be used at the entrance to or in a tunnel unless necessary for safety.
129. Engine whistle or horn signals: (o indicates a short blast; - indicates a long blast):

Locomotive Signals

- | | |
|-----------------------|---|
| A. o | Apply brakes; stop. |
| B. oo | Answer to any signal not provided for. |
| C. ooo | When standing, back up. |
| D. oooo | Call for signals. |
| E. - - | Release brakes; proceed. |
| F. - - - - | Conductor return to train. |
| G. - ooo | Conductor protect the rear of train. |
| H. - - o - | Approaching public crossing, area of restricted visibility, or train on adjacent track. |
| I. - - - -
- - - | Approaching a station or railroad crossing. |
| J. o o o o
o o o o | Warning to people or animals on the track;
general alarm. |
130. Conductors should use hand signals when practical. If there is more than one conductor in an area using whistles can easily be mistaken, one for another. The use of hand signals makes it

necessary for the engineer to see the signal intended for him or her, eliminating possible error and the danger of mistaking another conductor's whistle for that of his or her own conductor.

131. Hand signals may be given by hand, flag, or light, as follows:

Hand Signals

Stop	Swung arm's length down from the shoulders across the track; any object waved violently on or near the track.
Proceed	Raised and lowered vertically.
Back Up	Swung vertically in a circle across the track.
Reduce Speed	Arms held horizontally with a slight motion of hands.

132. Conductors using communicating signals when necessary to convey a message to the engineer while the train is running. Communicating signals are blown on the conductor's whistle, loud enough for the engineer to hear above the noise of the locomotive.

133. Communicating signals given by the conductor:

Conductor Signals

- | | | |
|----|------|-------------------------------------|
| A. | oo | When standing, proceed. |
| B. | oo | When running, stop. |
| C. | ooo | When standing, back up. |
| D. | ooo | When running, stop at next station. |
| E. | oooo | When running, reduce speed. |
-

134. Color signals, lights, or flags:

Colors for Signals, Lights and Flags

Red	Stop.
Yellow	Proceed with caution; prepare to stop at the next signal.
Green	Proceed.

2. Personal Conduct

201. No one under the influence of alcohol or narcotics shall operate any equipment within the Facility, nor shall any such person be part of the crew of any equipment operating within the Facility.
202. Smoking is not permitted anywhere in the Museum except in designated areas.
203. Refueling of gasoline-powered locomotives shall be done near the fuel storage building using the siding on the north side of the main line track adjacent to the fuel storage building. The locomotives shall be shut off during the fueling operation. Steam locomotives burning diesel fuel may be refueled at the Sutchville Station siding. Propane fired locomotives may have their fuel tanks changed at any convenient siding except at New Sherwood Station.
204. No person under 18 years of age may operate Power Equipment (defined on following page) within the Facility, and the Museum may prohibit any person who is not operating Power Equipment in a safe manner from operating Power Equipment.

“Power Equipment” means and includes, without limitation, powered garden equipment, string trimmers, chain saws, tractors, kitchen stoves and ovens, stationary equipment, lawnmowers and all powered or motorized equipment and tools and includes such equipment whether or not owned by LALS. Such prohibition may be permanent or for a specified period of time and may apply to some or all Power Equipment. The General Superintendent or Board member may make such a determination. Anyone cited by this rule shall be entitled to a hearing before the Board of Directors.

3. Operating Crews

3.1 General

301. The chief concern of all operating personnel shall be the safety of visitors, guests, and members of the Museum, their equipment, and the equipment of the Museum.
302. Subject to these rules, all members are entitled to the same privileges at the Museum and use of the Facility. All members also have equal responsibility for the safety and maintenance of the Facility, Museum equipment, and the observance and enforcement of these rules. Every member is responsible to, and for, every other member. There are no so-called “privileged” members.
303. A committee appointed by the Board of Directors will determine the qualifications of operating personnel by preparing and administering written and/or oral tests and verifying operating skills, abilities and judgment necessary to assure safe operation of a locomotive, subject to approval of the Board of Directors, and consistent with these rules.

304. The Museum may restrict or suspend from duty any operating personnel who consistently and/or willfully violate these Safety and Operating Rules. Anyone cited by this rule shall be entitled to a hearing before the Board of Directors.

3.2 Engineer Rules at All Times

See Section 4.2 for additional rules applicable to engineers during times of public hauling.

305. At all times, Engineers shall:
- A. Be responsible for safe operating condition if using private equipment.
 - B. Be responsible for the safe handling of his or her locomotive and train at all times.
 - C. Cooperate with all other operating personnel.
 - D. Operate locomotive in conformance with the Museum safety rules at all times.
 - E. Return all Museum equipment to proper storage space at the end of run (unless another engineer will run the equipment).
 - F. Complete any operating logs for Museum equipment.
 - G. When the train is brought into station, set train brakes and if the engineer leaves the operator's position, shuts off any gasoline or electric engine unless a redundant locking device is installed.

3.3 Rules Applicable to Children

Children are persons under 18 years of age. Below is a chart summarizing the rules regarding age requirements for various activities:

Minimum Ages and Qualifications of Children (under 18) for Museum Activities		
Activity	Age	
	Under 16	16-18
Engineer (Rule 307)		
Pulling public	Not permitted (Rule 307)	Qualified engineer permitted (Rule 307)
Pulling private train during public hauling and events	Qualified engineer permitted (Rule 307)	Qualified engineer permitted (Rule 307)
During meets and other times	Permitted if accompanied by responsible adult who signed liability forms.	Permitted
Conductor pulling public (Rule 308)	At least 14 and a qualified conductor	
Riding (Rule 309)	At least 14 or accompanied by adult	
Operating Power Tools (Rule 204)	Prohibited	

The minimums shown in the chart above are subject to common sense. Activities of individual children may be further restricted or prohibited depending on actions and abilities of such children.

306. **Adult Supervision.** All children on Museum property must at all times be under the supervision of an adult who is present (a “responsible adult”). Such adult must be a parent or legal guardian, or a person who has filed the appropriate consent and notice forms.
307. **As Engineers.** Children may not pull the public. However, children 16 and over who are qualified engineers may operate private trains during public running times. Children of any age may operate equipment during meets and other nonpublic hauling times without being a qualified engineer provided that a child under 16 must always be accompanied by a responsible adult who (i) is a qualified engineer and in the closest seat behind the child engineer on the train and (ii) assumes full responsibility for the child’s actions pursuant to the appropriate consent and notice forms.
308. **As Conductors.** Children 14 or over who are qualified conductors may be a conductor on trains hauling public or on private trains during runs. Children under 14 may not be a conductor on any train where passengers are being carried. Children of any age may conduct during meets and other times.
309. **As Riders.** During public running times, children under 14 years riding trains must be accompanied by a responsible adult or a child who is 14 or older who is supervising such children with the consent of a responsible adult. Children of any age may ride trains during meets and other times.

4. Special Rules and Duties During Times of Public Hauling

These rules apply to all trains whenever the public is being hauled—whether or not a train is itself hauling the public. See also Section 1.3—Special Rules For Public Rides

4.1 Public Hauling Operation

401. Sunday operating hours for hauling the general public are from 11:00 am to 3:00 pm. At 3:00 pm the general public gate is to be closed by the New Sherwood Station personnel. When closing the gate, allow entrance to any members of public who are about to enter. Public hauling will continue until the station is empty.
402. Engineers may, if they wish, begin hauling the general public on Sunday before 11:00 a.m. if the Safety Coordinator or other person has completed all pre-run inspections, the Station Master is present and ready to load passengers, the recorded safety announcement is operating (or is being spoken) and there are no unqualified engineers operating, and no test equipment running.
403. No equipment may be tested on the main line during public hauling.
404. During public hauling, the general public must be loaded and unloaded only at New Sherwood Station. The two New Sherwood Station sidings are designated ST1 (outer) and ST2 (inner), are for use of general public hauling trains only. Steam locomotives shall be given a preference on ST2. Steam locomotives may take on water and perform minor lubrication only on ST2. No refueling is allowed, other than solid fueled locomotives that are capable of transferring fuel from the tender to the firebox.

405. Public hauling has priority during public hauling hours. A train on the mainline not hauling the public when approaching the junction of the New Sherwood Station tracks and the mainline shall yield to trains hauling the public leaving, or about to leave, the station, including stopping if necessary.
406. Trains not hauling the public shall maintain a speed fast enough so as not to impede trains following that are hauling the public, but not exceeding the 6-mph public hauling speed limit. Private trains are encouraged to pull into sidings if necessary, to allow trains hauling the public to pass.
407. A safety message shall be delivered to train riders. *Also see Rule 414F.* The message shall contain such items as the Board from time to time determines and shall include at least the following:
- A. Remain seated facing forward at all times while the train is in motion until it returns to the station.
 - B. Do not lean out or reach for anything along the right-of-way while the train is in motion.
 - C. While the train is moving, keep hands and feet inside the train car at all times.
 - D. Do not yell or scream while riding on the train except in an emergency.
 - E. Although photography is permitted, people should refrain from leaning, reaching or otherwise creating a hazard while photographing.
 - F. Be sure your cell phones and carry-ons are secure.
 - G. Do not stand up while on the train.
 - H. If you drop something, do not reach for it, raise your hand, and we will stop the train and retrieve it for you.

- I. Anyone disobeying these rules may be put off the train and/or out of the Facility.
408. During public hauling, the general public must be loaded and unloaded only at New Sherwood Station. The two New Sherwood Station sidings are designated ST1 (outer) and ST2 (inner), are for use of general public hauling trains only. Steam locomotives shall be given a preference on ST2. Steam locomotives may take on water and perform minor lubrication only on ST2. No refueling is allowed, other than solid fueled locomotives that are capable of transferring fuel from the tender to the firebox.
409. During public hauling, trains shall stop at the designated stopping position at New Sherwood Station to discharge passengers. A train shall then promptly pull forward as far as possible without fouling signals or, except when required to accommodate trains behind it or to not impede passenger flow, blocking the pedestrian crossing to the bathrooms (westbound). For steam locomotives, this location may also be determined by most forward access to water.
410. A train may be parked in New Sherwood Station prior to starting public hauling if such train and crew are ready to immediately begin hauling the public upon commencement of public riding. Trains not ready and trains whose crew is on lunch or other break may park in the station only with the consent of the Station Master, and then only if it will not interfere with operations.

4.2 Engineers During Public Hauling

See Section 3.2 for additional rules applicable to engineers at all times.

411. **Qualifications.** During public hauling times, an engineer must have passed Level 1 safety test and qualifications for the type of

locomotive (steam, gasoline, etc.) operated. Engineers must have a valid driver's license.

412. **Duties.** During public hauling times, engineers shall:
- A. Have a radio and continually listen to designated frequency.
 - B. Before beginning hauling the public that day, run the train around the mainline track.
 - C. Sign the Public Hauling Run Log Sheet during public hauling or Museum sanctioned events.
 - D. When loading process is completed, the conductor and the engineer must exchange whistle signals for authorization to proceed. The conductor or the engineer may initiate this signal sequence.
 - E. Observe all rules and signals given by the conductors and Station Master and comply with these rules.
 - F. Upon returning to the station, stop his or her train to allow unloading at the assigned exit gate.
 - G. Upon completion of unloading, pull his or train up to the designated gate, or as directed by the Station Master.
 - H. When loading process completed, signal the conductor for authorization to proceed, and upon receipt of the conductor's signal, the engineer can proceed. Alternatively, the conductor may signal the engineer to proceed, which the engineer confirms, and the engineer can proceed.

4.3 Conductors

413. **Qualifications.** For pulling public or operating during public hauling times, a conductor must have passed Level 1 safety test. Must be acceptable to the engineer for whom operating.
414. **Duties.** Conductors shall:
- A. Have a whistle (police type preferred) and a red flag or light in possession at all times.
 - B. Have a radio and continually listen to designated frequency.
 - C. Flag or otherwise protect the rear of the train whenever the train stops on the main line.
 - D. Direct the loading and unloading of passengers on train. No more than three adults shall ride each bench seat car. Passengers should be as evenly distributed as possible on each car.
 - E. Politely refuse passage to persons who do not meet age and size requirements as riders or who are disruptive. or unwilling or unable to follow safety rules.
 - F. If the recorded public message is functioning, there is no need for crew members to repeat the message, except when a crew member observes member of the public violating or potentially violating a safety rule.
 - G. Ensure that all passengers are safely seated and following safety rules, including that arms are in, legs are within foot guards and passenger belongings are safely secure.
 - H. Observe passengers during operation and enforce all passenger safety rules while the train is in motion.

- I. Signal the engineer to stop the train when a passenger is breaking a safety rule, and approach and politely request the passenger to observe such safety rule.
 - J. Realign all manual switches (turnouts) for the main line after use of such switches by his or her train.
 - K. Prevent any passengers from throwing any trash, garbage, or other refuse from the train along the right-of-way.
 - L. Assist the engineer when necessary and call for help when necessary to enforce any safety rules.
 - M. On returning to the station, open exit gate unless others are doing so, and guide passengers to exit gate.
 - N. Whenever train stops and is ready to proceed, either initiate or respond to the engineer's whistle. Ensure that passengers are safely seated.
415. When trains are required to return to the station during an emergency, conductors shall:
- A. Perform Station Master duties as and if required.
 - B. Remain at the station to help carry out instructions as issued by the Station Master or the Safety Coordinator.
 - C. Assist engineers operating a locomotive during a defined system malfunction.
 - D. Return train and passengers to station if such return can be accomplished safely. The decision whether or not trains can return safely will be made by the Safety Coordinator.
 - E. If the safe return of train and passengers to station is not judged possible, stop the train and "emergency secure" it in a safe location and evacuate passengers to the station via emergency Facility exits and evacuation route defined for the zone.

4.4 Station Masters

416. A Station Master shall be specifically designated any time the public is allowed in the Museum.
417. **Qualifications.** The Station Master must be qualified per procedures defined by the Museum. There may be Assistant Station Masters. Station Masters must have passed the Level I test.
418. **Duties:** Station Masters shall:
- A. Open the main public gate at approximately 10:45 am.
 - B. Ensure that passenger safety rules are delivered, either via the recorded public message or by individual crew members during Sunday public hauling. If the recorded public message is functioning, there is no need for crew members to repeat the message, except when a crew member observes member of the public violating or potentially violating a safety rule.
 - C. Verify that all passengers meet or exceed 34 inches in height and do not weight more than 350 lbs. (The latter by observation). There are no exceptions.
 - D. Operate the entrance and exit gates by opening and closing them as needed.
 - E. Control the general public access to the trains and allow the correct number of passengers to board each train in coordination with such train's conductor.
 - F. Load passengers only at the designated gate and allow passengers to exist only at the designated gate(s).
 - G. Check that all engineers have signed the appropriate Public Hauling Run Log Sheet regarding inspection of the equipment they are operating.

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- H. Verify that all engineers and conductors are on the authorized list.
- I. At all times maintain a friendly, courteous and helpful demeanor with the public—make their experience here as enjoyable as possible.
- J. If a member of public is causing a disturbance and cannot be controlled, call the Safety Coordinator who shall, as necessary take or direct further steps.
- K. If the Station Master must leave for any reason, an authorized substitute Station Master must take over or passenger loading must be discontinued.
- L. If a derail or other stoppage occurs, discontinue loading passengers and stop any train already loaded from leaving the station. Do not open the station until the Safety Coordinator gives permission.
- M. Upon notification from the Safety Coordinator that the Museum must close, closes the public gate when the public holding area is empty.
- N. If the Museum will be closed, unload any passengers and move empty trains out so incoming trains can unload.
- O. In the event a member of the public shows interest in joining the Museum, provide a Membership Application and attempt to get another member to discuss the membership with the person.
- P. Close the main public gate at 3:00 pm.
- Q. Verify the proper operation of the station radio on the designated operational frequency.

4.5 Safety Coordinators

419. A Safety Coordinator shall be specifically designated any time the public is allowed in the Museum.
420. A Safety Coordinator cannot serve simultaneously as an engineer, conductor or steam plant operator. However, a Safety Coordinator may concurrently serve as Station Master for limited period if no other person available.
421. **Qualifications.** A Safety Coordinator must have passed the Safety Coordinator test and Level 1 safety test and otherwise be qualified in accordance with the procedures outlined herein.
422. **Duties:** The Safety Coordinator is the primary safety authority for the day. The Safety Coordinator shall:
- A. Maintain a presence near the Site Management Center, be prepared to receive notification of an impending or actual disaster, and make the decision to declare a disaster at any time the general public is in the Museum.
 - B. Provide any required coordination of relief or emergency activities with the County's Emergency Operation Center (EOC) and any other public agencies that may be onsite.
 - C. Notify all engineers, operating a locomotive, that a disaster has been declared. This will be attempted using handheld radios.
 - D. Notify all other people in the Museum that a disaster has been declared. This will be attempted using the Facility PA system.
 - E. Order the closure and/or evacuation of the facilities using the Facility public address system.
 - F. Obtain and/or direct medical attention for injured.

- G. Be familiar with the Museum's *Emergency Incident/Accident Response* plan.
- H. Be responsible for the direction and supervision of the Facility during an accident or other emergency.
- I. Must carry a radio at all times tuned to the designated operational frequency.
- J. Must implement and coordinate the Disaster Preparedness Plan and the Incident/Accident Response Plan.
- K. In the event of an accident or derailment, determine what level of response is required.
- L. Maintain the Accident Kit and ensure it is complete prior to public operations.
- M. Ensure that Accident Kit is complete prior to each public operation.

5. Equipment Requirements

5.1 Locomotives

501. All locomotives shall have means of braking. Hydraulic drive diesels are considered to have brakes if the train can be braked by putting the hydraulic system in reverse. Electric locomotives with dynamic braking also meet this requirement.
502. All locomotives or engineers' riding cars shall have braking devices that can be activated easily and quickly by the engineer. Such braking devices shall have the power to slow and stop the entire train within reasonable distance, depending on the weight and speed of the train.
503. All locomotives shall be equipped with a whistle, horn, or sounding device for sounding locomotive signals.
504. All locomotives operated during periods of low visibility or after sunset shall be equipped with a working headlight that may be seen clearly at a distance of at least 150 feet, and sufficient lighting in the locomotive cab to read gauges and see controls clearly.
505. All trains running during periods of low visibility or after sunset shall be equipped with a red marker light or lights, on the rear of the last car and visible for at least 150 feet.
506. All equipment shall be built to clear all trackside clearances as shown in these Safety and Operating Rules. Any equipment on which the engineer, conductor, or passengers ride with their feet outside the equipment shall have foot boards or bars to hold the feet of all riders in a position to clear all trackside objects, such as switch stands, signals, mileposts, etc.

5.2 Steam Locomotives and Other Steam-Operated Equipment

507. All steam boilers on equipment built after January 1, 1970 shall have at least two safety valves set to operate within five (5) pounds per square inch (PSI) of each other.
508. Steam boilers shall have an annual hydrostatic test. Such tests shall prove the ability of the boiler to withstand hydrostatic pressure at least fifty percent (50%) above normal working pressure of the boiler. Such test shall further prove the ability of each safety valve to work satisfactorily at its own set pressure. Steam boiler test certificates issued by other recognized live steam clubs within the past twelve months shall be honored by the Museum as valid.
509. Steam boilers shall have a means to shut off the heat immediately in case of emergency. Oil fired (diesel, heating oil, kerosene, etc.) and LP gas fired boilers shall have a valve or other means to stop the flow of fuel to the burner. Solid fuel (coal, charcoal, nut shells, fruit pits, etc.) fired boilers shall have a means of dumping the fire out of the firebox or smothering the fire with steam, water, CO₂, etc.
510. Steam boilers shall have the water level gauge located with the bottom of the gauge high enough above the crown sheet level to show ample water covering the crown sheet.
511. All steam locomotives shall have at least two methods of putting water into the boiler. At least one method of putting the water into the boiler shall be operable while the locomotive is under steam but not in motion.
512. Before leaving the steaming area, operating steam locomotives shall have steam brought up to operating pressure, have safety

valves and pressure gauges checked and operating correctly, have water gauges and try cocks blow down, have feed water devices checked and in working order, have whistle tested and operating properly, and have brakes checked and operating.

513. Steam boilers burning solid fuel shall have an ash pan constructed and installed to prevent the dropping of burning ashes or fuel along the right-of-way while the locomotive is in operation.
514. Steam locomotives shall be operated so as to prevent anyone from being burned or having their clothing soiled by steam from cylinder cocks, exhaust, blow-down valves, whistles, or other steam emission.
515. All locomotive steam boilers shall be equipped with plugs of 1/8" NPT giving access to the rear cross water leg of the firebox to permit inspection or cleaning. Locomotives with the firebox inside the main frame may use one centrally located 1/4" NPT plug. This rule is to be effective on boilers built or those receiving major repairs (i.e., replacement of flues or sheets, replacement of firebox, etc.) after December 1983.

5.3 Other Locomotives and Motorized Equipment.

516. Locomotives, speeders, etc. with internal combustion engines, where the top of the fuel tank is level with or above the bottom of the carburetor or engine fuel pump, shall have a fuel shutoff valve located in line between the fuel tank and carburetor or fuel pump. Such valve shall be able to be closed with the exterior body in its normal position.
517. On locomotives with internal combustion engines, only gravity feed or an auxiliary electric fuel pump may be used for fuel feed

in addition to any pump already built into the engine by the locomotive manufacturer. Pressurized fuel tanks are not permitted.

5.4 Riding Cars and Seats

518. Seats on any car (Museum or private) used to haul any person other than a member of the owner's family should meet the requirements herein.
519. Car seats may be made of wood or other material.
520. Wooden seats should be no more than 10" above the car floor and no more than 10" wide. Wider wooden seats may use guardrail bars to limit seating space to 10".
521. Tractor seats, which are molded to the body contour, may be installed with the seat bottom no more than 1/8" above the sides of a gondola. The top front edge of the seat should be no more than 10" above the floor.
522. Other cushion type seats must meet the criteria for wooden seats.
523. All seats should be securely restrained. This may be accomplished in any of the following ways:
 - A. On a gondola, fasten all seats to a common frame that fits within the gondola body or bolt the individual seats to the car body.
 - B. On a flat car, the individual seats or seat frame should be attached with bolts or screws.
524. Car seats, which are 2" or more below car sides and no more than 10" above the floor, can span the entire car width.
525. Narrow gauge cars with a continuous longitudinal seat should not exceed a seat height of 10" above the floor.

5.5 Truck and Wheel Requirements

526. Wheel dimensions (gauge, back-to-back, tread width, flange depth and thickness) must conform to the Museum standards to operate on the Museum track. The Museum Safety Committee or other Museum members may demand a check of any equipment before the equipment is allowed on the Museum track.
527. Truck Requirements:
- A. Springs should not compress more than 1/8" when a car is loaded to 680 lbs.
 - B. Each wheel of any car or locomotive truck should lift 1/4" off the rail without raising the other wheel.
 - C. When a truck side bearing is pressed against a car side bearing, the gap between the opposite side bearings should be no less than 1/32" and no greater than 3/32" (kingpin seats are in contact).
 - D. When one side of a car is lifted up from a truck, and the opposite side bearings in contact, the distance between side bearings on the raised side should be a minimum of 1/2" (kingpin seats are not in contact).
 - E. Trucks should rotate approximately 10 degrees each way from the centerline of the car.
 - F. Car and truck side bearings should be properly lubricated and in good operating condition. Roller or skid surfaces should be able to contact each other throughout the minimum allowable rotation of the truck, as defined in item E above.
528. Cars and truck bolsters shall be constructed to provide three- or four-point suspension for the car body. Side bearings clearance shall allow trucks to swivel freely and provide stability for the car

body with maximum load shifting. Kingpins for un-equalized trucks shall be loose enough to allow equalizing with respect to the car body.

5.6 Couplers and Chains

529. All equipment shall have couplers on both ends unless the prototype did not have them.
530. Couplers or drawbars between a locomotive and the engineer's riding car, or between locomotive and fuel car, or between any combination of locomotive, riding car, and fuel car, shall be a draw-bar with lock-pin type, or equivalent, that cannot become accidentally uncoupled, nor disconnect and fuel lines in case of derailment.
531. Coupler height should be no less than 4-5/16" from the center of the coupler to the top of the rail when the car is unloaded; it shall be no more than 4-7/16".
532. Couplers should be able to rotate sideways approximately 10 degrees each way from centerline of the car.
533. All railroad cars without air brakes (Museum or private) in trains used to haul the general public shall be interconnected by safety chains except trains using drawbars. Safety chains should be used on other trains not equipped with air brakes, but installation is not mandatory.

6. Signals

601. Signals must be obeyed when operating on signaled track.
602. On track not signaled, trains must keep a minimum distance of 100 feet apart while running. After making a complete stop, a train may approach to within one car length of the train ahead, if that train is stopped.
603. If the mast of a signal showing red exhibits the letter “A” (for absolute), a train must NOT proceed until the light changes from red unless given permission by the Safety Coordinator or flag or signal person.
604. Signals operate on a block system and show (i) what the conditions are in the next two blocks or (ii) if a switch is set to a diverging route ahead. The colors mean:

RED: means a train is in the next block or there is another obstruction ahead. **Stop.** Subject to rule 603, and unless the Safety Coordinator states otherwise, if a signal remains red, you may proceed slowly enough so you can stop within your line of sight.

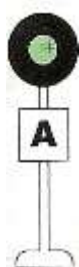
YELLOW: means the block following the next block is occupied or a switch in the next block is set to a diverging route ahead. **Proceed with caution; be prepared to stop.**

GREEN: means the next block is clear and any switch in the next block is set for mainline. **Proceed.**

DARK: should be interpreted as a red signal. See above.

The meaning of the different types of color aspects of signals and blade positions on semaphore's are further described on following pages:

Single-Headed Searchlight Signals



Semaphore Signals



**Red/
Blade Down**

STOP. See rules
603 and 604.

**Yellow/Blade
on Diagonal**

Proceed with
caution. Be
prepared to stop

**Green/
Blade Up**

Clear track ahead

Double-Headed Searchlight Signals



Next switch set for the diverging route. Proceed with caution.



Next switch set for the diverging route, which is clear.



Next switch set for diverging route, and a train is in the next block.



STOP The next switch is thrown to the diverging route which is occupied.

Triple-Headed Signals



Switches ahead are set for through route.



First switch ahead is set to diverging route.



First *and* second switch ahead are set to diverging routes.

When all heads are RED with an “A” stop, do not move until the bottom light is YELLOW, or GREEN.

Yard Dwarf Signals



Switch is set for through route.



DO NOT enter or exit the switch on the RED indication, or the train will derail and also damage the switch.

Webb Yard Entrance (from east)



Switch is aligned for through tracks on left.



Switch is aligned for Webb Yard.

Pennsylvania RR Style Signals



LIGHTS IN HORIZONTAL POSITION

Stop. *See rules
603 and 604.*



LIGHTS IN DIAGONAL POSITION

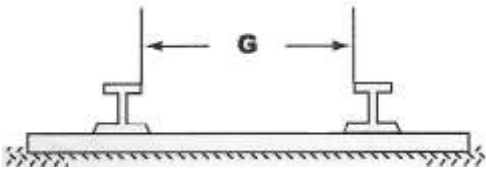
Proceed with
caution. Be
prepared to stop



LIGHTS IN VERTICAL POSITION

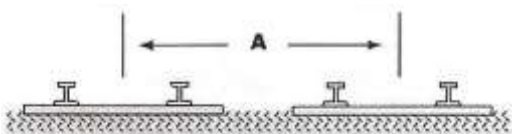
Clear track ahead

Track Gauge



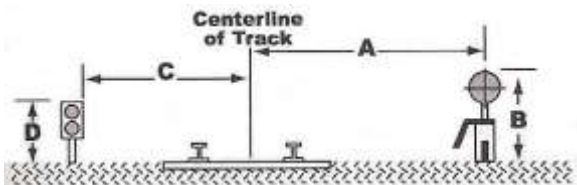
Scale	G straight	G curve
1"	4.750"	4.750"
1 ½"	7.562"	7.562"

Track Spacing



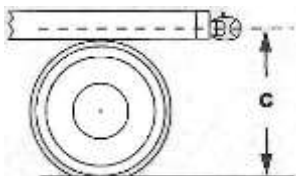
1"	Mainline	Minimum	36"
	Yard	Minimum	24"
1 ½"	Mainline	Normal	48"
		Minimum	42"
	Yard	Minimum	36"

Track Side Clearances



Scale	A _{min}	B	C	D
1"	17.50"	10.00"	9.50"	2.63"
1 ½"	24.00"	10.00"	11.50"	4.00"

Coupler Height



Scale	Coupler Centerline
¾"	2.19" ±.030"
1"	2.89" ±.040"
1 ½"	4.38" ±.060"

Switch Dimensions

Scale	P min	C ₁ min	C ₂ , C ₅		C ₃	
1 "	.625	.156	.218	+0.020 -.000	.218	+0.020 -.000
1 ½"	.750	.188	.250	+0.020 -.000	.250	+0.030 -.000

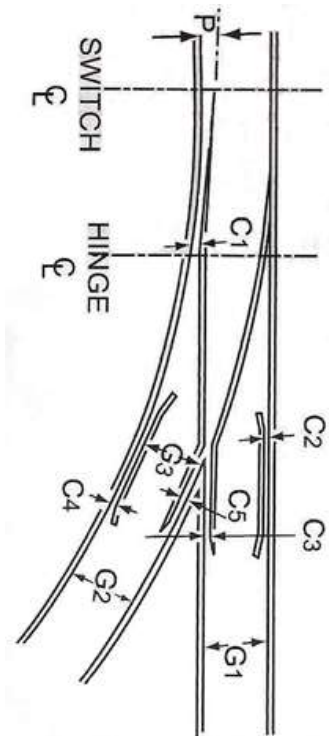
Scale	C ₄ * min	G ₁	G ₂		G ₃	
1 "	.218	4.750	4.750	+0.020 -.000	4.532	+0.020 -.000
1 ½"	.250	7.562	7.562	+0.020 -.000	7.312	+0.020 -.000

Notes

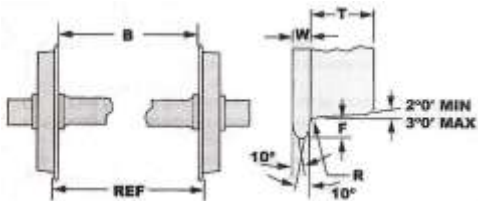
Dimensions in inches

- P Gap between stock rail inside surface to outside of switch points at STA 0.
- C₁ Gap between open switch point outer edge and curved stock rail at the kink point (kink point station varies with curve radius)
- C₂ Gap between outer surface of guard rail and tangent stock rail
- C₃ Gap between wing rail inside edge and fog edge on tangent
- C₄* Gap between outside surface of guard rail on switch and stock rail inside surface
- C₅ Gap between frog side and wing rail on turnout
- G₁ Gauge dimension of tangent track
- G₂ Gauge dimension of switch track (depends on switch radius)
- G₃ CRITICAL – Gauge dimension between frog and outside face of switch guard rail
- * Varies with change in G₂

Switch Dimensions



Axle Loading



Scale	Lbs./Axle max
3/4"	200
1"	200
1 1/2"	42

Wheel Dimensions

(Inches)

Scale	G ref	B	T min	W max	F	R
3/4"	3.47 \pm .020 -.000	3.28 \pm .020 -.000	.34	.094	.080 +.014	.04 \pm .010
1"	4.69 \pm .020 -.000	4.44 \pm .020 -.000	.38	.125	.140 +.016	.06 \pm .010
1 1/2"	7.44 \pm .020 -.000	7.12 \pm .020 -.000	.59	.156	.187 max	.094 \pm .010

Emergency Phone Numbers

When calling, state you are calling from:

Los Angeles Live Steamers Railroad Museum –
5202 Zoo Dr. in Griffith Park
immediately east of Travel Town

Our phone: (323) 661-8958 (monitor during emergency)

Fire or Emergency with injuries – 911

- ***(Preferred)*** Call 911 from landline– routed to LAFD with automatic location ID
- Can call 911 from cell phone *(not preferred)*– routed to CHP–*no* automatic location ID

Park Rangers – (323) 644-6661

**Los Angeles General Services Police
(Griffith Park) – (323) 913-7390**

Los Angeles Police Department – (877) 275-5273

California Highway Patrol – (323) 906-3434

Los Angeles Fire Department – (213) 485-6180

Providence St. Joseph Medical Center – (818) 843-5111
501 S. Buena Vista St., Burbank, CA 91505

If there is an incident, stop all trains and follow the LALS Safety Program. Follow Safety Coordinator's instructions.