

THE PENNSYLVANIA RAILROAD

SAFETY RULES

Maintenance of Way and Structures Employes

Effective November 1, 1957.

THE PENNSYLVANIA RAILROAD

.....
(Date)

Received copy of Safety Rules, Form S-7c effective
November 1, 1957.

I understand that I am required to have a thorough
knowledge of and obey these rules.

.....
(Name)

.....
(Occupation)

NOTICE

These rules are effective November 1, 1957, and supersede S-7c, Safety Rules—Maintenance of Way and Structures Employees, effective May 1, 1951.

These rules apply to all employees in Maintenance of Way and Structures service, regardless of I. C. C. occupation number or grouping.

Federal, state or local requirements that are more restrictive than these rules must be observed.

The rules are grouped under headings for convenience. However, a rule from any heading must be observed if it covers the duties being performed.

Employees to whom they apply will be furnished a copy and are required to understand and obey them.

Officers and supervisory forces will regularly make observations and checks and take such action as may be necessary to insure compliance with the rules.

P. M. Roeper
Vice President
Transportation and Maintenance

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Manager of Safety

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CONTENTS

	PAGE
General	3
Eye Protection	9
Other Work on or about Track or in Tunnel	11
Tools or Tackle	13
Jacks	20
Spikes and Bolts	22
Protection Against Being Struck or Run Over by Train	23
Power Operated Tools, Machinery or Equipment	45
Self-Propelled Equipment, Push Cars, Trucks and Trailers	51
Highway Vehicles	59
Handling Material Manually	60
Hoisting Equipment	67
On or about Engine, Car or Train	72
Camp Cars	78
Extinguishing Fires	80
Flammables, Explosives, Acids and Fumes	80
Lantern, Torch or Light	85
Gas Cutting or Welding	86
Thermit (flash) Welding	88
Preparing or Using Molten Paraffin, Metal or Other Molten Substance	88
Manhole, Trench, Sewer, Turntable Pit or Other Excavation	90
Ladder, Scaffold, Trestle and Working at Elevated Places	92
Overhead Line Work	98
Erecting or Removing Poles	104
Working on or about Electric Circuit, Apparatus or Equipment	105
Use and Care of Electrical Protective Gloves	114
Retarder Instructions	116
First Aid	117

GENERAL

3000. Promptly inform person in direct charge of work of every personal accident, even though extent of injury appears to be slight. Obtain prompt medical attention. When person in charge is in immediate vicinity report should be immediate. When person in charge is not in immediate vicinity inform him at earliest opportunity but not later than quitting time on day of accident.

3001. Foreman or other person in charge of work shall be responsible for safety instruction and safe performance of all of the men under him, including men temporarily transferred or borrowed from another department or gang.

3002. Walking or stepping on pipe, rail, frog, switch, guard rail, interlocking apparatus or connection, except when necessary in the performance of duty, is prohibited.

3003. Before starting work the person in charge must instruct men as to unusual obstructions, openings or other hazards.

3004. When 2 or more gangs are assembled to work as a single gang, 1 foreman must be designated to take charge of the work and be responsible for the protection of the men. Each foreman involved will be advised which one of them is to be in charge. In emergency or until 1 foreman has been designated, the foreman in whose territory the work is being performed will take charge, but if he is not present, the foremen will agree as to which one of them will be in charge. The foreman in charge will advise each

of the other foremen what his duties will be with respect to the safety of the men.

3005. Wearing shoes or overshoes untied, unbuckled, unzipped or with laces dangling far enough to cause a tripping hazard or with loose, thin or cracked soles, is prohibited. Wear footwear suitable for work being performed.

NOTE: Safety shoes with not less than 6 inch tops are preferable.

3006. Wearing overalls or trousers with bottoms of legs dragging or not secured to prevent catching, is prohibited.

3007. Wearing loose or badly torn clothing that is likely to be caught in machinery, equipment or elsewhere is prohibited.

3008. Keep property or equipment for which you are responsible in a clean and orderly condition. Remove refuse to proper location.

3009. Scuffling or playing jokes on fellow employe by air pressure, by electric shock or by other means, is prohibited.

3010. Using compressed air or gas to blow dirt from person or clothing is prohibited.

3011. Leaving equipment, tool or other object in pathway, on platform or other such place where it will constitute an obstruction, tripping or slipping hazard, is prohibited.

3012. Leaving tool, material or other object at edge of excavation, or above floor or ground level in such a position that it can be readily jarred or knocked off is prohibited.

3013. Leaving tool, material or other object that is likely to fall, standing on end unsecured, or

leaning against engine, car, wall or other structure, is prohibited.

3014. Clean, if practicable, and/or scatter salt, sand, cinders, ashes, sawdust or other suitable material on surface made slippery by weather or other condition if necessary to use it in the performance of work.

3015. Walking through steam or smoke which obscures the vision is prohibited.

3016. When walking look ahead and avoid tripping, falling and slipping hazards. If necessary to look away from direction in which moving stop while doing so.

3017. Using finger to determine if holes are in proper alignment for the insertion of rivet, bolt, pin or other object, is prohibited.

3018. Getting on or off moving engine, car, train, turntable, transfer table, movable bridge, elevator, vehicle or other moving equipment, is prohibited, except motor car not equipped with clutch. On work train an employe designated by the foreman may get on or off at speed not exceeding 4 miles per hour while performing work, except on flat car. (Includes employe passengers.)

3019. Remove promptly nails or screws from lumber or other material to be reclaimed. Bend flat, pointed ends of nails protruding from lumber or other material not to be reclaimed, except when thrown directly to a fire.

NOTE: Planks, boards, or timbers which have been removed for the purpose of repairs and will be promptly replaced, may be left with the nails protruding provided they are placed with nails downward.

3020. Manually handling keg, barrel, box or other container, or removing any object from or placing it in such container before removing protruding nails, staples or loose ends of metal bands from cover boards or opened end of container, is prohibited. Hoops or bands must be folded and flattened and put with scrap.

When practicable handle metal track spike container with tongs.

3021. Keep foot or hand in the clear and use knob or handle, if provided, when opening or closing door, lid or cover.

3022. Properly secure raised window, lid or cover against falling. Close door, drawer or lid of equipment or container when not in use.

3023. Knocking broken glass from frame is prohibited. Remove carefully with gloved hand or tool designed for purpose and properly dispose of it.

3024. Standing or placing weight on makeshift support which may wobble or fall or on any object which may not support your weight to perform work or reach an object, is prohibited.

3025. Ascending or descending stairs with hand in pocket or running up or down stairs, is prohibited.

3026. Jumping from standing position from truck, car, platform or other elevated location is prohibited. If necessary to descend without use of ladder or steps:

(a) Observe ground or floor conditions.

(b) Avoid holes, slippery spots or obstructions.

- (c) Assume a sitting position, with legs hanging over, to decrease the distance, when possible maintain handhold on suitable object.

3027. Sliding down cable, pipe, rod, rope or other such object or climbing it by "hand-over-hand" method, is prohibited.

3028. Standing near a cable, rope, or chain unnecessarily when heavy pull is being made is prohibited.

3029. Take precautions to prevent being caught in loop of wire, rope or other tackle when it is being tightened.

3030. Secure wire, strand or stranded cable before cutting to prevent ends flying or recoiling.

3031. Placing bolt, wire, nail or other such object in link of chain to repair, splice or shorten chain, is prohibited.

3032. Gripping barbed wire by hand after stretcher has been attached and before it has been securely fastened to a post near the stretcher, is prohibited.

3033. The following precautions, where applicable, must be taken when cutting or trimming tree:

- (a) Use suitable wedges, properly applied, and if necessary rope or other suitable means to insure that tree being cut falls in the right direction.
- (b) Cut bark and a sufficient thickness of the wood on opposite side of tree or underside of limb from which it is to be cut through to prevent its splitting or falling in an undesired direction.

- (c) Use ladder to get into or out of tree.
- (d) Use saw or trimmer while in tree. Taking axe or hatchet into tree is prohibited.
- (e) Use rope to lower large or heavy limb.
- (f) Keep self and others away from direction tree will fall and from under tree being trimmed.

3034. Unless authorized to do so, touching dangling wire or foreign object that is hanging from or may be in contact with electric circuit, apparatus or equipment, is prohibited. Report such conditions to Train Dispatcher or Power Director at once and see that it is guarded until the employee responsible for the repairs takes charge.

3035. Using wire, wet rope, steel tape line, or linen tape containing metallic reinforcement, around energized wire, apparatus or equipment is prohibited.

3036. Entering electrical substation enclosure or building unless authorized to do so, is prohibited.

3037. Before drilling wall or partition, attempt to locate hole so as to avoid contact with wire or equipment.

3038. Before permitting excavating operations the foreman or person in charge must ascertain if there is any underground wire, electrical apparatus, equipment or pipe line in that vicinity and if so arrange for full protection. The use of lining bar or other all-metal tool to loosen dirt in the vicinity of such underground facility is prohibited.

3039. Leaving tool, tack, nail, spike or other such object driven in or protruding from pole, except to fasten authorized sign to pole is prohibited.

EYE PROTECTION

3076. Have prescribed goggles, 'clean, properly fitted and available for instant use, and wear them when engaged in work listed below :

- (a) Acids or other irritants—handling or using.
- (b) Adzing.
- (c) Blowing with compressed air or steam.
- (d) Boring, drilling or reaming overhead with hand tool.
- (e) Briars or brush—cutting with scythe or brush hook.
- (f) Cable or wire that is unannealed-cutting, reeling or unreeling.
- (g) Chopping wood with hatchet or short handled axe.
- (h) Coaling or sanding ~~engines~~.
- (i) Concrete, stone, asphalt or cemented ballast—breaking or cutting.
- (j) Cranking gasoline engine with rope.
- (k) Frozen material (ground, gravel, cinders, ballast, coal or ice)—using handle tool to break or loosen.
- (l) Gas cutting or welding.
- (m) Grinding wheel—using or dressing.
- (n) Molten metal—heating, pouring, shaping or otherwise handling.
- (o) Nails, tacks or spikes—pulling.

- (p) Paint spraying.
- (q) Power cutting, punching or drilling tool or machinery—operating.
- (r) Rivets—heating or bucking up.
- (s) Scaling or scraping.
- (t) Thermit (flash) welding.
- (u) Tie being spiked—holding up end of.
- (v) Tie plug—driving.
- (w) Trimming tree above the level of the shoulders..
- (x) Striking metal against metal (except when driving track spikes) or holding metal to be struck with metal.
- (y) Wood lathe—operating.
- (z) Performing other work hazardous to the eyes.
(To be determined by the employe in charge.)

3077. Working, observing, inspecting or supervising while near enough to the above operations to be exposed to the hazards, without wearing prescribed goggles, is prohibited.

3078. An employe who is blind in one eye must wear protective goggles at all times while on Company working premises, except when working in office.

3079. Use prescribed helmet or hand shield equipped with prescribed protective glass when electric welding or cutting or watching such operation.

3080. Use proper screen when electric welding or cutting. Using screen that is worn, torn, improperly placed, of insufficient size or that other-

wise does not protect others from harmful rays, is prohibited. When the location at which the work is being performed makes it impracticable to use suitable screen to protect others, keep them a safe distance from the operation and advise them not to face it.

If necessary to perform work near location where others are electric welding or cutting, such as at a railroad crossing, and suitable screen is not being used, request that it be done. If suitable protection is not provided move a safe distance from the electric welding or cutting operation.

OTHER WORK ON OR ABOUT TRACK OR IN TUNNEL

3085. Piling or leaving ballast higher than top of rail is prohibited.

3086. Keep feet clear of edge of tie on side being pick tamped.

3087. At point where there has been a recent derailment, in periods of high temperature, at location where rail is kinked, before beginning to renew rail or to remove part of fastenings from one or more rails, close observation should be made to determine whether rail is too tight to safely perform the work. If rail is kinked or found to be otherwise too tight to safely perform the work and it is impracticable to first relieve stress by cutting out a portion of rail with gas cutting outfit, or by lining track, proceed as follows:

(a) Beginning at one end of the rail remove 15 rail-holding spikes from the outside of the curve or kink of rail.

- (b) Remove all rail anchors from the portion of the rail from which the 15 outside rail-holding spikes have been removed.
- (c) See that all persons move to the inside of curve or kink and complete work from that side.
- (d) Remove the joint bars from the end of the rail from which the outside rail-holding spikes have been removed.
- (e) Raise rail-holding spikes not more than 1 inch on inside of curve or kink of rail on same ties from which the outside rail-holding spikes have been removed.
- (f) Place jack at slight angle on inside of curve or kink of rail in second space from joint from which the bars have been removed and raise base of rail out of tie plates and past end of adjoining rail.
(If suitable short rail, tie or timber is available, it may be used to bump loose end of rail past end of adjoining rail after it has been lifted out of tie plates.)

3088. When working about switch, movable point frog, derail or its connection, keep clothing, tools, material and all parts of body clear of all moving parts unless the open points have been blocked or lever of hand operated switch is locked. A mechanical or power operated switch, movable point frog or derail may be lubricated with a long-handled brush, or can with long spout, without blocking the switch point.

3089. When operating handle or ball type switch lever observe the following precautions:

- (a) Before operating warn employees who are in a position where they may be injured and assure yourself that all employees, tools and material are clear of switch points or other movable parts.
- (b) Place feet firmly, brace body, avoid twisting movements and lift, push or pull steadily to prevent slipping, falling, strain or sprain.
- (c) Keep hand, foot, or other part of body clear of keeper or line that lever travels, particularly when releasing it from or pushing it into keeper.
- (d) Use of foot to push lever is prohibited.

3090. When bumping rail endwise:

- (a) Spike both sides of rail being bumped to at least every fifth tie.
- (b) Secure joint bar against which bumping is to be performed with at least 2 snugly tightened bolts.
- (c) Locate skids a sufficient distance from ends of driver rail to prevent ends from sliding off skids, when practicable.
- (d) Using jack, lining or claw bar as skid, is prohibited.

3091. See that power is shut off and M. P. 397, DO NOT OPERATE, warning tag is placed on switch or control before performing work at any point where operation of movable bridge, locking device or other mechanism could cause injury.

TOOLS OR TACKLE

3100. Inspect tool, tackle, strap, rope, jack or other equipment at end of each work period it is used. If defective, it must be repaired (except strap or belt) or marked defective and kept separated

from serviceable tools or equipment and in a suitable container, if practicable. Tool with striking surface cracked or mushroomed is defective.

3101. Using defective tool, tackle, strap, belt, rope, jack or other equipment is prohibited.

NOTE: To comply with this rule it will be necessary to frequently inspect, while in use, sledge, spiking hammer, punch, cutter, strap, rope or other such tool or equipment.

3102. Using handle punch, handle cutter or handle spike lifter without hose or other suitable protection around striking head, or with handle less than 21 inches in length, is prohibited.

3103. Wedge handle of spiking hammer, sledge, hammer, hatchet, or other handle tool, the use of which requires swinging, and also any other tool to be used in overhead operations.

3104. Store all tools so they will be secure, heavy tools being placed on the floor, and sharp or edged tools in suitable box, bin or rack, or protected with suitable sheath or wrapping. Having tools at such a height that they cannot be safely placed or removed while standing on the floor, is prohibited.

3105. Transporting assembled scythe on any moving equipment is prohibited.

3106. Placing strap, belt, rope or other such equipment where it will come in contact with edged tool or sharp edge of material, is prohibited.

3107. Repairing strap, belt, rope or similar equipment with wire, tape or other material, is prohibited.

3108. Being within swing of tool, in line with bolt or rivet being chiseled off or drift pin, rail

anchor or other such object being driven, is prohibited.

3109. Swinging a tool, chiseling off a bolt or rivet or driving drift pin, rail anchor or other object without being sure your intention is known by those close by who might be or move into swing of tool or in a position to be struck by flying object, is prohibited.

3110. Holding or striking tool when holder is directly in front of striker is prohibited.

3111. Striking file or using without handle, is prohibited.

3112. Deliver blows with axe, adze, sledge, hammer, or other tool in a manner that it will not catch upon or be deflected by other object.

3113. Sitting, standing on, or straddling, bar or lever while in use, is prohibited. Place it securely and be properly braced and alert to prevent injury due to unexpected movement. Have hand, foot or other part of body so it will not be caught between bar or lever and other objects.

3114. Using the following tools for the purposes mentioned, or any other tools for purposes for which they are not intended, is prohibited:

- (a) Alligator wrench for any purpose.
- (b) Any tool in bolt hole, claw or bar on base of rail, or jaw of wrench on head of rail, instead of approved rail fork or other approved tool or method, to roll rail. (When rail fork is not readily available, the Foreman may designate an experienced man to roll rail with lining bar in bolt hole.)
- (c) Bar or end of pick to align holes.

(Use of bar is permissible if it can be done without striking and provided it is not left unattended.)

- (d) Claw hammer or hatchet to strike punch, chisel or similar tool having all metal head.
- (e) Cleaver, knife or other improper tool to open can.
- (f) File as pry or wedge.
- (g) Hard faced hammer to strike tempered or case hardened steel.
- (h) Spiking hammer to strike cutting, riveting, forming, backing out tool or lining pin.
(Employee patrolling track may use spiking hammer to strike drift pin if sledge is not available.)
- (i) Safety strap to ride messenger.
- (j) Wrench other than a ratchet or self adjusting, to operate door winding mechanism of drop bottom car.
- (k) Wrench or tamping end of pick to hammer.

3115. Connecting or disconnecting pneumatic tool, before closing the tool supply line valve and draining pressure from hose, is prohibited.

Kinking hose to control air pressure therein, or allowing air pressure into hose before both ends are securely connected, except when necessary to clean out the hose and appropriate action has been taken to prevent the loose end from whipping around, is prohibited.

3116. Connecting or disconnecting electric tool before placing control switch in "Off" position, is prohibited.

3117. Using pneumatic hammer for riveting, unless equipped with spring clip or other arrange-

ment for holding die or set in hammer, is prohibited.

3118. While pneumatic hammer is held, but not actually in use, place thumb or finger under trigger.

3119. Allowing pneumatic hammer to point at a person is prohibited.

3120. Laying down or carrying power operated tool which is in operation is prohibited. Place such tool in a position where trigger, valve or switch is shielded to prevent tool being accidentally started.

3121. Secure or hold firmly, handle of electric or pneumatic tool while in use and be prepared for jerk if reamer, drill, tap, saw or similar tool should stick or jam.

3122. Moving portable power saw after making cut before blade or chain stops, is prohibited.

3123. Use broom, bagging, or other suitable material, or approved device to prevent bolt or rivet head, nut or spawl flying when cutting it off with impact tool.

Use bagging or other suitable material, or approved device on rail or other such object being cut with impact tool, to prevent spawl flying.

While using hammer and chisel, or holding handle tool for sledge, watch for and if practicable remove spawl before it flies.

3124. When using sharp or pointed tool turn the edge or point away from the body, if practicable.

3125. When using hand adze take the following precautions:

- (a) If necessary, secure object to be adzed. Using foot for this purpose is prohibited.
- (b) Remove nails, dirt, stones or other obstructions from object to be adzed.
- (c) Straddle object when possible and work adze between legs.
- (d) Cut with grain when practicable, notching and chipping out pieces if considerable amount is to be cut out.
- (e) Use short stroke, keep adze free of chips and be especially cautious to guard against adze blade glancing when cutting cross grained lumber or knot. Watch for and avoid striking nails, spikes or other metal not at first visible.

3126. When using wrench take the following precautions:

- (a) Select proper size solid end wrench, or properly adjust other wrench, to fit object on which it is to be used.
- (b) Place monkey or similar wrench so the turn will be toward open end of jaws.
- (c) Lengthening wrench handle with pipe or other object, using two wrenches "hooked" end to end, or using any object as a shim between jaws of wrench and nut, bolt head or other object, to make wrench fit, is prohibited.
- (d) Confine stroke of wrench to space available to prevent fingers, hands or any part of body striking against objects, or being pinched.
- (e) Brace body securely to avoid overbalancing in case wrench slips or wrench, bolt, nut or other object fails.

(f) Before attempting to apply full force, make sure wrench has proper grip and then gradually increase force until bolt, nut, pipe or other object turns.

(g) Pull instead of pushing on track wrench when nut begins to tighten.

3127. When moving car have handle of mover slightly to the outside of rail to avoid catching fingers.

3128. Laying down shovel, fork, rake, hoe or other pointed or edged tool with point or edge up, is prohibited.

3129. Having ice pick, file, screw driver or other pointed tool in pocket or about clothing, unless point is protected, is prohibited.

3130. Using hydraulic rail bender without cable or other suitable means to prevent jack from kicking out from between bender arm and rail, is prohibited.

3131. Pulling on rope, wire, cable or other such object without being properly braced and alert to prevent losing balance in case anything gives way, is prohibited.

3132. When using rail fork :

(a) Free rail that is embedded in dirt or ballast, or that is otherwise wedged before applying rail fork.

(b) Hold the fork so that the maximum length of the handle is between the rail and the hands.

(c) Keep feet between ties when practicable.

(d) Keep feet out of line of movement of rail.

JACKS

3150. Clean notches and latches and oil moving parts of jack as frequently as necessary.

3151. Keep hands away from top, screw, rack, latch, socket or other moving part of jack, the movement of which may catch them.

3152. Using track jack between rails is prohibited, except where necessary and then only when in the hands of an experienced man and protected against approaching trains.

NOTE: Protection need not be provided when using "baby" jack between rails (in gauge) to line track.

3153. Place jack (except when used to line track) straight and in proper contact with object to be lifted. When jack is not high enough or foundation is insecure, place suitable blocking under jack. Insert a piece of wood between jack head and load when jacking against metal, except when lining track with jack, the head of which is designed for the purpose.

3154. Using handle not designed for jack in which it is to be used is prohibited.

Operating jack unless handle is fully inserted in socket is prohibited.

3155. Using more than 2 men to operate jack handle is prohibited.

3156. Sitting on or straddling handle of jack or "jumping" on handle while operating it, is prohibited.

3157. To operate single action jack:

(a) Maintain braced position.

- (b) Start downward pull on handle at arm's length.
- (c) Move handle downward slowly and uniformly until top latch engages.
- (d) Keep head clear of upward movement of handle before releasing downward pressure on it.
- (e) Then immediately raise handle to uppermost position, making sure that bottom latch engages.

3158. Have latches in full holding position while load is jacked up sufficiently high to make it possible for hands or feet of workmen to be under it.

3159. Leaving handle in socket of jack when operation has been discontinued, is prohibited.

3160. Allowing any part of person to be under load supported by jack, unless necessary for the performance of the work, and unless load has been adequately supported with blocks or trestles, is prohibited.

3161. Before tripping or otherwise lowering jack under load, warn fellow employees and see that they are in a safe position.

3162. To trip jack which is under load, set latch to trip, then fully insert handle in socket and start pull on handle at arm's length. Tripping jack under load by striking socket is prohibited.

3163. When not in use, lay down big track jack, pole jack, or other such topheavy jack, taking precautions to prevent dirt or other object from getting into the mechanism. When in tool house it

may be left standing, with the rack or head lowered in space designated.

3164. Using jacking timber (one end on jack and other end against object to be moved) unless it is secured with chain, brace or other dependable method to assure its staying in place, is prohibited.

SPIKES AND BOLTS

3180. When starting spike, proceed as follows:

- (a) Wipe from head of spike any excessive amount of grease.
- (b) Hold spike so that fingers will not be between spike and rail, and when practicable with the palm of the hand up.
- (c) Strike light blows until spike is firmly seated and it is sufficiently stable to prevent flying when striking hard blows.

3181. Driving of 1 spike by 2 men at the same time, is prohibited.

3182. Spiking over rail or straddling rail while spiking is prohibited, except when:

- (a) Lead, guard rail or other such construction makes it necessary.
- (b) Starting spikes with short handled hammer.
- (c) Using power spike driver.

3183. When pulling spikes, proceed as follows:

- (a) Place claw end of bar with firm grip under head of spike.
- (b) If spike cannot be firmly gripped with claw end of bar, use pinch end of bar under edge of tie plate or joint bar and pry it up sufficiently to permit firm grip under head of spike.

- (c) If spike does not pry up readily, use sledge and spike lifter, with suitable protection over head of spike. Striking claw bar to start spike is prohibited.
- (d) If necessary to have block under heel of claw bar, make sure it is sound and securely placed.
- (e) Make sure no employe is in position to be struck by claw bar; stand in fully braced position and make light pulls on claw bar, slightly increasing the force of each pull. If it requires excessive force to start spike, use bagging or similar material or take other precautions to prevent injury should spike head fly up.
- (f) After spike has started, and before pushing down on bar, observe what part of bar is likely to strike other objects and so place hands that they will not be caught if bar suddenly drops.

3184. Straightening or bending spike or bolt by striking it when it is placed on rail or on tie, is prohibited.

PROTECTION AGAINST BEING STRUCK OR RUN OVER BY TRAIN

As used under this heading the following terms convey the meaning shown opposite each:

TERM	MEANING
(a) Train	A car, cut of cars, engine or train.
(b) Track	The space between the rails and the space within 4 feet outside each rail.
(c) Secondary track	Same as main track—follow precautions specified for

TERM

MEANING

(d) Out of service

main track, except in yard.

A designated track from which train movements, other than maintenance trains for which there is thorough understanding as to operation and protection among the employees involved, have been excluded between specified points and protected.

Foreman shall be furnished written advice by proper authority as indicated below that designated track between specified points is out of service, and whether flag protection is to be provided:

1. Copy of train order addressed to operator each side of point of work or block OR

2. Message or other form designed for the purpose.

(e) Permission to use or obstruct main or secondary track (See Rule 109, Book of Rules)

Permission shall be obtained from Superintendent of Transportation or other proper authority, by train order, message or other form designed for the purpose and shall state the method of protection.

(f) Permission to use or obstruct other than main or secondary track

Permission shall be obtained from proper authority, by train order, message or other form designed for the purpose and shall state the method of protection.

TERM	MEANING
(g) Protection against approaching trains. (See Para. 55, C. E. 81, Para. 902, C. E. 78 and Rule 101, Book of Rules)	The precautions shown below shall be considered protection against approaching trains:
	<ol style="list-style-type: none"> 1. Flag protection in both directions OR 2. When foreman has been furnished a copy of train order, message or other form by the operator or other authorized person that a designated track between specified points is out of service and protected. 3. When switches involved have been set against movement to yard or other such track on which working and secured with spike or special lock, when practicable or suitable arrangements have been made to prevent being trapped.
(h) Man at telephone.	Arrangement is a source of information and does not substitute for procedures outlined above.
(i) Gang	Three or more men who are to work together.
(j) Three or more men	Includes the man in charge.
(k) Clear of all main tracks	Moving to or being at least 4 feet outside the rail of all main tracks but not between main tracks unless track center is 22 or more feet. (See Rules 3232 and 3236 covering this feature in tunnel.)

**(1) Exception to assigning gang (or additional) watchman may be made by Regional Manager Notice:
(See Notes to Rules 3212, 13 and 14)**

Employees who are protected against approaching trains on the track on which working and also on adjacent tracks by:

1. Electronic or other automatic warning device OR
2. Track being out of service and no trains operating OR
3. Engineman and conductor being instructed to approach point of work prepared to stop and not proceed without designated hand signal from man on the ground OR
4. Train speed being restricted to 15 miles per hour and view is sufficient to clear at least 15 seconds before train reaches point of work.

NOTE: Train orders, messages or other forms used in connection with the foregoing shall be completely filled in, and kept by the foreman until disposed of in accordance with instructions.

3200. Walking, standing or sitting on track, except when necessary for the proper performance of duty, is prohibited.

3201. Using umbrella, or wearing ear coverings which seriously interfere with the hearing, while on the track, is prohibited.

3202. Where authorized path or route is provided, use of other path or route is prohibited.

3203. Look in both directions before driving or

pulling vehicle on or across track. Driving or pulling vehicle on or across track closely in front of moving train, or after it has passed, until sure no other train is approaching, is prohibited.

3204. Look in both directions for approaching train before getting off standing equipment or stepping on or crossing track. Walk straight across track when possible to do so.

NOTE: To comply with rules **3203** and **3204** it will be necessary to turn the head in both directions before reaching each track.

3205. Crossing track closer than 10 feet from end of standing train, or stepping on or crossing track closely in front of moving train, or after it has passed, until sure no other train is approaching, is prohibited.

3206. Performing regular work on track when view of approaching train is obscured by fog, snow storm or other weather condition, is prohibited. For emergency work which must be performed by a gang under such conditions, absolute use of the track must be secured and the track protected.

Absolute use of the track is not required when men are assigned to snow duty in accordance with regional snow program, but ample gang watchman protection must be provided, the gang watchmen to stand clear of all tracks when possible.

3207. Arrange all work so it will progress against the current of traffic, except:

1. When use of track has been secured.
2. Where nature of work to be performed makes it desirable to work up grade.

3208. When necessary to walk on track:

- (a) Walk against current of traffic, except:
 1. When the track is out of service and protected.
 2. On single or other track where there is no current of traffic.
- (b) Maintain sufficient lookout in both directions to see on which tracks trains approach.
- (c) Upon the approach of a train on any main track clear the train-occupied track and the near adjacent track, preferably clear of all main tracks. When not clear of all tracks stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped. WHERE VIEW IS RESTRICTED CLEAR ALL MAIN TRACKS ON APPROACH OF A TRAIN ON ANY MAIN TRACK.
- (d) Clear other than main track on which walking on approach of a train on that track. On the approach of a train on the next adjacent track discontinue walking. When the situation permits remaining on a track or moving to another track for a train to pass stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped.
- (e) Clear tracks at least 15 seconds before train reaches point at which walking, if practicable.

3209. When working alone on track:

- (a) Assume a position and perform work in such

a manner that will permit making frequent observations in both directions to see on which tracks trains approach.

- (b) Upon the approach of a train on any main track clear the train-occupied track and the near adjacent track, preferably clear of all main tracks. When not clear of all tracks stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped. WHERE VIEW IS RESTRICTED CLEAR ALL MAIN TRACKS ON APPROACH OF A TRAIN ON ANY MAIN TRACK.
- (c) Clear other than main track on which working on approach of a train on that track. On the approach of a train on the next adjacent track discontinue work. When the situation permits remaining on a track or moving to another track for a train to pass stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped.
- (d) Clear tracks at least 15 seconds before train reaches point of work, if practicable.

3210. Before 2 men who are to work together go on track, it must be arranged that they will maintain sufficient lookout, 1 in each direction or 1 in both directions to see on which tracks trains approach, and on being warned or knowing of approach of a train:

- (a) Upon the approach of a train on any main track clear the train-occupied track and the

near adjacent track, preferably clear of all main tracks. When not clear of all tracks stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped. WHERE VIEW IS RESTRICTED CLEAR ALL MAIN TRACKS ON APPROACH OF A TRAIN ON ANY MAIN TRACK.

- (b) Clear other than main track on which working on approach of a train on that track. On approach of train on next adjacent track discontinue working. When the situation permits remaining on a track or moving to another track for a train to pass stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped.
- (c) Clear retarder equipped track on which working on approach of a train on that track. On approach of a train on the next adjacent track at location where retarder cylinders are painted yellow, in accordance with Instruction 1300, C. E. 223 which is shown on page 116, and which indicates that track center is less than 20 feet, discontinue work, stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped. On approach of a train on the next adjacent track at location where track center is 20 feet or more work may be continued pro-

vided 1 person maintains lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped.

(d) **CLEAR TRACKS AT LEAST 15 SECONDS BEFORE TRAIN REACHES POINT OF WORK.**

3211. Assigning foreman, assistant foreman, machine operator, or employe who has other duties, or an employe as gang watchman who has not been qualified by Medical Officer in accordance with Form G-45, as well as each 2 years by Supervisor-Track, Supervisor-Structures or Supervisor-Communications and Signals on knowledge of duties of gang watchman, is prohibited.

A gang watchman shall be provided with approved qualification card, which he shall keep on his person while on duty.

3212. Before men are permitted on track to perform work, a gang watchman must be assigned to afford protection in accordance with the following:

(a) **MAIN LINE MAIN TRACK IN ELECTRIFIED TERRITORY:**

1. 3 or more men who are to work together.
2. 1 or more men on duty with work train, who are to be on track.

(b) **OTHER TRACKS:**

1. 3 or more men who are to work

together, and the NATURE OF THE WORK, or the SIZE OF THE GANG necessitates such close attention to or supervision of the work, or RESTRICTIONS TO VIEW make it impracticable for the man in charge to maintain sufficient lookout to warn gang of approaching train from either direction in time to permit gang to clear tracks in accordance with Rule 3226. (See Rule 3223 for duties of gang watchman.)

NOTE: EXCEPTION TO ASSIGNING GANG WATCHMAN MAY BE MADE BY REGIONAL MANAGER NOTICE.

(c) *CAR RETARDER*:

1. 3 or more men who are to work together
—1 gang watchman for each retarder section within which men are to work.

3213. Before starting the operation of noisy power tool, machinery or equipment, or when outside noise interferes with hearing approaching train, a gang watchman must be assigned to afford proper protection, except:

- (a) When operating machinery or equipment that must be placed on or fouls the track when in use, requires the absolute use of the track, does not foul any adjacent track, does not require assistance from any person on the ground, and is operated by only 1 person located thereon.
- (b) When relieved of doing so by Regional Manager notice.

NOTE: Small one-man bonding machine is not considered as being noisy.

3214. When approaching trains, on any track in either direction, cannot be readily seen by the gang watchman near the gang (or by the foreman when a gang watchman is not required) in time to give sufficient warning for the men to clear in accordance with the rules, additional gang watchmen must be assigned as needed.

If the separation of some man or men from other men prevents their distinctly hearing warning, such additional gang watchmen as necessary must be provided.

NOTE: EXCEPTION TO ASSIGNING ADDITIONAL GANG WATCHMAN MAY BE MADE BY REGIONAL MANAGER NOTICE.

3215. Before permitting men to be on track, the foreman or man in charge will have an understanding with all the men as to where they will go when necessary to clear for trains.

3216. Unless otherwise instructed, all members of gang working on track must clear on same side of track as foreman or man in charge.

NOTE: Gang watchmen stationed on opposite side of and clear of tracks are not required to cross tracks in order to clear on same side of track as Foreman or man in charge.

3217. Designated employees must have the equipment indicated below, in good order and readily accessible for use, the separate warning whistle to be on the outer side of the clothing, while in charge of a man or men engaged in work on or about the track:

	FOREMAN, ASST. FOREMAN OR PERSON IN CHARGE	GANG WATCH- MAN	ADDI- TIONAL GANG WATCH- MAN
Good	Warning whistle	Warning whistle Standard white disc	Warning whistle Standard white disc Red flag
In tunnel, night, or otherwise not good	Warning whistle Suitable white light	Warning whis- tle, car inspec- tor's reflector type oil lantern, or approved electric lantern —white light.	Warning whis- tle, car inspec- tor's reflector type oil lantern, or approved electric lantern —white light. 2 red fuses.

NOTE: Gang Watchman assigned to protect only 1 man who is performing work at location where additional gang watchman is not required need not be equipped with white disc.

3218. Gang watchman will, if practicable, be stationed clear of all tracks at a point where he will have the best view of approaching trains in both directions, and a sufficient distance from the gang to prevent attention being distracted by the work, but not farther than his warning whistle can be distinctly heard, except as follows:

**WHEN USING EQUIP-
MENT DESCRIBED
BELOW:**

- (a) Pneumatic Tie Tamper
- (b) Unit Tie Tamper

**GANG WATCHMAN TO
BE STATIONED AS
FOLLOWS:**

- At the lever gate valve.
- Near the Men. (1 gang watchman for each rail length within which the tampers are being used.)
- 1 Rail Length From Mole.

- (c) Ballast Cleaning Mole

(d) Rail, joint bar or other such renewal operation.

Near the Men. (1 gang watchman for each machine or group of machines, and for each separate group of men as may be necessary.)

(e) Noisy power tool machinery or equipment which does not obstruct or foul the track and does not require absolute use of the track, such as a portable hand power wrench or tool, power lubricator, flexible shaft grinder, out-fit for spot or out-of-face welding rail or other off-track power tool, machinery or equipment of that nature.

Near the Men. (1 gang watchman to be assigned to not more than 2 operators of such items and provided they are working within 1 rail length. 39 feet.)

(f) Noisy Machinery or Equipment which must be placed on the track when in use and which requires absolute use of the track, such as electric or gas welding outfits for out-of-face work, power grinder, milling machine, power drill, spike puller, tie extractor, tie inserter or other machine of that nature.

Near the Men. (When all work is to be performed from gauge side of rail, 1 gang watchman for each 3 rail lengths within which the machines or welders are working. When necessary to perform any work from inter-track space 1 gang watchman for each machine or welder.)

(g) Noisy Machinery or Equipment which must be placed on or fouls the track when in use and which requires the absolute use of the track, such as tie bed scarifier, ballast distributor or equalizer, tie tamper, power track liner, or other such machinery or equip-

Gang Watchman not required.

ment which is operated by only 1 person located there-on does not require assistance from any person on the ground, and does not obstruct any adjacent tracks.

(h) Car Retarder. Noisy power tool, machinery or equipment that does not obstruct or foul the track when in use and does not require absolute use of the track, or the nature of the work permits it to be performed from outside the rail, when working on **CAR RETARDER THAT IS NOT OUT OF SERVICE OR PROTECTED AGAINST TRAIN.**

Near the Men. (When all the work is being performed from outside the rail, 1 gang watchman for each car retarder section within which power tool, power lubricator, machinery or equipment is being used, or work is being performed.)

(i) Car Retarder. Noisy power tool, machinery or equipment that obstructs or fouls the track when in use and requires absolute use of the track, or the nature of the work requires it to be performed from the gauge side, when working on **CAR RETARDER THAT IS OUT OF SERVICE OR PROTECTED AGAINST TRAIN IN ACCORDANCE WITH INSTRUCTION 1301, C. E. 223, which is shown on pages 116 and 117.**

Near the Men. (Work may be performed from the gauge side, 1 gang watchman for each car retarder section within which power tool, power lubricator, machinery or equipment is being used, or work is being performed.)

NOTE: Work with power tool, heavy machinery or equipment may not be performed from the gauge side of car retarder unless such retarder is

out of service and protected in accordance with Instruction 1301, C. E. 223 which is shown on pages 116 & 117.

Foreman of other than Communications and Signals employes shall not permit such employes to work with such tool, machinery or equipment from the gauge side of car retarder until he has made arrangements with and received assurance from Foreman C.&S., Assistant Foreman C.&S., or other C.&S. employe in charge that protection specified in Instruction 1301 has been provided.

3219. Additional gang watchmen, when required because of obstruction to view, in addition to those specified in the previous rule, will be stationed at points where they will have the best view of approaching trains from the direction to which they are assigned, and where their warning signal can be plainly seen by the next gang watchman nearer the gang.

3220. Gang watchman (or foreman, when gang watchman is not required) must, on approach of a train from either direction, warn gang in time for it to clear tracks in accordance with Rule 3226 at least 15 seconds before train reaches point of work.

When pneumatic or electric tie tamper or other equipment having a gate valve or control switch is in use, the gang watchman stationed at the valve or switch will first shut off power and then sound whistle.

When other noisy machinery or equipment is in use or outside noise interferes with hearing whistle, the gang watchman near the gang will, if

men do not appear to hear whistle, warn them by touching them and continuing to sound whistle.

Gang watchman assigned to protect man or men working near hump apex, on master retarder or on switches in connection therewith, must sound warning as soon as train leaves the apex. Gang watchman assigned to protect man or men working on intermediate or group retarder or on switches in connection therewith, must give maximum warning of approach of train, and also give warning at any moment that he is uncertain of train routing.

3221. Gang watchman nearest the gang (or foreman, when gang watchman is not required) will signal:

- (a) The approach of a train, by sounding whistle, by holding white disc at arm's length above the head and by hand signal indicating where they will clear. (foreman of gang not requiring the protection of a gang watchman in accordance with Rules 3212 or 3213, or gang watchman assigned to protect only 1 man who is performing work at location where additional gang watchman is not required need not use white disc.)
- (b) When safe to resume work, by holding white disc (hand in case of foreman, or gang watchman assigned to protect only 1 man who is performing work at location where additional gang watchman is not required) horizontally at arm's length toward point of work.

Additional gang watchman will signal:

- (c) The approach of a train by sounding whistle and by holding white disc at arm's length above the head.
- (d) When safe to resume work, by holding white disc horizontally at arm's length. Gang watchman receiving a signal will repeat same as an acknowledgment and indication that it is understood.

NOTE: If signal is not acknowledged by the gang watchman nearest the gang, the additional gang watchman will signal the train to stop. At night or when white disc cannot be plainly seen, the above signals will be given and acknowledged with approved white light. (See Rule 3217.)

3222. Resuming work after the passage of a train before gang watchman (or foreman, when gang watchman is not required) has signaled it is safe to do so, is prohibited. Where additional gang watchmen are involved, the gang watchman nearest the gang (or foreman, when gang watchman is not required) must not give signal to resume work until he has received and acknowledged signal from additional gang watchman that no trains are approaching.

3223. Gang watchmen must give their entire attention to watching for trains and warning the men and are prohibited from performing, even momentarily, any other duties. They must not leave their post until instructed by the man in charge that protection is unnecessary or another gang watchman has been assigned and is in position and watching for approaching trains.

3224. When necessary for gang watchman (or foreman, when gang watchman is not required)

to leave his post for any reason, even momentarily, the foreman or other person in charge must assign another gang watchman in his place and see that he is in position, is properly equipped and watching for trains before permitting the regular gang watchman to leave his post.

3225. Should anything occur to prevent gang watchman having a good view of trains approaching in either direction or to interfere with his duties as a gang watchman, even momentarily, he must signal the gang to clear tracks. If, after warning has been given, no trains pass within reasonable time, foreman will instruct men to remain clear of tracks and, after consulting gang watchman, make necessary arrangements to protect gang before resuming work.

3226. On receiving warning or knowing of approach of a train all men in gang must clear tracks at least 15 seconds before train reaches point of work, discontinue all activity and remain clear until receiving signal from the gang watchman (or foreman when gang watchman is not required) to resume work, except under the following circumstances and provided the action specified is taken:

(a) Any Track—working with ballast cleaner:

1. On the blind side:

Employees are prohibited from getting off ballast cleaning train or fouling any track on the blind side without permission of the foreman, who shall arrange for necessary protection.

2. On the working side:

It is unnecessary to stop work for passage of trains on the blind side.

When the track next to the ballast cleaner is fouled and protected, men may continue to work in the inter-track space next to the ballast cleaner or stand erect within the gauge of the fouled track for the passage of trains on other tracks.

NOTE: The term "blind side" as used in this rule means the side opposite the "working side," which is the one on which the work is being performed.

(b) Main Track

1. Upon the approach of a train on any main track clear the train-occupied track and the near adjacent track, preferably clear of all main tracks. When not clear of all main track, stand erect and maintain lookout for trains in both directions to see on which tracks other trains approach, in order to clear tracks if necessary, to prevent being trapped.

**WHERE VIEW IS RESTRICTED
CLEAR ALL MAIN TRACKS ON
APPROACH OF A TRAIN ON
ANY MAIN TRACK..**

2. When the track on which the men are working is out of service with the permission of the Superintendent of Transportation and protected, in this case men must stop work and stand in center of track on which working.

**(c) In Terminal Where Speed is Restricted to 30
or Less Miles Per Hour:**

1. Clear track on which working on approach of a train on that track.
2. On approach of a train on next adjacent track stop working and stand in center of track on which working, maintaining lookout in both directions to see on which tracks other trains approach, in order to clear, if necessary, to prevent being trapped.

(d) In Yard :

1. When practicable set switches involved against movement to track on which working and secure with spike or special lock. When this is impracticable make suitable arrangements to prevent being trapped.
2. Clear track on which working on approach of a train on that track.
3. On approach of train on the next adjacent track stop work and stand in center of track on which working, maintaining lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped.

(e) Car Retarder :

1. Clear track on which working on approach of a train on that track.
2. On approach of train on next adjacent track at location where retarder cylinders are painted yellow, in accordance with Instructions 1300, C. E.

223, which is shown on page 116, and which indicates that track center is less than 20 feet, discontinue work, stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped.

3. On approach of train on the next adjacent track at location where track center is 20 or more feet, work may be continued on car retarder provided gang watchman within retarder section in which power tool, power lubricator, machinery or equipment is being used, or work is being performed, is maintaining lookout in both directions to see on which tracks other trains approach in order to clear if necessary, to prevent being trapped.

3227. On approach of a train on a track equipped with dragging equipment detector or ice deflector, employes working on or about track must place themselves either on the side of the detector or ice deflector from which the train is approaching or at least 100 feet from the detector or ice deflector in the opposite direction.

3228. When working on track adjacent to inter-track fence, remove and place clear of track, such panels of fence as will insure safety of the men.

3229. Keep as far as practicable from passing train. If in confined place, secure loose clothing, large or long coat and, if possible, maintain handhold until train has passed.

3230. Having tool, material or other object 3

or more feet in length, over shoulder while close to moving train, is prohibited.

3231. When clearing track leave tool, material, equipment or other object so it will not be struck by train or equipment.

3232. Employes working in tunnel in which there are manholes must occupy them on approach of a train, except when on bench wall when they must secure loose clothing, large or long coat, and, if possible, maintain handhold until train has passed.

3233. Leaving tool, material, machinery, equipment or other item in manhole in tunnel or on safety platform on bridge or trestle, is prohibited.

3234. Before leaving material, refuse or other object on walking space of bench wall in tunnel arrange for suitable notice.

3235. While walking or working in tunnel arrange to carry or provide sufficient light to permit moving about and performing work safely.

3236. In tunnel where side clearance is limited and no manholes or other places of safety are provided, foreman must arrange for the use of the track and protection against approaching trains.

3237. Leaning against standing train is prohibited.

3238. Before performing work which requires going under train, going between those close together or fouling the equipment have full understanding with person controlling the movement and know that full protection has been provided.

3239. Except in emergency, hand signals for movement of work or wreck train, incident to the

work being performed, may be given only by the train crew upon signal from or understanding with foreman or other person in charge.

3240. Requesting train or engine crew to move train while employe is under, between or foul of the equipment or before having warned men who are on or about the equipment, is prohibited. Men who remain in the car while it is being moved will maintain a handhold and if in drop bottom car remain as far as practicable from the opening.

3241. Place tool box, compressor, large material, or other object, when practicable, not less than 10 feet from gauge of nearest rail. When practicable place tool box in position that lid will open toward track. (See Rule 3022.)

POWER OPERATED TOOLS, MACHINERY OR EQUIPMENT

3260. Operating track car, vehicle, self-propelled tractor, crane, cartridge powered impact tool, or other power operated equipment, machinery or tool, unless authorized to do so, is prohibited.

Authorizing a person to operate such equipment before qualified to do so, is prohibited.

A qualified person shall be provided with approved qualification card, which he shall keep on his person while on duty.

3261. Make visual inspection at beginning of each tour of duty of track car, vehicle, self-propelled tractor, crane or other power operated equipment, machinery or tool. Operating such equipment in unsafe condition is prohibited.

3262. Application of unapproved device to car,

vehicle, self-propelled tractor, crane or other power operated equipment, machinery or tool, is prohibited.

3263. Leaving tool, material or other object inside enclosure formed by machine guard is prohibited.

3264. Operating track car, vehicle, self-propelled tractor, crane or other power operated equipment, machinery or tool with safety guard missing, defective or out of position, is prohibited, except for test purposes and then only under direct and constant supervision of person in charge. If impossible to correct, report defective condition to immediate superior.

Operating grass, weed or brush cutting device that is designed to be operated without guard protection, while any person is within an area 25 feet in front or on either side of such equipment, is prohibited.

3265. Blocking limit switch on hoisting equipment or making ineffective any safety feature on power operated equipment, machinery or tool, is prohibited.

3266. Keep track car, vehicle, self-propelled tractor, crane or other power operated equipment, machinery or tool free from accumulation of dirt or grease.

3267. Before operating track car, vehicle, self-propelled tractor, crane or other power operated equipment, machinery or tool warn fellow employees and see that they are in a safe position.

3268. To start a gasoline engine not equipped with a starter :

(a) Make sure clutch is disengaged.

- (b) With ignition off close choke and spin engine several times. (Release compression if engine is equipped with release rod.)
- (c) Retard spark and turn on ignition.
- (d) Properly engage crank to shaft, start cranking by lifting on crank, keeping fingers and thumb on same side of handle and keeping body as far away as possible. (If compression has been released restore compression release rod to normal position while spinning.)
- (e) If necessary to spin crank with ignition on, start with upward motion of crank.
- (f) Wrapping rope around hand, if using rope starter, is prohibited.

3269. If gasoline engine backfires when spark is fully retarded or if it is necessary to spin crank more than 10 revolutions to start it, discontinue cranking and arrange to have cause for failure to start corrected. In the case of a motor car, push it while on the track and start engine by method used to start engine of car not equipped with clutch.

3270. Cranking engine, pushing car or truck or riding on car, train or other such equipment with safety rope or strap hanging from body, is prohibited.

3271. Unless engine or motor of track car, vehicle, self-propelled tractor, crane or other power operated equipment, machinery or tool is shut off and engine or motor, and all parts of the equipment, machinery or tool are stopped, performing any of the following operations unless the design permits it to be done safely, is prohibited:

- (a) Adjusting, cleaning or oiling.
- (b) Applying or removing chain, belt or other attachment or device.
- (c) Changing gears.
- (d) Touch chain, belt, conveyor or other moving part.
- (e) Placing it on or removing it from track, unless assistance of engine or motor is needed.
- (f) Other operations the supervisory employee in charge considers hazardous.

3272. Using hand to remove chip, cutting or scale from drill, hammer, press or other machine is prohibited.

3273. Before entering or permitting any employee to enter a turntable or other pit containing machinery, except for test purposes, see that power is shut off and place M. P. 397, DO NOT OPERATE, warning tag, on switch or control.

3274. Close control valve and place M. P. 397, DO NOT OPERATE, warning tag, on valve and release pressure remaining in the line before cutting steam, air, gas, water or oil line.

3275. Operating switch, valve or control of equipment with M. P. 397 warning tag attached, is prohibited.

3276. M. P. 397 warning tag placed on switch, valve or other control of equipment shall be removed only by the person who placed it and then only when it is safe to do so.

3277. Forcing power driven grinding wheel into confined space where it will not revolve freely, such as between stock rail and switch point, is prohibited.

3278. Grinding on side of emery wheel, not designed to be so used, is prohibited. Tool rest must not be more than $\frac{1}{8}$ inch from wheel.

3279. When using power rip saw (Bench):

- (a) Using saw without spreader or kickback guard in proper position is prohibited.
- (b) Stand to side of material being sawed to prevent being struck in event of kickback.
- (c) Use forked push stick of sufficient length instead of fingers to feed back-end of material into saw.
- (d) Remove loose or scrap pieces of material from saw or table as soon as cut is completed, using suitable stick instead of hands to do so.

3280. Overloading or unsafely loading car, truck or other transporting equipment, is prohibited.

3281. Keep clutch of track car or vehicle engaged while descending steep grade, using low or second gear to control it.

3282. See that all employees are in a safe position before blowing dirt or condensation from line or equipment.

3283. Crossing roadway commonly used by power driven vehicles or equipment before looking in both directions or crossing roadway closely ahead of such moving equipment, is prohibited.

3284. Wear approved shin guards when operating:

- (a) Power adzer.
- (b) Power spike puller, except hydraulic.

- (c) Cribbing machine, the design or operation of which would likely cause injury to shins.
- (d) Other such equipment, the design or operation of which would likely cause injury to shins. (The necessity for use of shin guards to be determined by employe in direct charge.)

3285. Operating power adzer unless wearing approved foot protectors is prohibited. (The necessity for use of foot protectors when operating concrete breaker or other machines, the design or operation of which would likely cause foot injury to be determined by the employe in direct charge.)

3286. Using pressure gauges of equipment unless tested and approved within the prescribed period is prohibited.

3287. Riding on material conveyor, chute or bucket is prohibited.

3288. Use approved hook to move mole rail while being used in ballast cleaning operations.

3289. Being on ballast closer than 2 feet directly in front of digging arms of ballast cleaning mole while it is operating, is prohibited.

3290. Crossing over haulage cable while it is coupled to the ballast cleaning machine and the haulage car, is prohibited.

3291. Tool, material, supplies or other object must not be placed on self-propelled equipment, crane or conveyance attached thereto unless authorized to do so and covered basket, box, bin or other suitable arrangement is provided to prevent shifting, rolling or falling.

3292. Leaving machinery, equipment or truck

on track when not continuously attended by the man in charge, unless secured against movement by having brakes (when so equipped) set to hold and chain through wheel, around rail, and locked with special lock, is prohibited.

NOTE: A group of coupled machinery, equipment or trucks left on the track unattended by the man in charge need have only one wheel at each end of the group secured with chain and lock.

SELF-PROPELLED EQUIPMENT, PUSH CARS, TRUCKS AND TRAILERS

(The term "self-propelled equipment," as used under this heading, means track motor car, crane, compressor, ballaster, tamper, ballast equalizer or distributor, rail-highway truck or other self-propelled equipment when used on the track.)

3300. Permitting a person other than an officer, or an employe directly connected with the work for which self-propelled equipment, car or trailer is operated, to ride on such equipment without written permission of the Regional Manager is prohibited.

3301. Before starting movement or work the foreman, driver or operator must have a thorough understanding with each person riding on self-propelled equipment, car or trailer as to what duty each is to perform, and also assign seat location.

When seat location is not available on self-propelled or other equipment, except track motor car or man hauling trailer, foreman, driver or operator may authorize persons that must ride thereon to stand while it is moving, provided there is suitable facility for maintaining handhold and it is otherwise safe to do so.

Standing on moving track motor car, man hauling trailer or other equipment that has seating arrangement, is prohibited.

Standing on moving equipment that does not have seating location unless authorized to do so by the foreman, driver or operator, or not maintaining handhold, is prohibited.

Employees accompanying self-propelled equipment, car or trailer shall obey the instructions of the foreman, driver or operator.

NOTE: Regular employees of gang who have been assigned seat location need not be given the assignment before each trip, but must sit at the assigned location, unless otherwise assigned.

3302. Starting self-propelled equipment or car or having clutch or gears engaged while men are getting on or off, is prohibited.

3303. When operating self-propelled equipment or car maintain constant lookout ahead, particularly on curves and at switches and crossings for obstructions on track or in flangeway.

3304. When 2 or more men are on self-propelled equipment, car or trailer assign 1 employee to a position where he will have the best possible view to the rear, see that he maintains a constant lookout in that direction for approaching trains and also watches load on trailers while the equipment is in motion.

3305. When placing equipment, car, truck or trailer on or removing it from track:

- (a) Placing it on or removing it from track while train is passing on next adjacent track when the inter-track space is less than 20 feet, is prohibited.

- (b) Use skids and/or turntable whenever practicable.
- (c) Stop highway traffic when necessary.
- (d) Push from rear instead of from sides.
- (e) Pull on front lift rail, if necessary, while moving in soft material.
- (f) Being on car while it is on turntable is prohibited.

3306. Placing self-propelled equipment, except rail-highway truck or other equipment needing the assistance of engine or motor, on or removing it from track with engine or motor running, is prohibited.

Leaving self-propelled equipment on track when not continuously attended by the employee in charge, unless the engine or motor is stopped, clutch engaged and brakes set to hold, is prohibited.

NOTE: A group of coupled self-propelled equipment or machinery, as well as a group of coupled equipment, cars, trucks or trailers that are not self-propelled, left on the track unattended by the man in charge must be secured against movement by having brakes (when so equipped) set to hold and by chain through one wheel at each end of the group, around rail and locked with special lock.

3307. Avoid pushing self-propelled equipment or car to start engine or motor while on open floor bridge or trestle, on track with empty cribs or through turnout. Push car slowly, walking between rails on open floor bridge or trestle, to a point

where secure footing is available, before turning on ignition.

3308. When equipment, car, truck or trailer is on the track, push it from the rear, when practicable. If necessary to push it from the side, keep feet as far as possible from the wheels. Pulling or assisting to move car from front is prohibited.

3309. When pushing equipment, car, truck or trailer, place hands where they will not be caught by moving parts, or by material or other object rolling, shifting or falling on them.

3310. When arrangement of gasoline valve permits, start engine of one-man car not equipped with clutch as follows:

- (a) Close valve in gasoline line.
- (b) Push car to start.
- (c) Mount car and open gasoline valve as soon as engine starts.

3311. Coupling equipment, cars, trucks or trailers with other than approved rigid coupler equipped with self-locking pin, or leaving coupler attached to equipment, car, truck or trailer when the opposite end has been uncoupled, is prohibited.

3312. Uncoupling moving equipment, cars, trucks or trailers is prohibited.

3313. Hauling tools, small material, supplies or other such items on trailer or push truck, unless approved rack is in proper position and unless arranged so they will not fall over top of the rack, is prohibited.

Distribute load uniformly with bars at the bottom; tools laid flat, pike poles secured and with points to the rear; and jacks, rail benders, drills

or other such appliances toward the trailing end. Use 2 or more trailers or trucks to haul long material, when practicable.

3314. Place tools, material, supplies or other objects on equipment or car so they will not project over sides or fall from ends or sides and not obstruct machinery, operating controls, seating space or hand rails. Distribute load uniformly. Lining or other bars must be placed in the bottom of the tool trough, tools must be laid flat, pike poles with points to the rear and jacks, rail benders, drills and other such appliances on the trailing end of the car. Securely fasten tools, material, or other object that will not fit inside tool trough.

3315. Test brakes immediately after starting equipment, car, truck or trailer and, if practicable, warn employes riding thereon before suddenly applying the brakes.

3316. Interfering with, or unnecessarily distracting attention of driver of equipment or car is prohibited.

3317. Use hand rail when getting on, riding on, or getting off equipment, car, truck or trailer that is so equipped.

3318. Riding on material, tools, or other items loaded on equipment, car, truck or trailer is prohibited.

3319. Riding on equipment, car, truck or trailer with feet hanging over side or end, or sitting on and propelling it with feet, is prohibited.

3320. Stepping from one moving unit of equipment or car, truck or trailer to another is prohibited, except when provision has been made for

doing it safely and designated individuals have been authorized to do so.

3321. In operating car, equipment or trailer through spring side of spring frog be sure that all wheels are properly on rails immediately after passing through spring side. (See Rule 3322(M).)

3322. Exceeding speed indicated below with self-propelled equipment is prohibited:

M. P. H.

- | | |
|--|----|
| (a) Rail-highway vehicle | 30 |
| (b) Not otherwise specified in forward motion | 20 |
| (c) Not otherwise specified in backward motion (motor car or other equipment that is not designed for the same degree of safety in backward motion as in forward motion) | 10 |
| (d) Approaching location at which men are working on the track on which running, or next adjacent track, until it is seen that the men are in the clear.. | 10 |
| (e) Hauling underslung load..... | 10 |
| (f) Over open floor bridge or trestle..... | 10 |
| (g) Passing train moving on next adjacent track | 10 |
| (h) Running on rail that is "wet," covered with ice, snow or leaves..... | 10 |
| (i) Pushing truck or trailer of 30,000 lbs. or greater capacity, or equipment weighing 9,000 lbs. or more, on which men are riding..... | 10 |
| (j) Over highway or railroad grade crossing, switch, turnout, derail and through | |

open side of frog.....	5
(k) Pushing truck or trailer of less than 30,000 lbs. capacity, or equipment weighing less than 9,000 lbs., on which men are riding	3
(l) Over track in which ballast is high enough that it is likely to obstruct free passage of wheels or running board. (Slow walk).....	3
(m) Through spring side of spring frog....	1
(n) Equipment weighing less than 9,000 lbs. (motor car, light compressor, etc.)	
1. Using equipment weighing less than 1,000 lbs. as motive power.....	3
2. Pulling or pushing truck or trailer of 30,000 lbs. or greater capacity, or equipment weighing 9,000 lbs. or more.....	10
3. Pulling truck or trailer of less than 30,000 lbs. capacity, or equipment weighing less than 9,000 lbs. ...	20
4. Pushing truck or trailer of less than 30,000 lbs. capacity, or equipment weighing less than 9,000 lbs. ...	10
(o) Equipment weighing 9,000 lbs. or more (crane, heavy compressor, ballaster, ballast equalizer, etc.)	
1. Pulling or pushing truck or trailer of 30,000 lbs. or greater capacity, or equipment weighing 9,000 lbs. or more.....	20
2. Pulling or pushing truck or trailer of less than 30,000 lbs. capacity,	

or equipment weighing less than
9,000 lbs. (rail-train)..... 10

3323. Precautions indicated opposite the following situations must be observed before operating equipment, car, truck or trailer over highway grade crossing:

**SITUATION AT
CROSSING**

**PRECAUTION TO BE
TAKEN**

- | | |
|--|---|
| (a) All crossings. | Sound warning signals |
| (b) Crossing at which vehicle is stopped or near which an approaching vehicle is so close that there is not sufficient time to safely move car or equipment over the crossing. | Stop equipment, car, truck or trailer and allow vehicle to pass over the tracks, if necessary signaling the driver to do so. |
| (c) Crossing protected by attended gates | See that gates are lowered. |
| (d) Crossing protected by watchman | See that stop signal for highway traffic is displayed by watchman. |
| (e) Crossing protected by automatic gates, lights or bells | Stop equipment, car, truck or trailer and assign an employee, one on each side of the tracks, if necessary, to take position where he will have a clear view of highway in both directions, stop highway traffic and to signal when it is safe to move car or equipment over crossing. (STOP ONE-MAN car clear of such crossing and move over after making sure there is time to safely complete movement.) |
| (f) Crossing that is unprotected or is protected only by crossing sign, and it is impossible to see highway traffic a sufficient distance | Stop equipment, car, truck or trailer and assign an employee, one on each side of the tracks, if necessary, to take a position where he will have a |

to insure that vehicles are not too close to crossing.

clear view of highway in both directions, stop highway traffic and to signal when it is safe to move car or equipment over crossing. (STOP ONE-MAN car clear of such crossing and move over after making sure there is time to safely complete movement.)

3324. When equipment, car, truck or trailer left on the track is not continuously attended by the employe in charge, secure it against movement in accordance with Rule 3306. At other times place it clear of tracks and so as not to obstruct crossing, pathway, or platform, and lock it.

3325. When dog is running close to car or other equipment or other animal is near track, reduce speed and stop if there is danger of running over it.

HIGHWAY VEHICLES

3335. Driver must obey the motor vehicle laws.

3336. Driver is prohibited from transporting men in body of auto truck unless :

- (a) It is equipped with approved communicating signal between cab and body.
- (b) It is equipped with barrier at rear end.
- (c) Tool, material or other item in the truck with the men is secured to prevent shifting, rolling or falling.
- (d) The men are properly seated.
- (e) The dumping mechanism of dump truck (when used) is made ineffective and the dump body secured.

3337. When on highway get in or out of vehicle from side away from traffic, if practicable to do so.

3338. Permitting the crowding of the driver's seat or placing tool, material or other object so as to interfere with safe driving of vehicle is prohibited.

3339. Remain seated and also maintain handhold, when practicable, while riding in auto truck, except when in the cab.

3340. Riding on vehicle with hand, foot or any part of body projecting beyond side or end is prohibited. Riding on running board, fender, bumper or top of cab, is prohibited.

3341. Riding on load on truck in any of the following situations is prohibited :

- (a) On top of high load.
- (b) In an insecure position on any load.
- (c) On load that is not secured to prevent shifting.

3342. When chains or non-skid devices are used apply them to all the rear wheels.

3343. Driver of vehicle must determine that it is safe to cross track, even though position of crossing gate or indication of signal, may indicate that it is safe to do so.

3344. Driver of vehicle hauling employes must stop and know it is safe to proceed before crossing railroad track.

HANDLING MATERIAL MANUALLY

3355. Keep hand or foot in a position where tie, timber, rail or other heavy or unwieldy object being handled cannot fall or slip on or against it and where it will not be caught between object being handled and another object.

If impossible to do this, use suitable object as a skid, support or stop, at side, at end, on top, or under object being handled to provide protection.

3356. Keep clear of sharp edges, slivers, or other such projections while handling material or supplies. Wear gloves, in good condition, if impracticable to handle without danger of injury to hands.

3357. Use tongs to carry rail, frog, switch point, guard rail, tie, timber, pile, ice or other such object when practicable.

Before lifting with tongs make sure they have a secure grip on material.

3358. When handling material take the following precautions:

- (a) Avoid dislodging nearby loose material or object which is likely to catch hand, foot or other part of body.
- (b) Avoid holes or obstructions in order to prevent slipping, falling or being caught by material.

3359. Leaving rail, tie, timber, pole, pile, girder, keg or other material or object in an unstable position when the handling is completed, is prohibited. Block, lash or otherwise secure it when its shape or position is likely to result in its shifting or falling.

3360. Work from ends or from back of pole, pile, timber, girder or other long object when pushing or rolling it.

3361. Lifting beyond normal physical capabilities is prohibited. Avoid jerking or twisted posi-

tions and obtain help to lift or handle heavy or cumbersome objects. When lifting:

- (a) Have secure footing.
- (b) Bend knees and keep back as erect as possible.
- (c) Take firm grip on the object and slowly straighten the legs.

3362. When two or more men handle material or other object by hand:

- (a) Remove slipping or tripping hazards when practicable; when not practicable, take necessary precautions to prevent slipping or tripping.
- (b) Designate 1 person to give commands for all movements (lifting, walking, lowering or throwing) and, when practicable, place him at one end of object being handled.
- (c) Have person designated to give commands fully inform those assisting, just what is to be done and what the words of command will be. Command to be given in a loud and distinct manner.
- (d) Giving of command by other than person designated to give command or talking unnecessarily or loud, is prohibited.
- (e) Place men according to size, strength and experience.
- (f) Lift or make other movement only on command.
- (g) If there is a feeling that handhold is being "lost" on material or tool handle, or if tool is "losing" contact or grip on material or

object, so indicate to the person giving commands so that operation can be stopped.

- (h) Know "walking" conditions and locations of other objects; take the necessary precautions, and if necessary to walk backwards, walk slowly and avoid obstructions.

3363. In piling material :

- (a) Place it on suitable substantial foundation at a safe distance from track.
- (b) Place it in a safe and orderly manner and avoid making high narrow piles.
- (c) Step or lap it when practicable, and secure ends of pile of short material by stepping, crossing or interlocking the material or by other suitable means.
- (d) Securely block round or other material that is likely to shift or fall.
- (e) Do not allow spacing strip to extend beyond edge of pile.

3364. When placing material or other object on or removing it from pile, avoid dislodging other parts from pile and take precautions to prevent injury if any parts be dislodged.

3365. Skid, transfer plate or gang plank must be strong enough for the purpose intended and must be properly secured when placed in position, to prevent falling or shifting. Walking on or between skids is prohibited.

3366. Observe location of obstructions and persons nearby when carrying long material or tool to avoid striking them. Following closely behind material or tool being carried is prohibited.

3367. Dropping material or other object when it is likely to rebound or otherwise cause injury is prohibited.

When necessary to throw material or other object, particularly when throwing it into car, see that all men understand method to be used, throw it high enough to go over top of car and stand far enough back to prevent being struck should it fall or rebound.

3368. When necessary to lean door, portable platform, sheet metal or similar material against another object, lean it at a sufficient angle to prevent its toppling, and if necessary, secure it at the bottom to prevent its sliding out. Lay such material flat when practicable.

3369. When loading rail, frog, switch point, guard rail, timber or other long heavy object upon push truck proceed as follows if men available are not able to safely lift it directly to the truck :

- (a) Place the object to be lifted between the rails.
- (b) Lift end nearest the truck and place suitable support across rails and under lifted end.
- (c) Lift elevated end of object in stages, blocking each lift until high enough to push truck under it at least 18 inches and let object rest on truck, holding or blocking the truck to prevent its kicking out.
- (d) Repeat raising end resting on truck, moving and holding truck under object after each lift, until truck is far enough under object to permit lower end to be safely raised and, after blocking truck, slide to desired position. Use rollers if available.

3370. If practicable to unload rail, frog, switch point, guard rail, timber or other long heavy object by dropping it off the side of push truck, proceed as follows:

- (a) Move the object to the edge of the push truck from which it is to be dropped.
- (b) Place men within gauge of track, but far enough from end of the truck to prevent being struck should it tilt or derail, and at word of command, push it off edge of truck.

If impracticable to drop it off the side of the push truck unload it from the end of the truck to the gauge of the track as follows:

- (c) Slide object endways off truck sufficiently to safely lower end to track, holding or securing opposite end of the truck from which object is being unloaded to prevent its raising or truck "kicking out."
- (d) See that all men are outside the rails and then push the truck from under raised end of object.

3371. If sufficient men are not available to safely raise and unload rail, timber, or other long heavy object directly over side of gondola car proceed as follows:

- (a) Locate one end of object not more than 2 inches from one end of the car.
- (b) Raise that end and place strong block, not less than 8 inches thick, under it.
- (c) Raise that end higher than top of end of car, blocking each lift, and pull endwise so that the end extends at least 2 feet beyond the end of the car. End may extend far enough

beyond end of car to permit easily raising lower end but not so far that it will be impossible to control the extended end when object is shoved off top of side of car.

- (d) Move both ends of the object near the side of the car over which it is to be unloaded.
- (e) Raise lower end of object, blocking each lift if not sure that men available are able to safely lift it in one operation and also hold it, and when high enough, place and secure suitable support under that end of the object and over the top of sides of the car.
- (f) Properly position the material or object with respect to the top of side of car, properly place men and at word of command push it off the car.

3372. Standing on rail or placing bar in bolt hole to steady or balance it while it is being cut, or dropping it to complete the break, is prohibited.

3373. Before cutting stay wires preparatory to unloading poles, piles or timbers from flat car, place not less than 1-inch rope or 5/16-inch stranded steel wire around each end of load on the car.

3374. Unloading tool, material or other object from car, truck or other equipment that is moving in excess of 5 miles per hour or throwing or dropping it from moving or standing equipment without knowing that no one is in a position to be struck by it, is prohibited.

3375. Keep hand or foot clear of roller or dolly upon which load is being moved and use sledge or

other suitable object to shift roller or dolly under load.

3376. Keep material or object being moved by hand or on rollers, dollies or wheels under complete control at all times so its movement can be stopped short of person or obstruction. Push from rear when practicable.

3377. Leaving material or part of equipment in an insecure position, when applying or removing it, is prohibited.

3378. Transporting large or heavy reel without properly lashing, bracing, blocking or otherwise securing it, is prohibited.

HOISTING EQUIPMENT

3400. The following shall govern with respect to being on, riding on or performing maintenance or repair work on hoisting equipment, or the car on which it is mounted:

- (a) Getting on or riding on hoisting equipment, or the car on which it is mounted, without the permission of the operator, is prohibited.
- (b) If necessary for the performance of duty, and no other suitable means for transporting employees is available, the operator may grant permission to not more than 2 employees to ride on the hoisting equipment and to not more than 4 employees to ride on car on which the equipment is mounted.
- (c) The operator must assign such employees a riding location that will permit them to be in his view at all times and also to maintain handholds. He must be prepared to stop, if necessary to protect them and as-

sure himself that they are off the equipment and car before operating hoisting equipment.

- (d) Performing maintenance or repair work on such equipment or on the car on which it is mounted before having a thorough understanding with the operator as to the work to be performed, before he has made arrangements to prevent injury due to moving or working the hoisting equipment, and knowing that such precautions are in effect, is prohibited.
- (e) Operator must not operate or move hoisting equipment before employe in charge of the maintenance or repair work thereon has authorized the removal or discontinuance of the precautions and advised him that it is safe to operate or move the equipment, and he has assured himself that all the employes are in the clear.

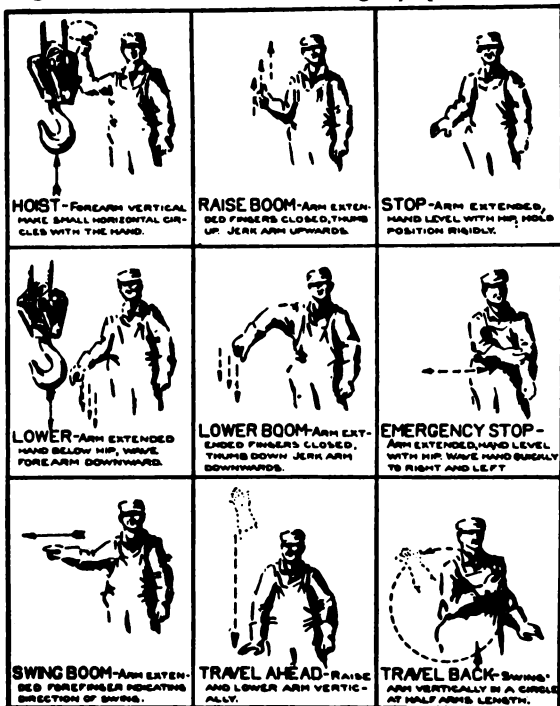
3401. Taking hold of cable, sheave, boom or any part of hoisting equipment where hand may be caught by any part that moves, unless instructed to do so by the operator, who must first provide adequate protection, is prohibited.

3402. If the operator does not have a good view in the direction he is moving the equipment, an employe shall be assigned to precede it and warn others of its approach.

3403. Before starting an operation involving use of hoisting equipment 1 person shall be designated to give signals and all persons involved in the operation shall be notified who has been designated.

3404. Giving signal for operation of hoisting equipment by others than person designated to give signals, operating hoisting equipment without signal, or on signal from person not designated to give signals, is prohibited, except when working alone or not needing assistance from any other person.

3405. Use standard hand signals shown below to govern movements of hoisting equipment :



3406. When starting to lift an unusual or a heavy load, test brakes when load is a few inches from floor or ground.

3407. When hoisting material or machinery, attach chain or cable well above center of gravity to prevent its tilting or falling over when lift is made.

3408. Place block or hook directly over and centered on load, if possible, so that the lift will be vertical to prevent load from dragging, swinging or catching other object.

Use tag line and/or hand lines as may be necessary to assist in controlling load, see that all persons are in a safe position, hoist slowly until load is vertical and under complete control, if any of the following or other hazards exist:

- (a) Position of hoisting equipment, object to be moved or other object, necessitates lifting at an angle.
- (b) The object being handled, or the men assisting are in confined space.
- (c) The shape or the size of the load is unusual.

3409. Rail or other long object turned end for end while suspended from crane must be so controlled that its movement can be stopped short of person or obstruction.

3410. Riding on idler car, on man hauling trailer or other equipment within the limits of the boom, or walking, standing or sitting in swing of cab, path of or under load, bucket or magnet handled by hoisting equipment, or under boom unnecessarily, is prohibited.

Operating or moving hoisting equipment if any person is in a position that he is likely to be caught

by any part of the load or the equipment, or carrying load over workmen, is prohibited.

3411. Riding or hanging on tongs, sling, hook or load of hoisting equipment, is prohibited.

3412. Moving hoisting equipment with load swaying or rotating is prohibited.

3413. Lowering load on hoisting equipment so fast as to necessitate a sudden stop is prohibited.

3414. Handling tie, timber or similar object between jaws of hoisting bucket not equipped with teeth, is prohibited, except when using grapples or other attachment especially designed or approved for the purpose.

3415. Being in car in which bucket or magnet is being operated is prohibited.

3416. When freeing sling, observe arrangement of load, be sure it has settled before unhooking and take a position to avoid being struck by sling or any part of load.

3417. Keep from between object and load being handled, to avoid being caught between them.

3418. Leaving hoisting equipment unattended with load, bucket, magnet or other heavy attachment suspended, is prohibited.

3419. When unloading crawler crane from, or loading it on car, proceed as follows:

- (a) See that ramp (if used) is properly and securely placed.
- (b) Boom shall trail in unloading and lead in loading and be at lowest position practicable.
- (c) Remove load cable from sheave at upper end

of boom and hook it to a sling around draw-bar at opposite end of car.

- (d) Set brakes on swing mechanism and place short chain around cog wheel of swing gear to lock it.
- (e) Move crane slowly keeping travel clutches engaged during entire operation and, if necessary, use the load cable to keep crane from getting out of control.

3420. Keep doors of cab secured in either open or closed position when not in use.

3421. Guiding crane bucket by hand is prohibited. If impossible for crane operator to guide it with tag line, use hooked or pronged pole to do so.

3422. Gin pole shall be securely set and guyed and men shall not be on it while lift is being made.

ON OR ABOUT ENGINE, CAR OR TRAIN

3430. Placing clothing, tool or other object where it will foul ladder rung, handhold, foot-board, running board, step, end sill or other safety appliance on engine, tender or car, is prohibited.

3431. Getting on or off standing engine or car, except when necessary for the performance of duty, is prohibited.

3432. When getting off standing equipment, observe ground conditions, place feet so as to avoid obstructions, slippery surfaces or opening and retain handhold until sure foot is firmly placed to avoid falling, slipping, tripping or turning ankle.

3433. Carrying tool, material or other object, which prevents taking secure hold with both

hands, or which interferes with safe movements, when getting on or off or ascending or descending ladder or step on engine, car or other equipment, is prohibited.

3434. Use steps, ladders or handholds provided, when getting on or off engine, car or other equipment. Jumping off end sill or swinging up or down between cars with hand on each, is prohibited.

3435. While going up or down ladder on car or tender, turn foot slightly sideways and place portion of ball of foot on ladder rung. Keep body as close to the ladder as possible.

3436. When coming out of gangway of engine to steps, going up or down vertical steps or ladder on equipment or stepping from brake board, face the equipment and place foot firmly on step, ladder or brake board before placing weight on it.

3437. Riding at any of the following locations on engine or car or sitting at such locations when engine or car is standing, is prohibited:

- (a) On end sill.
- (b) Step.
- (c) Between cars or between car and engine with handhold and/or foothold on both.
- (d) On footboard.
- (e) Roof of box car, except when used as working platform, or on top of side or end of open top car.
- (f) Any part of engine or car with foot, hand or any part of body projecting beyond side.

3438. Observe the following precautions when necessary to be about end of drop end gondola car :

- (a) Before climbing over end gate assure yourself that it is properly latched.
- (b) Placing hand on latch, in the jamb or using the top of the side of the car within the swing of end gate, for a handhold, is prohibited.
- (c) Being on, astride or within the swing of raised end gate, is prohibited.
- (d) Opening end gate while standing inside car is prohibited. Stand outside end gate and take secure handhold on grab iron before unlatching and pushing end gate down.
- (e) Attempting to close end gate without a sufficient number of men to do it safely and without a block at least 6 inches thick to support it when changing handhold or in event it drops, is prohibited. The block must be shoved under the end gate as soon as it has been raised high enough to do so.

3439. To avoid injury from sudden start, lurch or jerk of engine, car or train :

- (a) Ride in the car provided for the purpose, when practicable. Riding on platform, except by persons in charge of work train work, is prohibited.
- (b) Be seated, when possible.
- (c) When not possible to be seated, maintain a braced position, maintain handhold and move about only when necessary.

3440. Going from one moving car to another in work train is prohibited, except when necessary and space between cars is platformed, properly

guarded to prevent falling between cars, and hand-holds are provided.

3441. Jumping from one car to another is prohibited. While stepping from one standing car to another, have secure handhold on car to which stepping, if possible, before making step.

3442. Standing or placing arm, leg or any part of body between side or end of car and lumber, timber, ties, rail or other lading likely to shift, except when car is standing, or moving at speed of not more than 5 M. P. H., and then only after understanding has been had with train and engine crew in order that sudden start, stop or changes in speed will be avoided, is prohibited.

3443. Walking, standing or sitting on edge of side or end of flat or tower car or on top of side or end of open top car, is prohibited.

3444. Before opening or closing door of drop bottom car see that all persons in the car and on the ground, particularly on the opposite side of the car, are clear of the door.

3445. Using wrench to hold door-winding mechanism while releasing pawl from ratchet is prohibited. Knock pawl from ratchet with suitable tool, and, if necessary, unwind with approved ratchet or self-adjusting car wrench. Using fingers to release pawl from ratchet is prohibited.

3446. Placing hands or fingers in jamb or on frame of drop-bottom or hopper car door, or using hands to close hopper car door, or closing it with feet while under the car, is prohibited.

3447. In closing door of drop bottom car equipped with winding mechanism use approved

closing device, if provided, or place pawl in holding position and wind with only approved ratchet or self-adjusting car wrench.

3448. Use approved closing device, if provided, or use method shown opposite each kind of latch listed below when closing hopper car door equipped with latch:

DROP LATCH

- (a) Push door to first notch with bar used as a pry against the bottom of the door. When impossible to use bar as pry, push door to first notch with foot.
- (b) Securely place suitable bar in loop provided.
- (c) Pull steadily on bar until door latches.

LATCH BAR

- (a) Securely place suitable bar in loop provided.
- (b) Pull steadily on bar until latch bar properly engages hook.

3449. Before operating side door on box car, look and be certain door is properly tracked. If door is off track and cannot be retracked, use rope equipped with hook to pull door open or shut, keeping clear of door while doing so.

3450. While operating box car door, keep hands and fingers clear of edge of jamb of door and rail or casting on which door travels, to avoid having hands or fingers pinched. Keep body clear of opening made by door, to avoid being struck by falling objects.

3451. Keep all parts of body clear of moving parts while operating or working about dump car.

3452. Being on tower car, except at controls, while the tower is being raised or lowered and

before safeties are in full holding position or being on top of moving tower car unless presence is necessary and precautions to prevent injury have been taken, is prohibited. Face direction of movement while on tower car.

3453. Working on ladder resting on tower of car before placing M. P. 397, DO NOT OPERATE, warning tag on switch, valve or other apparatus controlling raising and lowering of tower, is prohibited.

3454. When the outrigger of tower car, rope, ground stick or scaffolding of any kind extends over the adjoining track, maintain proper clearance from the top of the rail to the bottom of the outrigger or other obstruction. Allow for sagging due to weight being imposed on the outrigger in its extended position.

3455. When releasing vertical geared brake which does not release merely by placing lever in "off" position, after placing lever in "off" position take hold of wheel on outside, apply stress until pawl releases and let go, using care to keep clear of wheel. On other types place lever in "off" position, keeping hands, arms and any part of body clear of wheel.

3456. When releasing shaft and wheel brake, with or without club, apply sufficient stress to release pawl without forcing it from the ratchet; if impossible to do this secure help, and be prepared to engage pawl instantly to prevent wheel from spinning. Release brake a few notches at a time to permit slack to adjust before completing operation.

3457. Operating lever type (pump-handle)

hand brake with broken or defective handle stop is prohibited. When releasing pump-handle brake, after placing pawl lever or weight in "off" position and taking stress off, have firm hold on handle, place it in down position and retain handhold until brake releases. If brake fails to release in this position bring handle back up and re-engage pawl lever or weight in "on" position and report it to proper authority.

3458. Going in space made by material dropping through hopper or gondola opening, until after material remaining in car has been shaped to prevent its falling or rolling, is prohibited.

3459. Entering or leaving hopper type car through hopper opening is prohibited.

3460. Using hand to remove material or object from hopper opening is prohibited.

CAMP CARS

(Includes Sperry, Clearance, Instruction or other such car or equipment when "parked" for use as living quarters, meeting or demonstration.)

3470. Place and protect camp cars, assigned for occupancy, as follows:

- (a) Place, where possible, on a track which can be assigned exclusively to the camp cars and preferably not adjacent to main or running track.
- (b) On track assigned to exclusive use of camp cars:
 - 1. Set switches against movement to that track.
 - 2. Lock switches with special lock.

3. Place blue signal bearing words CAMP CARS at clearance point.

NOTE: A blue light, in addition, must be used at night.

(c) On track to be used also for other purposes :

- 1. At a point at least 40 feet from car disconnect the rail on side away from main or running track and swing end of disconnected rail nearest car at least 1 foot toward center of track and securely spike it in this position.**

If impracticable to do this, properly secure and lock a portable derail in derailling position with special lock, on side away from main or running track at least 40 feet from car.

- 2. Place blue signal bearing words CAMP CARS at point where track has been broken or derail applied.**

NOTE: A blue light, in addition, must be used at night.

3471. Steps on camp cars placed for occupancy must not be used on the side next to live track when the inter-track space is less than 20 feet. If intertrack space between camp cars and next adjoining live track is less than 20 feet, barricade platforms or steps on side next to live track.

3472. Take precautions to avoid :

- (a) Being cut by sharp, pointed or broken equipment.**
- (b) Spilling or splashing hot liquid or coming in contact with steam, hot ashes or hot equipment.**
- (c) Bumping other person in kitchen or aisleway.**

EXTINGUISHING FIRES

3480. Use of water to extinguish fire near energized electrical equipment or apparatus is prohibited. Apply sand or other extinguishing means only after circuit has been de-energized.

3481. Have power removed when necessary to direct hose stream close to high tension wire or apparatus.

3482. Use of extinguisher for fire around electrical circuit unless approved for the purpose is prohibited. Follow instructions applying to the particular make of extinguisher. When using chemical extinguisher, use care to avoid being overcome by the fumes.

3483. Keep as far as possible, during a fire, from energized high voltage conductor which might fall. Arrange to have such wire de-energized and grounded.

FLAMMABLES, EXPLOSIVES, ACIDS AND FUMES

3500. Smoking or using open flame, such as lantern, where gasoline or other flammable liquids, gases or storage batteries are present or being handled, is prohibited.

3501. Use of open flame to thaw frozen liquid in carburetor, fuel line or radiator is prohibited.

3502. Use only approved safety can to transfer gasoline or other flammables and maintain metal contact between containers, pipes, flexible hose or other attachment while doing so. Handling or storing other flammable liquids in open container is prohibited.

3503. Starting or encouraging fire in stove, furnace or other such source of heat container by using grease, gasoline, alcohol, kerosene or other such highly flammable substance, or wood that has been saturated by flammable liquid, is prohibited.

The use of highly flammable substance to start or encourage fire in the open is prohibited, except that kerosene may be used to start fire, in which case remove container to safe location before igniting and keep self on the side from which the wind is blowing.

3504. Allowing gasoline or other flammable liquid to spill or overflow while being transferred is prohibited. When practicable handle during daylight.

3505. Cleaning hands, gloves, clothing, machinery, equipment or other item with gasoline or other highly flammable liquid or with any substance not approved for the purpose, or wearing gloves or clothing saturated with gasoline, grease or other flammable, is prohibited.

Should gloves or clothing become saturated with gasoline or other flammable, keep a safe distance from stove, furnace or open flame until they have been discarded.

3506. Filling gasoline supply tank of internal combustion engine while the engine is running is prohibited.

3507. Before filling gasoline tank in confined place open all windows and doors, keeping them in open position until confined place is entirely free of fumes.

3508. Placing or leaving paper, rags, waste or

other material saturated with flammable liquid in refuse container, locker or other confined space or near stove, furnace, radiator or other source of heat, is prohibited.

3509. Cleaning around engine, tank or other place where gasoline fumes may be present, with steel wool or steel brush is prohibited.

3510. Before opening container of gasoline, creosote or similar liquid where there is a possibility of pressure having built up from heat, loosen plug slightly, cover plug with heavy cloth or bur-lap and complete operation.

3511. Using air pressure to force flammable liquid from container, or inserting iron or steel pipe into container for purpose of pumping flammable liquid is prohibited, except equipment designed and approved for this purpose. Use brass or copper pipe or non-metallic flexible tubing.

3512. Using kerosene oil as an anti-freeze solution in radiator is prohibited.

3513. Removing cap from steaming radiator before radiator has cooled sufficiently to prevent steam or hot liquid gushing out, is prohibited.

3514. Using cutting or welding apparatus, hot rivets or other source of heat while working on or in container which has been used for oil, gasoline or other flammable before removing all sediment, thoroughly washing out with water and steaming until all traces of oil, gasoline or other fumes are removed, is prohibited.

3515. Dropping barrel or other container of flammable liquid or explosive is prohibited.

3516. Handling or using dynamite or blasting

caps, or other explosives, unless qualified and authorized to do so in accordance with C. E. 140, Instructions Covering The Use of Explosives, or under the instructions and direct supervision of an authorized person, is prohibited.

3517. Using "canned heat" is prohibited. Placing air tight container of coffee or other liquid on stove or other source of heat before loosening cork, stopper, cap or cover, is prohibited.

3518. Before building, refueling, poking or shaking coal fire in stove or furnace completely open flue draught, close bottom draught and stand at side instead of at front of fuel or ash door.

3519. Using cylinder having contained explosive or flammable, as a roller is prohibited.

3520. When lighting fusee, hold end to be lighted downward and far enough away to prevent fire dropping on hands, feet or clothing and rub it in the direction away from body. If necessary to extinguish fusee, do so by holding lighted end downward, away from body and strike side of fusee lightly over some object until powder loosens and lighted portion drops off.

3521. Keep torpedoes and fusees separated from each other and also from other objects.

3522. Oil lamps, candles or other open flame lights must be secured to prevent falling or upsetting.

3523. Operating an internal combustion engine inside a building unless provision has been made for the exhaust gases to be expelled outside the building is prohibited.

3524. Using carbon tetrachloride in confined place unless there is proper ventilation, is prohibited.

3525. Wear approved rubber gloves when:

- (a) Handling wet cell battery.
- (b) Handling, pouring or using acid or caustic soda.
- (c) Performing other work when protection is necessary.

(To be determined by employe in charge.)

3526. Use approved respirator when:

- (a) Paint spraying.
- (b) Shotcreting (Guniting etc.).
- (c) Sandblasting.
- (d) Operating power adz, if operator or employe in charge considers it necessary.
- (e) Grinding with power tool, if operator or employe in charge considers it necessary (Employe in charge shall determine necessity for use of respiratory equipment in other work involving fumes or dust.)

3527. Thoroughly ventilate tanks containing oil fumes before entering.

3528. Entering oil tank without having an employe in attendance at manhole opening is prohibited.

3529. Using or storing propane gas tank, torch, furnace or similar equipment in basement, tunnel, manhole or other closely confined place, unless authorized, is prohibited.

3530. When practicable keep on the side of the chlorate or other weed killer spray from which the wind is blowing, or take other precautions to avoid having clothes saturated.

Wash clothing which has been worn while applying chemical weed killer as often as practicable and keep a safe distance from stove, furnace or open flame if clothing is incrustated with chlorate or similar chemical weed killer.

NOTE: Chlorate and other chemical weed killers contain large quantities of oxygen, which supports combustion. Cloth, wood or other organic matter saturated with chemical weed killer will, when dried, ignite readily and burn rapidly.

3531. Making ineffective vent, valve or other safety feature on tank or container, or filling container requiring pressure control or release protection with gas, air, liquid or substance unless sure it is equipped with appropriate effective vent, safety valve or other safety feature, is prohibited.

LANTERN, TORCH OR LIGHT

3545. Shaking torch to extinguish flame is prohibited.

3546. Removing filling cap while lantern or torch is burning is prohibited.

3547. Leave a space of not less than $\frac{1}{2}$ inch at top when filling fount of lantern or torch.

3548. Replace filling cap on lantern or torch immediately after filling.

3549. Examine lantern or torch for leak and see that filling cap is tight before lighting.

3550. If there is indication of leak in blow torch or furnace, immediately relieve pressure, repair, or mark it DEFECTIVE and ask for disposition.

3551. The following precautions, where appli-

cable, must be taken in connection with carbide lights:

- (a) Store in dry place.
- (b) Shaking or roughly handling container is prohibited.
- (c) Inspect before using and if punctured, the existing holes have been enlarged, additional holes put in, cap over top or bottom hole is loose or missing or if otherwise defective, mark DEFECTIVE, keep it separated from safe lights and properly dispose of it at first opportunity.
- (d) When preparing to use:
 - 1. Remove top and bottom cap.
 - 2. Place it in standard can provided for the purpose, containing the depth of clean water prescribed by the manufacturer's instructions.

NOTE: If a standard can is not available, use clean bucket containing not less than 10 inches of clean water.

- 3. Wedging or preventing it from settling as it absorbs water, is prohibited.
- 4. Keep body and face as far away as possible when lighting torch.
- (e) Relighting after it has become extinguished for any reason is prohibited. Dispose of it in the open.

GAS CUTTING OR WELDING

(Additional rules in Form L. G. P. 260, Instructions For The Safe Handling And Care Of Oxygen And Acetylene Gas Cylinders And Welding And Cutting Equipment, must be observed.)

3560. Operating gas cutting or welding outfit unless authorized to do so is prohibited.

3561. Lifting or transporting gas cylinder with hoisting equipment is prohibited.

3562. Throwing, dropping or otherwise roughly handling loaded or empty gas cylinder is prohibited.

3563. Using leaking gas cylinder is prohibited. Remove to open air, clear of flammable material or anything that will cause gas to ignite.

3564. Allowing gas cylinder to be near furnace, steam pipe or other source of heat is prohibited.

3565. Before cutting through anything, be certain that there is no person on the other side who might be burned.

3566. Performing cutting, welding, or heating operation on container, cored casting, pipe, plugged holes, etc., unless properly vented or drilled to permit escape of gas, steam or hot air, is prohibited.

3567. Operating torch on or near receptacle where gas may be generated from oil, grease, gasoline, etc., or where fumes from torch might accumulate, is prohibited.

3568. Carrying lighted torch while climbing, is prohibited.

3569. Wear clothing and shoes that will give full body protection when performing gas or electric cutting or welding operations. Take precautions against burning clothing or safety strap with torch or sparks.

3570. Leaving gas cutting or welding outfit under load handled by hoisting equipment is prohibited.

THERMIT (FLASH) WELDING

3575. When thermit (flash) welding:

- (a) Wear clothing and shoes that give full protection and trousers or overalls without cuffs.
- (b) The design and quality of molds or other items, as well as the quality of powder, shall be in accordance with manufacturer's recommendations.
- (c) Make sure that molds or other items are free of defects, promptly replacing any that are damaged or unsafe for use.
- (d) Make sure that cable or wire ends, molds, crucibles, as well as all other items are dry and free of grease or oil before placing contents of cartridge into crucible.
- (e) Place entire contents of all cartridges to be used on one weld into crucible.
- (f) Before igniting powder place self in a position to avoid injury from gases or molten metal which may be discharged from crucible or mold.
- (g) Close mold tightly before igniting powder, when cover is provided.
- (h) Allow sufficient length of time for metal to solidify after weld is made, before opening cover.

PREPARING OR USING MOLTEN PARAFFIN, METAL, OR OTHER MOLTEN SUBSTANCE

3580. Leaving hot material unattended is prohibited.

3581. Place furnace at as safe a distance from manhole opening as practicable, and on down grade side when possible.

3582. When necessary to place furnace close to manhole opening, place suitable guard to prevent spilling hot material on employe in manhole.

3583. Remove pot of hot material from the furnace when pumping.

3584. Heat side of compound pot or otherwise provide for escape of gas before placing it on the furnace.

3585. Filling a pouring or melting pot to more than $\frac{2}{3}$ of its capacity, is prohibited.

3586. Heating paraffin above 375° Fahrenheit is prohibited. Use a thermometer to test it.

3587. Keep water out of hot paraffin, molten metal or similar molten substance, using a cover when necessary.

3588. Spitting in pot to test temperature of material being heated is prohibited.

3589. Heat ladle or dipper before placing it in molten metal.

3590. Remove ladle and dipper when passing pot of molten material to other workmen.

3591. Passing ladle or dipper containing molten paraffin or molten metal to other person, or lowering pot containing molten paraffin or molten metal before warning all persons below and knowing that they are in a safe position, is prohibited.

3592. Heating paraffin, solder, or similar substance on cable platform, balcony, aerial cable car, in manhole or other such place, is prohibited.

3593. In aerial work suspend pot from the messenger. Setting pot on cable platform, balcony, aerial cable car or other such place, is prohibited.

3594. Putting solder drippings from catch pan into hot solder pot while in manhole, is prohibited.

MANHOLE, TRENCH, SEWER, TURNABLE PIT OR OTHER EXCAVATION

3600. Using fire or open flame to thaw frozen manhole cover is prohibited. Bump it loose or use salt.

3601. Smoking or using open flame in manhole, or other place where gas may be present, is prohibited.

3602. Entering sewer pit, manhole or oil tank without an employe at top to render assistance in case of necessity, is prohibited, except in C. & S. manhole less than 8 feet deep.

3603. When entering manhole use sense of smell to detect presence of gas.

3604. Entering sewer pit, manhole or tank where gas may be present is prohibited. If impracticable to ventilate, use gas mask.

NOTE: It is not always possible to detect the presence of gas, but dizziness, headache or rapid beating of heart is sufficient warning. Come to the surface immediately on feeling any of these symptoms.

3605. If gas is present, provide ventilation with approved ventilating machinery, by blanket barrier process outlined below or by removing cover from the next adjacent manhole on each side:

Suspend end of blanket or piece of canvas

through manhole opening to within about 2 feet of bottom of manhole, the other end being outside the manhole. Stretch or spread the 4 corners of the blanket and tie them. The blanket will then be in a vertical position and divide the manhole opening into 2 parts which will cause the air to flow into the manhole through $\frac{1}{2}$ of the opening and out through the other half.

3606. Come up at intervals for fresh air when working in manhole where gas may be present.

3607. After ventilating a gassy manhole, plug ducts in manhole in which work is to be performed.

3608. Surround by suitable guard, or assign a man to protect, manhole, pit, trap or other such opening, cover of which has been removed or opened. Replace manhole cover immediately after work is finished.

3609. Leaving open or unguarded after dark, any excavation about track or other place where persons are likely to walk, is prohibited.

3610. Cleaning rim of manhole unless cover is completely removed is prohibited.

3611. Use handle, or suitable hook to remove or replace manhole cover, keeping hands and feet in the clear.

3612. Keep a safe distance from edge of ash, inspection, turntable or other pit or trench, except when necessary for the purpose of construction, inspection, maintenance or use.

3613. Stepping or jumping across ash or other pit is prohibited.

3614. Performing or permitting any employe to perform work in excavation $4\frac{1}{2}$ or more feet in depth unless safely shored or sloped, when the nature of the ground indicates it is likely to cave in or slide, is prohibited.

LADDER, SCAFFOLD, TRESTLE AND WORKING AT ELEVATED PLACE

3625. Be certain of hand and foothold before climbing anywhere.

3626. Climbing or working on ladder, scaffold, roof, tree or other elevated place when force of wind makes it unsafe to do so, is prohibited.

3627. Stepping or walking on skylight is prohibited.

Working on roof, platform or other elevated part of structure that is not properly secured, that is deteriorated, rotted or otherwise of questionable stability, before it has been inspected and if necessary tested under the direct supervision of the man in charge, who shall arrange for the necessary precautions, such as strengthening by guying, bracing, blocking, is prohibited. (See Rule 3024.)

3628. When working at elevated place look before stepping in any direction to avoid slipping, tripping, stumbling or otherwise losing balance.

3629. Getting on ladder occupied by another person is prohibited.

NOTE: In electric traction work 2 men, with use of safety belts, may work on a ladder which has been lashed at top. One man must be in working position with safety belt in use while the other man ascends or descends.

3630. Throwing tool, material or other object, except hot rivet when necessary, to employe on pole, scaffold, tree or other elevated place or dropping it from such place unless adequate warning has been given and persons below are known to be clear, is prohibited.

3631. Use hand line and when necessary suitable container, to convey tool, material or other object to employe in elevated position, and also to lower it when unsafe to drop it.

3632. Rope off space or take other measures, where necessary, to keep public from passing underneath work being performed. Where necessary for public to walk underneath, provide guards to prevent tool, material or other object from falling on them.

3633. When work is being performed overhead and suitable protection against the falling of tool, material or other object has not been provided, keep from under such work, unless the nature of the work requires it, and then only after workmen above have been notified to take precautions against the falling of tool, material or other object.

3634. Assign an employe to guard ladder, scaffold or trestle in use at location where persons or vehicles are likely to collide with them.

3635. When working on bridge, ladder, scaffold or other elevated place near or over track or highway, keep rope, wire, chain, tackle or other such object clear of passing train or vehicle.

3636. Use standard body belt and safety strap, rope or cable, adjusting the safety strap, rope or cable to allow only slack necessary for perform-

ance of work, except when scaffold or other suitable protection is provided, in the following situations:

- (a) Working in drop bottom car on trestle or open floor bridge, unless otherwise authorized by the District Engineer.
- (b) Working outside elevated window.
- (c) Working on steep pitched roof.
- (d) Working on steep hillside, cliff or embankment.
- (e) If practicable, when working in dangerous place on bridge or other structure.

Belt or strap must be used in an untwisted position and with tongue or snap away from body.

(Necessity for use of body belt and safety strap, rope or cable to be determined by employee in direct charge.)

3637. Using weak, cross grained, split, knotty or other unsuitable material for ladder, scaffold, hand rail, platform or other such equipment, is prohibited.

3638. Painting a portable wood ladder or using one that has been painted, is prohibited.

3639. Ladder, including rope, hooks, fastenings, braces and other parts, or scaffold, including platform planks, hand rails, toe boards, fastenings and other parts, must be inspected daily before using. Defective ladder must be properly repaired, or separated from serviceable equipment, and defective scaffold must be repaired before using.

3640. Using trestle or "A" ladder as a step-

ladder or straight ladder, is prohibited.

3641. Using a ladder lengthened by splicing 2 short ladders together or by using more than 2 sections of a sectional ladder, is prohibited.

3642. Placing a ladder on a box, barrel, block or other insecure object to make it reach, is prohibited.

3643. Using step-ladder before it is fully opened and spreaders set to hold, is prohibited.

3644. Before using, place straight ladder so that the distance from the base of the ladder to the object against which it is to be leaned is about $\frac{1}{4}$ of the height at which the ladder contacts object against which it is leaned. When impossible to so place ladder, lash or otherwise secure it.

3645. Using straight ladder not equipped with spikes or non-slip bases suitable for surface on which it is to be used, unless securely lashed or someone placed at base of ladder to hold it, is prohibited.

In case of doubt as to ladder being secure, station a man at base of ladder to hold it or securely lash it. No type of ladder base can be depended upon under all conditions. Securely lashing ladder is preferable to assigning a man to hold it.

3646. When ladder is used within swing of a door, or so as to obstruct doorway, lock or secure the door in closed position.

3647. "Walking" a ladder while on it, is prohibited.

3648. Before placing a ladder against bridge warning or messenger cable, test the cable by throwing a rope or hooking a ladder over it and

exert double the weight it will be required to hold.

3649. When ascending or descending, face ladder and have firm grip with 1 hand before releasing hold with other hand. When practicable use sides instead of rungs for handholds. Keep as close to ladder as possible.

3650. Jumping from ladder or sliding part way down is prohibited.

3651. Carrying tool, material or other object in hand while ascending or descending ladder is prohibited. Carrying any object about person, which interferes with safe movements while ascending or descending, is prohibited.

3652. When climbing extension ladder, inspect the hooks before passing them.

3653. Extending or lowering top portion of extension ladder without using rope and other necessary attachments, or while hand or any part of body is in position to be caught should top portion of ladder drop, is prohibited.

NOTE: Sash cord is not considered as rope for this purpose.

3654. Placing weight on portion of ladder extending above object against which it is supported unless the base of the ladder is secured to prevent its kicking out, is prohibited.

3655. Standing on either of the 2 top rungs of straight ladder, or top step or platform of step-ladder, is prohibited.

3656. Guying ladder, scaffold or platform to or placing it against movable portion of standpipe or other movable object unless such object is secured, is prohibited.

3657. Reaching out more than arm's length from side of ladder or edge of scaffold or platform, or leaning beyond it, is prohibited, unless ladder is lashed or fastened and safety belt is used. When reaching out from side of ladder or edge of scaffold or platform, maintain hold with 1 hand or use safety belt.

3658. Secure scaffold against tipping, falling or moving as its construction progresses and before depending upon it for support.

3659. Moving assembled scaffold unless the scaffold planks are removed or secured, is prohibited.

NOTE: End stops on platform planks will not be considered adequate for this purpose.

3660. Using scaffold or platform on which any of the following conditions exist is prohibited:

- (a) Floor is made of loose planks not equipped with end stops, or are not otherwise appropriately secured to prevent them from coming or sliding off supporting trestle, horse, brace or bracket.
- (b) Floor is less than 16 inches wide.
- (c) There is a space of more than $\frac{1}{2}$ inch between the floor boards, or between the floor boards and toe boards.

3661. Working on scaffold not equipped with hand rail and toe board is prohibited.

3662. When work is being performed where there is danger of falling into more than 4 feet of water a boat, continuously attended and ready for instant use, must be kept at the most advantageous point, if the nature of the work makes it necessary.

3663. Standing in boatswain chair while it is suspended, is prohibited.

3664. Wear approved helmet when:

- (a) Catching rivets.
- (b) Working where there is danger of rock or other object falling, or of being struck by object being handled by hoisting equipment during wrecking operations.

NOTE: Employe in charge shall determine necessity for use of helmet in other work or situations.

OVERHEAD LINE WORK

3670. Climbing pole unless authorized to do so is prohibited.

3671. Climbing pole or performing other overhead work during high wind is prohibited, except in emergency, when authorized by the person in charge of the work, in which case every precaution must be taken to avoid injury.

3672. Use standard body belt and safety strap, adjusting the safety strap to allow only slack necessary for performance of work, in the following situations:

- (a) Getting on, working on or getting out of cable splicer's platform or aerial cable car, the strap to be around the messenger.
- (b) Working on pole.

Belt or strap must be used in an untwisted position and with tongue of buckle away from body.

3673. Climbing pole while another person is climbing is prohibited. Wait until the person

above is in position or the person below is clear of the pole.

3674. Placing weight on crossarm, terminal box, pole step or platform, if not sure it will support your weight, is prohibited.

3675. Using insulator, insulator pin, bracket, crossarm brace or conductor wire as support for the body while on pole, is prohibited.

3676. Inspect climber, skate, strap, body belt and safety strap before using. If defective it must be repaired (except strap or belt) or marked defective and kept separated from serviceable equipment and in a suitable container.

3677. Using defective body belt or safety strap is prohibited. Using climbers with defective straps or buckles, with loose, dull or cracked gaff or with gaff less than $1\frac{1}{4}$ inches in length, is prohibited. Sharpening gaff on emery wheel is prohibited.

Using skates with defective straps or buckles, with points that are dull, broken off or removed, or with defective pads, is prohibited.

3678. Wearing climbers or skates unnecessarily while moving about on the ground is prohibited, except that if there is occasion to go immediately from one pole to another climbers or skates may be worn if footing or other condition does not make it unsafe to do so.

3679. Using skates to climb pole with wet paint on portion of pole over which climber must pass, is prohibited.

3680. Using steps while wearing climbers or skates is prohibited.

3681. When climbing pole make close observa-

tion to note presence of metal, numbers or letters, guy or strain plates, hooks, drive screws, nails, slivers, shell, knot, crack, or other such condition and avoid such item to prevent hand or other injury.

3682. When climbing wood pole:

- (a) Keep the top of the climber leg iron not less than 8 inches from pole.
- (b) Avoid striking metal or other unsuitable part of pole with gaff.
- (c) Take short steps.
- (d) Do not hurry.

3683. Observe condition of wood pole to see that it is safe before climbing. Pay particular attention to the following points:

- (a) Old or leaning poles.
- (b) Poles marked for replacement.
- (c) Poles not side guyed against pull of wires running to a side or branch line, or making a corner.
- (d) Abandoned poles to be removed.
- (e) Poles on a straight line not carrying a messenger or more than 10 communication wires or equivalent.
- (f) Poles with excessive weather cracks or other openings.
- (g) Poles on embankment, particularly if there is evidence of supporting earth washing away.
- (h) Guy wire, brace or other supporting feature is broken, deteriorated or otherwise not effective.

3684. If there is any doubt as to whether a

wood pole is safe to climb, test it as follows:

- (a) The preferred test is by means of a pike pole 8 feet long applied to the pole 8 feet to 12 feet from the ground on the side which has no support from wires or messenger. Rock or sway the pole sufficiently to determine its condition.
- (b) If pike pole is not available, remove the dirt from around the pole to at least 6 inches below the surface of the ground. Use a heavy screw driver or similar tool to prod the decayed wood from around this portion of the pole to determine the amount of sound wood remaining. Sound the pole to the height of 4 feet with a hammer or other suitable object to determine the presence of hollow heart.
- (c) Observe conditions and take necessary precautions in making the test where a broken pole would cause contact with other wires, interfere with railroad or street traffic or cause injury or damage to others.

3685. If swaying or prodding and sounding of wood pole indicates a doubtful or unsafe condition, or if it is known that it is broken, rotted or burned off at base and/or guys are deteriorated or unsuitable or IF POLE IS UNTREATED, before climbing, temporarily safeguard pole by the method suitable to the condition as follows:

- (a) Brace pole, not exceeding 30 feet in height with pikes not less than 18 feet long, securely set against the pole and firmly ground. Place pike butts at least 6 feet from the butt of the pole and guard them

if necessary.

- (b) If work involves untying of wires, loosening of suspension strand, guys or other devices supporting the pole, hold pole from turning in either direction by use of 2 cant hooks.
- (c) Guy pole, exceeding 30 feet in height, with guys of $\frac{1}{2}$ inch or larger hemp rope, $\frac{5}{16}$ inch messenger strand, No. 6 B.W.G. iron wire, or of a stronger material as follows:
 - 1. While placing temporary guys support the pole with pikes placed in line with pull on temporary guys. Securely ground the pikes and guard them when necessary.
 - 2. Attach temporary guys to the pole at a point not less than $\frac{3}{4}$ of its height above the ground. Attach the other end to some suitable object such as an adjacent pole, tree or bar driven in the ground at a horizontal distance from the butt of not less than $\frac{3}{4}$ of the height of the pole.
 - 3. Where practicable, temporary guys shall have clearance specified for permanent guys over track, highway, street or sidewalk.
 - 4. Temporary guys shall have clearance from current carrying wires or apparatus specified for permanent guys.
- (d) Securely set a good pole in ground close to defective pole, secure defective pole, top and bottom, to the good one before removing wires and then lower the defective pole

to ground with rope.

If good pole is not available, temporarily set substantial post securely in the ground and secure pole to it until another pole is available.

3686. Dead-ending wires, cutting a sufficient number of wires to cause excessive pull from one direction, introducing excessive slack or excessive side or overhead pull from any cause before safeguarding pole as outlined in Rule 3685 and also guying crossarm on which there is likely to be unbalanced pull, is prohibited.

3687. On curve or corner, when pulling wire, cable or rope into position, or when releasing it from position, keep on the outer side of the curve, if practicable.

3688. When renewing catenary wire on a curve, tie new wire to old wire at each hanger location to prevent wire from fouling train on adjacent track.

3689. Securely fasten catenary or other wire after stringing before attempting to work on or about it.

3690. Before riding, carefully examine messenger strand to determine if it is safe. If it is unsafe for riding, use an emergency strand and report the condition of the messenger to immediate supervisor.

3691. When pulling contact and auxiliary wire together, if only one clamp is being used attach clamp to the contact wire.

3692. Applying strain before wire-pulling clamp is tightly secured is prohibited.

3693. When unreeling wire, tend reel from opposite side from which wire is pulled.

ERECTING AND REMOVING POLES

3700. Use pike pole from shoulder or with both hands from side of body and face toward the object on which pike is being used. Resting butt in body belt to make a lift is prohibited.

3701. Hold pike firmly to prevent it from dropping on other men when pole drops in hole.

3702. Pikes holding a pole unattended shall be well set and grounded so they will not cut out or slip.

3703. In setting pole with pikes, use at least 2 cant hooks to hold pole from turning in either direction.

3704. When erecting heavy pole, trench the hole whenever practicable.

3705. When necessary use pole support of proper length until the butt of the pole has been placed a sufficient depth in the hole to prevent pole from falling in case the pikes should break or slip.

3706. When removing poles in congested places, use pike poles, or ropes attached to a firm support to prevent falling in the wrong direction.

3707. If space available permits and no other factor makes it unsafe to do so, with pike poles push over unsafe poles that are to be removed by hand, particularly those in an abandoned line or those that are unsafe to climb until safeguarded, and then process the dismantling, staying clear of the crossarm and pole until they are flat on the ground.

WORKING ON OR ABOUT ELECTRICAL CIRCUIT, APPARATUS OR EQUIPMENT

(In addition to rules shown below the applicable instructions in Electrical Operating Instructions, Form C. T. 290, must be complied with.)

3715. Working on or about electrical circuit, apparatus or equipment unless qualified or without full knowledge as to its operating voltage and service handled is prohibited.

3716. The use of device, appliance, wooden ladder, pole, tool handle, rope, tape or any other object unless especially approved for use in maintenance and operation of the circuit on which it is to be used, is prohibited.

3717. Insulation on wire or electrical apparatus or equipment must not be depended upon for protection against shock.

3718. Except for removing or replacing fuses, or operating disconnect switches when rubber gloves must be worn in accordance with Rules 3731 and 3735, protection shown opposite voltages listed below must be used when working on circuit, apparatus or equipment normally energized at:

VOLTAGES

175 to 400* volts

400 to 2,500 volts

PROTECTION

Electrical protective gloves

De-energize and ground.

If impracticable to do so obtain permission of the Engineer C. & S. (except where Foreman-Electrician is in charge) and use electrical protective gloves

2,500 or more volts
70,000 or more volts

and approved protective devices.

De-energize and ground.

De-energize and ground all circuits on the same pole structure before working on any of them, except where structure provides at least 8 feet clearance from energized circuit.

*Except that 750 volts direct current will be the maximum when working on energized third rail or apparatus the design of which does not permit grounding or maintaining grounds while work is being performed on it.

3719. Except for removing or replacing fuses, or operating disconnect switches when rubber gloves must be worn in accordance with Rules 3731 and 3735 unless protected by approved barrier, keep self, tool, material or other object being handled the distances shown below from electrical circuit, apparatus or equipment normally energized at:

400 to 2,500 volts—Avoid contact.

2,500 to 50,000 volts—3 feet.

50,000 or more volts—8 feet.

3720. An employe working with a gang is prohibited from working on a circuit normally energized at 400 or more volts before reporting to and receiving authority from person in charge. This applies at the start of the job and after any temporary absence from the job.

3721. Working on aerial line wire, messenger, aerial cable or associated apparatus during an

electrical storm is prohibited, except in emergency and then only when proper grounds are provided.

3722. Before touching structure carrying live circuit, examine it to insure that it is not energized due to broken insulator, slack wire or other such condition.

3723. Touching or coming in contact with wood stick or insulator on adjacent energized wire, is prohibited.

3724. Riding messenger strand when there will not be proper clearance for person, tools or material from energized power wires, is prohibited.

3725. Inspect cable ties when riding messenger strand over energized wire. If there is any question as to its condition, secure the cable to the messenger before proceeding.

3726. Place standard warning tag, M. P. 397 or 398, properly filled in, on switch set to de-energize line, apparatus or equipment.

3727. Employee preparing a clearance Form M.P. 260, for work in substation must see that all employees in gang know which circuits and apparatus are covered by clearance and must obtain their signatures on form to that effect. Before clearance is released employee who has clearance must see that all employees in gang know that circuits and apparatus must be considered energized and must obtain their signatures on form to that effect.

3728. Releasing clearance before making careful check to see that all contact wires are in safe condition for electric operation and that all men,

grounding sticks and grounded pantographs are clear of the line, is prohibited.

3729. Operating switch bearing M. P. 397, DO NOT OPERATE, warning tag is prohibited.

3730. Authorizing removal of M. P. 397, DO NOT OPERATE, warning tag from switch without knowledge that all workmen are clear and have received proper warning that grounds have been removed, or removing such warning tag from switch without authority of person in charge of men for whose protection it was placed, is prohibited.

3731. Removing or replacing fuses on energized circuit of 400 or more volts without the use of rubber gloves and insulated tongs or other approved device, is prohibited.

3732. Using switch pole on circuit energized at 70,000 or more volts is prohibited.

3733. Applying local grounding device to 132,000 volt circuit before grounding switch has been closed and visual check of grounding switch is made in at least one adjoining substation, is prohibited.

3734. Hold switch pole so that the maximum length of the pole is between the circuit and the hands.

3735. Operating hook stick type high tension disconnecting switch without the use of rubber gloves and treated wooden switch pole provided for that purpose, is prohibited.

3736. When closing an energized circuit breaker by hand, close contacts as quickly as possible.

3737. Opening or closing disconnect switch as-

sociated with a circuit breaker before circuit breaker has been opened, is prohibited, except that disconnecting switch may be closed while circuit breaker of non-trip-free type is closed.

3738. Applying grounding stick so that it will foul pantograph of train on adjacent track is prohibited.

3739. Operating circuit breaker by hand, when the operating lever travels beyond reach of employe, without use of platform, is prohibited.

3740. Remove detachable handle for hand operation of electrically operated oil or air circuit breaker as soon as hand operation is completed.

3741. Use proper standard grounding devices on line, apparatus or equipment as follows:

- (a) Secure to ground connection before placing the other end in contact with the line, apparatus or equipment.
- (b) When removing the grounding devices disconnect them from the line, apparatus or equipment, before removing them from the ground connection.
- (c) Keep as far as practicable from circuit if possible below and to the side from which the wind is blowing so that any resulting arc will not blow toward you.

3742. Applying grounding device before person in charge has received clearance, Form M.P. 260, properly filled in, that line, apparatus or equipment has been de-energized, is prohibited.

3743. Surround with approved non-metallic barricade type tape or rope the limits within which clearance protection has been provided for safely

working on circuit, apparatus or equipment on the ground or floor of substation and also on the structure when practicable.

3744. Working in substation on any circuit or apparatus normally energized at 400 or more volts except between grounds, is prohibited.

NOTE: Except that 750 volts direct current will be the maximum when working on energized circuit or apparatus the design of which does not permit grounding or maintaining grounds while work is being performed on it.

3745. Working on any substation return rail bus before applying grounds to bus is prohibited.

3746. Opening ground return circuits between track and substation bus or apparatus grounds when connected apparatus is energized is prohibited.

3747. When necessary to work on substation transmission line air break switch and grounding switch:

- (a) Before starting work close air break switch, close the motor operated grounding switch by contactor on mechanism or by hand, and then apply grounding devices.
- (b) After completing work and before clearance is released, remove grounding devices, open ground switch and report position of grounding switch and air break switch to the Power Director.

3748. Before working on catenary cross-over, section break or pull-off, de-energize, if practicable, adjacent circuits with which men, tools or material are likely to contact.

3749. Working on edge of tower car adjacent to pull-off, cross-over, feeder or switch wire which is not de-energized, where it is possible to avoid doing so, is prohibited.

3750. Ground that portion of steady span located between other circuits before disconnecting it from contact and auxiliary wire.

3751. Before working on broken conductor normally energized at 400 or more volts, or on catenary section break, place grounding devices on both sides of break.

3752. Apply grounds to wire or messenger being strung near high voltage circuit.

3753. Working on aerial wire circuit normally energized at 400 or more volts unless it is de-energized and grounded on each side of point of work, is prohibited.

3754. Before working on insulated power cable normally energized at 2,500 or more volts, de-energize the circuit and then ground it by switches or other approved method at nearest terminal on each side of the work. Before starting work use detecting device at point where work is to be done to insure that you have selected the de-energized cable.

3755. Being on top of tower car, without proper clearance authority (M.P. 260) in effect, or in location not covered by this authority, is prohibited.

3756. Raise grounded pantograph of wire train against trolley wire, when practicable, before applying grounding devices.

3757. Working on top of tower car before 2 standard grounding devices have been applied to de-energized circuit is prohibited. All men must work between the 2 grounding devices, except when making running inspection of catenary at which time the grounded pantograph must be in constant contact with the wire.

3758. When necessary to ground catenary circuit, place ground on contact and auxiliary wires. In case this is impossible, ground may be placed on messenger.

3759. Working on transformer without first removing the primary fuses and opening secondary circuit, is prohibited.

3760. Opening secondary circuit of energized current transformer is prohibited.

3761. Before working on electrically operated apparatus or equipment open the control cut-out switch.

3762. Before working on electrically operated apparatus or equipment that does not have a cut-out switch, block magnet switch open.

3763. Before working on power transformer separated from bus by a horn gap switch, open control cut-out switch at horn gap switch mechanism.

3764. When de-energizing power transformer, opening horn gap switch before opening circuit breaker, is prohibited.

3765. When energizing power transformer, closing circuit breaker before closing horn gap switch is prohibited.

3766. Before working on signal power apparatus

or equipment open all necessary circuit breakers, block relays and open control cut-out switches to prevent automatic starting of signal generator set or operation of circuit breakers.

3767. When working on control board avoid contact with electro-static ground detectors which are energized with the high voltage.

3768. Working on static condensor or lightning arrestor before it is discharged is prohibited.

3769. Working on pantograph before closing grounding switch is prohibited.

3770. When necessary to work on circuit supplying electrical energy to operate crane, elevator, tool or other device:

- (a) Notify operator of such device that circuit is to be de-energized.
- (b) De-energize the circuit and securely attach M. P. 397, DO NOT OPERATE, warning tag to each switch as it is opened.
- (c) Removing such warning tag or operating switch by workmen other than the one who applied the tag, is prohibited.
- (d) If necessary to keep the circuit de-energized for a period of time longer than the hours of duty of the man who applied the original M. P. 397, DO NOT OPERATE, warning tag, the man who relieves him shall apply his M. P. 397, DO NOT OPERATE, warning tag as soon as the original tag is removed.
- (e) If the man who applied the M. P. 397, DO NOT OPERATE, warning tag is not relieved by another workman, the warning

tag shall remain on the switch until his next tour of duty.

- (f) If the same workman is not available to work on that particular circuit, his supervisor may arrange for the removal of the M. P. 397, DO NOT OPERATE, warning tag for the purpose of putting other workmen on the job, such workmen to place their warning tags as outlined.
- (g) When work on the circuit is completed, both workmen and operator shall satisfy themselves that machinery is in proper shape for operation. Warning tags shall then be removed and switches and circuits re-energized.

3771. Leaving tool or other unauthorized item in sectionalizing case, lightning arrestor case, switch or cable box or relay case, is prohibited.

USE AND CARE OF ELECTRICAL PROTECTIVE GLOVES

3800. The electrical protective glove combination consists of a flexible rubber glove with gauntlet, and a soft pliable leather glove without a gauntlet to be worn over the rubber glove to protect it against puncture or abrasion. A suitable bag container is provided for carrying the gloves when not in use on the employe's hands. Stock gloves shall be kept in a dark cool place, preferably around 60° F.

3801. Each pair of rubber gloves will be received from stock in a sealed package bearing the date of acceptance, proof test voltage and size of gloves. Each new glove will bear the company in-

spector's acceptance stamp. Accepting gloves from stock unless they comply with these requirements is prohibited.

3802. Accepting gloves from stock which prove to be defective upon visual inspection is prohibited.

3803. Remove oil from hands before using rubber gloves.

3804. Using rubber gloves without protective leather gloves is prohibited.

3805. Using leather glove, while retained in service as a rubber glove protector, for any other purpose is prohibited.

3806. When leather glove becomes wet, remove it from the rubber glove until thoroughly dry.

3807. Using leather gloves worn or torn so that they expose the rubber gloves to damage, or leather gloves which have become hardened from becoming wet, as rubber glove protectors, is prohibited.

3808. When carried or stored in tool kits, keep gloves in bag container to protect them from damage. Folding gloves is prohibited.

3809. When not in use, gloves located at various points for operating purposes shall be placed in a box in which they were received or other container and kept in a place where they will not be exposed to sunlight, oils or heat.

3810. Unnecessarily exposing rubber gloves to sunlight, oils or heat is prohibited.

3811. Upon request a pair of new gloves shall be issued to an employe if he feels that the ones he

is using are unsafe. The old gloves shall pass electrical test before being used again.

3812. Before starting to work on maintenance of energized circuits, inspect and test gloves as follows:

Fold gauntlet of rubber glove in such manner that air is held in the glove. Squeeze the glove and if pressure shows signs of reducing, the glove is probably punctured and shall not be used until further test can be made.

3813. Periodic electrical test shall be made on rubber gloves as required by the nature of the service in which they are used. The frequency of this test shall be determined by the supervisory officer in charge. In no case will the interval between the periodic tests be more than 90 days.

Gloves shall be shipped to the Engineer of Tests, Altoona, Pa., where periodic electrical test will be made in accordance with current specifications. Gauntlet of each glove which withstands the periodic electrical test will be marked, "P.R.R. Test Department, Tested 10KV, Date . ., Size . ., Maximum Time Until Retest 90 days." After test, gloves will be placed in container which will be sealed and marked in the same manner as the gauntlets.

INSTRUCTIONS 1300 and 1301, C. E. 223 **(See Rules 3210, 3218 & 3226)**

1300. When retarders are located on adjacent tracks, the centers of which are less than 20 feet, the retarder cylinders shall be painted yellow.

1301.

(a) Retarders that are out of service for main-

tenance shall have controls opened under the direction of the foreman, assistant foreman or other person in charge.

- (b) Group and intermediate retarders that are out of service for maintenance requiring use of track shall be protected by a track switch located above the retarder, secured in a position to divert cars or engines. Special Instructions 351, insofar as they apply, shall govern.
- (c) Master retarders that are out of service for maintenance requiring the use of track shall be protected in accordance with paragraph (b) above where track switches are available. Where track switches are not available the foreman, assistant foreman or other person in charge shall **SECURE** the hump signal controller in **STOP POSITION**, or open controls of hump repeater signals, and place M. P. 397, **DO NOT OPERATE**, warning tag on the hump signal controller.

FIRST AID

Artificial respiration may be required in electric shock, apparent drowning, asphyxiation by gases, fumes or noxious vapors, shock or collapse, exposure to extremes of heat or cold and cases of poisoning. In brief, it is required in all cases in which breathing is temporarily suspended.

It is highly important that someone thoroughly familiar with the methods to be followed and the precautions to be observed, take charge and direct operations when an accident occurs. The person

in charge should select as assistants only those who are most likely to remain calm in such an emergency, and who may be depended upon to give intelligent assistance.

Prompt and intelligently directed and continued efforts in restoring natural respiration, are necessary for successful results. While promptness is essential, undue haste should be avoided. The failure of the victim to respond quickly to resuscitation should not cause discouragement; the effort should be continued, because:

- (a) The body depends upon a continuous exchange of air. We must breathe in and out about 15 times per minute.
- (b) If the body is not repeatedly supplied with air, suffocation occurs.
- (c) Persons whose breathing has been stopped have been restored after artificial respiration has been continued as long as 3 hours or more.

DROWNING—If the victim is one of drowning, no time should be taken to roll him on a barrel even if one is at hand. The victim's body should be laid with his head and chest lower than his feet. Waste no time in an effort to empty water out of him. Start artificial respiration at once.

GAS POISONING—If the victim is one of gas poisoning, he should be carried or dragged to fresh air (but preferably not to cold outside air.) Make no attempt to walk him about. Start artificial respiration at once.

ELECTRIC SHOCK

1. Electric shock is not always fatal; it may only stun the victim and stop his breathing for

a while. The shock is not likely to be immediately fatal.

2. Extreme care must be exercised in releasing the victim from contact with a live conductor, to avoid receiving a shock yourself. Many persons, by their lack of knowledge of such matters, have been severely shocked or burned.

3. Release of victim from contact with live conductors if known to be 750 volts or less:

- (a) Do not touch the live conductor.
- (b) Do not touch the victim on his bare skin while he is in contact with the live conductor.
- (c) Use a piece of DRY non-conducting material such as a piece of wood, rope, a coat or rubber hose to push or pull the live conductor away from the victim. The live conductor may be handled safely with rubber gloves, or
- (d) If the victim's clothing is dry, he should be dragged away from the live conductor by grasping his clothes—NOT HIS BARE SKIN. In doing this the rescuer should stand on a dry board and use only one hand. Do not stand in a puddle of water or on damp or wet ground.

4. Release of victim from contact with live conductors of unknown or more than 750 volts:

- (a) Do not touch the live conductor.
- (b) Do not touch ANY part of the victim as long as he is in contact with the live conductor.
- (c) Use a treated wood pantograph or switch pole to push the wire away from the victim. Keep the hands at least 6 feet away from the victim and wire when doing this.

Treated wood poles may be found in all substations, wire trains and at Communication and Signal Foreman's headquarters.

- (d) If such a pole is not available, get the wire de-energized as promptly as possible by grounding the wire if rescuer knows how, or notify the power director, nearest signalman, or electrician before attempting to release the victim. When permission has been obtained from the power director, nearest signalman, or electrician, use a dry piece of wood, a rope, a coat, or rubber hose to push or pull the conductor away from the victim.
- (e) If the victim or the live wire is in a pool of water, do not step into the water. Remove the victim or the live wire with the pole.

5. When handling a live wire or other conductor, be careful to see that it does not come in contact with yourself or bystanders.

6. Send for a physician promptly, preferably a company physician, and put the case in his hands upon arrival.

METHOD OF ARTIFICIAL RESPIRATION

1. If the victim can be made to breathe and to continue to breathe, the major part of resuscitation has been accomplished, and recovery is practically assured. Having freed the victim from contact with the live conductor, remove him from the water or from presence of poisonous gas, start artificial respiration immediately; do not wait for the physician. Resuscitation should not be delayed or discontinued for longer than 1 minute and then only

when the situation is such that he can be placed on a train or other vehicle taking him to a hospital in such a way that artificial respiration can be continued during the trip. Bystanders must not be permitted to stand about the victim since this prevents fresh air.

2. Quickly feel with your fingers and remove from the victim's mouth and throat any foreign body such as tobacco, false teeth, etc.

Do not stop to loosen the victim's clothing at this time; every moment of delay is serious. Apply artificial respiration as outlined below:

POSITION OF THE SUBJECT. Place the subject in the face down (prone) position. It is all-important that artificial respiration, when needed, be started quickly. If possible, the body should be inclined slightly toward the head. The subject's head should be extended, and the chin should not sag. Bend his elbows and place his hands one upon the other. Turn his face to one side, placing the cheek-bone upon his hands.

POSITION OF THE OPERATOR. Kneel at the head of the subject on either your right or left knee. Place your knee close to his arm and just at the side of his head. Place your opposite foot near his elbow. If it is more comfortable, kneel on both knees, one on either side of the subject's head.

Place your hands upon the flat of the subject's back so that the heels of the hands lie just below a line running between the armpits. With the tips of your thumbs just touching, spread the fingers downward and outward. See Figure 1.



**Figure 1 Position
of the Operator**

COMPRESSION PHASE. Rock forward until your arms are approximately vertical and allow the weight of the upper part of your body to exert slow, steady, even pressure downward upon your hands. This forces air out of his lungs. Your elbows should be kept straight and the pressure exerted almost directly downward on the back. See Figure 2.



Figure 2
Compression Phase

EXPANSION PHASE. Release the pressure by removing the hands from the back without giving any extra push with the release and rock slowly backward. As you rock backward grasp the subject's arms just above his elbows and draw his arms upward and toward you. Apply just enough lift to feel resistance and tension at the subject's shoulders. Do not bend your elbows. Now drop his arms to the ground. The arm lift expands his chest by pulling on the chest muscles, arching the back, and relieving the weight on his chest. See Figures 3 and 4.



Figure 3
Expansion Phase



Figure 4
Expansion Phase

This completes the full cycle. The cycle should be repeated 12 times a minute at a steady, uniform rate. The compression and expansion phase should take about equal time with short release periods.

3. Continue artificial respiration without interruption for at least 3 hours, or until natural breathing is restored. Continue the movement for some time after natural breathing has begun. In continuing the movement be careful to keep

your movements in step with the natural breathing of the victim. In stopping the movement see that the victim continues to breathe; if he stops, start artificial respiration again.

4. Do not give any liquids by mouth until the victim is fully conscious. A physician only may administer stimulant; this should not be attempted by any other person.

CARE OF THE VICTIM

1. In handling the victim, do not touch or irritate burned parts if possible, and during artificial respiration see that pressure is not brought to bear upon burns.

2. During the period of restoring natural respiration, an assistant should keep the victim warm by applying a cover and by laying bottles or rubber bags filled with warm—not hot—water beside the body.

3. When natural respiration has been restored, burns, if serious, should be cared for until a physician arrives.

4. Do not open blisters.

5. A raw or blistered surface should be protected from the air. If clothing sticks, cut around it; do not peel it off. A dressing of soft material should be applied to the burn, and this or the cloth adhering to the wound should be saturated with a solution of baking soda (1 teaspoonful to a pint of water).

Cover the dressing with cotton, gauze, lint, clean waste, clean handkerchiefs, or other soft cloth, and hold lightly in place by a bandage.

6. Similar coverings should be lightly bandaged over dry, charred burns, but without applying oil or other liquid dressing.

7. After regaining consciousness, the victim should be watched carefully to see that he does not exert himself except in moderation. Violent exertion is liable to cause a cessation of breathing, recovery from which is doubtful.

FIRST AID TREATMENT FOR BURNS AND SCALDS

1. A remedy has been provided for the treatment of burns and scalds, a supply of which is kept at all substations and block stations in electrified territory.

2. Completely bandage the burn or scald with contents of First Aid Packet; follow this by thoroughly wetting the bandages, covering the injured part with the solution contained in the bottle, remembering that nothing is to be applied directly to the burn or scald except the bandage contained in the First Aid Packet.

3. It should be thoroughly understood that this preparation is not to be considered for healing purposes, but merely to save the person from pain until he can be treated by a physician.

