

PORTOLA RAILROAD MUSEUM



GENERAL CODE OF OPERATING RULES

GENERAL NOTICE

Safety is of the first importance in the discharge of duty.

Obedience to the rules is essential to safety and is required.

To enter or remain in the service is an assurance of willingness to obey the rules. The service demands the faithful, intelligent and courteous discharge of duty.

The utmost care and diligence must be used in the maintenance and handling of museum equipment, due to its unique nature, age and historical significance.

To obtain promotion, ability must be shown for greater responsibility.

Cooperation is essential to success. Cooperation between members is required for proper functioning under the rules and instructions.

Suggestions from members intended to promote safety, economy, or improved service, are solicited and will receive consideration.

The rules contained herein are issued for the purpose of insuring greater protection to lives of members, the public, the property of the museum and its traffic.

The public judges the museum by the appearance and conduct of its members, quality of service, and condition of the property. Courteous, considerate treatment of visitors is of the first importance in retaining and increasing our volume of patronage, and governs the extent of opportunity for advancement to members.

GENERAL RULES

A. Members whose duties are prescribed by these rules must provide themselves with a copy and have such copy available for reference when needed.

B. Members must be conversant with and obey the rules and instructions. If in doubt as to their meaning, they must apply to proper au-

thority for explanation. If immediate action is necessary, the safe course must always be taken.

C. Members designated by proper authority must pass the required examinations before entering service and as prescribed for promotion. Designated members must attend rules classes annually, or as required by the proper authority. When reporting for rules classes, they must present their copy of the operating rules for inspection.

D. Persons employed in any train or mechanical service are subject to the rules and special instructions.

E. Members must render every assistance in their power in carrying out the rules and special instructions. They must report promptly to the proper official any violation thereof or any misconduct or negligence affecting the interest of the museum.

F. Accidents, defects in tracks, bridges, tunnels or signals or any unusual condition which may affect the movement of trains must be protected at the location and train dispatcher informed of the condition promptly using first available means of communication.

G. The use of alcoholic beverages, or other intoxicants, narcotics or similar substances by members subject to duty or their possession or use while on duty is prohibited. Members shall not report for duty under the influence of any drug, medication, or other substances, including those prescribed by a physician or dentist, that will in any way affect their alertness, coordination, response, safety or ability to perform their work properly, nor shall such drug, medication or other substance be used by members while on duty.

H. Smoking is prohibited on museum property where the danger of fire therefrom exists and where designated by proper authority.

J. Members on duty must be neat and clean in their appearance. Their hair must be worn so that eyes are not covered and no longer than will allow for the safe conduct of their duties. Members using cutting or welding torches must have beards cut short or well covered. Persons required to use respirators must not wear beards.

They must wear protective clothing or appliances, as prescribed, while on duty.

They must be suitably clothed for the performance of their duties consistent with safety. Suitable footwear around shops, tracks and moving equipment does not include sandals, high heeled boots or shoes and tennis shoes.

Any locker or cabinet furnished will be maintained in a sanitary

manner and free of any fire hazard. Such lockers and cabinets are subject to inspection.

L. Fire or other danger to the museum's property must be reported promptly and members must unite to protect it, taking every precaution to guard against injury and loss or damage from any cause.

M. Members are responsible for their own safety. Constant presence of mind to insure safety to themselves and others is the primary duty of all members and they must exercise care to avoid injury to themselves and others. They must observe the condition of equipment and tools which they use in performing their duties and when found defective, will put them in safe condition, reporting defects to proper authority.

Members are prohibited from getting on roof of cars except when necessary to make repairs.

Members must expect the movements of trains, engines or cars at any time, on any track, in either direction.

Members must not stand on track in front of an approaching engine or car. They must not ride footboard of engine in direction of movement or trailing footboard when engine is pulling cars.

Members must not attempt to get on or off equipment moving at a speed which would endanger their safety.

Members must inform themselves as to the location of structures or obstructions where clearances are close.

Engine room doors must be closed on all locomotives except when in immediate use. Safety chains or guards must be used if provided.

N. Members reporting for duty are expected to be amply rested in order to be physically and mentally fit for the proper and safe performance of their duties.

O. Special instructions or bulletins supercede any rule of the operating rules with which they conflict.

P. Before going on duty a member shall read and understand all special instructions and bulletins in effect at that time.

DEFINITIONS

CONDUCTOR: Road conductor or yard conductor.

DERRAIL: A protective device that guides engines, vehicles or other on-track equipment off the rails.

ENGINE: A locomotive unit propelled by any form of energy or combination of such units operated from a single control, used in train or yard service.

ENGINEMAN: Engineer, fireman(helpers), and hostlers.

FIXED SIGNAL: A signal of fixed location indicating a condition affecting the movement of a train or engine, including but not limited to such signals as switch, train-order, block, interlocking, semaphore, stop signs, yard limit signs, slow signs, or any other means for displaying indications that govern the movement of a train or engine.

FLAGMAN: Any member of whatever designation to whom the term flagman is applicable under the rules governing flag protection.

FLAG PROTECTION: Refer to Rule 99.

FOULING POINT: The location in the vicinity of a switch marking safe passing clearance with another track.

MARKER: A red light or other prescribed signal affixed to rear of equipment being operated as a train.

NOTICES: Written instructions issued by proper authority.

OUTFIT CARS: House cars used by personnel for living or eating quarters; not including MSW cars transporting roadway equipment.

RESTRICTED SPEED: A speed that will permit stopping short of another train, obstruction, stop signal, or switch not properly lined and looking out for broken rail, not exceeding 10 miles per hour.

SWITCH: A device to connect one track diverging from another.

TRACK CAR: A self-propelled vehicle, operating on the rails, with or without trailers or push cars, used for transporting men and/or material to or from a job site or for inspection.

TRAIN: An engine or engines coupled, with or without cars, displaying markers.

TRAINMEN: Conductors and brakemen.

VARIABLE SWITCH: A switch, designated by letter "V", that when trialed through the switch points remain lined in the position to which forced.

YARD: A system of tracks within defined limits provided for the making up of trains, storing of cars and other purposes, over which movements not authorized by timetable or by train order may be made, subject to prescribed signals and rules or special instructions.

SIGNALS

7. Members whose duty may require them to give signals must provide themselves with the proper appliances, keep them in good working order, and ready for immediate use.

7A. Signals must be given and acted upon strictly in accordance with the rules. Trainmen, enginemen and others must keep a constant lookout for signals. Those giving hand, flag or lamp signals must locate themselves so as to be plainly seen. Signals must be given in such a manner that they can be definitely understood.

The utmost care must be exercised by trainmen and enginemen to avoid acting upon signals that are not understood or that may be intended for other trains or engines. Unless trainmen and enginemen are positive that signals given are intended for them, they must not move until proper understanding is assured.

When backing or shoving a train, engine or cars, the disappearance from view of member or light by which signals are given must be construed as a stop signal, unless the way is seen or known to be clear, the movement is directed by radio or controlled by tail-hose.

7B. When radio communication is used to direct movement, distances will be called out in car lengths, such as "ten, nine, eight," etc.. Should continuous contact with member directing movement be lost, the movement must be stopped immediately. Refer to Rule 48.

8. When flags (cloth or metal) are used by day, they must be of the prescribed color. Lights of the prescribed color must be used by night.

8A. Electric lantern may display white lights only except as specifically authorized for signaling purposes.

9. Day signals must be displayed from sunrise to sunset, but when day signals cannot be plainly seen, night signals must be used in addition.

Night signals must be displayed from sunset to sunrise.

10. Color signals

Colors and their indications are prescribed by the applicable rules.

10G. When an unattended red flag or lamp is displayed on or near the track, train or engine must stop before any part of train or engine has passed the red signal.

A signal so displayed will not apply to the track on which a train or engine is running if displayed beyond the first rail of adjoining track.

10J. Speed prescribed must not be exceeded.

11. Use of fusees and torpedoes is prohibited.

13. Any object waved violently by anyone on or near the track is a signal to stop.

14. Whistle must be sounded at all places where required by rule or law, and where necessary as a warning signal.

In case of whistle failure, speed of train must be reduced consistent with safety and bell rung continuously when approaching and passing through station and over grade crossings.

Note: The signals prescribed are illustrated by "O" for short sounds; "-" for longer sounds. The sound of the horn or whistle must be distinct, with intensity and duration proportionate to the distance signal is to be conveyed.

| | SOUND | INDICATION |
|-----|-------|---|
| (A) | O | Apply brakes. Stop. |
| (B) | - - | Proceed. Acknowledgement of signal to release air brakes. |

| | | |
|-----|----------------------------|--|
| (G) | OO | Answer to any signal not otherwise provided for, except stop signal. |
| (H) | OOO | When standing, back up. |
| (J) | OOOO | Call for signals. |
| (L) | - - O - | Approaching crossings at grade, stations or other points where view may be obscured and to warn trackmen or other workmen. |
| (M) | - | Airbrakes applied for test in response to signal to apply brakes. |
| (P) | Succession of short sounds | Alarm for persons or livestock on track. |

TRAIN SIGNALS

17. The headlight will be displayed to the front of every train by day and by night.

17A. By night, when standing or moving about yards, an engine must display a dimmed headlight to the front and rear.

17B. If headlight fails enroute, train must proceed at restricted speed until engine passes through stations or over grade crossings. Whistle must be sounded frequently and bell rung continuously.

17C. Except when approaching and moving over crossings at grade, the headlight must be dimmed at night under the following conditions:

- 1. Approaching and passing front and rear of train or engine standing or moving on adjacent tracks.**
- 2. While standing on or passing through yards where yard engines are working.**

18. Yard engines when moving will display headlight in the direction of movement. The headlight may be extinguished on the end coupled to cars. The headlight will be dimmed approaching and passing other engines, when other engines or trains are passing on adjacent tracks or when circumstances or safety of members is required.

19. A red marker must be displayed to the rear of the train during the hours of operation.

26. As used in Rule 26, the following definitions apply:

"Workmen"- Museum members assigned to inspect, test, repair or service railroad rolling equipment or their components including brake systems. Train and yard crews are excluded, except when assigned to perform such work on railroad rolling equipment that is not part of the train or yard movement they have been called to operate.

"Rolling Equipment"- Engines, railroad cars and one or more engines coupled to one or more cars.

"Blue Signal"- A clearly distinguishable blue flag or blue light by day and a blue light at night.

"Effective Locking Device"- When used in relation to a manually operated switch or derail, a lock that is capable of being locked and unlocked only by the person applying the lock.

"Engine"- A self-propelled unit of equipment designed for moving other equipment or engines including a self-propelled unit designed for carrying freight or passenger traffic, or both, and may consist of one or more units operated from a single control.

"Switch Providing Access"- A switch which if traversed by rolling equipment would permit that rolling equipment to couple to equipment being protected.

(A) Blue signal displayed in accordance with Rule 26A will signify that workmen are on, under or between rolling equipment. Under these conditions:

(1) Equipment must not be coupled to.

(2) Equipment must not be moved.

(3) Other rolling equipment must not be placed on the same track so as to reduce or block the view of the blue signal.

(4) Rolling equipment must not pass a displayed blue signal.

(B) Blue signals must be displayed in accordance with Rule 26A by workmen prior to going on, under or between rolling equipment and may only be removed by the same workman that displayed them.

26A. When workmen are on, under or between rolling equipment:

(A) A blue signal must be displayed at or near each manually operated switch providing access to that track;

(B) Each manually operated switch providing access to the track on which the equipment is located must be lined against movement to that track and locked with an effective locking device;

(D) If rolling equipment requiring blue signal protection as provided for in this rule is on a track equipped with one or more crossovers, both switches of each crossover must be lined against movement through the crossover toward that rolling equipment and the switch of each crossover that provides access to the rolling equipment must be protected in accordance with the provisions of paragraphs A and B of this rule;

(E) If rolling equipment to be protected includes one or more engines, a blue signal must be attached to the controlling engine at a location where it is readily visible to the engineman or operator at the controls of that engine.

30. The engine bell must be rung when an engine is about to move, except after momentary stops in continuous switch movements. It must also be rung while approaching and passing crossings at grade and elsewhere where necessary as a warning signal. The unnecessary use of the bell is forbidden.

30A. In case of engine bell failure, speed of train must be reduced consistent with safety and whistle sounded continuously while approaching and passing crossings at grade and elsewhere when necessary as a warning signal.

34. All members of engine and train crews must, when practical, communicate in a distinct and audible manner to each other the names of all signals affecting the movement of their train or engine as soon as they become clearly visible and call any changes of indication until they

are passed.

If engineer fails to control speed in accordance with signal indication or speed restriction, other crew members must take action to ensure safety.

40. Radio communications, if distinct, may be used the same as any other means of communication to effectuate any operation prescribed by the rules.

Radios must be used only in connection with museum business and in compliance with operating rules.

41. During each tour of duty, engineers and conductors are responsible for verifying that engine and caboose radios, when installed, are working.

Portable or pack set radios must be tested in accordance with these requirements.

Radio test must consist of an exchange of voice communications, determining quality and readability of transmission.

41A. A malfunctioning radio must not be used and each member of the crew and the train dispatcher or supervisor of communications must be notified as soon as practical.

41C. When radios are manned, they must be turned to the appropriate channel with volume adjusted to receive communications.

Radio calls must be promptly acknowledged; Acknowledgement may be delayed if it would interfere with other duties relating to safety.

41D. A member who receives a transmission must repeat it to the transmitting party except when the communication:

(1) Relates to yard switching operations;

(2) Is general in nature and does not contain any information, instruction or advice which would affect the safety of the museum operations.

41E. When radio is used to transmit any mandatory directive for movement it must be copied by the member receiving the transmission and repeated to the member transmitting it.

42. Radio communications must be made in accordance with Federal Communications Commission and Federal Railroad Administration regulations:

(1) No member shall knowingly transmit false distress calls or communication.

(2) Unnecessary, irrelevant, or unidentified communications are forbidden.

(3) Obscene, indecent or profane language is prohibited.

(4) No member shall knowingly transmit while distress traffic is being handled on the channel.

(5) Any member receiving inquiry concerning any violation shall answer within 24 hours after receipt of notice to permit the museum to provide and answer to an official notice within three days.

(6) Any member shall permit inspection of the radio equipment in his charge and all FCC documents pertaining thereto, by a duly accredited representative of the Federal Communications Commission at any reasonable time.

43.1 A member using radio must satisfy himself that he is in communication with the proper station and person and must not consider communication complete until he is certain that he has heard all of the conversation, repeating same when required to indicate that the total communication is understood.

44. When a message or instruction is to be transmitted to a train by radio, the member operating the radio shall listen a sufficient interval to be sure that the circuit is not already in use, particularly for distressed traffic.

45. Except for yard switching operations, instruction relating to the movement of trains or engines shall be repeated to the sending station by the person receiving them. All other instructions and messages received by radio shall be acknowledged to the sending station by the person receiving them.

46. Any instruction or message which is not repeated or acknowledged as being fully understood in accordance with these procedures shall not

be acted upon and shall be treated as though not sent.

48. When radio communication is used in connection with switching, backing, or pushing a train, engine, or cars, complete instructions must be given or continuous radio contact must be maintained.

When backing or pushing a train, engine, or cars, the distance of the movement must be specified, and movement must stop in half the specified distance unless additional instructions are received.

If the instructions are not understood or continuous radio contact not maintained, movement must stop immediately and not be resumed until the misunderstanding has been resolved, radio contact has been restored, or communication by other means has been established. In event the radio communication is overridden by another radio, movement must be stopped immediately and new instructions given.

53. Radio transmission will not be attempted when signs indicate electric blasting caps are being used.

93. Within yard limits, trains and engines may use track without train order.

99. When a train is moving under circumstances where it might be overtaken by another train, flagman must take action necessary to ensure protection.

The front of the train must be protected in the same way if necessary by the brakeman or by the fireman if brakeman is not available.

Conductors and engineers are responsible for the protection of their trains or engines.

103. When shoving cars, precautions must be taken to prevent damage or fouling other tracks. When conditions require, a member of the crew must take a conspicuous position on the leading car, with the proper signals.

103A. Switching must be done in a careful manner to avoid severe shocks by sudden starting or stopping or by impact in making couplings and to prevent personal injury, damage to equipment or lading.

When cars are cut off in an open track, precautions must be taken to prevent fouling other tracks. When necessary to control cars by handbrakes it must be known, before cars are cut off, that such brakes are in good order.

Cars and engines must not be permitted to couple at a speed in excess of four miles per hour.

Cars with plug type doors and refrigerator cars must not be moved unless doors are closed and properly secured.

103C. A sufficient number of handbrakes must be set to hold cars standing on any track. If brakes are inoperative cars must be secured otherwise.

Proper precautions must be taken to prevent damage or fouling other tracks before coupling to equipment that may roll away when coupling is attempted.

Whenever coupling is attempted by engine or car or other equipment, the joint must be stretched to know that the knuckles are locked before further movement is made or before air, steam and electrical connections have been made.

104. Conductors are responsible for the position of switches and derails used by them and members of their crews. This, however, does not relieve other crew members where and when they are handling a switch or derail or are able to observe the positions of switches and derails.

Switches and derails must be properly lined after having been used. When practicable, enginemen must see that the switches and derails nearest the engine are properly lined.

A train or engine must not foul a track until switches connected with the movement are properly lined unless it can be seen there is no conflicting movement.

104B. Members lining switches must see that points fit properly and that switches are lined for route intended before initiating movement over them. If a rigid switch is run through it is thereafter unsafe and must be protected. If an engine or car is run partially through a switch, the entire movement must be continued. When a switch is damaged, report must be made immediately to proper authority and switch spiked unless track supervisor takes charge.

104C. During storms or drifting snow, special care must be used in handling switches. Remove snow from the points, using a broom when necessary. Never use force to put the switch in place against the obstruction of snow, as it may be possible to spring the lever into place while the points may be left open unsafely.

106. Both conductor and engineer are responsible for the safety of the train or engines and for the observance of the rules. Under conditions not provided for by the rules, they must take every precaution for protection. This does not relieve other members of their responsibility under the rules.

107. When a passenger train is receiving or discharging traffic on the side toward the station, a train or engine must not pass between it and the station unless proper safeguards are provided.

108. In case of doubt or uncertainty, the safe course must be taken.

110. When practicable when leaving station and at every opportunity on the road, crew members must carefully inspect the train for defects.

Crew member will in addition, when practicable, observe the track at rear of train looking for marks on track that indicate dragging equipment.

112. Unless previous inspection has been made, cars must not be coupled to or moved until they are inspected and determined if they are in condition to be handled.

ADDITIONAL GENERAL RULES

700. Members whose duties are prescribed by these rules will report to and comply with instructions issued by the officers of various branches of service and such others as may have proper jurisdiction when applicable to their duties.

702. Members in train service must wear glasses when their driver's license requires them.

705. Civil, gentlemanly deportment is required of all members in their dealings with the public and with each other. Courtesy and attention to visitors is demanded.

Members are prohibited from entering into altercations with any person, regardless of provocation.

They will make note of the facts, if necessary, and report to the immediate supervisor.

Members are prohibited from having loaded or unloaded firearms in their possession while on duty or during museum hours.

Horseplay, sparring, or any form of practical joking is forbidden on duty or on museum property.

706. Carelessness, negligence, and/or indifference in the performance of duties will not be condoned.

707. Members who are either disloyal, dishonest, insubordinate, incompetent, make false reports or statements, or conceal facts concerning matters under investigation will not be retained in the service.

723. Permission must be obtained from yardmaster before moving any outfit car in use. Before coupling or moving outfit cars, notice must first be given to all occupants, and all ladders and other equipment cleared before moving.

Sign reading "Occupied Outfit Cars" must be placed on switch stand leading to tracks occupied by such outfit cars.

760. A personal injury sustained by a member on duty must be reported to proper authority.

Normally, members will report injuries sustained by them to their immediate supervisor.

773. Motor vehicles must be driven at a safe and reasonable speed, observing all speed regulations, giving due regard to traffic, local conditions and safety to the public.

776. Operators of museum owned vehicles are responsible for the safety of the occupants and must see that seat belts are used at all times on vehicles so equipped.

ADDITIONAL TRANSPORTATION RULES

800. The general direction and government of a train is in charge of the conductor and all persons employed on the train are subject to their instructions.

Should there be any doubt as to the authority or safety of proceeding, he must consult the engineer who will be responsible with him for the safety and proper handling of the train and other precautions as circumstances may require.

800A. Conductor, or in the absence of the conductor the engineer, must

require trainmen to position themselves as in their judgement may be necessary.

802. When on duty, trainmen are subordinate to conductors and firemen are subordinate to engineers. Conductors and engineers must see that their subordinates are familiar with their duties, ascertain the extent of their experience and knowledge of the rules and instruct them in the proper and safe performance of their work.

When the conductor is not present, trainmen must promptly obey the instructions of the engineer.

819. When coupling to a caboose, passenger car or locomotive or coupling such equipment to other cars, movement must be made with special care. Occupants of such equipment must be warned in advance of impending couplings. Persons occupying such equipment must brace themselves and remain seated while coupling is being made.

830. Members must report at the first opportunity the presence of fires on museum property unless fire is being controlled by other members. In case of danger of fire spreading to any structures or museum equipment all members must assist in extinguishing fire.

852. When cuts are to be made between occupied passenger cars while switching, trainmen must know that vestibule curtains are unhooked and end gates closed at the end of each car where cut is to be made and the electrical connector, if any, must be taken down.

854. Conductors must comply with instructions in placing cars and doing other station work.

863. In case of personal injury, loss of life, or damage to property, conductors must furnish immediate report of facts to the proper authority. Everything possible must be done for the immediate and proper care of the injured.

The conductor must immediately secure the names, addresses and occupations of all persons involved or witnesses, regardless of whether these persons admit knowing anything. Names of witnesses who can testify relative to bell, whistle and flagman's signals must be obtained when possible to do so.

Other members will assist conductor in obtaining the required information.

864. If an accident causes personal injury or death, all tools, machinery or other equipment involved must not be disturbed, if possible,

until inspected by proper authority.

Persons making inspection will fill out written report in a timely manner.

865. Information concerning accidents or personal injuries must not be given to anyone except authorized representatives of the museum or an officer of the law.

877. Members must see that all cases of attempted robbery, theft of property belonging to the museum or in its charge, personal injury and other extraordinary occurrences are reported promptly to the proper authority.

885. Yardmasters have supervision over the yards and all persons employed therein must obey their instructions.

886. It is the responsibility of the yardmaster to take immediate and decisive action if he has knowledge of any member under his jurisdiction being in a condition that such member cannot render safe or satisfactory service or is a hazard to other members working in the yard.

890. Unless otherwise provided, enginemen must know before starting each day's work that their engine is furnished with sufficient fuel, water, sand and other supplies and equipment.

893. Engineers must be diligent in all matters pertaining to safety and while moving must keep a close lookout and watch for obstructions on and defects in track and roadway.

All other crew members on engine must assist in keeping a close lookout and must instantly give notice to the engineer of any indication of obstruction or danger.

895. When locomotives are being serviced, they must not be moved until hose connections are removed and it is ascertained that members servicing are in a safe location.

896. Enginemen must make all reports required of them by the operating and mechanical departments, respectively, in due time and in the form and manner prescribed.

USE AND OPERATION OF TRACK CARS AND OTHER ROADWAY EQUIPMENT

939. Care and safety must be exercised in the operation of track cars to

avoid collisions with trains or other cars.

942. Track cars must not be run or pushed through variable switches. Switches must be lined for movement.

947. Unless otherwise provided, track cars must approach all road crossings prepared to stop, giving road traffic preference. If necessary, stop must be made, traffic flagged, and cars pushed over crossing.

949. When approaching workmen or others on or near the track, speed must be reduced and if necessary movement stopped.

950. Unless the movement is protected, track cars must not pass a passenger train on the side from which passengers are being received or discharged.

953. Immediately after starting, brakes must be tested to insure that they are in proper working condition.

955. Trailers and other cars being towed must be coupled with an approved coupler.

Under no circumstances must rope, wire, chain, or other makeshift couplers be used.

961. When removed from the track, roadway equipment must be placed so that it will not foul the track. It must not be left standing at public and private crossings in such a position that it will in any manner obstruct or interfere with the traveled way.

963. Track cars must be thoroughly inspected before each use and thereafter as frequently as necessary by the operator to insure that all mechanical and safety devices function as intended. They must be kept clean and in good order. Cars that may be considered unsafe to operate must be withdrawn from service immediately and report made to the proper authority. Cars requiring repairs, although not unsafe to operate, must be similarly reported.

964. Materials, tools, and supplies must be placed on track cars and push cars so that they will not fall off, and the load should be distributed uniformly over the car.

967. Matches, torches, or other open lights must not be used in the inspection of roadway equipment. The engine of a track car must not be allowed to run while fuel tank is being filled. Smoking is prohibited when fuel tanks are being filled.

Do not strain gasoline through a chamois skin as there is danger of ignition of the gasoline by a spark caused by static electricity.

Starting or allowing engines to run within tool or car house is prohibited.

ADDITIONAL MECHANICAL RULES

1000. Foremen shall report to and receive instruction from proper authority. They must know that all members under their charge perform their duties properly and in a safe and economical manner, instructing their men in safe working conditions. Foremen are responsible for seeing all rules, special instructions, and standards relating to their work are observed.

USE OF SAND

1100. During acceleration, sand should be used until sufficient speed is attained so that slipping will not occur.

If slipping occurs, do not apply sand until power is reduced and slipping has stopped. The slipping of driving wheels seriously damages rails and causes severe stresses in draft gear and mechanical parts of locomotives.

1101. If slipping is likely to occur when passing over track oilers, icy rail, or any other condition likely to cause wheelslip, power must be reduced when practicable to do so to prevent slipping, avoid the use of sand until the locomotive has passed such appurtenances.

LOCOMOTIVE RULES

1201. During freezing weather, engine cooling water systems must be drained as required. Engines equipped with anti-freeze are excepted.

AIR BRAKE RULES

1500. Enginemen and trainmen are responsible for having a working knowledge of air brakes and train handling.

1501. Repairs, adjustments or modifications to any air brake equipment or brake rigging may only be done under the proper authority.

TAKING CHARGE OF ENGINES

1510. Engines must be inspected by hostler or engineer for defective or binding brake rigging, missing or worn brake shoes, or any other condition that may prevent the proper operation of air brakes.

1511. Engineer must know before each trip or when taking charge of engines that brakes on engines are in a safe and suitable condition for service.

1512. Before making initial movement of an engine, engineer must apply brakes and inspect engine for proper piston travel. Brake shoes must be of sufficient thickness to accomplish the day's work.

1513. Dynamic brake may only be used when authorized by proper authority.

1514. Multiple engine consists must be inspected by proper authority before initial movement. Engineers will be instructed on proper procedure for multiple unit operation by proper authority.

1515. As soon as operating conditions permit, a running brake test must be made immediately after: initial movement of a light engine, change in multiple unit consist, or transfer of brake control. At a speed not exceeding 5 miles per hour, make a service application with the automatic brake valve and note brake cylinder pressure and retarding force. Place independent in release position, brake cylinder pressure should reduce to zero and brakes release.

1520. Unless otherwise stencilled, maximum brake cylinder piston travel on engines should not exceed 6 inches, except truck mounted cylinders should not exceed 4 inches.

1521. Reservoirs should have condensate drained daily or more often as conditions require.

1522. Engines must have at least 100 pounds of main reservoir air pressure before attempting movement. Main reservoir air pressure must be maintained at least 15 pounds higher than brake pipe pressure and not exceed 140 pounds. In the event main reservoir air pressure falls below the minimum required pressure or compressor fails, movement must be stopped immediately and the cause must be determined. Pressure must be restored and brakes known to be in safe operating condition before resuming movement.

1523. Should main reservoir pressure fall below 110 pounds on a diesel engine while charging train line, engineer may open generator field switch, center reverser and advance throttle to no more than half speed. Avoid running engine in any throttle position that causes high vibration.

1524. Engines left unattended, over pits or in engine service areas must have throttle closed, reverse lever centered and removed if removable. Wheels must be blocked, handbrake applied and generator field switch left open if so equipped. Independent brake lever must be in full application position and automatic brake lever placed in holding position. If not equipped with holding position, place in running position.

1525. Enginemen, and trainmen giving signals, must increase braking distance when rail is wet, frosty, greasy or oily, on descending grade, or any other condition that requires extra caution. Every effort should be made to prevent wheels from sliding due to poor rail conditions.

BRAKE PIPE

1530. Brake pipe must be charged to not less than 70 pounds when switching within yard limits. Brake pipe must be charged to not less than 90 pounds on any road movement. Caboose or rear end gauge must show not less than 60 pounds and not less than 10 pounds below feed valve pressure setting.

1531. Should for any reason front or rear brake pipe gauge indicate less than 45 pounds during movement, an emergency application must be made immediately and movement stopped. Cause of loss of pressure must be determined, pressure restored and brakes known to be in a safe operating condition before resuming movement.

1532. Only one engine brake valve may be cut in and used to control train. Under no circumstances may more than one feed valve or any other method of increasing brake pipe pressure be used. Only one brake valve may be cut in on a dual control equipped locomotive.

1533. Use of feed valve to make or maintain brake application, known as "feed valve braking", is prohibited.

1534. The independent brake valve handle must not be fastened or bail blocked in the release position.

1535. Air brakes must be cut in and operative on all movements of derricks, cranes, outfit cars and cars in passenger service.

TERMINAL BRAKE TEST

1540. All trains must be given an inspection and test as prescribed by Rules 1541 through 1554 at points where a train is initially made up, and on any cars added thereafter.

Tests must be performed by train crew unless carman is in charge.

1541. Rear angle cock or tailhose must be opened enough to determine that brake pipe air flow is not restricted and blow out any condensation.

1542. Train air brake system must be charged to not less than 5 pounds below the standard pressure for that train, angle cocks and cutout cocks must be properly positioned, air hoses properly coupled and all other brake equipment known to be in a condition for service. Air leaks should be at a minimum. Caboose or rear end gauge must show not less than 65 pounds and not less than 5 pounds below the feed valve setting.

1543. Upon receiving signal for test, engineer shall make a 15 pound reduction and sound proper whistle signal.

1544. After 45 seconds, cut off valve or pressure maintaining feature on engines so equipped must be cut out, and the number of pounds per minute brake pipe leakage must be noted, after which, brake pipe reduction is increased to full service and pressure maintaining feature or cut off valve should be cut back in.

1545. Brake pipe leakage must not exceed 5 pounds per minute.

1546. Trainman, or workman if in charge, must inspect all cars to determine that brakes are applied, piston travel is correct, rigging does not foul and retainer is in proper position.

1547. Brake piston travel must be between 7 and 9 inches, or 6 inches on truck mounted cylinders, unless otherwise stencilled on car. Body mounted brake cylinders not within these limits must be adjusted to nominally 7 inches. Cars with excess piston travel cannot be counted as an operative brake.

1548. Passenger cars equipped with disc brakes are equipped with indicators above each truck. Plungers are extended when brakes are applied and retracted when brakes are released.

1549. Cast iron brake shoes must be at least 1/2 inch thick. Composite brake shoes must be at least 3/8 inch thick including the backing plate. Brake shoes must not be missing, cracked, or of wrong type. Brake shoe keys must be in place.

1550. During standing test, brakes must not be applied or released until the proper signal is given.

1551. Defects discovered during a standing test that cannot be repaired promptly must be reported to the workman in charge or the conductor for appropriate action.

1552. On proper signal, engineer will release brakes. Trainman will then inspect train to see that brakes have released and handbrakes are not applied. Release inspection must be made with train standing.

1553. When a test of the air brakes has been completed, the engineer and conductor must be notified that train is in proper condition to proceed.

1554. Trains will not operate with any brakes cut out or inoperative.

APPLICATION AND RELEASE TEST OF REAR CAR

1560. An application and release test must be made on the rear car of a train when: anytime an angle cock has been turned, the consist has been changed, except when a solid block of cars has been detached from the rear, and after crew change or when taking charge of a train that has been left unattended.

1561. Engineer will make a 15 pound reduction and sound proper whistle signal after brake pipe has been charged to not less than 5 pounds below feed valve setting. Trainman will then inspect last car to determine that brake is applied.

1562. Upon receiving proper signal, engineer will release brakes. Before proceeding, it must be known that brakes are released and brake pipe pressure is being restored.

RUNNING BRAKE TEST

1570. All passenger trains must make a running brake test: after leaving initial terminal; after crew change; after an excessive delay; or

if an angle cock has been turned except if a solid block of cars has been detached from the rear. Running brake test must be made from the rear end valve or tailhose during back up moves.

1571. For running brake test, engineer will make a reduction of approximately 7 pounds, wait for slack to adjust itself, then add 3 pounds before releasing. Trainman will note reduction in rear end gauge and, following buildup in pressure when brakes are released, give proceed signal.

1572. Other locations that running brake test are required will be listed in the current instructions.

DEFECTIVE BRAKES

1580. Should an air brake become or thought to be defective on a car or engine, movement of car or engine may only continue if it is safe to do so. Defective car or engine must be set out at first opportunity. Proper authority must be notified in writing.

1581. In the event of an air compressor failure or a failure of brake control on a locomotive, movement must be stopped, train secured, and another locomotive used if repairs cannot be made.

1582. Steam engines must maintain not less than 125 pounds boiler pressure to insure operation of air compressor. Steam engines handling train brakes with less than 125 pounds boiler pressure, or steam engines running light with less than 110 pounds boiler pressure, must stop and wait for boiler pressure to rise to the minimum level before resuming movement.

1583. The engineer and conductor must be notified of any defective brake or any other conditions affecting the stopping ability of the train.

REAR END VALVE AND TAILHOSE

1590. Brakes must not be applied from the rear except: when making a running brake test from the rear; in an emergency or to prevent an accident.

1591. Tailhose must be used, when practicable, when rear of train is not equipped with a rear end valve.

1592. To obtain a service brake application, open valve slowly until application of brakes is effective. Valve is not to be closed until train stops except during a running brake test.

1593. To obtain an emergency brake application, open valve quickly and leave fully open until train stops.
1594. To obtain a service brake application from a rotary caboose valve, move handle to position 2. If brakes do not apply, move to next notch for 10 seconds and repeat if necessary until brakes apply. Do not move handle back towards lap until train stops.
1595. To obtain an emergency brake application from a rotary caboose valve, move handle to full open position and leave it in that position until train stops.
1596. Backup whistle must not be used unnecessarily. Undesired brake action may result.

HANDBRAKES

1600. A sufficient number of handbrakes must be applied to the descending end of a cut of coupled cars. Cars left on a level track must have not less than one handbrake applied on each end of the cut.
1601. Skates or chocks must be used in addition to handbrakes when required.
1602. Cars or engines with defective handbrakes must be left coupled to an equal number of cars or engines, or otherwise secured to prevent movement.
1603. Handbrakes used for switching must be tested and known to be in working order before being used.
1604. Handbrakes must not be used to control speed of train except when their use is required to make an emergency stop.

EMERGENCY STOPS

1610. An emergency stop should only be made when there is an immediate danger to life or property.
1611. Engineer making emergency stop must place automatic brake handle in emergency position until train stops.
1612. If emergency application is made from the train, engineer must place handle in emergency position.
1613. Engineer must use sand during an emergency application.

Independent brake should be handled to keep engine from sliding. Throttle should be closed gradually or as required to control slack.

1614. No attempt must be made to release brakes until after train comes to a complete stop and the cause for the emergency application has been determined and the danger has passed. Train must be inspected before resuming movement.

1615. As a last resort, engineer may attempt to stop train by reversing engine.

1616. Should for any reason the air brakes on a train become ineffective or fail, or if there is any doubt as to the ability of the air brakes to stop the train, train must be stopped at once and the conductor notified.

1617. Any failure of air brakes, whether actual or suspected, any car cut out, or any other air brake defect must be reported in writing to the proper authority.

1618. Engineer must not attempt to release brakes after an emergency application until train has been stopped at least 2 minutes.

CHANGING CONSIST OR ENGINES

1640. Before closing angle cock, engineer must make a 20 pound brake pipe reduction and time must be allowed for brake pipe to equalize.

1641. When cutting off cars or engines, angle cock must be left open on at least one end and brake pipe depleted on detached portion.

1642. Overcharged brakes may be corrected by making a reduction to equalizing pressure, waiting for brakes to apply and then releasing. In the event this does not correct overcharge condition, place brake valve in emergency and release after 2 minutes.

GENERAL AIR BRAKE RULES

1650. A minimum brake pipe reduction must be between 6 to 8 pounds.

1651. A minimum brake pipe reduction should be made and train slack allowed to adjust before reducing to the required amount during normal stops.

1652. A reduction of at least 15 pounds should be made before brakes are released on a train that is stopped.

1653. No attempt should be made to make a running release of train brakes at low speeds if harsh slack action will result. Train must come to a stop before attempting to release the brakes.

1654. Trains must not exceed 5 miles per hour when starting for the length of the train or until proceed signal is received from the rear.

1655. Trainmen will be held responsible for wheels slid flat on cars of their train.

1656. Engineers will be held responsible for wheels slid flat on their engines and for proper train handling.

1657. Any train or car must not be moved if it is not safe to do so in the judgement of the engineer or conductor.

1658. Engineers should attempt to stop trains with a light brake application when conditions allow.