No. 395

THIS BOOK

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THE WESTERN MARYLAND
RAILWAY COMPANY

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Who hereby agrees to return it to the proper officer when called for, or upon leaving the service.

The Western Maryland Railway Company

RULES AND INSTRUCTIONS FOR THE GOVERNMENT OF EMPLOYES OF THE MAINTENANCE OF WAY DEPARTMENT

They will take effect March 1, 1914, and supersede all prior Rules and Instructions in whatever form issued, which are inconsistent therewith.

H. R. PRATT,
Chief Engineer.

Approved:
J. M. FITZGERALD,
President.

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ORGANIZATION.

CHIEF ENGINEER.

The Maintenance of Way Department is under the direction of the Chief Engineer.

ASSISTANT CHIEF ENGINEER.

The Assistant Chief Engineer has charge of maintenance, and reports to and receives his instructions from the Chief Engineer.

DIVISION ENGINEERS.

Division Engineers have charge of maintenance on a prescribed territory, and report to and receive instructions from the Assistant Chief Engineer in all matters relating to maintenance.

BRIDGE ENGINEER.

Bridge Engineer reports to and receives instructions from the Chief Engineer, performing such duties as are assigned to him.

He will co-operate with the Assistant Chief Engineer and Division Engineers, and may employ such Assistants as may be required, upon authority from Chief Engineer.

SIGNAL ENGINEER.

Signal Engineer reports to and receives instructions from the Chief Engineer, and will have charge of construction and maintenance of interlocking plants, mechanical and electrical block signal devices on the System.

He will co-operate with the Assistant Chief Engineer and Division Engineers, and may em-

ploy such force as is necessary, upon authority from Chief Engineer.

SUPERVISORS.

Supervisors have charge of roadway and tracks on prescribed territory; report to and receive instructions from the Division Engineer.

MASTER CARPENTERS.

Master Carpenters have charge of all bridges and buildings on a Division, report to and receive instructions from Division Engineer, unless otherwise ordered.

FOREMEN WATER SUPPLY.

Foremen Water Supply have charge of water stations and plumbing on a Division, report to and receive instructions from the Division Engineer, unless otherwise ordered.

SECTION FOREMEN.

Section Foremen have charge of designated sections of roadway and track; report to and receive instructions from Supervisors.

CARPENTER FOREMEN.

Carpenter Foremen have charge of Carpenter gangs; report to and receive instructions from the Master Carpenter.

COAL STATION FOREMEN.

Coal Station Foremen have charge of designated coaling stations; report to and receive instructions from the Section Foremen.

WATER STATION PUMPMEN.

Water Station Pumpmen have charge of designated Water Stations; report to and receive instructions from Foreman Water Supply.

WATCHMEN.

Watchmen perform duties over designated places; report to and receive instructions from Section Foremen.

BRIDGE INSPECTORS.

Bridge Inspectors make detailed inspection of bridges, and other structures, as ordered by Master Carpenter; report to and receive orders from Master Carpenter.

EXTRA GANG FOREMEN.

Extra Gang Foremen have charge of extra gangs; perform such duties as are assigned them; report to and receive instructions from Supervisor, unless otherwise ordered.

SIGNAL FOREMEN.

Signal Foremen have charge of gangs engaged in signal and interlocking work; report to and receive instructions from Signal Engineer.

SIGNAL MAINTAINERS.

Signal Maintainers are assigned to stated interlocking plants or a certain prescribed territory; report to and receive instructions from Division Engineer and Signal Engineer.

EXTRA POSITIONS.

Such other appointments will be made from time to time, as may appear necessary for the good of the service.

GENERAL NOTICES.

In case of doubt, take the side of safety.

To enter or remain in the service of this department is an assurance of willingness to obey the rules.

Obedience to the rules is essential to the safety of passengers and employes, and to the protection of property.

Successful service requires the continuous, intelligent and faithful discharge of duty. To obtain promotion, capacity must be shown for increased responsibility.

Employes are advised that, in accepting employment, they assume the accompanying risks, and are expected to look after and be responsible for their own safety, as well as to exercise the utmost caution to avoid injury to others.

Eternal vigilance is the price of a good railroad.

Anything that interferes with the safe passage of trains is an obstruction.

GENERAL RULES.

RULES MUST BE UNDERSTOOD AND OBEYED.

All employes whose duties are in any way prescribed by these rules must have a copy of and be conversant with them. They must render all necessary assistance in carrying them out, and immediately report any infraction of them to the next superior officer.

If in doubt as to the meaning of any rule or special instruction, application must be made at once to the proper authority for an explanation. Ignorance is no excuse for neglect of duty.

KNOWLEDGE OF RULES.

Officers and employes of this department must have an accurate knowledge of the rules and regulations governing the department.

Officers will determine by personal investigation that all Foremen and others concerned have a copy of the book of rules and regulations, and that same are known and understood.

PREVENTION OF ACCIDENT.

All employes in this Department must do everything in their power to prevent accident, even though in so doing they may perform some other employes duty.

CO-OPERATION.

Officials and employes of this Department will co-operate with one another in performance of duty.

CHIEF DUTY.

The Chief Duty of each member of this Department is to keep the track in safe and proper condition for safe movement of trains, and each employe is expected to perform his duty faithfully.

RESPONSIBILITY.

Supervisors, Master Carpenters and others in authority will be held responsible for the proper understanding of the rules by their subordinates.

PROMOTION.

All employes will be regarded as in the line of promotion, advancement depending upon the faithful discharge of duty, and capacity for increased responsibility.

USE OF INTOXICANTS.

Use of intoxicants is prohibited. The habitual use of or the frequenting of places where they are sold, is sufficient cause for dismissal.

ABSENCE FROM DUTY.

No employe, whatever may be his rank, will be allowed to absent himself from duty without permission from the Foreman or Officer under whose direction he is employed.

PROTECTION OF COMPANY'S PROPERTY.

All employes of this Department will interest themselves in the protection of the Company's property.

OBSTRUCTION OF TRACK.

An obstruction is anything that interferes with the safe movement of trains, and must be

removed as quickly as possible. Proper precaution must be taken to prevent accident to trains by obstructions.

PROTECTION AGAINST AND REMOVAL OF OBSTRUCTIONS.

Employes of this Department learning of obstructions or damage to track from any cause, must go with sufficient force, and see that track is cleared and made safe in the shortest possible time. Proper Signals must be displayed to protect trains against obstruction.

TRAIN SIGNALS.

Employes must notice the signals of passing trains and be governed accordingly.

RULES FOR GOVERNMENT OF EMPLOYES IN OPERATING DEPARTMENT.

All Officers and Foremen of the Maintenance of Way Department must have a copy of rules for the government of the employes of the Operating Department, and familiarize themselves with such rules.

TIME TABLE.

All Officers and Foremen of this Department must have a copy of the current time table, and be familiar with time of trains.

TRAIN MOVEMENT.

All employes at work must bear in mind that in operating the road under telephone or telegraphic orders, a train may pass at any moment. They must keep a sharp lookout for trains, *and must not assume that a train may not come for any certain time, nor act upon the assurance of any person to that effect, but will at all times*

protect themselves with proper signals, as per rules. Classification signals of trains must be noted and properly observed. This rule applies to both tracks on double track.

SIGNALS READY FOR USE.

Supervisors, Master Carpenters and Foremen Water Supply, and others concerned, must know that their gangs are always supplied with proper signals, flags, lanterns and torpedoes, and are thoroughly instructed as to their uses. Proper signals must always be ready for immediate use.

COLOR SIGNALS.

For signalling, flags of prescribed color must be used by day and lanterns of the prescribed color by night. Night signals are to be displayed from sunset to sunrise. When weather or other conditions obscure day signals, night signals must be used as an additional precaution.

EXPLANATION OF COLOR SIGNALS.

Red is a stop signal.

White is a clearance signal when used by employes of this Department.

Green is a caution signal.

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

AUDIBLE OR SOUND SIGNALS—EXPLANATION.

The explosion of one torpedo is a signal to stop.

The explosion of two torpedoes, not more than two hundred feet apart, is a signal to reduce speed and to look out for a stop signal.

All employes must familiarize themselves with the meaning of locomotive whistle signals, as explained, for movement of trains, in rules of Operating Department.

FLAGGING.

Employes whose duties require them to stop trains must take position a sufficient distance from point being protected, to insure full protection.

Two torpedoes must be placed opposite each other on the rails so they will make one report, one hundred (100) feet ahead of the flagman.

After being called in and no approaching train is within sight or hearing, the torpedo from the Fireman's side must be removed and placed not more than sixty (60) feet from torpedo on Engineman's side. If at night, or in stormy weather, a red burning fusee must be placed in center of track.

The stop signal must be used in all cases where there is any doubt as to the safe passage of trains, except as is provided for by rule.

SLOW ORDERS.

Points in the roadbed, or at bridges, not safe for the passage of trains at schedule speed, must be protected by slow orders.

When slow orders are placed, a green flag by day and a green lantern by night, must be placed on the right hand side of track, with the current of traffic, at a sufficient distance from the protected point, that Engineman may reduce to the prescribed speed before it is reached.

PLACING SLOW ORDERS.

Slow orders are placed by telephone, telegraph or letter, as may be necessary, directed

to Division Engineer, Superintendent and Train Masters, stating exact location of point to be protected with reference to a station, mile post, bridge number, or other familiar location.

State concisely cause for slow order, probable length of time it will be in effect, and prescribed speed for trains. Be positive that order has been placed before working under its protection.

CAUTION SIGNAL—WHEN RAISING TRACK OR RENEWING TIES.

When renewing ties on roadbed, or raising track, trackmen will display the caution signal at a distance of nine hundred (900) yards from point at which working. This caution signal does not protect against first or second class, but only against third class and extra trains. Upon the approach of a third-class or extra train, Foreman in charge will give a hand signal promptly, indicating at what speed a train may proceed. This caution signal will only be used when track can quickly be made safe for passage of trains. In all other cases protect in accordance with rule.

SLOW ORDERS REMOVED.

Supervisors and Master Carpenters must keep themselves informed of slow orders on their respective sub-division and bridges, and have them removed as soon as consistent with safety.

RESPONSE TO SIGNALS.

Employes of this Department will observe the failure of trainmen to properly respond to their signals, and make prompt report to superiors.

PROPER USE OF SIGNALS.

Supervisors, Master Carpenters and Foremen Water Supply must observe that proper signals are displayed by their subordinates when in discharge of duty.

LOCATION OF SIGNALS.

All fixed and other signals, switch targets, road crossing signs, etc., must be placed so as to give the best possible view.

CLEARING WORK FOR REGULAR TRAINS.

Repairs, renewals, or any work interfering with the safe passage of trains must not be attempted within twenty (20) minutes of the time of first-class trains, and ten (10) minutes of the time of other schedule trains without notice to Division Engineer, Superintendent and Train Masters. In all cases track must be protected by displaying proper signals.

REPAIRS AFFECTING MOVEMENT OF TRAINS.

Trackmen, Bridgemen, or other employes before undertaking any extraordinary work, affecting the safe movement of trains must make report to Division Engineer, Superintendent and Train Masters, explaining the class of work to be undertaken, location of work, with reference to some known location, and probable length of time for performing such work.

State clearly what orders must be given to passing trains.

In all cases protect the work by rule.

WORK IN FOG OR STORM.

Heavy repairs, renewals or any other work that will seriously interfere with the safe move-

ment of trains must not (except in case of emergency) be performed during fog or storm.

DAMAGE TO ROADWAY.

Employes observing obstructions, danger or damage to roadway, bridges, buildings or signals must take prompt action to prevent accident, and make full report of conditions to Division Engineer, Superintendent and Train Masters.

Every precaution must be taken during storm and times of danger or peril to prevent accident. Men must be detailed to watch roadway, particularly at exposed points.

HIGH-WATER MARKS.

At times of high water, record must be made of high water marks at different points along line, especially at bridges. At bridges measure to high water from base of rail on downstream side of bridge.

EXAMINATION AFTER HIGH WATER.

After high water examine roadbed, all water ways, and especially foundations of all masonry and timber structures. If any undermining or serious damage has taken place notify Division Engineer, Superintendent and Train Masters promptly. Remove all drift wood and other matter from bridge and culvert masonry.

TELEGRAPH LINE.

If telegraph or telephone line is found broken, make repairs if possible, and report conditions to Division Engineer, Superintendent and Train Masters promptly.

SIGNALS OUT OF ORDER.

Fixed or other signals discovered out of order must be reported to Division Engineer, Superintendent, Signal Engineer and Train Masters, and proper employe notified so that repairs can be made promptly.

JOINT JURISDICTION.

With work involving two sub-departments, employes will co-operate with each other in performance of duty.

REPORT OF GENERAL CONDITION.

Supervisors, Master Carpenters and Foremen Water Supply will make regular reports to Division Engineer of general conditions of structure and track under their jurisdiction.

DAILY MOVEMENTS.

Supervisors, Master Carpenters and Foremen Water Supply, and others concerned, must make daily reports of their whereabouts to Division Engineer, Superintendent and Train Masters.

STATIONERY SUPPLIES.

It is the duty of Supervisors, Master Carpenters, Foremen Water Supply, and others concerned, to see that Foremen under them have a supply of necessary forms and blanks on hand, and know how to fill them.

REPORT FORM.

The blank forms to be used by the Maintenance of Way Department will be prescribed from time to time, and Officers and Foremen required to use such blanks, will be governed

strictly by the rules and instructions printed thereon.

FORWARDING REPORTS.

All reports received from subordinates, of interest to or requiring the attention of superior officers, must be promptly forwarded by mail or by wire. This must be strictly observed by all officers and employes charged with any duties connected with this department.

UNUSUAL OCCURRENCES.

Report to Division Engineer promptly any unusual condition on the Division and advise with him frequently regarding unusual work.

ACCIDENTS.

In case of an accident of any character, make a telegraphic report thereof to Division Engineer, Superintendent and Train Masters. As soon as full information is obtainable, make full report on proper form. All accidents must be fully investigated and reported.

TRAIN ACCIDENTS.

In case of a train accident an adequate force must be taken promptly to place of accident, wreckage removed and track placed in proper condition without delay.

The Operating Department has charge of clearing up wreckage, and the Maintenance of Way Department has charge of restoring track to proper condition. The two departments should work in harmony.

Make complete report on proper form of all train accidents.

PERSONAL INJURY.

Should any passenger, employe or trespasser be killed or injured on Company property, call a Company surgeon at once. If person is dead, notify coroner and Company's Attorney, if possible. Make telegraphic report of accident promptly to Division Engineer, Superintendent, Train Master and Chief Surgeon.

Make regular report on proper form.

STOCK KILLED OR INJURED.

Should live stock be killed or injured on Company's property, notify owner and bury or dispose of body as quickly as possible.

Make regular report on proper form.

STOCK ON RIGHT OF WAY.

Live stock found on right of way must be driven off and owner requested to keep it off. Report to Supervisor all live stock found on Right of Way, giving description, owner, how it got there, and other pertinent information.

FIRES.

Extinguish all fires on or about Company property and report promptly any damage to bridges or other structures involving the passage of trains. State whether or not trains can pass in safety. Make regular report on proper form.

STANDARD MATERIAL.

No appliance, except those properly authorized, will be allowed on track or bridge work.

MATERIAL REQUISITION.

Supervisors, Master Carpenters and Foremen Water Supply will make requisition on Division Engineer for necessary material and supplies.

Signal Foremen and Maintainers will make such requisition on Signal Engineer.

Material and supplies must not be purchased from outside sources, except when necessary.

STORING MATERIAL.

Material must not be piled or stored within eight (8) feet of main track rail, nor seven (7) feet of side track rail.

All material not intended for immediate use must be properly piled and stored.

DISTRIBUTING MATERIAL ALONG TRACK.

Material distributed along track must not be left near enough to the track to endanger passing trains. It must not be thrown down high embankments, and when unloaded in cuts must be so placed that it will not obstruct the drainage.

RESPONSIBILITY, ECONOMY AND EFFICIENCY.

Supervisors, Master Carpenters and Foremen Water Supply and others concerned must see that all good second-hand material is kept and used as far as practicable; that the most economical methods are used consistent with safety, and that Foremen are not only instructed how to work, but that instructions are obeyed. Converse with Foremen, calling attention to bad practice and inefficient work.

ACCOUNT OF MATERIAL.

All employes using Company's material must keep an accurate account thereof, and make report of same on proper form.

EXPENDITURE—TIME ALLOWANCE.

Supervisors, Master Carpenters and Foremen Water Supply, and others concerned, must see that appropriations for months are not exceeded.

SCRAP MATERIAL.

All scrap material must be gathered and stored promptly at section headquarters. Mechanical Department and Maintenance of Way Department scrap must be stored separately in bins, at designated points. Scrap material will be loaded and shipped as may be ordered.

Brass or other particularly valuable scrap must be stored in tool houses.

MATERIAL TAKEN FROM TRACK OR STRUCTURES.

All material taken from track or structures and fit for further use, must be properly piled and removed to proper storage point promptly.

Burn or dispose promptly all material unfit for further use.

PLANS FOR WORK.

Plans for the various items of work requiring them will be forwarded upon request, and all work must conform to the Company's standard specifications and plans.

DATING NAILS.

Dating nails will be placed in all ties put in track. Place nails in middle of ties.

USE AND CARE OF TOOLS.

Employes must know that all tools and appliances to be used by them are in safe condi-

tion before using. Foremen in charge of work will be held responsible for tools in their possession.

All tools and small materials must be kept in section tool houses.

EMPLOYES MUST NOT LEND TOOLS.

Foremen must not lend tools. They are responsible for all tools and materials in their possession.

SHIPPING TOOLS.

A shipping tag, showing kind and number of tools, destination and where to be returned, must be firmly attached to each bundle of tools shipped away or sent to shops for repairs.

SWITCH AND TOOL-HOUSE KEYS.

No switch or tool-house keys will be given to employes without taking proper bond therefor.

STAMPING TOOLS.

All tools must be plainly stamped "W. M."

HAND CARS—USE OF.

Employes using hand or push cars on track must remember that they are obstructions to the safe passage of trains, and must be protected accordingly.

Hand and push cars operated on the main track must be under absolute protection of flag; special attention is directed to the necessity for flagging on sharp curves and other dangerous points.

Hand and push cars must be used only in the discharge of duty.

Hand and push cars shall be set clear of track ten minutes before the schedule time of passenger trains.

Hand and push cars, when not in use, must be set clear of the track and locked.

Hand and push cars must not be attached to a train.

On double track hand and push cars must be set clear of both tracks while trains are passing on either track.

No one except employes in discharge of duty will be allowed to ride on hand cars.

Hand and push cars when set clear of the track must be placed with side of car parallel with the rail and not with the end of the car pointing toward the track.

CAMPS AND CAMP CARS.

Camps and camp cars will be assigned to trackmen, bridgemen, and others as may be necessary. Proper officers will see that they are kept in good condition.

POLICING.

All Station grounds, yards, right of way and other Company land must be kept clean and in good order.

Rubbish must not be allowed to accumulate especially on station grounds.

Remove all papers, straw and other combustible material to a safe place and burn it.

Cut weeds and underbrush before seed time.

Bury dead animals found on Company property.

TUNNEL INSPECTION.

All tunnels not arched throughout must be carefully inspected weekly by trackmen and all loose material removed.

Loose rock, trees, stumps and other similar material about portal of tunnel must be removed from slope. Timber and masonry lined

tunnels must be inspected regularly by trackmen and bridge inspectors.

CLEANING CULVERTS, BRIDGES AND PIPES.

See that all culverts and other waterways in the roadway are at all times kept free from driftwood or other obstructions, and that all trestles, bridges, culverts and other structures which would be injured by fire are kept free from the accumulation of weeds, leaves or other combustible material. Keep dirt away from the ends of steel and iron bridges, and from the top of all bridges and piers. Allow no dirt to come in contact with steel and iron bridges.

TRESPASSERS.

Make every effort to keep trespassers off of Company property.

LOST FREIGHT.

Any article of freight that has fallen from a car must be sent to the nearest office at which there is an operator or agent, and receipt taken therefor. If too heavy for hand car, notify Superintendent by wire.

POLICING CAMPS.

Grounds about camps and camp cars must be kept in presentable condition. All debris must be kept in barrels and disposed of in remote places.

CAMP CARS ON TEMPORARY SIDINGS.

Temporary sidings, upon which camp cars are set out must not be laid closer than fifteen (15) feet, center to center, from nearest track. Camp cars must be carefully blocked to prevent movement.

WORK TRAINS APPLICATION.

Application for work train service is made to Division Engineer, Superintendent and Train Masters, stating at what time train is wanted and for what purpose. State at what point train is to work and how long it will be needed.

WORK TRAIN EMPLOYMENT.

Employes on work trains must be kept at work and not allowed to loaf when train is delayed.

WORK TRAIN DELAYS.

Report delays to work train service, giving cause of delay.

APPOINTMENT OF FOREMEN.

Prior to appointment of Foremen, the appointee must be conversant with the rules of this Department, and the Company's standard rules for movement of and schedule of trains.

CHANGING FOREMEN.

Change of Foremen, except in emergency, should always be made at the beginning of a month.

FOREMEN'S TIME BOOKS.

Foremen are required to enter daily on prescribed time books the time worked by each man, and on the daily distribution sheet the total time made by gang must be entered opposite the class of work on which employed.

NAMES ON TIME ROLLS.

Names on time roll must be written out in full.

SIZE OF FORCES.

The number of men employed in this Department will be regulated by instructions from the Division Engineer.

EMPLOYMENT OF MINORS.

The employment of minors is forbidden, unless consent of the parents or guardians is first given in writing, and such consent is forwarded through usual channels, to be filed as a personal record in the general office.

DISCHARGE OF EMPLOYES.

When an employe leaves the service, his superior will see that all Company property is turned over to proper person, and time ticket issued covering wages due the discharged person.

WHISTLE POSTS.

Station and road-crossing whistle posts will be placed 1,650 feet from station or crossing and eight (8) feet from rail.

STATION 1-MILE SIGNS.

Where there is a passing track "Station 1-mile sign," will be located one mile from nearest switch of passing track, otherwise it will be located one mile from station.

STANDARD CLEARANCE.

The standard clearance for any overhead object is 22 feet above top of rail, and the standard side clearance is 7 feet 9 inches from center of track.

PASSES—ISSUANCE OF.

Passes will be issued, and must be used in strict accordance with the rules of the Company and Federal and State Laws applying thereto.

PASSES—COLLECTION OF.

Persons leaving the service of the Company must surrender all passes over this Company's lines.

BEHAVIOR ON PASSENGER TRAINS.

Employes riding on Passenger trains must sit together, and not occupy space in the train unnecessarily.

They must behave in a quiet and orderly manner.

Should trains be crowded, they will promptly give up seats to revenue passengers.

DEPORTMENT.

Civil deportment and proper conduct on the part of all, especially those having control of men, is required. Employes on duty must not use abusive, boisterous, profane or vulgar language, nor enter into altercations.

REPORTING MISCONDUCT.

All employes, especially those in position of trust, are required to report any misconduct or negligence affecting the business of the Company, and the withholding of such information will be considered as an indication of indifference to the Company's interest.

TRANSMISSION OF TELEGRAMS.

Telegraph must not be used when mailgram or letter will serve the purpose as well.

BOUNDARY LINES.

Employes must familiarize themselves with the boundary lines of Company's property, and make report of trespassers.

ENCROACHMENT ON RIGHT OF WAY.

No encroachment of any character will be allowed upon the Company's property without proper authority. Any encroachment should be reported to Division Engineer, through the proper channels.

DIARY.

Supervisors, Master Carpenters and Foremen Water Supply, and others concerned, should keep a diary of daily movements and work in which engaged.

WATCHES.

Supervisors, Master Carpenters, Foremen Water Supply, Foremen and all other employes of this Department, when duties so require, must carry a reliable watch, which must be compared each day with the clock at nearest telegraph office, or with the watch of a conductor who has standard time.

WATCH INSPECTION.

They must have their watches inspected at least twice each year by the Company's watch inspector.

RULES FOR THE GOVERNMENT OF EMPLOYES WORKING ON OR ABOUT TRACKS.

1. It is the duty of every employe working on or about the tracks of this Company to exercise great care to avoid injury to himself and others, and nothing in these rules is to be so construed as to relieve any employe from performing his full duties in that respect.

2. Employes must examine and know for themselves that tools, materials, etc., which they must make use of in performing their duties are in proper condition; if not, they must put them so, or report them to the proper person and have them put in the proper order before using.

3. On the approach of trains employes who are working on or about the tracks must move to a place of safety. They must not walk nor stand on the track, except when necessary for the proper performance of their duties.

4. Watchmen, Patrolmen, Track Walkers, and others on duty which make it necessary for them to be on the track, where there are two or more tracks, should, when practicable, travel against the current of traffic, keeping a sharp lookout in both directions for approaching trains.

5. Any employe who, while on duty, is careless about the safety of himself and others, or who disregards warning, will be disciplined.

6. Foremen and others in charge of employes working on or about the tracks must instruct their men to be alert, watchful and keep out of danger, and will take the necessary precaution to see that all men working under their immediate supervision receive warning of approaching trains in time to reach a place of safety.

7. When working on tracks or places where approaching trains cannot readily be seen because of permanent obstructions to the view or temporary obstructions, such as, for instance, fog, storms, snow, engines or cars extra precaution must be taken to warn the men of approaching trains. Foremen, Watchmen and others in charge of gangs or squads of men must provide themselves with a whistle and should use the same when warning the men when working in places where approaching trains cannot readily be seen.

8. As an extra precaution when necessary to place a Watchman at some distance from the men at work on the track or in such location that this signal may not be understood, an additional Watchman should be placed, so that the signal can be passed to the men at work and return signal obtained. In case return signals are not received or understood, the Watchman must signal the train to stop.

9. When large numbers of inexperienced men are working on the track they should be divided into small squads and each squad placed in charge of an experienced man and the necessary additional precautions taken to prevent accident.

10. Employes working in a tunnel or near the end of same when a train approaches from

either direction, must stand clear of all tracks, and if in the tunnel must occupy the manholes.

11. In tunnels where mechanical draft is necessary to remove the gases, workmen should not be allowed in the tunnel when the draft machinery is not in operation.

12. In tunnels where the clearance is limited and no manholes or other places of safety provided, Foremen must arrange with the Superintenent for the use of tracks and work under flag protection.

13. Employes are required to carry a lantern or torch when passing through any tunnel where men cannot readily be seen. When the entire gang is working in close order, two or more lanterns or torches will be considered sufficient observance of this rule.

14. Hand cars or hand trucks must not be used at night nor in the day time when approaching trains cannot readily be seen by reason of fog, storm or snow, except by permission of the Superintendent.

15. Trains will be run in either direction on any track whenever necessary or expedient, and workmen will be governed accordingly.

16. Employes whose duties require them to work on or about the track must supply themselves with a copy of these rules.

SPECIAL RULES FOR SUPERVISORS AND TRACKMEN.

RESPONSIBILITY OF SUPERVISORS.

Supervisors will be held responsible for the maintenance of track, right of way and station grounds, and for work performed by their subordinates.

INSPECTION BY SUPERVISOR.

To enforce proper discipline, and to promote efficiency and economy in all work done under their direction, Supervisors must pass over parts of their sub-division each day, except when engaged in checking up reports at end of month. They must pass over their entire subdivision, on foot at least once each month.

SWITCH INSPECTION.

Supervisors will make a careful inspection of all switches on their sub-division at least once each month, making report of such inspection to Division Engineer at end of month. Section Foremen must inspect all switches on section at least twice each week, and track walkers must inspect them daily.

SUPERVISION OF WORK.

Supervisors will look closely into the details of work, talk frequently with their Foremen, give them full instructions, and know that their orders are carried out. They must know that their subordinates are at all times at their proper places and attending to their duties.

CONFORMITY TO STANDARDS.

While making inspection, Supervisors will notice that Company's standards are being observed, that right of way is clean, that line is clear of obstructions, and that the property generally is in safe and presentable condition.

DIRECTING IMPORTANT WORK.

Supervisors must, as far as possible, personally direct rail renewals, and other extraordinary repairs to track or roadbed.

WEAR OF TRACK MATERIAL.

Supervisors must investigate the wear of track material, encourage their men to do likewise, and report results of such observations to Division Engineer.

DEFECTIVE STRUCTURE.

Supervisors and Foremen must report to Division Engineer and Master Carpenters all defects in bridges and other structures observed by them, when traffic is endangered or delayed by such defects, they will, whenever possible, make such repairs, as may be necessary for the safe passage of trains.

INSTRUCTION TO FOREMEN.

All Foremen must be fully instructed as to work, and new Foremen must be closely examined to ascertain if they correctly understand rules and instructions.

JURISDICTION OF SECTION FOREMEN.

Section Foremen will be in charge of designated sections of track, together with the laborers and watchmen employed thereon.

FORCES.

Section Foremen will employ such forces as are assigned to them, and must not exceed such allowances.

WORK ON ADJOINING SECTIONS.

If notified of anything needing attention on adjoining section, go at once and render necessary assistance.

WORK AT STATIONS AND PUBLIC POINTS.

If performing work at stations or other points used by the public, be particularly careful to avoid injury to persons.

TRACK-WALKER'S DAILY INSPECTION.

Every morning Section Foremen will send a competent man over the entire section, on foot, who will look out for safety of track and make light repairs when necessary.

Track-walkers must be provided with a red flag, at least six torpedoes, tamping pick, track wrench, and a few spikes and bolts.

TRACK-WALKER'S DUTIES.

Track-walkers will look out for broken or damaged rails, defective rail joints, damaged ties, wide gauge, bad surface, absence of spikes or bolts, and all other matters pertaining to the safety of train movement.

He will attend to switch lamps unless otherwise ordered, examine all switches, road crossings, waterways, right of way fences; look out for obstruction on or about tracks, and will notify Foremen of all such matters immediately after such inspection.

In case of danger to trains, track-walker must use his best judgment to stop approaching trains.

EXTRA GANG FOREMEN.

Extra gangs will perform such work as may be assigned to them.

CONSTRUCTION OF TRACKS.

Supervisors will have charge of such track construction and other special work as is assigned to them. Special attention must be paid to this class of work.

REPORT OF INSTALLATION OR REMOVAL OF TRACKS.

Supervisors and Section Foremen must make telegraphic report to Division Engineer, Superintendent and Train Masters when a new track is ready for service, or when an existing track is put out of service. State exact location with reference to mile post, and clear length in feet.

Make regular report on proper form.

RAIL LENGTHS.

Whenever possible, rails of 33 feet length will be used. All short rails must be laid in continuous line, and no rail less than 16 feet in length will be allowed in main track.

UNLOADING RAIL.

Rail must not be unloaded while cars are in motion. Rails may be evenly dropped from side of car when it can be done without injury. Rails must not be allowed to drop on each other.

SECOND-QUALITY RAIL.

Second-quality rails must be used at turnouts, on straight or slow speed tracks.

EMERGENCY RAIL.

Two serviceable rails of proper section must be kept, properly stored, at each mile post, with one pair of angle bars to fit, bolted to each rail with one bolt.

At least one serviceable rail of proper section must be kept, properly stored, at each passing track, and at convenient points in yards.

RAIL EXPANSION.

To allow for proper rail expansion, shims will be used when laying rail, as follows:

0	Degrees	to	20	degrees	temperature	5/16	inches
20	"	"	40	"	"	1/4	"
40	"	"	60	"	"	3/16	"
60	"	"	80	"	"	1/8	"
80	"	"	100	"	"	1/16	"

EXPANSION ALLOWANCE.

While many serious accients have been caused by the buckling of rails by heat, the other extreme of allowing too much expansion room is to be guarded against. Joints cannot be kept up if the spaces between rails are too great.

STANDARD GAUGE.

The standard gauge of track is 4 feet 8½ inches, and must not be deviated from without special authority from Division Engineer.

TEST OF GAUGES AND TRACK LEVELS.

Supervisors must test all track gauges and levels when received, and those in service must be tested at least once every six months.

GAUGING.

Gauge must be set square across the track, fitted neatly against head of rail, and must not be removed until spike is driven home. Do not use gauge to hold rails apart.

WATCH GAUGE OF TRACK.

Watch gauge of track and see that it does not exceed 4 feet 8½ inches. Wide gauge must be promptly rectified. Track over ½ inch wide must be regauged.

RAIL LAYING, BREAKING JOINTS.

Rail must be laid with broken joints, care being taken to have the joints of one line of rail opposite the center in opposite line. Rails one or two feet shorter than regular length may be used on inside of curve to accomplish this result.

BOLTING JOINTS, FASTENINGS.

Joint fastenings must be applied with full number of bolts, nuts, nut locks and spikes. Joints must be full bolted before joint is spiked.

POSITION OF BOLTS, STAGGERING.

The nut of bolt nearest Baltimore at each joint will be on gauge side of rail, and each successive one will be staggered.

WRENCHING NUTS, BOLTS.

Nuts must be screwed up and kept tight.

USE OF RAIL DRILL.

Rails must not be nicked, punched or slotted but when necessary to make holes for bolts, they must be drilled with proper tools.

COMPROMISE JOINTS.

Wherever possible compromise joints must be supported on one tie and not suspended. The middle of tie must be under the rail joint. Step plates will be used to secure proper bearing for rail.

RAIL RENEWALS.

Rail must be coupled and laid in the direction of traffic when practicable.

If trains are so frequent as to require the use of switch points to close track, such points must be of good full section, at least as high as stock rail, with switch plates properly secured and braced, and spiked against stock rail.

When practicable, switch points will be laid so that trains will trail over them.

Such switch points must be removed at the end of each days work, and track closed with a rail of proper length.

RAIL RENEWALS—DIFFERENT SECTION.

If renewing rail of different section, the connecting switch point must be of the larger rail section, bolted to a short length rail of similar section, and connected with the smaller rail section by compromise joint.

TRACK CENTERS.

The standard distance between track centers is 13 feet. This distance must not be reduced without proper authority.

TIE INSPECTION.

Supervisors will have charge of tie inspection on their sub-divisions. Instructions will be issued by Division Engineer from time to time, relative to tie inspections.

LINING TIES.

The north end of ties on single track must be kept in a uniform line, and the outside ends of ties where there are two or more tracks must be kept in line.

TIES—NUMBER PER RAIL.

Ties must be laid 16 to a thirty foot rail, and 18 to a thirty-three foot rail.

ADZING TIES.

Ties must not be notched; the adz must only be used to secure a true and uniform bearing for base of rail.

TIE RENEWALS.

Place large ties at joints. Place ties at right angle to rail. No ties fit for one year's service in track shall be removed, and renewal of ties out of a face must be avoided whenever possible.

Space ties regular distances apart.

SWITCH TIES.

The practice of renewing switch ties in sets is not allowed. Only such ties should be renewed as are unfit for further use.

TAMPING TIES.

Tamping under ties must extend a distance of 12 inches on each side of rail. Ballast must be shovel rammed under remainder of ties.

PLUGGING SPIKE HOLES.

When a spike is drawn from a tie the hole must be plugged and spike driven in plug.

SPIKING AT JOINTS.

Spikes must be placed in slot holes of angle plates, except on bridges, to prevent rail creepage.

SPIKING.

Rail must be spiked in full, four spikes to each tie, and each spike driven home perpendicular with face of tie. All ties on curves must be doubled spiked.

DRIVING SPIKES.

Spikes must be set perpendicular to tie, so that edge just clears rail. When "Homing" a spike, the last few blows must be lightly struck, to avoid breaking off spike head. Rail must not be forced to line by spiking, but should be held in place with lining bar while spike is driven.

Spikes improperly driven must be drawn and re-driven.

LOCK SPIKING.

All ties must be lock spiked; the outside spikes being driven opposite each other on one side of tie, and the inside spikes opposite each other on other side, but no spikes must be driven less than two inches from edge of tie.

SECOND-HAND SPIKES.

Second-hand spikes, when fit for use, must be used and not scrapped.

TIE PLATES—USE OF.

Tie plates will be used on all curves, all tunnels, all bridges, through all turnouts, and elsewhere as directed.

PLACING TIE PLATES.

Ties must be properly adzed to secure a uniform bed for tie plates. Tie plates must be set square with rail and full spiked. After tie plates have taken their set in ties, spikes must be driven home.

SURFACING TRACK.

Track level must always be used when raising or surfacing track. When surfacing near bridges, see that line and surface conform to that on bridges, and if there is any variation, communicate with Master Carpenter and arrange to correct discrepancy promptly.

LINING TRACK.

Tangents must be truly straight and curves must be carefully and truly lined. All kinks and long bows must be lined out.

LINE INSTRUMENTALLY ESTABLISHED.

When alignment has been established by instrument the center stakes must be carefully adhered to in lining track.

SURFACING TRACK AT BRIDGES.

Track at ends of bridges must not be raised higher than on bridges, and must not be allowed to settle low at ends of bridges.

LINE AND SURFACE OF TRACK.

Supervisors and Foremen will carefully observe track for irregularities in line and surface, and will have same corrected promptly.

JOINTS.

All rail joints must be full bolted and nuts brought to snug bearing.

Low joints in track must be corrected at once.

LINE ON BRIDGES.

Good line on bridges is imperative, and no excuse will be accepted for bad line.

EASEMENT CURVES.

Where spiral or easement curve joins main curve full super-elevation must be used. On the tangent 30 feet from end of spiral place rails level; run from full super-elevation to level between these points, thus making run-off equal to length of spiral curve, plus 30 feet.

On curves of 2 degrees and under, when no spiral is used, run off super-elevation on tangent at the rate of one inch in fifty feet. Use full super-elevation at point of curve.

SUPER-ELEVATION.

Supervisors and Foremen must see that accurate and proper super-elevation of rail on curves is maintained.

TABLE OF SUPER-ELEVATION OF RAIL ON CURVES.

0	Degree—	30	minutes—	1/8	inches	super-elevation	
1	"	00	"	1 1/4	"	"	
1	"	30	"	1 3/8	"	"	
2	"	00	"	2 1/2	"	"	
2	"	30	"	2 3/4	"	"	
3	"	00	"	3 1/2	"	"	
3	"	30	"	3 3/4	"	"	
4	"	00	"	4 1/2	"	"	
4	"	30	"	4 3/4	"	"	
5	"	00	"	5 1/2	"	"	
5	"	30	"	5 3/4	"	"	
6	"	00	"	6	"	"	
6	"	30	"	6 1/2	"	"	
7	"	00	"	6 3/4	"	"	
7	"	30	"	6 3/4	"	"	
8	"	00	"	7	"	"	

The above table is a general guide, but may be deviated from under special conditions. All such deviations, however, must have the approval of Division Engineer.

For curves of eight degrees or greater, the super-elevation must not exceed 7 inches, except under special instructions.

RAIL—GRADE LINE.

In placing super-elevation on curve, put the elevation in outside rail and carry the inside rail at regular grade line. Do not depress low rail.

FINDING DEGREE OF CURVE.

Should the degree of curve not be known, it may be ascertained by stretching a 62-foot string so that the two ends touch the gauge side of rail. The distance from middle of string to gauge of rail, opposite the midde of string, in inches and fractions, gives the degree of curve in degrees and fractions, one inch being equal to one degree.

Example: Middle distance measures 5¾ inches; degree of curve is 5¾ or 5 degrees, 45 minutes.

POSITION OF TRACK JACKS.

Track jacks, when in use, must be placed outside of rails, and not between them.

SHIMMING TIES.

Track shimming in this climate is rarely necessary, and must be used only as a last resort, when other methods of surfacing are ineffective. The shims must be removed as soon as weather conditions permit, and must never be left in track any undue length of time.

When shims are used special precaution must be taken to insure stability of spiking. Shimming must not be used without consent of Supervisor, who will report case to the Division Engineer.

BALLAST.

Ballast will consist of such stone, cinder, gravel or slag as the Chief Engineer, or Assistant Chief Engineer, may designate.

PREPARING ROADBED FOR BALLAST.

Before distributing any kind of ballast, the roadbed must be properly prepared, by having fills widened and cuts ditched.

KEEP BALLAST CLEAN.

Care must be taken in handling ballast to keep it free from dirt and other foreign matter.

BALLAST SECTION.

Ballast must be put in track and dressed to conform to the standard drawings.

BALLAST SIZE.

Stone or slag ballast must be broken to cubes, the maximum of which will pass through a 2½ inch ring in any direction.

COLOR OF BALLAST.

Ballast of same color must be spread over a continuous portion of track, and different colors must not be mixed.

TURNOUTS—LOCATION.

As far as practicable, turnouts will be so located as to give enginemen approaching them a good sight. Avoid turnouts on curves where possible.

SWITCH TARGETS.

All Main Line switches, and all derailers will be equipped with targets.

Switch targets must be set square with rail to insure full view.

SWITCH TARGETS' COLORS.

Main-line switch targets and lamps will show white when switch is set for Main Track, and red when switch is set for siding. Yard-switch targets and lamps will show white when switch is set for ladder, or more important track, and green when switch is set for less important track.

Derailer switch targets will show white when track is clear for passage of trains, and green when switch is set against trains.

CROSSOVER SWITCHES.

All crossover switches on double track must trail with the current of traffic, unless otherwise ordered.

LAYING OUT CROSSOVER-SWITCHES.

To determine distance between frog points at crossover switches, use the following rule: From the distance between track centers, subtract 9 feet 5 inches, multiply this remainder by frog number. The result will be the distance from one frog point, to a point opposite the other frog point, measured along the main track rail.

This rule applies only to crossover switches on straight track.

For crossovers on curves, the frog points will be established instrumentally.

SWITCHES—BENDING STOCK RAIL.

In laying a standard turnout from the main line, a prounounced bend must be made in the main line turnout stock rail, ahead of switch point as follows:

No.	6	frog,	10-ft.	switch	point,	8	in.	from	pt.	of	switch
"	7	"	15	"	"	"	11	"	"	"	"	"
"	8	"	18	"	"	"	12	"	"	"	"	"
"	10	"	18	"	"	"	12	"	"	"	"	"
"	12	"	18	"	"	"	16	"	"	"	"	"
"	15	"	24	"	"	"	23	"	"	"	"	"

USE OF FROGS.

Use Manganese, or anvil-face frogs when frog is subjected to very severe service.

Use spring-rail frogs for main line connections, unless there is special reason to contrary.

Use stiff frogs in yards, and on main tracks, when especially required.

Special frogs will not be used except when absolutely necessary.

Crossing frogs will be especially designed to meet conditions.

At ends of double track use No. 12 or No. 15 frogs.

At ends of passing tracks use No. 10 or No. 12 frogs.

At crossover switches use No. 10 frogs or larger, if practicable.

At business sidings use No. 8 frogs or larger, if practicable.

Avoid use of any frog less than No. 8, if practicable.

Turnout leads will be as follows:

No.	6	frog,	10-foot	switch	point,	57	-foot	lead			
"	7	"	15	"	"	"	66	"	"		
"	8	"	18	"	"	"	75½	"	"		
"	10	"	18	"	"	"	85	"	"		
"	12	"	18	"	"	"	93	"	"		
"	15	"	24	"	"	"	122	"	"		

SWITCH LEAD RAIL.

Rails in switch lead must be of same section to avoid the use of compromise splices on switch ties, and the main-line rail sections must be carried to clearance point on sidings.

SWITCHES.

Switches must be carefully laid to line and the switch points must fit snug against stock rail.

PLACING POINTS.

The full number of plates must be used under each switch point and the full number of switch rods used to connect points.

FROGS—SETTING.

Frogs must be laid with full number of braces and plates, and set on top of ties without chopping or adzing, except to secure true bearing.

Frogs must not be set in track without guard rails.

Frogs should be located by Engineers.

GUARD RAIL.

Guard rail must be set opposite frog and 1¾ inches from main rail.

GUARD-RAIL FASTENING.

Care must be used to properly fit and secure guard rails correctly. Use full number of base plates or fasteners.

Spike the ends of guard rails where necessary to prevent movement.

SWITCH LOCKS.

Switches and derails must be provided with a standard switch lock, securely fastened to switch stand.

HEAD BLOCKS.

Keep head blocks of switches well tamped to prevent lamps being jarred out.

KEEP SWITCHES IN ORDER.

Switches must be kept in proper working order; rails truly lined and surfaced and all lost motion in switch stands and connections taken up; guard rails must be properly placed and securely fastened. All switches must be full bolted. Movable parts of switches should be oiled and a few drops of oil placed on switch points occasionally.

SWITCH LAMPS.

All main line switches and all derailers will be equipped with switch lamps unless otherwise ordered.

SWITCH LAMPS—CARE OF.

Switch lamps must be kept bright and clean and wicks free of crust. Switch lights must be kept lighted from sunset to sunrise and during heavy fogs.

When first lighted they must be watched for a few minutes to see that they burn properly. Do not fill lamps too full. Do not discolor switch targets.

CARE OF LONG-TIME-BURNING SWITCH LAMPS.

Do not handle lamps roughly nor change them in any way. Lamps needing repairs which the lamp man cannot make should be reported promptly by the Section Foreman to the Supervisor. If trouble is experienced with the switch lamps on account of the quality of the oil, it should be reported to the Supervisor at once, stating date and from what point oil was received. Care should be taken so as not to waste oil, and all employes handling switch lamps are required to observe the following rules:

CLEANING.

Every Wednesday and Saturday clean all lamps inside and outside; remove all grease, soot and dirt from the lenses and lantern.

TRIMMING WICKS.

Turn the wick down so that the charred portion only is exposed above the wick tube. Break off the charred portion, but do not trim the wick with shears unless it is frayed. Renew the old wick when it gets too dirty or too short. Dirty wicks will not freely carry the oil to the burner.

FILLING.

Fill lamps every Wednesday and Saturday. Do not entirely fill the oil cup. Leave a space of about one-quarter (¼) inch at the top unfilled. This is to provide an air space so that the oil will not become heated and be forced through the wick tube too fast.

CLEANING OIL CUP.

Empty the oil cup at every fourth filling. Clean all dirt from the bottom of the cup and refill with fresh supply of pure, clean oil.

LIGHTING.

When the lamp is lighted, turn the flame down to about half the height required to give a full light until the parts become warmed, after which turn the flame to the height which gives the best light, but do not turn the flame too high.

OIL CANS.

Cans for oil supply should be thoroughly cleaned inside once a month, and when not in service should be kept indoors and not left out in the weather.

REMOVAL OF SNOW AND ICE.

During snowstorms and bad weather keep turnouts, turntables, road crossings, station platforms and other exposed points clear of snow and ice.

Clean turnouts, turntables and road crossings first.

Station platforms second.

Street pavements and other points third.

REMOVAL OF CINDERS FROM TRACK.

Remove cinders from track.

Report to Division Engineer any failure on the part of trainmen to comply with rules for dropping cinders on track.

CUT-DITCHES.

Ditches in cuts must be kept clean and free from all obstructions, so as to thoroughly drain

the roadbed. The line of all ditches must conform to the standard roadbed section. Material taken from cuts should be placed where needed on fills, and under no conditions thrown up on side of cuts.

BERM DITCHES.

Wherever the general drainage of the ground is toward the cut, surface ditches must be made outside of the slope of the cut, 10 feet or more from top of slope.

EMBANKMENT PROTECTION.

Wherever water washes the soil, so as to approach too near the track, special effort must be made by piling logs or stone to stop the waste.

Washed places must be filled in to preserve full roadbed section.

DRAIN TILE.

Cuts with springs of water in them can frequently be bettered by use of drain tile. This tile should be carefully laid on regular grades, two feet below roadbed, and be covered with stone or cinders before applying earth filling.

Upon request, Division Engineer will furnish plans showing position of drain tile in place.

DRAINAGE OF ROADBED.

The stability of the track depends upon the strength and permanence of the roadbed and structure on which it rests; whatever will protect them from danger or premature decay should be carefully observed.

The worst enemy is *water*, and the further it can be kept from the track or the sooner it can be diverted from the roadbed, the better the track will be protected.

WATCHING CUTS.

All cuts must be closely watched, and loose rock, trees and stumps removed from slope.

WATCHING TRACK DURING STORMS.

During storm and severe weather watch closely all points where obstructions are likely to occur.

Watch carefully all cuts and remove promptly all trees, stumps, rocks, ice or earth that may fall or endanger the passage of trains.

Take all necessary precautions to prevent accident or obstructing train service.

ROAD CROSSINGS.

Road crossings must be closely watched. Crossing boards must be kept in place, and ballast, dirt and other foreign material kept from between boards and rails.

Road-crossing boards must be laid close to rails on outside of head of rail and 2½ inches from head on gauge side.

Keep space between rail and crossing board free of foreign matter.

Keep boards in proper position and well nailed.

Fill space between crossing boards with ballast.

CLEARANCES.

At overhead structures or at any points where vertical or horizontal clearance is close, no change in clearance must be made without proper authority.

Report to Division Engineer promptly any vertical clearance less than 22 feet, or horizontal clearance of less than 7 feet 9 inches, from center of track.

CLEARING RIGHT OF WAY.

Right of way will be cleaned as may be directed; all grass, brush, trees and stumps must be removed, and grass and weeds scraped from roadbed to a width of 6 feet from rail. During winter months foremen may obtain permission from Supervisor to burn over right of way.

TOOL HOUSES.

Tool houses must be kept neat.

Tools and material must be properly stored and ready for use.

Do not keep scrap and unnecessary material on hand.

MAIL CRANES.

Mail cranes must be carefully placed in correct position and maintained in proper condition.

GRASS UNDER BRIDGES.

It is the duty of track men to keep dead grass and other inflammable material from under wooden bridges.

FENCES.

Foremen must see that Company right-of-way fences are kept in good repair, and that gates are kept closed.

Cattle guards must be kept in good repair.

Report to Supervisors unusual repairs necessary.

COALING STATION EMPLOYES.

Coaling station employes will receive instructions from Supervisors.

They must make every effort to give the proper kind of coal to engines promptly, and arrange their work to avoid delay.

They must keep an accurate record of coal furnished each engine.

They must notify Train Master and Supervisors when coal supply is getting low. Never run out of coal.

They must keep premises about the coaling station in neat condition.

WATCHMEN.

Watchmen will receive instructions from Section Foremen.

TRACK WATCHMEN.

Track watchmen will constantly patrol the beat to which they are assigned, keeping a sharp lookout for slides, rocks and other obstructions on the track.

If employed about bridges, they will keep water barrels full and inspect bridges frequently for fire and other dangers.

When not otherwise employed they will remove loose rocks, stumps or other material liable to get on track.

TRACK AND BRIDGE WATCHMEN—SIGNALS.

Track and bridge watchmen will display a white flag by day, or a white light by night, when track is safe for passage of trains at regular speed. They will display a green flag by day, or a green light by night, when track is safe for passage of trains at slow speed. They will properly flag approaching trains if track is unsafe for passage of trains.

They will report to Section Foremen promptly any danger or trouble coming under their notice.

CROSSING WATCHMEN.

Crossing watchmen must be on constant lookout for approach of trains, and will warn persons using crossing of the approach of trains, and will use every effort to prevent accident.

They will operate safety gates when provided.

They will keep crossing and surrounding property in neat condition.

They will use a green flag by day or a green light by night for signal purposes.

SPECIAL RULES FOR MASTER CARPENTERS AND SUBORDINATES.

RESPONSIBILITY.

Master Carpenters will be in charge of Carpenters, Painters, Draw Bridge Operators and Masons, and will be responsible for maintenance of bridges, trestles, culverts, platforms, turntables, track and wagon scales, stock pens and buildings. They must cause all ordinary repairs to be made to buildings and other structures without special order, but must obtain authority and approval of plans, through regular channels, before making any extensive renewals, and before altering or remodeling buildings, or removing any of the Company's buildings or other structures.

INSPECTION OF BRIDGES.

Master Carpenter must make personal examination of all bridges and culverts at least twice each year, and must make a report about April 1st, and October 1st, of each year to Division Engineer, specifying all structures of every description requiring renewal within next six months. Bridges and other structures requiring special attention must be frequently inspected.

IMPORTANT BRIDGE WORK.

Master Carpenters must personally direct, as far as possible, all important construction of or repairs to bridges.

PERFORMANCE OF WORK.

All work must be performed in accordance with Company's standard plans and in a workmanlike manner. Joints must be properly cut, and the use of shims and unnecessary blocking avoided.

SUPERVISION OF WORK.

Master Carpenters must look closely into details of work, be familiar with plans and know that subordinates understand them.

They must spend each day on field work, except when necessary to be at office.

PLANS.

Plans will be furnished for work when necessary, and in all cases standard form of construction will be used, unless otherwise ordered.

CARPENTER FOREMEN.

Carpenter Foremen will perform such duties as are assigned them. They must stay with their men, and keep them properly employed.

MASONRY FOREMEN.

Masonry Foremen will be employed when necessary, and will perform such duties as are assigned them.

They must stay with their men and keep them properly employed.

FOREMEN OF PAINTERS.

Foremen of Painters will be employed when necessary, and will perform such duties as are assigned them.

They must stay with their men, and keep them properly employed.

DRAW-BRIDGE TENDERS.

Draw-Bridge Tenders must be at post of duty at all times, and be particularly careful to avoid delay to trains and boats.

They will keep signals and lights properly displayed at all times.

LOCATION OF FOREMEN.

Foremen must keep Master Carpenter advised as to where they are working. In case of severe storm or high water, they should place themselves in communication with a telegraph office, ready to go at once with their gang to repair any damaged structures.

TOOLS AND EQUIPMENT.

Frequent examinations must be made of all lines, ropes, ladders, derricks, blocks, sheaves, adzes, hammers and other tools and appliances to know that they are in proper condition for use.

EXAMINATION OF STRUCTURES BY FOREMEN.

Foremen will be furnished with a schedule of work and repairs for various structures, but they should always examine structures at every opportunity. They should see that bridges are in good line and surface, and that timbers are in good condition.

URGENT REPAIRS.

Foremen are authorized to make urgent repairs at once on any structure they find in a dangerous condition. No other work should be performed, except such as is authorized by the schedule or ordered by the proper official. Performance of urgent repairs must be reported promptly to Master Carpenter.

INSPECTION OF MASONRY.

Examine all bridge seats, piers and abutments for failure, cracks or settlement. Note carefully condition of foundations.

INSPECTION OF TIMBER STRUCTURES.

Examine all sills, posts, caps, stringers, ties and wall plates. Note carefully condition of joints and timbers and floors of roadway bridges exposed above ground.

Look out for bolts and drift pins.

INSPECTION OF STEEL STRUCTURES.

Steel bridges and other steel structures must be inspected at regular intervals. Examine bridge seats, connections and riveting carefully. Examine all steel members carefully.

REPAIRING BRIDGES.

If making repairs to bridges, work should be performed with the least interruption to traffic. A thorough understanding must be had with Superintendent and Train Master in order to secure the safe movement of trains and engines during repairs. Do not block traffic unless absolutely necessary. When track is blocked, protect with proper signals.

MATERIAL FOR EMERGENCY USE.

Material must be stored and piled so as to be convenient for quick loading in case of emergency. Keep grass, leaves and other inflammable material away from lumber piles.

USE OF MATERIAL.

Care must be exercised to avoid waste in laying out and cutting material.

USE OF SECOND-HAND MATERIAL.

Timber removed from structures can frequently be cut back to solid wood and replaced in structures.

Bolts and other iron material can also be used to advantage again.

Employes must practice economy in use of material.

INSPECTING AND CHECKING MATERIAL.

All lumber and other material must be carefully inspected and checked.

Be positive that the class of material called for on bill of material is furnished.

CUTTING OFF OLD PILES.

When replacing piles with framed bents, dig down until sound timber is found in the old pile. Care must be taken in sawing off old piles and fitting new timbers, to make a good joint. New timbers must be securely fastened to pile with drift bolts.

RENEWAL OF BRIDGE TIMBERS.

Bridge timbers must be closely watched, and those showing fatigue or decomposition removed. Examine joints and bearings carefully.

FRAMING BRIDGE TIES.

When framing bridge ties, be careful to frame out camber as directed, and be sure that line and surface of track on bridge conform to that adjacent to bridge. If there is any variation, communicate with Supervisor and arrange with him for prompt correction thereof.

TIMBER JOINTS.

All timber joints must be correctly made to avoid use of shims and blocking. All timbers must have full bearing.

BRIDGEMEN LAYING TRACKS.

When required to lay or maintain track, bridge man will be governed by the rules prescribed for the government of trackmen.

REPAIRS TO STEEL BRIDGES.

Repairs to steel bridges must be undertaken only by men properly instructed and who thoroughly understand the work.

REPAIRING HIGHWAY BRIDGES.

If making repairs on highway bridges, work should be performed with as little interruption to travel as possible, and if temporary driveways or footways are necessary, be sure they are absolutely safe, and that permanent roadway is effectually blocked.

POLICING.

Do not permit rubbish of any kind to remain on or about any bridges or structures, and after completion of a job remove all refuse.

SYMMETRY OF BUILDINGS.

All additions to Company's buildings must conform in construction and appearance to the main building to which they are attached, and all new buildings constructed must conform to general standards.

PASSENGER AND FREIGHT STATIONS.

Passenger and freight stations must be kept in good condition. Doors, locks, windows, gutters, down spouts, roofs, platforms and lighting facilities must be maintained in proper working order.

BUILDING REPAIRS.

If repairing buildings, make only such repairs as are ordered. Should Foremen discover any defects that would endanger the buildings, especially as regards liability to fire, he should at once call the attention of Master Carpenter to such defects.

If working about passenger station or other public place, be careful to avoid injury to persons.

REPAIRS TO TURNTABLES.

If adjusting turntables, see that the circular track is level and the table raised so that end wheels will just clear the circular rails when turning the heaviest engines as directed. The elevation at ends must be adjusted so that when engine is moving on or off turntable the rails thereon are level with the rails on the curb.

TRACK AND WAGON SCALES—INSPECTION.

All track scales must be tested with scale-test car at stipulated times, and correct report made of condition of scales. All bearings must be clean and fit and work properly; masonry and framed parts must be maintained in good condition.

Scale pits must be kept clean and well drained. Do not allow scale floor or rails to foul or rub framework.

PLACING COALING STATION, TURNTABLE AND SCALES OUT OF SERVICE.

Do not put any coaling station, turntable or scales out of service without giving notice of twenty-four hours in advance to Division Engineer, Superintendent and Train Masters.

PAINT COLOR.

Only standard paint and colors will be used.

APPLYING PAINT.

All rust, grease, dirt and other foreign matter must be carefully removed from steel or iron structures with scraper and brush before paint is applied.

Paint must not be applied in wet or freezing weather.

Paint must be mixed and applied in a thoroughly workmanlike manner.

DATE OF PAINTING.

Upon the completion of a piece of work, painters will stencil date of completion on the east end of building or structure.

ELECTRICAL FIXTURES.

No electrical apparatus or fixtures will be used by electrician except those properly authorized.

Be particularly careful to insulate and properly protect charged wires and other fixtures.

MATERIAL FOR MASONRY STRUCTURES.

Only such material as is authorized by the Division Engineer will be used in masonry structures.

CEMENT.

Care must be taken to keep cement free from moisture, and none will be used in important structures that has been damaged.

STONE MASONRY.

Stone for Masonry must be hard and free from seams and cracks. Stone must have a good bed surface and be free of dirt.

STONE FOR CONCRETE.

Gravel will preferably be used for concrete work. If crushed stone is used it must be broken so as to pass through a two-inch ring in any position. All stone for concrete must be hard, free of cracks, seams and dirt.

SAND.

Sand must be clean and sharp. Screenings from ballast plants may be used instead of sand for less important work.

MIXING CONCRETE.

Concrete must be mixed "Medium Wet," and in such proportions as may be directed by Division Engineer.

FOUNDATIONS.

Solid rock foundations for masonry structures must be obtained if possible. If gravel or earth foundations are unavoidable communicate with Division Engineer. If timber foundations are necessary, special plans will be furnished by Division Engineer.

PLATFORMS.

Timber platforms and floors, especially those used by the public, must be kept safe and in good repair.

FENCES.

Keep fences in good repair, and gates in proper working order.

ROOFING.

Manufactured roofing material must be approved before being used. Joints must be fully protected to prevent leaks. All roofing must be properly laid and securely fastened to building.

STOCK PENS.

Stock-pen fences must be kept in good repair; no sharp or projecting points are allowed. Roofs must be kept in good repair.

REPORTING COMPLETION OF WORK.

In reporting work done on bridges or other structures, use the same language and order of wording as in the order for such work. If work called for in the order is changed in any manner, give the reason for such change. If any work is performed not called for in order, it must be reported with reason for such extra work. When work on a structure is completed, make out completion report.

REDUCTION OF CLEARANCES.

In building or making repairs to any structure should it become necessary to reduce the standard clearance, notify Division Engineer, Superintendent and Train Masters promptly by wire.

DISTURBING TELEGRAPH, TELEPHONE AND SIGNAL WIRES WITH DERRICKS.

If raising derricks, proper care must be used in handling guy ropes, so that they will not

cause telegraph, telephone or signal wires to become crossed.

DERRICK CLEARANCES.

Guy lines must be placed at least 25 feet above top of rail. If clearance is less, notify Division Engineer, Superintendent and Train Masters.

If derrick fouls the main track when in use, it is an obstruction and must be properly protected.

SPECIAL RULES FOR FOREMEN WATER SUPPLY AND SUBORDINATES.

RESPONSIBILITY.

Foremen Water Supply have charge of water stations, plumbing, crossing gates and such other facilities as may be assigned.

INSPECTION.

Foremen Water Supply will make regular inspections of all work coming under his care, and will report conditions to Division Engineer.

ASSISTANTS.

Foreman Water Supply will have a force of Plumbers, Carpenters and Laborers.

PUMPMEN.

Pumpmen report to Foremen Water Supply in matter regarding machinery and to section foremen in all other matters.

They must keep the water station clean and in proper working order.

A full supply of water must be kept up. Cinders and other filth must be removed from the plant, and about tracks adjacent thereto.

Pumpmen are responsible for the care of machinery and the surroundings about water stations.

PUMP FAILURES.

Report promptly to Division Engineer, Superintendent and Train Masters any failure to

keep up water supply. State concisely cause of trouble, what is required to make repairs and how long water station will be out of service.

FUEL SUPPLY.

Pumpmen must order fuel for water stations at such time as to insure having an ample supply on hand at all times.

BOILERS.

Only boilers of design approved by the Chief Engineer will be installed.

BOILERS—CARE OF.

Particular attention must be paid to care of boilers. They must be kept clean. Injectors, steam gauges and water glasses must be in proper working order.

Boilers must be thoroughly washed as often as necessary, and flues must be kept tight. Fire and hot coals must not be allowed to accumulate under grate.

Do not overtax boilers.

PUMPS.

Only pumps of design approved by the Chief Engineer will be installed.

PUMPS—CARE OF.

Pumps must be kept clean, and all foreign matter must be carefully removed, especially from working parts.

Pumps must be kept securely fastened to foundations; they must be properly packed and lubricated, and must not be worked beyond capacity, except in emergency.

FITTINGS, VALVES.

All fittings and valves must be of design adopted as standard, must be properly installed and maintained in good working order.

FOUNDATIONS.

All foundations for boilers, pumps, pumphouses, water tanks and water columns will be of concrete, unless otherwise directed. Standard plans of these foundations will be generally used. The Division Engineer will prepare special plans when necessary.

TANKS.

Tanks must be standard dimensions. The material and design must be in accordance with specifications. Tanks must be properly fitted together and kept painted to avoid leakage.

WATER COLUMNS.

Water columns of standard design will be used. They must be set up in a thoroughly workmanlike manner and in accordance with standard plans. Position of water columns will be determined after consultation with Division Engineer.

INTAKE BASINS.

Intake or settling basins, when necessary, will be placed in stream or source of water supply. They must be kept free of all sediment and clear for the intake of water.

FOOT VALVES.

Foot valves and strainers must be fitted to pipes where necessary.

PIPE LINES.

Pipe lines must be laid straight when possible. Joints must be made tight.

DRAINING PIPES AND BOILERS.

During cold weather boilers, pipes and pumps must be thoroughly drained when not in use.

DRAINAGE.

All pumphouses, standpipe foundations and other points at which water would accumulate must be properly drained.

CROSSING GATES.

Crossing gates will be installed where necessary. They will be of standard design, and no gate will be over 30 feet long unless absolutely necessary.

PLUMBING AND HEATING.

Where plumbing and heating systems are necessary, they must be installed in accordance with plans. As far as possible material of similar design will be used in this class of work.

WORKMANSHIP.

All water, heating and sewer pipe must be laid on the best lines obtainable and thoroughly protected to prevent freezing.

POLICING.

After completion of work, clean up and remove all waste material.

WORK ABOUT STATIONS AND PUBLIC PLACES.

If working about passenger stations or other points used by the public, be careful to avoid injury to persons.

SPECIAL RULES FOR SIGNAL MEN.

RESPONSIBILITY OF MAINTAINERS.

Maintainers are responsible for the inspection, adjustment and proper maintenance of all interlocking plants, signals, crossing bells, or other signaling apparatus assigned to their care.

TRAIN-ORDER SIGNALS.

Location of train-order signals will be selected in conference with Superintendent. A good view from approaching trains must be secured. Use only standard signals.

ADDITIONS AND ALTERATIONS.

Additions or alterations to an interlocking plant must not be made unless authorized by the proper officer.

WORK AFFECTING TRACK CONDITIONS.

When necessary for the performance of work in any way affecting track conditions repairmen must notify the Supervisor, who will arrange to have such work performed by the regular track forces under the direction of the Section Foreman.

EMPLOYE'S DUTIES.

Repairmen when on duty, or subject to call, must keep the proper officer advised as to where they can be found, and must respond promptly when called. Employes engaged in signal work must be familiar with the rules and must comply with them. They are not permitted to leave the section or district to which they are assigned without proper authority.

TOOLS.

Tools provided by the Company must be kept in good condition and ready for instant use.

INSPECTION OF PLANTS.

The interlocking plant must be inspected daily. All pins in crank stands, compensators, detector bars and other connections must be kept tight. Cotters must be kept in place and properly spread. Crank, compensator and other foundations must be kept rigid, and all boxing must be kept in repair. All wire and pipe-line connections must be kept in proper adjustment.

Glasses and lenses must have frequent inspection and kept in a clean condition. If any are cracked or broken, they must be replaced at once.

Switches must be inspected daily while in operation, to see that points fit up and are properly locked.

Switch-circuit controller must be inspected at least every week for loose connection and for switch point adjustment.

Switch rod and pipe-line insulations should also be examined, though not necessarily as frequent as insulated rail joints. Bootleg wires must be watched closely, as they are frequently

caught by dragging brake rigging and damaged so that they may cause a failure at any time.

MAINTENANCE OF PLANTS.

Signal arms must be kept adjusted to proper angle. The arms must be washed whenever the color of same becomes obscured by dirt, and painted when necessary. Any part of apparatus becoming so worn as to endanger the safe working of the plant must be removed at once.

All moving parts of the plant or other signal apparatus must be kept oiled and free from grit. Care must be taken not to use too much oil, and all old oil must be removed before re-oiling.

Any damage to the interlocking plant must be immediately investigated, and the tracks and switches in a desired route must be put in a safe condition before allowing a train to pass.

In case of derailment or accident, the repairman must take precautions to prevent any unnecessary damage to ground work or connections.

LOCKING.

Tampering with machine locking will not be allowed; any defect in the locking must be reported to the proper officer immediately.

RECORD OF OPERATION.

A correct record of operation and condition of the interlocking plant or other signaling apparatus must be kept and report made to proper officer when requested.

TRACK CIRCUITS—BONDING AND INSULATION.

Track bonding should be inspected regularly and systematically.

Insulated rail joints must be inspected frequently to see that they are in good condition. Defective insulated joints may not only cause danger failures which are hard to locate, but may also cause clear failures. Two end posts should always be used in each joint. Ends of rails cut with a chisel must not be used within the joints, as the rough ends will quickly cut out the end posts.

One of the principal causes of track circuit failures is wet track or gravel and cinder ballast, and repairmen will watch this condition and arrange to have rails kept free.

Signal motor brushes and commutators must be properly adjusted and kept clean. Brushes should be adjusted so they will be diametrically opposite each other. Motor commutator should be cleaned with a rag saturated with gasoline or hydrol oil.

WIRE CLEARANCE.

Repairmen must be sure that all line wires over streets, road crossings or tracks are high enough to give proper clearance.

No appliance or material of any kind may be placed within clearance lines.

REPAIRS AFFECTING MOVEMENT OF TRAINS.

Where the condition of switches or track does not admit of proper operation or maintenance, the fact must be reported at once.

When any part of an interlocking plant is to be repaired, a thorough understanding must be had with Superintendent and Train Masters, in order to secure the safe movement of trains and engines during repairs. The towerman must be notified when repairs are completed.

If necessary to disconnect any switch or derail it must be securely fastened before any train or engine is permitted to pass over it.

A signal arm must not be removed from a stop to a proceed indication except by means regularly provided for the purpose. When the position of a signal arm must be changed to permit work to be done, the moving of the arm is to be accomplished only in the regular way.

A signal must not be fastened in the position to give a proceed indication, unless ordered by the Superintendent, in which case all switches in the route controlled by such signals, must be spiked in proper position.

If necessary to disconnect a switch, detector bar, facing point lock, or derail, the pin should be taken out as close to the function as possible, and the disconnected end left in such manner as not to foul obstructions when the lever is handled. Care should be taken that the top of the detector bar is below the top of the rail. If necessary to disconnect a detector bar or a facing point lock, the switch or derail affected must be securely spiked, and the defect remedied without delay.

BATTERIES—CARE OF.

Batteries should be inspected once a week. Track batteries should be cleaned every two weeks. Cracked jars should be taken out of service as soon as discovered.

More than one cell in the same set of track batteries must not be disconnected at one time. If there are only two cells in a set of track battery, only one should be renewed at one time. An interval of one week should elapse before the other cell is renewed. Batteries should not be cleaned on ties, station platforms, or other

places where it will be seen after the water it contained has evaporated.

SIGNAL LAMPS.

Lamps equipped with one day burners should be cleaned, filled and wicks trimmed daily. Lamps equipped with long time burners should be inspected twice a week and crust removed from the wicks, filled and flame properly adjusted. Observe rules for care of switch lamps.

FIRE—PREVENTION OF.

The utmost precaution must be taken against fire. See that no oily waste is kept around the interlocking plant where fire might occur from spontaneous combustion or other causes.

Fire buckets must be kept filled, and fire extinguishers, where provided, in place and in good order. Fire apparatus must not be used for any other purpose, but must be of easy access and ready for instant use in case of fire.

An exposed flame must not be taken near gasoline or other volatile oils, or receptacles in which they are retained, nor where the vapors of such oils exist.

POLICING.

The tower and other buildings must be kept in a neat and orderly condition. If working about stations or other public points, be careful to avoid injury to persons.