RULES AND REGULATIONS
OF THE
TRANSPORTATION DEPARTMENT

SOUTHERN PACIFIC COMPANY

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SOUTHERN PACIFIC COMPANY

RULES AND REGULATIONS

OF THE

TRANSPORTATION DEPARTMENT

Effective January 1, 1969

The rules herein set forth govern the railroads operated by the Southern Pacific Company. They supersede all previous rules and instructions inconsistent therewith.

Special instructions may be issued by proper authority.

D. R. KIRK
General Manager
Texas and Louisiana Lines

M. A. McINTYRE
General Manager
Pacific Lines

Approved:
W. D. LAMPRECHT
Vice President
System Operations

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GENERAL NOTICE

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

Obedience to the rules is required.

The service demands the faithful, intelligent and courteous discharge of duty.

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

GENERAL RULES

A. Employes whose duties are prescribed by these rules must be provided with a copy.

Employes whose duties are in any way affected by the timetable must have a copy of the current timetable, and supplements if any, with them while on duty.

B. Employes must be conversant with and obey the rules and instructions. If in doubt as to their meaning, they must apply to proper authority for an explanation.

C. Employes must pass the required examinations.

E. Employes must render every assistance in their power in carrying out the rules and instructions and must report promptly to the proper official any violation thereof.

F. Accidents, defects in track, bridges or signals, or any unusual condition which may affect the movement of trains, must be promptly reported to the chief train dispatcher from first available point of communication.

G. The use of alcoholic beverages, intoxicants or narcotics by employes subject to duty, or their possession or use while on duty, is prohibited.

Employes shall not report for duty under the influence of any drug, medication or other substance, including those prescribed by a doctor or dentist, that will in any way adversely affect their alertness, coordination, reaction, response or safety; nor shall such drug, medication or other substance be used by employes while on duty.

H. The use of tobacco by employes on duty while in the presence of patrons is prohibited.

J. Employes on duty must wear the prescribed badge and uniform when required and be neat in appearance.

M. Employes must exercise care to avoid injury to themselves or others. They must observe the condition of equipment and tools which they use in performing their duties, and when found defective will, if practicable, put them in safe condition, reporting defects to the proper authority.

Carelessness by employes of the safety of themselves or others will not be condoned.

Employes are warned that it is unsafe to ride on top or side of cars while passing points where impaired clearances exist and that they must protect themselves from injury. There are numerous structures with impaired clearances and employes must be familiar with their location.

Employes are prohibited from getting on top of box or other house cars not equipped with roof running board except when necessary to make repairs.

Employes may ride on roof of cars equipped with roof running board when necessary during switching operations, but must not cross from roof of one car to another while in motion.

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

They must not stand on track in front of an approaching engine or car for purpose of boarding it.

When personal protective equipment is furnished, it must be used as directed.

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

Each personal injury suffered by an employe, and any injury to another employe or person, of which an employe has personal knowledge, must be reported without delay to his immediate superior; and written report completely and correctly made must thereafter be promptly mailed to Superintendent.

Conductors, engineers, foremen, and other supervisors must make report without delay, by wire, unless otherwise instructed by Superintendent, of any personal injury to employes under their jurisdiction, or to other persons reported to them or of which they have knowledge; with written report in full on prescribed form promptly forwarded thereafter.

DEFINITIONS

Absolute-Permissive Block (A-PB). A block within which the movement of trains on a designated section of track or tracks is directed by signals automatically controlled and without train-order authority and without superiority of trains.

Absolute Signal. A home signal, the indications of which authorize and govern the movement of trains and engines and supersede the superiority of trains.

Approach Medium Signal. A fixed signal used in connection with an approach signal to govern approach thereto. (For example, see Rule 285-A).

Approach Signal. A fixed signal used in connection with a home signal to govern the approach thereto. (For example, see Rule 285).

Automatic Block Signal System (ABS). A series of consecutive blocks governed by block signals actuated by a train, or by certain conditions affecting the use of a block.

ATS. Abbreviation for Automatic Train Stop.

Block. A length of track between consecutive home signals governing in one direction; or from a home signal to sign reading "End of Block" or "Block System Limit"; the use of which by trains is governed by block signal.

Block Signal. A fixed signal at the entrance of a block, or within a block, to govern trains entering and using that block.

Block System. A series of consecutive blocks within A-PB, ABS, CTC and interlockings.

Centralized Traffic Control (CTC). A method of operation by means of which the movement of trains over routes and through blocks on a designated section of track or tracks is directed by signals controlled from a designated point without requiring use of train orders and without regard to superiority of trains.

Controlled Siding. A siding within CTC or interlocking limits by which trains enter or leave by signal indication.

Crossover. Connection between two adjacent tracks.

Current of Traffic. Movement of trains on a main track, in one direction, specified by the rules.

Distant Signal. A fixed signal used in connection with a home signal to govern approach thereto. (For example, see Rule 286).

Division. That portion of a railroad assigned to the supervision of a Superintendent.

Double Track (DT). Two main tracks, on one of which the current of traffic is in a specified direction, and on the other in the opposite direction.

Dual Control Switch. A power-operated switch, also equipped for hand-throw operation.

Dummy Mast. A short mast equipped with blue light and used in conjunction with a fixed signal to indicate an intervening non-signaled track. (See Rule 297).

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

Extra Train. A train not authorized by a timetable schedule. It may be designated:

Extra: For any extra train except work extra.
Work Extra: For work train extra.

Fixed Signal. A signal of fixed location indicating a condition affecting the movement of a train, such as train-order, interlocking, absolute or automatic block signal; switch; stop signs; yard limit signs or speed signs.

Grade Signal. An automatic home signal with disk on mast bearing letter "G".

Holidays. When this term is used in timetables, timetable bulletins and train orders, it will apply to the following days:

New Year's Day, January 1,
Washington's Birthday, February 22,
Decoration Day, May 30,
Independence Day, July 4,
Labor Day, first Monday in September,
Thanksgiving Day, fourth Thursday in November,
Christmas Day, December 25.

Home Signal. A fixed signal at the entrance of a route or block to govern trains entering and using that route or block.

Interlocking. An arrangement of signal appliances so interconnected that their movements must succeed each other in a predetermined order. It may be operated manually or automatically.

Interlocking Limits. The tracks between opposing home signals of an interlocking.

Interlocking Signal. A home signal of an interlocking.

Main Track. A track extending through yards and between stations, upon which trains are operated by timetable or train order, or both, or the use of which is governed by signal indication.

Overlap Post. A post marking the limit of control of a block signal.

Pilot. An employe assigned to a train when the engineer or conductor is not acquainted with the rules or portion of railroad over which the train is to be moved.

Regular Train. A train authorized by a timetable schedule.

Schedule. That part of a timetable which prescribes class, direction, number and movement for a regular train.

Section. One of two or more trains running on the same schedule displaying signals or for which signals are displayed.

Siding. A track auxiliary to the main track for meeting or passing trains.

Signal Aspect. Appearance of a fixed signal conveying an indication as viewed from the direction of an approaching train.

Signal Indication. Information conveyed by the aspect of a fixed signal.

Single Track. Main track on which trains are operated in both directions.

Speeds:

Medium Speed. A speed not exceeding forty miles per hour.

Restricted Speed. Proceed prepared to stop short of train, obstruction, or switch not properly lined and look out for broken rail, not exceeding twenty miles per hour.

With caution. Run at reduced speed, according to conditions, prepared to stop short of a train, engine, car, misplaced switch, derail, or other obstruction, or before reaching a stop signal. Where circumstances require, train must be preceded by a flagman.

Spring Switch. A switch equipped with a spring mechanism to restore the switch points to original position after having been trailed through.

Station. A place designated in the timetable by name.

Subdivision. A portion of a division designated by timetable.

Superior Train. A train having precedence over another train.

Timetable. The authority governing movement of trains subject to the rules. It contains classified schedules of regular trains, and special instructions.

Train. An engine, or more than one engine, with or without cars, displaying marker.

Train of Superior Class. A train given precedence by timetable.

Train of Superior Direction. A regular train given precedence in the direction specified by timetable as between opposing trains of same class.

Train of Superior Right. A train given precedence by train order.

Train Register. A book or form used at designated stations for registering signals displayed, time of arrival and departure of trains and such other information as may be prescribed.

Yard. A system of tracks within defined limits, other than main track and siding, provided for the making up of trains, storing of cars and other purposes, over which movements may be made without train-order authority, but subject to direction of a yardmaster, if on duty, and such rules, instructions and signals as may be prescribed.

Yard Engine. An engine assigned to yard service.

Yard Limits. The territory between signs placed adjacent to main tracks to designate the points between which engines may operate on main track without train-order or timetable authority, and within which engines and certain trains are restricted in their movement on all tracks.

Note. Where, in these rules, special instructions, timetable bulletins, or in train orders, the following terms appear, they will apply as follows:

Train or Trains: In connection with speed restrictions or the observance of signals (except train-order signals), also applies to engines.

Conductor: To conductor or yard-engine foreman.

Trainmen: To conductors and brakemen; yard-engine foremen and switchmen.

Engineman or Enginemen: To engineers, firemen, hostlers and hostler helpers.

Outside of Block System Limits: Also applies to movement on any track which is provided with block signals for movement in one direction only, when movement is being made in the direction for which block signals are not provided.

RULES
FOR
SINGLE AND DOUBLE TRACK

Rules will apply as follows:
Without prefix: Both single and double track.
Prefix "S": Single track only.
Prefix "D": Double track only.

STANDARD TIME

1. Standard time, obtained from an authorized observatory, will be transmitted daily except Sundays and holidays. Clocks bearing the prescribed sign "Standard Clock" will be maintained at designated places, as shown in timetable, and employes charged with duty of receiving time signal must set standard clock to agree with time signal.

At locations where time signal is not received, employe in charge of standard clock must obtain correct time from nearest train-order operator, during, or after, transmittal of time signal, and set the clock.

2. Each of the following employes, and such other employes as may be designated, must carry, while on duty, a reliable railroad grade watch and a watch certificate, Form 2821, both of which must be presented to an authorized watch inspector for examination during October of each year:

*Train-order operators
*Signal operators
*Except when assigned in offices where a standard clock is located.
Conductors
Brakemen
Engineers
Firemen
Outside hostlers
Outside hostler helpers
General yardmasters
Assistant general yardmasters
Yardmasters
Assistant yardmasters
Yard-engine foremen
Switchmen
Switchtenders
Herders

Employes must show their watches and certificates to division officers, authorized watch inspectors and traveling watch inspectors upon request.

3. Conductors, yard-engine foremen, engineers and outside hostlers must compare their watches with a standard clock, and conductors and yard-engine foremen must compare time with their engineers, when commencing each day's work; and conductors must compare time with their brakemen, yard-engine foremen with their switchmen and engineers with other crew members on engine as soon as practicable.

The time when watch is compared with standard clock, and any variation of such watch must be recorded on prescribed form. If watch is set to correct time the word "set" must also be recorded.

When an additional engine is added to a train en route, engineer of that engine must compare time with the conductor or an engineer of the train.

When conductors and engineers tie up at a point where there is no standard clock, time must be compared with train-order operator on duty when commencing each day's work. If this cannot be done, time must be compared with conductor or engineer of first available train.

At train-order offices and interlockings where there is no standard clock, train-order operators and signal operators must, during each tour of duty, compare time with time signal if possible, otherwise with a train-order operator where standard clock is maintained, or time signal is received.

Watches must be set to correct time if they reflect a variation of more than twenty seconds from correct time when comparison is made as prescribed in this rule.

TIMETABLES

4. Each timetable, from the moment it takes effect, supersedes the preceding timetable, and its schedules take effect on any subdivision at the leaving time at their initial stations on such subdivision. But when a schedule of the preceding timetable corresponds in number, class, day of leaving, direction, route, and initial and terminal stations with a schedule of the new timetable, and is in effect as prescribed by Rule 82, train authorized by preceding timetable will retain its train orders and assume schedule of corresponding number of new timetable.

Schedules on each subdivision date from their initial station on such subdivision.

Not more than one schedule of the same number and day may be in effect on any subdivision.

Note: Day of leaving under this rule means the day of the week that the schedule authorizes a train to leave its initial station.

4-A. Notice of new timetable, or a supplement, must be issued by timetable bulletin and posted at least twenty-four hours prior to its effective time. During a period commencing twenty-four hours before and continuing until six days after it becomes effective, notice by train order, Form Q, must be given to conductors and engineers of trains.

4-B. Special instructions in timetable supersede any rule or regulation of the book of rules with which they conflict.

Special instructions appearing on a schedule page of timetable apply only to the page on which they appear, unless otherwise provided.

Bulletin boards and/or bulletin books will be provided at stations designated by timetable. Timetable bulletins will contain only information or instructions relating to the rules, or movement of trains; supersede special instructions in the timetable, or any rule or regulation of the book of rules with which they conflict, and expire with the current timetable. Instructions affecting the superiority of trains must not be issued by timetable bulletin.

Trainmen, enginemen and others concerned in the movement of trains must review timetable bulletins when commencing each day's work, and review other instructions relating to their duties as often as practicable.

Timetable bulletins will be issued by authority and over the name of the Superintendent, and will be numbered consecutively during the effectiveness of each timetable, and bear the name of the division and the number of current timetable.

5. Not more than two times are given for a train at any station; where one is given, except at terminating stations, it is the leaving time; where two, they are the arriving and leaving times.

Unless otherwise provided, time applies at the clearance point of siding where an inferior train must be clear of main track; where there is no siding, it applies at the train-order signal; where there is neither siding nor train-order signal, it applies at station sign.

Schedule meeting or passing times are indicated by figures in full-faced type.

6. Following symbols when placed before figures of a schedule indicate:

s—regular stop,
f—flag stop to receive or discharge traffic,
c—conditional flag stop as prescribed by special instructions.

6-A. Following symbols when placed at left of station name indicate:

TO—train-order office,
R—train-register station.

Following symbols when placed at right of station name indicate:

B—bulletin station,
K—standard clock,
I—interlocking,
Y—wye or turning track,
P—telephone,
Q—radio base station.

DT or CTC limits will be indicated within brackets at right of station column.

ABS, A-PB or ATS limits will be indicated within brackets at the left of station column.

SIGNALS AND THEIR USE

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

7-A. Yellow flags and unattended red flags and red lights must be placed to right of track in direction of approach. Other flag and lamp signals, fusees and torpedoes must also be placed on that side, but must be respected when displayed on either side. When practicable, all signals by hand must be given on engineer's side.

Note: Flags may be of cloth, metal or other suitable materials.

7-B. Signals must be given and acted upon strictly in accordance with the rules. Trainmen, enginemen, and others must keep vigilant lookout for signals. Those giving signals must locate themselves so as to be plainly seen. Signals must be given in such a manner that they cannot be misunderstood.

Precaution must be exercised by trainmen and enginemen to avoid acting upon signals that are not understood, or that may be intended for other trains or engines. In case of doubt, movements must not be made until oral understanding has been reached.

In backing engine or cars, or shoving cars ahead of engine, disappearance from view of trainmen or lights by which signals controlling the movement are being given must be construed as a stop signal.

While switching, enginemen must remain on the engine, exercising care in handling engine while trainmen or others are making couplings, and must give close attention to signals.

Hand, flag and lamp signals to proceed on main track or siding do not supersede the superiority of trains, nor dispense with the observance of fixed signals, unless otherwise provided.

8. Flags of prescribed color must be used by day, and lights or reflectorized flags of prescribed color and type by night.

9. Day signals must be displayed from sunrise to sunset.

Night signals must be displayed from sunset to sunrise and when day signals cannot be plainly seen.

10. COLOR SIGNALS

COLOR	INDICATION
(a) Red	Stop, unless otherwise prescribed by the rules.
(b) Yellow	Proceed at reduced speed, and for other uses prescribed by the rules.
(c) Green	Proceed, and for other uses prescribed by the rules.
(d) Blue	See Rules 26 and 297.

10-G. When an unattended red flag or red light is displayed to the right of main track in direction of approach, train, after stopping, must be preceded for a distance of three-fourths mile from point where flag or light is displayed, by a flagman who must carefully examine track and structures.

A flag so displayed will not apply to the track on which train is running if displayed beyond the first rail of adjacent track.

An unattended red flag or red light placed between the rails of any track other than main track requires that train or engine stop and not proceed until flag or light has been removed by an employe of the class that placed it there.

10-H. When a yellow flag is required it will be displayed to right of track in direction of approach, two miles from structure or track over which speed of trains must be restricted. Where two or more main tracks are affected flags will be displayed for each track the same as if it were a single track.

Trains must not exceed the speed specified by train order or timetable bulletin, or restricted speed if no different speed is specified, until rear of train clears the restricted limit.

Where yellow flags are displayed within limits of track over which a maximum speed is designated in train order or timetable bulletin and no maximum speed is otherwise specified, trains must not exceed restricted speed until rear of train clears the restricted limits. When yellow flags are displayed and speed is not specified by train order or timetable bulletin, trains must proceed expecting to find unattended red flag that may be displayed two miles beyond the yellow flag.

A green flag will be displayed to right of each track at the limit of restriction, and trainman will give proceed signal after rear of train has passed green flag.

A yellow flag by day and a yellow light by night may be displayed on speed sign post to direct attention to figures on speed sign, and when so displayed will not be considered a yellow flag as prescribed by this rule.

10-I. When Form Y train order is in effect an unattended red sign reading "CONDITIONAL STOP" will be displayed 1,000 feet in advance of where main track is obstructed or impassable. Trains must approach prepared to stop short of this sign unless the engineer is orally authorized to proceed beyond the stop sign by foreman in charge of work or a proceed signal with a green flag or light is received. A yellow sign reading "PROCEED PREPARED TO STOP" will be displayed two miles in advance of the red sign.

When orally authorizing a train to proceed, foreman must inform engineer the maximum speed permitted over restricted track.

A green flag will be displayed to right of each track at limit of restriction. Trainman will give proceed signal after rear of train has passed the green flag.

10-J. Speed signs will be located to right of track in direction of approach where practicable. On double track where trains keep to left, speed signs will be located to left if proximity of adjacent main track prevents locating to right.

Speed signs that prescribe reduction in speed will be located three-fourths mile from initial point of restriction, and where used to authorize increase in speed will be located at point where higher speed commences. Speed may be increased as soon as rear of train has passed speed sign. Where such signs are not used to authorize an increase in speed, limit of restriction will be shown in timetable.

Fig. 1

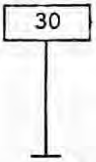


Fig. 2

The higher number on speed sign indicates the maximum speed for trains consisting entirely of passenger equipment, and the lower number indicates the maximum speed for all other trains. Where but one number is shown, it indicates the maximum speed for all trains.

Certain speed signs have the word "SIGNAL" above the figures. Such signs in advance of signal indicate the speed that must not be exceeded while engine is passing signal three-fourths mile beyond the speed sign, unless signal can plainly be seen to be displaying green aspect.

11. When an unattended fusee is burning on, or near, a track outside of block system limits, train must stop and not proceed until fusee has burned out.

An unattended fusee burning beyond the first rail of an adjacent main track will not apply to the track on which train is running.

Fusees must not be placed in timber-lined tunnels, on bridges, road crossings, nor at places where damage from fire may result.

12. HAND, FLAG AND LAMP SIGNALS

MANNER OF USING	INDICATION
(a) Swung at right angle to track.	Stop.
(b) Slight horizontal movement at arm's length at right angle to track.	Reduce speed.
(c) Raised and lowered vertically.	Proceed, also trainmen's answer to signal 14(k).
(d) Swung vertically in a circle at right angle to track.	Back.
(f) Swung horizontally above the head at right angle to track when standing.	Apply air brakes.
(g) Held at arm's length above the head, when standing.	Release air brakes.

12-H. Any object waved violently by anyone on or near track is a signal to stop.

14. ENGINE WHISTLE SIGNALS

Note. Signals prescribed are illustrated by "o" for short sounds, "—" for longer sounds. Sound of whistle should be distinct, with intensity and duration proportionate to distance signal is to be conveyed.

In case of whistle failure, speed of train must be reduced and bell rung continuously when approaching and passing through stations, yard limits, over public crossings, and on curves.

Signs bearing letter "X", located one-fourth mile in advance of certain public crossings at grade, tunnels and obscure curves, require engine whistle signal as prescribed by Rule 14(l). Absence of this sign in advance of public crossings at grade, tunnels or obscure curves does not relieve engineers from complying with Rule 14(l).

	SOUND	INDICATION
(a)	o	Apply brakes. Stop.
(b)	— o o o	Flagman protect rear of train.
(c)	o o o —	Flagman protect front of train.
(d)	— — — —	Flagman may return from west.
(e)	— — — — —	Flagman may return from east.
(f)	— — —	Train parted.
(g)	o o	Answer to 14(k) or any signal not otherwise provided for.
(h)	o o o	When standing, back. Answer to 12(d) and 16(c).
		When running, answer to 16(d).
(j)	o o o o	Call for signals.
(k)	— o o	(Single track) To call attention of engine crews and train crews of trains of the same class, inferior trains, yard engines, and of trains at train-order meeting or waiting points, to signals displayed for a following section, unless otherwise provided by special instructions. Failure to receive acknowledgment by signal 14(g) and 12(c) must be reported. Signal 14(k) also to be sounded when passing rear of freight trains. (Double track) To call attention of engine crews and train crews of trains of same class and of inferior trains and yard engines, to signals displayed for a following section.
(l)	— — o —	Approaching public crossings at grade, tunnels and obscure curves; to be commenced sufficiently in advance to afford ample warning, but not less than one-fourth mile before reaching a crossing, and prolonged or repeated until engine has passed over the crossing.

	SOUND	INDICATION
(n)	— — o	Approaching meeting or waiting points. (See Rule S-90-A).
(o)	o —	Inspect brake pipe for leaks or for brakes sticking.
(p)	Succession of short sounds.	Alarm for persons or livestock on the track.
(r)	o o —	Engineer of second engine take control of air brakes. When second engineer has taken control, he must repeat the signal.

15. Explosion of a torpedo is a signal to proceed with caution for two miles.

When a torpedo is exploded in the vicinity of a yellow flag displayed in accordance with Rule 10-H, train must proceed expecting to find an unattended red flag or red light displayed two miles beyond the torpedo and yellow flag.

Torpedoes must not be placed near station buildings, public crossings, or on other than main track.

16. COMMUNICATING SIGNALS

Note. Signals prescribed are illustrated by "o" for short sounds; "—" for longer sounds.

	SOUND	INDICATION
(a)	o o	When standing, start.
(b)	o o	When running, stop.
(c)	o o o	When standing, back.
(d)	o o o	When running, stop at next station.
(f)	o o o o	When running, reduce speed.
(g)	o o o o o	When standing, recall flagman.
(j)	o o o o o o	Increase train heat.
(k)	—	Running test completed; elsewhere when running, look back for hand signals. When standing, apply or release air brakes.
(l)	o	Approaching meeting or waiting points.
(m)	—o	Shut off train heat.

When train order is received indicating that main track is out of service and that trains are to be detoured through a siding or other track, or over a shoofly, necessitating a reduction in normal train speed, signal 16(f) must be sounded on passenger trains two miles before reaching point where train must reduce speed, which must be acknowledged by whistle signal 14(g).

17. The headlight must be displayed to the front of every train day and night but will be extinguished when meeting trains under following conditions:

If train is clear of main track and has stopped.

When standing at end of double track or at a junction.

When standing on main track if switch, and derail if any, has been lined for the opposing train, but not until headlight has been blinked as assurance to the opposing train that route is properly lined, and opposing train has also blinked its headlight as acknowledgment.

17-A. When an engine is running by day, headlight must be displayed to the front in direction of movement, when such movement involves crossing of streets, roads or highways at grade.

When an engine is standing or running by night, headlight or white light must be displayed to the front and rear. When coupled to a car, headlight next to car must be extinguished.

17-B. If headlight fails, a white light must be substituted. Headlight failures must be reported to chief train dispatcher.

17-C. When rules require headlights to be displayed, electric headlights will be dimmed to front, except when nearing street or highway crossings, as follows:

When standing or running on yard tracks.

When approaching stations where other trains are standing.

On double track, when approaching stations, momentary blink, followed by dimming of headlight, as a signal to an opposing train that speed will be reduced, or stop made if necessary, to permit opposing train to receive or discharge traffic.

When passing head end and rear end of trains on adjacent track.

At other points to permit passing of signals, delivery of train orders, or when safety of employes requires.

17-D. Oscillating white light on engines so equipped must be operated during stormy weather day and night, foggy weather during daylight hours only and must be operated approaching road crossings at grade both day and night under all conditions.

Oscillating red light on engines so equipped shall be operated by day or by night only when train has stopped, or is stopping under circumstances that may cause an adjacent track to be fouled, and will not in any way relieve trainmen or enginmen from compliance with Rules 99, 102 and other rules. A train or engine on the same or adjacent track must stop at once, and may proceed only after ascertaining that track is safe for passage of trains.

S-17. Until headlight of a train turned out to meet another is extinguished, it is an indication that main track is obstructed. Opposing train must approach with caution, and if head end of train is clear of main track, it may proceed with caution to the point where the main track may be obstructed.

19. A marker must be displayed while train is authorized and be removed when train arrives at destination, except that light of marker permanently installed must be extinguished.

Electric marker light must be illuminated by day and by night.

Note: Train not equipped to display the prescribed marker or in event of marker failure will display to the rear a red flag by day and a light by night in lieu of marker to indicate rear of train.

19-A. Outside of block system limits, when marker displays red light to the rear, it is an indication that main track is obstructed. Following train must approach with caution, and if rear of train is clear of main track, it may proceed with caution to the point where main track may be obstructed.

20. All sections except the last will display two green lights by day and by night in the place provided for that purpose on the front of the engine.

Note: If both green lights fail en route, unless other means of communication are available, train must stop and notify inferior trains that are met or passed, including trains at train-order meeting points.

20-A. Extra trains will display two white lights by day and by night in the place provided for that purpose on the front of the engine.

20-B. One light displayed wherein two are prescribed by Rules 20 and 20-A will indicate the same as two; but proper display of all train signals is required.

21. Trains must be identified by engine number on lead unit. Only the number designated for identification will be continuously illuminated when engine is so equipped.

Engine number of regular trains and sections thereof, when necessary, must be furnished by train order to all trains that are to be met or passed except within CTC or interlocking limits and territory where Rule D-251 applies.

Identification of opposing trains in CTC, interlocking limits or on double track is required only as prescribed by special instructions.

22. When two or more engines are coupled at the head of a train, the leading engine only will display signals; except when road engine is coupled behind a helper engine over part of a subdivision, the road engine will display signals the same as displayed on helper engine. The leading engine only will give or answer signals.

25. Each car of a passenger train consisting entirely of passenger equipment must be connected with the engine by communicating signal appliance. When signal is inoperative, other signals may be used. In such cases there must be an understanding between conductor and engineer and by them with other members of crew when practicable.

26. When employes are working between, upon, in or under an engine or units, train, car or cars for purposes of inspection, repair or service of any of them a blue sign reading "Men at Work" (white lettering on blue background) must be displayed at each end of track or equipment to which coupling can be made. If engine is attached to train, car or cars, blue sign on engine end must be displayed on engineer's side of cab. On tracks regularly assigned for repairing of cars a blue sign must be displayed on a standee on track or between rails of track and switches leading thereto must be locked with a special lock.

At night a blue light must be attached to each blue sign prescribed herein.

When more than one class of employe is engaged in the work, a disk with the name of each employe or each class must be attached to the blue sign. A disk may be removed only by the employe attaching it or by an authorized employe. Signs or lights must not be removed by any person other than employe who placed it, or by an authorized employe, and not until all disks, if any applied, have been removed.

An engine, train, car or cars protected by a blue sign must not be moved or coupled to, nor other equipment placed so as to obstruct the view of signs or lights.

When repair work is to be done between, upon, in or under an engine or units, train, car or cars and blue signs are not available, engineer must be orally notified by the employe in immediate charge of work and complete understanding had to prevent movement while work is being performed. The same employe is required to notify engineer orally when the work has been completed.

26-A. Only on certain tracks designated by Special Notice, a sign reading "EMPLOYES WORKING" (white lettering on red background) must be placed on car, track, or between rails of track, in approach to cars which are being loaded, or unloaded, and when sign is displayed cars must not be coupled to, nor moved, nor other cars placed so as to obstruct view of the sign. White light must be attached to sign by night.

Sign will be placed and removed only by authorized employes. Sign must be displayed to protect employes loading, unloading or working in or about cars, and must not be removed until it is known that employes and others are clear, and that aprons have been removed, and trucks and other vehicles are clear.

On other tracks, when necessary to disturb cars being loaded or unloaded, or serviced, notice must first be given to all persons in or about the cars to be moved, and it must be known that aprons, trucks, vehicles and any other equipment are clear.

When a sign reading "STOP—TANK CAR CONNECTED" (white lettering on blue background) is displayed on a track or car, the car or cars must not be coupled to, nor moved, until it is known that connections have been detached.

When a sign reading "SERVICE CONNECTIONS" (black lettering on white background) is displayed on a car or engine, the car or engine must not be coupled to, nor moved, until it is known that connections have been detached.

When a sign reading "OCCUPIED OUTFIT CARS" is attached to switch lock, outfit cars must not be coupled to, nor moved, until occupants have been notified, and permission given by person in charge.

Any cars not to be removed must be returned to location at which found.

27. A signal imperfectly displayed, or the absence of a fixed signal at a place where a signal is usually shown, must be regarded as the most restrictive indication that can be given by that signal, except that when day indication is plainly seen, it will govern.

Imperfectly displayed signals or absence of fixed signals must be promptly reported to train dispatcher.

29. When a signal is given to stop a train, it must be acknowledged and unless proceed signal is received, reason for stopping train must be made known to engineer before train proceeds.

29-A. When cause for a flagman's signal is fully explained to engineer, and circumstances do not require train to stop, it may proceed, being governed by instructions of flagman.

30. Engine bell must be rung when engine is about to be moved; while passing through tunnels; while approaching public crossings at grade, beginning sufficiently in advance to afford ample warning, but not less than one-fourth mile before reaching such crossing and continuing until engine has passed over crossing; and elsewhere when necessary as a warning signal.

31. Whistle must be sounded at all places where required by rule or law, and elsewhere when necessary as a warning signal. When visibility is impaired by fog, storm, or otherwise, the whistle must be sounded frequently as a warning to trackmen and other employes who may be working on or about the track.

32. Unnecessary use of either whistle or bell is forbidden. Whistle signals must be sounded, and bell rung, by the leading engine.

34. When practicable, each member of crew must identify by name and communicate to each other each signal affecting movement of his train as soon as it becomes visible or audible to him.

If engineer fails to take proper action, other crew members on engine must remind him of rule requirement.

35. Following signals must be used by flagmen:

Day signals: Red flag, torpedoes and fusees.

Night signals: White light, torpedoes and fusees.

Following signals must be kept ready for use by train-order operators:

Day signals: Red flag.

Night signals: White light and fusees.

Note: Red flag and fusees will be provided at train-order offices located beyond fouling point, or where leaving time applies, where first-class trains are scheduled to stop on flag; and at such other stations as authorized by Superintendent.

SUPERIORITY OF TRAINS

70. Within limits in which Rule D-251 is applicable, and within interlocking, A-PB and CTC, signal indications supersede the superiority of trains.

Illuminated letters in letter type indicators will also supersede the superiority of trains within the limits defined by special instructions in timetable.

S-71. A train is superior to another train by right, class or direction.

Right is conferred by train order; class and direction by timetable.

Right is superior to class or direction.

Direction is superior between trains of the same class.

D-71. A train is superior to another train by right or class.

Right is conferred by train order; class by timetable.

Right is superior to class.

72. First-class trains are superior to second-class; second-class are superior to third-class, and so on.

S-72. Regular trains in the direction specified by timetable are superior to trains of the same class in the opposite direction.

73. Extra trains are inferior to regular trains.

Second and following sections of a schedule are inferior to preceding sections of the same schedule.

MOVEMENT OF TRAINS

81. Main track must not be occupied without authority. Outside of block system limits main track must not be fouled until by observation or flag protection the engineer or conductor, as the case may be, is assured it is safe to do so.

In block system limits Rule 513 must be complied with before fouling main track.

82. Timetable schedules, unless fulfilled, are in effect for twelve hours after their time at each station.

Regular trains more than twelve hours late on either their schedule arriving or leaving time at any station lose both schedule and train-order authority, and can thereafter proceed only as authorized by train order.

82-A. Unless otherwise provided, regular trains will be authorized at their initial station by clearance, which must bear the OK, time and initials of the chief train dispatcher. At an intermediate station, following form of train order must be used:

"ENG_____RUN AS NO._____FROM_____"

When its initial station is an open train-order office, unless otherwise provided, an extra train must not leave without a clearance, which must bear the OK, time and initials of the chief train dispatcher.

83. A train must not leave its initial station, or a junction, or an intermediate station where schedules originate or terminate, or pass from double track to single track, or from CTC or interlocking to other track, until it has been ascertained that all superior trains due have arrived or left, or that it has authority to proceed.

Visual identification, register check, or train-order check of a section, will be evidence that all preceding sections of the same schedule have also arrived or left.

Stations at which train registers are located will be designated in timetable.

83-A. Information called for by train register must be inscribed therein and the register checked by the conductor, or by engineer if there is no conductor, except as hereinafter provided.

Regular trains will register their arrival on page of register for the day on which such regular trains are due to arrive; and register their departure on page for the day on which such trains are due to depart.

An extra train will register only at a register station where it originates or terminates, unless otherwise directed.

All lines on page of register must be filled in before starting a new page for the same day.

83-B. A train may leave a register ticket on prescribed form with the train-order operator at train-register station when authorized by special instructions or by train order, or when train-order check of trains is received. When so authorized, the operator must enter on register information contained on the ticket, then report train from register.

When train-order check of a schedule or section is received, or schedule or section is identified or checked on register at initial or terminal station, or at end of double track or CTC or interlocking, or after having been met on single track or passed on either double or single track by a regular train, it will not be necessary to check an intermediate register against the same train.

83-C. Before leaving train-register station at which it is necessary for conductor to check register, he must deliver, or have delivered to his engineer, or engineers if more than one, check of register on Form S-2529, copy of which conductor must place with his copy of clearance and any train orders received.

Enginemen must check Form S-2529 for information needed as to superior trains that have arrived or left.

If no conductor, engineer must check register, and place Form S-2529 with his train orders.

83-D. When a train is restricted for another train, the restricted train must not leave until train has been identified by conductor or engineer or member of crew authorized to do so, or train order is received superseding or annulling the restriction, or train order, Form V, Example (4) is received.

A train may check register against an extra only when authorized by train order, Form W, Example (4).

84. A train must not start until the proper signal is given.

85. When a train of one schedule is on the time of another schedule of the same class in the same direction, it will proceed on its own schedule.

Trains of one schedule may pass trains of another schedule of the same class. Second and inferior class and extra trains may pass and run ahead of second and inferior class and extra trains.

Except as hereinafter provided, a section must not pass and run ahead of another section of the same schedule without first exchanging train orders and each assuming the other's section number, displaying signals if necessary, responsibility resting with the conductor and engineer of each section. The change in sections must be reported from the first open train-order office unless otherwise instructed. If trains are met or passed after change is made, sections involved must stop and identify themselves to such trains unless train order Form F, Example (5), is issued to trains involved. Within CTC or interlocking limits or territory where Rule D-251 applies, a section may pass and run ahead of another section of the same schedule without exchanging train orders, changing signals or reversing section numbers, but must not leave those limits or territory until the change in sections has been authorized by train order.

86. Within block system limits, other than interlocking, CTC and territory where Rule D-251 applies, a train must be clear of main track and insulated joints:

(a) Before the leaving time of an opposing superior train.

(b) Sufficiently in advance of the leaving time of a following first-class train or train of superior right to avoid delaying such train by block signal indication.

87. Outside of block system limits:

(a) A regular train must be clear of main track before the leaving time of an opposing train of superior direction.

(b) A train must be clear of main track not less than five minutes before the leaving time of an opposing train of superior right or class.

(c) A train must be clear of main track before a superior first-class train or a train of superior right in the same direction is due to leave the next station to the rear where time is shown, but not less than ten minutes if schedule provides less than ten minutes time between the two stations.

88. Crew members must remind conductors and/or engineers of the time of a superior train which must be cleared.

S-88. Extra trains will be governed by train orders with respect to opposing extra trains.

At a train-order meeting point between extras, train in inferior timetable direction must take siding, unless train order provides otherwise.

89. When an inferior train fails to clear a superior train by the time required by rule, it must be protected at that time as prescribed by Rule 99.

Trains required to take siding must head in, when practicable. If necessary to pull by and back in, or enter siding at other than initial switch, train must be protected by flagman before movement is made beyond the initial switch, unless authority for occupancy of main track is otherwise provided.

S-90. At meeting points trains must stop short of fouling point providing such additional fouling point clearance as is consistent with operating conditions and, when practicable, must stop back not less than 400 feet from fouling point.

S-90-A. Approaching a schedule meeting point with a train of the same or superior class, or a train-order meeting or waiting point, engineer must sound signal 14(n). On train of passenger equipment conductor must sound signal 16(l) at least two miles before reaching station, and engineer must immediately acknowledge by sounding signal 14(n).

Should engineer fail to sound signal 14(n), or to reduce speed preparatory to stopping short of fouling point when required, conductor must take immediate action to stop train.

Should a stop be made after signal 14(n) has been sounded and before the expected train is met, signal 12(c) or 16(a) must not be given for movement beyond point of restriction until such train has been met, or authority is held to proceed against it.

91. Outside of block system limits, trains in the same direction must keep not less than ten minutes apart. Lighted fusees must be thrown off for this purpose when necessary.

92. A train carrying passengers or mail must not leave the place where traffic is received or discharged at a station in advance of its schedule leaving time.

93. Within yard limits engines, after complying with provisions of Rule 81 or Rule 513, may use main track without train-order authority, clearing or protecting against first-class trains, and without flag protection against second and inferior-class trains, extra trains and engines.

Second and inferior-class trains, extra trains and engines must move with caution on main track within yard limits, except where movements are governed by block signal indication.

Trains and engines must not move against the current of traffic within yard limits until provision has been made for protection of movement, except where movement is within interlocking limits and protection is afforded by interlocking signals.

95. Two or more sections may be run on the same schedule. Each section has equal timetable authority.

A train must not display signals for a following section without train-order authority, except as prescribed by Rule 85, or upon receipt of clearance at initial station with the words "Green Signals" following the section number.

96. Clearance or train order requiring display of signals authorizes such signals to be displayed to the terminal on the subdivision. A train order must not be issued creating a section to an intermediate point or to take down signals at an intermediate point of schedule. When it is desired to discontinue the last section from initial station or any intermediate point, train order, Form K, must be used.

When a following section is created at an intermediate point of schedule, a copy of the order must be given to inferior trains and to trains of the same class in both directions, at or before reaching such point, until the following section has left.

97. Unless otherwise provided, extra trains must not be run without train-order authority.

D-97. When authorized by special instructions in timetable, trains moving with the current of traffic may run extra or work extra without train-order authority, except when train order, Form D-S, is in effect, but must obtain a clearance before commencement of trip if at an open train-order office.

98. Trains and engines must approach end of double track, junctions, railroad crossings at grade, and drawbridges, prepared to stop, unless switches are properly lined, signals display proceed indication, and track is clear.

Except where otherwise provided, trains and engines must stop before crossing a railroad at grade, or drawbridge, unless protected by interlocking.

99. When a train is moving under circumstances in which it may be overtaken by another train, the flagman must drop lighted fusees at proper intervals and take such other action as may be necessary to insure full protection.

Except as prescribed in Rule 99-A, when a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing a torpedo and, when necessary, in addition, displaying lighted fusees. When recalled and safety to train will permit, he may return, and he will leave the torpedo, and if conditions warrant, also leave a lighted fusee.

When a train stops under circumstances in which it may be overtaken by another train, the engineer will immediately signal the flagman to protect the rear. When ready to proceed he will recall the flagman.

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

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

The train must be protected in the same manner before fouling main track when protection by flagman is required as prescribed by Rules 81 and 513. Engineer or conductor at the fouling point must know that such protection has been provided.

99-A. When rear of train is standing within yard limits, flag protection to the rear is not required against second and inferior-class trains, extra trains and engines.

When a train stops within block system limits, with protection of at least two block signals to the rear, flagman must go back immediately with flagman's signals a sufficient distance to insure full protection against following trains moving at restricted speed, except when rear of train is standing between opposing absolute signals at a station, or is within interlocking limits, flag protection to the rear is not required.

During station stops flagman of a train carrying passengers must take position not less than thirty feet behind rear car, except when necessary to go farther to afford protection.

When protection is to be afforded for other than a train or engine and where conditions may interfere with the safe passage of trains or engines at normal speed, flagman must provide protection in accordance with second paragraph of Rule 99.

S-99-B. When a flagman is sent with specific instructions affecting the superiority of an opposing train such instructions must be in writing on prescribed form. When sent by train, he must ride on engine and show flagging order to engineer who must let him off at point at which opposing train is to be restricted.

Flagging instructions must be written in duplicate, one copy given to the flagman and the other retained by the conductor, or engineer if no conductor, until movement is completed, and then mailed to the Superintendent. Flagging orders issued by conductor must be shown to his engineer.

An engineer must not carry a flagman flagging against an opposing train, unless he presents his flagging instructions written on prescribed form. After reading the flagman's hold order, engineer must return it to the flagman and flagging order must be delivered to engineer of the restricted train.

99-C. When a regular train, in territory designated by Superintendent, receives train order, Form I, Example (1), protection against extra trains in direction specified is not required until the time named. Extra trains in direction specified must not follow the regular train until time named.

When an extra, in territory designated by Superintendent, receives train order, Form I, Example (2), protection against extra trains in direction specified is not required until time named. Other extra trains in direction specified must not enter territory specified until the time named.

100. When the flagman goes back to protect rear of train and is left behind, another trainman must take his place on the train.

101. Trains and engines must be protected against any known condition which interferes with their safe passage at normal speed.

When conditions are found which may interfere with safe passage of trains or engines at normal speed and no protection has been provided, such action must be taken as will insure safety.

101-A. Instructions respecting movement of trains or condition of track or structures must be in writing, except within yard limits where movements are subject to yardmaster's instructions, within CTC where movements are subject to train dispatcher's instructions and within interlocking where movements are subject to operator's instructions.

102. If a train should part while in motion, trainmen must take every precaution to prevent damage to the detached portions.

Should there be a sudden application of brakes, which may cause damage to train or obstruct an adjacent track, train-parted signal 14(f) must be given, and enginemen and trainmen must immediately display stop signals to trains on the other track. Trains receiving these signals must stop and not proceed until it is known that track is not obstructed.

102-A. When portion of train is left on main track where view is obscured, a torpedo must be placed one-fourth mile in advance thereof to serve as a warning when returning to pick up such portion. When circumstances require, a flagman must protect engine when returning.

103. When cars are pushed by an engine, except when switching either within or outside of yard limits, or when making up trains in yards, and even in above exceptions when conditions require, a member of crew must take a conspicuous position on leading car. By night he must display a white light.

103-A. Before kicking or dropping cars over a public crossing not protected by a watchman, a member of crew must take position at the crossing to afford protection to traffic.

Switches must not be left open nor cars left standing longer than necessary, on main or other tracks, within operating limits of wigwags, crossing signals and gates or other automatic warning devices.

Highway crossing signals are generally so designed that they will not operate for trains or engines making a reverse movement after having passed over the crossing. Before reverse movement is made, member of crew must take position at the crossing to afford protection to traffic unless it is known that signals are operating.

When stop is made short of crossing but within operating limits of crossing signals, or when making movement on other than main track or against current of traffic on main track, before entering public crossings protected by automatic crossing signals or other warning devices, it must be known that such signals or devices are operating; otherwise member of crew must take position at the crossing to afford protection to traffic.

103-B. Passenger trains normally required to make back-up movements, and trains moving with caboose as leading car, must be equipped with back-up hose or pipe with whistle attached.

104. Except where switchmen are in charge of switches, trainmen (enginemen if no trainmen) are responsible for proper setting of hand-operated switches and derails to be used by their train or engine, and for their return to proper position after use. Enginemen must see that switches and derails immediately ahead of engine in direction of movement are properly set.

A switch must not be left open for another train or engine unless in charge of a member of crew of such train or engine.

When spring switches or dual control switches are operated by hand, they are considered hand-operated switches within the meaning of this rule.

104-A. Main track switches, other switches and derails equipped with switch locks, must be left locked and unless otherwise provided must not be left unattended if lined for other than normal movement. Switches and derails not equipped with locks must be left hooked. When a switch or derail cannot be properly locked or hooked, it must be secured and immediately reported to proper authority.

104-B. If a rigid switch is run through, it is thereafter unsafe. If an engine or car is run partly through a rigid switch, movement must be continued.

Switches damaged in this way must be reported to the proper authority. They must be spiked unless track foreman takes charge.

104-C. When a train or engine is clear of main track, to be met or passed by a train, employes must not unlock derails or switches, nor be between fouling point and main track switch. They must not be within 150 feet of any main track switch until approaching train has passed.

Conductor or engineer nearest switch must see that other members of their crew comply with this rule.

When necessary to go beyond the switch to provide flag protection, flagman must remain at least 150 feet away from switch while approaching train is passing over it.

When train or engine is on main track to be met or passed by another train and switch is to be set for expected train to enter siding, employe, after securing switch, must take position at least 150 feet away from switch while train is passing over it.

When switch is lined, employe setting it must see that both points have moved to proper position. Switch must be secured as soon as lined and when locked, chain pulled to insure lock is securely fastened.

Crossover switches must not be opened when there is a train, engine or car closely approaching either switch. When crossover movement is to be made, both switches must first be opened before movement is commenced, and within block system limits movement must be completed before either switch is restored to normal position.

Employe alighting from moving train to change position of a switch behind such train must get off from rear of rear car or, when not practicable, on opposite side of track from switch stand unless unsafe to do so. While a train is moving over a switch any employe in the vicinity of such switch must take position on opposite side of track from switch stand or, when not practicable to do so, must take position not less than twenty feet from switch stand.

104-D. Before making a running switch, stop must be made, brakes tested, and switch tried. Engine must be kept on straight track, when practicable.

Running switch must not be made over dual-control switches; nor with scale test cars, or work equipment such as pile-drivers, locomotive cranes, power shovels, spreaders and steam derricks.

104-E. A switch stand with plate bearing letter "V" identifies a stand which automatically varies switch points in the position to which forced by trailing movements. Switch target moves with movement of switch points, but switch lever moves only when hand thrown. Switch equipped with this automatic stand does not function like a spring switch. Use of automatic stand is restricted to tracks other than main track. Trailing movement may be made over switch from either track, regardless of position of switch points. When facing point movement is to be made and switch points are not lined for such movement, switch must be lined by hand. When making a trailing movement and switch points are not lined for such movement, all wheels of leading truck must clear switch points before reverse movement is commenced.

104-F. Within interlocking, CTC or A-PB limits where main track hand-operated switches are not equipped with electric or mechanical switch locks and maximum speed is in excess of 20 MPH, trains and engines using such switches must occupy main track continuously or leave main track switch open while work is being performed. Such tracks must not be used by trains or engines for meeting or passing of trains.

105. Before entering a siding or other track, it must be known that switch, and derail if any, is properly lined. When practicable, stop must not again be made until train is clear of main track. Movement must be made with caution.

Where trains are to meet or pass, train taking siding will, after clearing main track, provide such additional clearance to fouling points as is consistent with operating conditions, and when practicable, must stop back not less than 400 feet from fouling point.

Sidings assigned for use by trains of a specified direction must not be used by trains in the opposite direction unless necessary precaution is taken to insure safety, providing flag protection when visibility is obscured.

106. The conductor and the engineer, and pilot if any, are responsible for the safety of the train and observance of the rules, and, under conditions not provided for by the rules, must take every precaution for protection.

This does not relieve other employes of their responsibility under the rules.

107. When a passenger train is receiving or discharging traffic at a station, a train or engine must not pass between it and the station platform unless proper safeguards are provided, and movement must be made with caution.

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

D-151. Trains and engines must keep to the right, unless otherwise provided.

D-152. Before a train or engine crosses over to or obstructs another main track it must first be protected on that track.

RULES FOR MOVEMENT BY TRAIN ORDERS

201. For movements not provided for by time-table, unless otherwise provided, train orders will be issued by authority and over the initials of the chief train dispatcher and only contain information or instructions essential to such movements.

They must be brief and clear; in the prescribed forms when applicable; and without erasure, alteration or interlineation.

Figures in train orders must not be surrounded by brackets, circles or other characters.

202. Each train order must be given in the same words to all employes or trains addressed.

203. Train orders must be numbered consecutively each day, beginning at midnight. Duplicate numbers of the same date must not be used over the initials of the same chief train dispatcher.

204. Train orders must be addressed to those who are to execute them, naming the place at which each is to receive his copy. Those for a train must be addressed to the conductor and engineer, and also to the pilot if any. A copy for each employe addressed must be supplied by the operator.

Conductor must show train orders, clearances and check of train register to at least one brakeman and to others when practicable. They must be shown by engineer to members of crew on engine.

Crew members must read and return them, comparing their understanding of the orders with conductor or engineer and call their attention to errors or omissions. They must remind conductor or engineer of their contents should there be occasion to do so.

204-A. A copy of each train order affecting movement of a train having helper engines must be given to engineer of each helper engine.

If helper engine is not in train when orders are to be delivered, operator must be instructed to make an additional copy and to deliver it to road engineer or to conductor for delivery to helper engineer when helper engine is added. Comparison to be made by

helper engineer with road engineer or conductor, when practicable, to insure that he has a copy of each order that affects the movement of the train.

205. Each train order must be written in full in a book provided for the purpose in office of train dispatcher; and with it recorded time and the signals which show when, and from what office order was repeated and the responses transmitted. The date and train dispatcher's initials must be placed at the top of each page. These records must be made at once and never from memory or memoranda.

Additions to train orders must not be made after they have been repeated.

If an error is made in transmitting a train order it must be immediately destroyed, and the same order number must not be again used on the same day.

206. In train orders and clearances regular trains will be designated by number, thus: NO 10, and sections, thus: SECOND 10. Extras will be designated by engine number and the direction, thus: EXTRA 798 EAST. Work extras will be designated by engine number, thus: WORK EXTRA 798.

When an engine of another railroad is used, except SSW (Cotton Belt), the initials of that road must precede the engine number, thus: EXTRA GN 5002 EAST.

Even hours must not be used in stating time of day in train orders.

206-A. In transmitting and repeating train orders and clearances, names of stations, sections, and direction of extras, must be plainly pronounced, and then spelled, letter by letter, thus: Aurora, A-u-r-o-r-a; Second, S-e-c-o-n-d; East, E-a-s-t. Order numbers, train, engine and other numbers, and time, must first be pronounced and then followed by pronouncing each figure, thus: One hundred five, 1-0-5; Twenty-seven fifty-six, 2-7-5-6; Nine fifty, 9-5-0. Where the number is but one figure it must first be pronounced, thus: One, figure 1, then spelled, thus: o-n-e.

The names of stations, sections, direction of extras, order numbers, train, engine, and other numbers, and time, must be written in train orders and in train-order book, thus: AURORA; SECOND; EAST; 105; 2756; 950; 1.

206-B. When transmitting a train order, the dispatcher must write it in the train-order book as he transmits the order and underscore each word and number as repeated by each office.

206-C. To relay a train order, it must be transmitted in the usual manner to the relaying office. Operator at relaying office must transmit the order to destination. Employe receiving the order at destination must repeat the order to operator at relaying office, who must underscore on his copy each word and number as repeated. He must then repeat the order to train dispatcher, by whom "complete" will be given to relaying operator, who will transmit it to destination.

If order is also addressed to a superior train at relaying office, the "X" response must be given before it is transmitted to the inferior train.

208. A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable. When not sent simultaneously to all, the order must be sent first to the superior train.

The several addresses must be in the order of superiority of trains, each office taking its proper address.

A train order restricting the movement of a train must not be issued for it at the station where such movement is restricted if it can be avoided. If necessary to place such an order at a train-order office located beyond the fouling point, or where leaving time applies, operator must give additional stop signals with red flag or fusee to the restricted train. When so sent to a point other than its initial station or a station within interlocking limits, the following must be added to the order:

"ORDER TO_____AT_____"

Opposing trains that have received the order must take siding if the restricted train is met at the station named, unless order otherwise provides.

Train dispatcher must not give OK to the clearance until assured by operator that train has stopped.

208-A. Under the following conditions, a train order restricting the superiority of a train must not be repeated, nor "X" response sent, until engineer, or engineer of the leading engine if more than one engine, is in the train-order office and has assured operator that he understands that train is to be restricted:

(a) When a train has received a clearance, or the engine of which has passed train-order signal displaying proceed indication.

(b) To annul the authority of a work extra, unless movement is otherwise safeguarded.

(c) When it is necessary for train dispatcher to know that an order has been delivered to conductor and engineer of a train before such order addressed to another train may be completed.

If clearance has been received at that station, all copies of such clearance held by engineers and the conductor must be returned to the operator and be destroyed before new clearance and the restricting order are delivered to either engineers or conductor. Previously delivered train orders addressed to the train at that station must not be returned to the operator.

208-B. When a train order restricting the superiority of a train is to be issued direct to a train, train dispatcher must have a personal understanding with conductor and engineer, or with the engineer if there is no conductor, that train is to be restricted before transmitting order.

Before transmitting a train order to a conductor or engineer, the person who is to receive order must give his name, train identification and location. Employes who have been promoted to conductor or engineer are permitted to copy non-restricting train orders when authorized by conductor or engineer.

The "X" response must not be used when handling train orders direct with conductor or engineer.

209. Operators receiving train orders must write or typewrite them in manifold during transmission.

When necessary to make additional copies of a train order, operator, after repeating new copy to train dispatcher, must sign his own name on new copies. Operator must file copy from which he made copies, together with one of the new copies, showing thereon date and time made. Train dispatchers must record time and date, and name of office repeating each recopied train order.

210. When a train order has been transmitted, unless otherwise directed, operators must repeat it in the succession in which the several offices have been addressed. Each operator receiving the order must observe whether others repeat correctly, unless relieved of this duty by train dispatcher. After each order has been repeated correctly, the response "complete", time, and initials of chief train dispatcher will be given by train dispatcher. Operator will then write or type, in space provided, the time and his last name, and when OK to clearance received, deliver, or place on delivery post, a copy for each employe addressed.

210-A. When a train order is delivered to any member of train or engine crew, employe making delivery must not orally inform person to whom delivered, the contents thereof, nor read the order to him.

211. To enable train dispatcher to advance a train beyond a station where it is restricted for an opposing or following train, the necessary train order must first be issued, and then, unless otherwise provided by the rules, an order, Form N, must be issued to the operator, which will authorize him to give following calling-on signals:

(1) Illuminate letter "M" in letter-type indicator if one is located at or near the siding switch.

(2) Lower train-order signal arm or blink red light in light-type train-order signal several times; immediately thereafter restoring signal to stop position.

(3) Verbal authority by operator.

When authorized by operator, this will be an indication to an approaching train that orders are to be delivered which will authorize movement to next station at least, against and ahead of all superior trains. Engineer must acknowledge calling-on signal verbally or by sounding signal 14(g), and will proceed on main track to receive orders.

Operation of signal in above manner or verbal permission is prohibited unless operator has received Form N train order and further, provided time named in order has not expired.

If train is delayed between the time of acknowledging calling-on signal and receipt of train orders, protection by flagman against any superior train must be provided.

212. When directed by train dispatcher, a train order, having been transmitted, may be acknowledged by operator as a holding order until repeated, by responding: "_____(Order number)_____to _____(Train number)_____X", with the operator's initials and office name. Operator must then write or type on the order his initials and time.

213. "Complete" must not be given to a train order for delivery to an inferior train until order has been repeated or "X" response sent by operator who receives order for superior train.

214. When a train order has been repeated, it must be completed at once, but when "X" response is sent, and until it has been completed, order must be treated as a holding order for train or trains addressed, and must not be otherwise acted on until "complete" has been given.

If communication fails before an office has repeated an order or has sent the "X" response, the order is of no effect and must be there treated as if it had not been sent.

217. A train order to be delivered to a train at a point not a train-order office, or at which the office is closed, must be addressed to "C&E_____AT _____CARE OF_____", and forwarded and delivered by the employe in whose care it is addressed. When sent in care of conductor or engineer of a train, the number of the order must be shown in the usual manner on clearance for train making delivery the same as if addressed to it. Copies of order must be provided for conductor and engineer of train making delivery and copies for conductor and engineer of train addressed.

Orders must not be sent, in manner herein prescribed, to a train, the superiority of which is thereby restricted.

Train orders for use by the same crew on another trip are not to be addressed to the train by the identification it will have on a later trip, but by the identification it is authorized to display when the train orders are received.

Train orders must not be addressed to a crew in care of themselves.

218. When a schedule is designated in a train order by its number alone, all trains operating as sections of that schedule are included, and each must have copies delivered to it.

This does not apply to addresses on clearances.

220. Train orders once in effect continue so until fulfilled, superseded, or annulled. Any part of an order specifying a particular movement may be either superseded or annulled.

Orders held by or issued for, or any part of an order relating to, a regular train, become void when such train loses both right and schedule as prescribed by Rules 4 and 82, or its schedule is annulled.

When a conductor or engineer, or both, are relieved before completion of a trip, all train orders and instructions held must be personally delivered to the relieving conductor or engineer, with necessary information regarding trains met or that have passed. Relieving conductor and engineer must compare such orders and instructions before proceeding.

220-A. Train orders relating to track conditions and Form Y train orders, unless annulled, must be respected by conductor and engineer on all trips made during the tour of duty on which such orders are received.

Other orders received by a train may be made applicable to an additional trip by issuance of an order reading "RESPECT ORDER NO._____", or adding these words to order creating the train for additional trip.

221. A train-order signal will be provided at each train-order office, except at those where all trains are required to obtain clearance. Light-type train-order signal will be designated by letters "TO" on the mast.

The arm of a train-order signal to the right, as seen from an approaching train, is the one which governs. When the arm is extended horizontally, or in addition a red light is displayed, it indicates "stop", and when slanted downward at an angle of 60 degrees, or in addition a green light is displayed it indicates "proceed". Arms will be positioned to indicate "proceed" when a train-order office is closed.

When red light is displayed in light-type train-order signal it indicates "stop". When green light is displayed it indicates "proceed". Green light will be displayed when train-order office is closed.

Train-order signal must be kept in stop position for both directions while operator is on duty, except signal will be cleared for an approaching train when no orders are held for any train in the same direction other than for trains originating.

Signal must be restored to stop position as soon as practicable after rear of train has passed, and operator must not OS the train, nor "X" or repeat an order for a following train until signal has been restored. If signal is restored to stop position before rear of train has passed the signal, train must stop and obtain clearance.

When signal remains in stop position for an approaching train, a clearance must be obtained, and engine must not pass the fouling point of the switch at which an opposing train may enter the siding, or the place where time applies if there is no siding, until engineer has ascertained that he is not to receive train orders which restrict his train at that point.

Delivery of orders by operator while train is moving, or from delivery post will indicate that orders do not restrict the train at that station.

Outside of block system limits and for movements into territory outside of block system limits, operators must space trains ten minutes apart. When clearance is delivered before the expiration of ten minutes, operator must show on clearance the time following train may leave.

When light is not displayed in train-order signal at night, report must be made from next open train-order office, unless special instructions provide that light will not be displayed.

221-A. Before clearing a train for which there are orders, operator must carefully read the address of each order held, fill out the clearance, showing thereon without erasure or alteration, number of each train order addressed to train or in care of an employe on the train, then transmit address and order numbers from clearance to train dispatcher, who must check correctness thereof against his record in train-order book, and if correct give the OK, time and initials of chief train dispatcher, and make proper record thereof. Operator, after entering this information on clearance, may make delivery.

When necessary to issue clearance to a train for which there are no orders, the word "No" must be written in space provided for number of orders and time issued will be inserted following operator's name. Such clearance will not bear dispatcher's OK, except when used to authorize a train at its initial station as prescribed by Rule 82-A.

If all orders held for a train have been completed, and communication fails before clearance has been OK'd by train dispatcher, operator may deliver such orders accompanied by clearance bearing notation "wire failure" in space provided for dispatcher's OK. Time of issuance must follow operator's name. If no orders for delivery, and OK'd clearance is required by the rules, operator may clear train as prescribed in this paragraph. Such clearance must be accepted and acted upon as though OK had been given in the usual manner. When communication has been restored, operator will notify train dispatcher time and order numbers for each train so cleared, for dispatcher's record.

Clearances and train orders must be carefully checked by conductors and engineers and if errors or omissions found, train must not proceed until correction has been made.

Clearances may be handwritten or typewritten, and must bear date of issuance, with time in the proper space.

If, after a clearance is delivered to conductor or engineer, or both, orders are issued for a train which do not restrict its superiority, train dispatcher, without requiring operator to destroy the clearance first issued, may authorize issuance of a second clearance which must be endorsed "Second" preceding the word "clearance" on top margin. All orders for delivery to train at that station must be shown on second clearance.

222. Operators must promptly record, and report to train dispatcher, the arrival and departure of all trains, reporting "no signals" or "green signals", as the case may be. If report of signals displayed is incorrect, train dispatcher must immediately notify all trains affected until he has ascertained that signals are properly displayed, and should "no signals" be registered when "green signals" should have been registered, he must require immediate correction in train register.

222-A. Operators in relieving each other must make a transfer on prescribed form, of undelivered train orders and undelivered messages addressed to, or in care of, trains; also show on the transfer, except at train-register stations where all trains register, numbers of all overdue trains and whether trains then in the yard or at stations have or have not been cleared. Operator assuming duty must not handle train-order signal, nor deliver train orders, until transfer has been made and signed.

If an operator is permitted to close his office leaving track orders, annulments of schedules, or undelivered messages addressed to, or in care of, trains, for another operator coming on duty at a later time, he must list them in transfer book and operator coming on duty later will sign it.

223. Following signals and abbreviations may be used:

Initials for name of chief train dispatcher,
Such office and other signals as are arranged for by Superintendent,

C&E.....conductor and engineer,
X.....train will be held until train order is made "complete",
Com.....complete,
OK.....correct,
OS.....train report,
No.....number,
Eng.....engine,
Psgr.....passenger,
Frt.....freight,
Mins.....minutes,
Jct.....junction,
Div.....division,
Subdiv.....subdivision,
MP.....mile post,
MPH.....miles per hour,
Dispr.....dispatcher,
Opr.....operator,
YM.....yardmaster,
Engr.....engineer,
Condr.....conductor.
Usual abbreviations for names of the months.

CLEARANCE

C.S. 2643

_____ Station _____ 19_____

To C. & E._____ Display_____ Signals.
(Insert "No" or "Green" for each regular train at initial station.)

I have_____ orders for your train as follows:
(If no orders, insert "No".)

Orders

No._____ No._____ No._____ No._____ No._____

No._____ No._____ No._____ No._____ No._____

No._____ No._____ No._____ No._____ No._____

O.K. at_____ M, _____ Chief Train Dispatcher.

Do not leave before_____ M.
(Fill in this line only when necessary to comply with Rule 221.)

_____ Operator. *Time_____ M.

Conductor and each engineer must have a copy and see that their train is correctly designated above, also that the number of orders, and the numbers of all orders received correspond with the numbers inserted above.

Operators must retain a carbon copy.

*To be filled in only when clearance is not OK'd.

Note. Forms with prefix "S" are for single track; those with prefix "D" are for double track; those without prefix are for single or double track.

Examples given herein are typical.

S-A

Fixing Meeting Points for Opposing Trains

(1) NO 1 ENG 10 MEET NO 2 ENG 11 AT AFTON

(2) NO 3 ENG 30 MEET SECOND 4 ENG 40 AT BERTRAM

(3) NO 5 ENG 50 MEET EXTRA 95 EAST AT MARFA

(4) EXTRA 562 EAST MEET
EXTRA 231 WEST AT LANGTRY

(5) NO 2 ENG 20 AND SECOND 4 ENG 40 MEET NO 1 ENG 10 AND NO 3 ENG 30 AT GLAMIS AND EXTRA 95 WEST AT OGILBY

(6) NO 2 ENG 20 MEET NO 3 ENG 30 NO 5 ENG 50 AND NO 7 ENG 70 AT PATTERSON

(7) NO 1 ENG 10 MEET FIRST 2 ENG 20 AND SECOND 2 ENG 30 AT POMONA THIRD 4 ENG 40 AND FOURTH 4 ENG 60 AT WALNUT AND EXTRA 95 EAST AT PUENTE
NO 1 TAKE SIDING AT POMONA AND WALNUT

(8) FIRST 5 ENG 50 SECOND 5 ENG 52 AND THIRD 5 ENG 53 MEET NO 6 ENG 60 AT MECCA

(9) SECOND 573 ENG 5301 HOLD MAIN TRACK MEET NO 26 ENG 60 AT FENELON

(10) SECOND 7 ENG 70 MEET NO 256 ENG 2560 AT FLOWING WELL AND NO 258 ENG 2580 AT AMOS
NO 256 HOLD MAIN TRACK AT FLOWING WELL

When there is more than one meeting point made in a train order, and it is desired that superior train take siding, or that inferior train hold main track, at either, or all, of the meeting points, such instructions must be in a separate paragraph in the order.

Trains receiving Form S-A train orders will run with respect to each other to designated points and there meet in the manner prescribed by the rules, and unless designated train is met, will not proceed until further authority to move is given by train order.

Work extras must not be given meeting points with each other, nor with other trains.

B

Directing a Train to Pass or Run Ahead of Another Train

(1) NO 171 ENG 1710 PASS NO 3 ENG 30 AT JEFFERSON
NO 3 TAKE SIDING

Both trains will run according to rule to the designated point and there arrange for the following train to pass promptly. Order must state which train is to take siding.

When an inferior train receives an order to pass a superior train, authority is conferred to run ahead of train passed, from designated point. If, after leaving the station named, first-named train is delayed, it may allow second-named train to pass and authority to run ahead will then become void.

---

(2) EXTRA 594 EAST RUN AHEAD OF NO 6 ENG 60 MOJAVE TO LANG

First-named train will run ahead of second-named train between points designated.

If a train is delayed after receiving an order to run ahead of a superior train, first-named train may allow second-named train to pass, and authority to run ahead will then become void.

Giving Right Over an Opposing Train

(1) NO 172 ENG 1720 HAS RIGHT OVER
NO 3 ENG 6010 MOOR TO VALLEY PASS

If second-named train reaches point last named before the other arrives, it may proceed, clearing time of the opposing train as required by rule. If first-named train is met between designated points, and engine of second-named train is not on siding, first-named train must be informed of arrival of second-named train.

(2) EXTRA 37 EAST HAS RIGHT OVER
NO 3 ENG 6020 KLAMATH FALLS TO
CHILOQUIN

Regular train must not go beyond point last named until extra train has arrived, unless authorized by train order.

Examples (1) and (2) give right to train first named over regular train between points named. If trains meet at either of designated points, first-named train must take siding, unless order otherwise prescribes.

---

(3) EXTRA 172 WEST HAS RIGHT OVER
EXTRA 2391 EAST FRESNO TO
LOS BANOS AND WAIT AT
MENDOTA UNTIL 320 PM
FIREBAUGH 350 PM
DOS PALOS 420 PM
FOR EXTRA 2391 EAST

This order gives right to first-named extra over other extra named between points designated, but not at either of those points, and does not restrict first-named train beyond initial switch of siding at last-named station.

If second-named extra exists beyond second-named point at time the order is issued, the following must be added to the order:

AND TAKE SIDING NOT LEAVE
LOS BANOS UNLESS
EXTRA 2391 EAST HAS ARRIVED

D

Giving Right Over Another Train in the Same Direction

(1) NO 101 ENG 6010 HAS RIGHT OVER NO 25 ENG 2750 SACRAMENTO TO OAKLAND

Second-named train must clear time of first-named train as prescribed by Rule 86 or 87.

---

(2) EXTRA 95 WEST HAS RIGHT OVER NO 59 ENG 5725 BURBANK JCT TO SAUGUS AND WAIT AT
BURBANK JCT UNTIL 850 PM
SAN FERNANDO 920 PM
NEWHALL 940 PM

(3) EXTRA 57 WEST HAS RIGHT OVER EXTRA 61 WEST
KING CITY TO WATSONVILLE JCT

Examples (2) and (3) give right to first-named train over other train between points named. If train-order time is given, first-named train must not pass designated stations before time shown, and second-named train must clear such time as prescribed by Rule 86 or 87. If no time is given, second-named train must not leave first-named point ahead of first-named train.

E

Time Orders

(1) NO 1 ENG 6020 RUN 50 MINS LATE CRESCENT LAKE TO KLAMATH FALLS

(2) NO 1 ENG 6015 RUN 50 MINS LATE CRESCENT LAKE TO CHEMULT AND 20 MINS LATE CHEMULT TO KLAMATH FALLS

This form of order makes the schedule time of train named, between stations named, as much later as stated in order, and any other train receiving order is required to run with respect to this later time, as before required to run with respect to schedule time. Time in the order should be such as can easily be added to schedule time, as 10, 20, etc.

---

(3) NO 16 ENG 6001 WAIT AT
CARTER UNTIL 950 AM
PENGRA 1030 AM
HILLS 1055 AM

Train, or trains, named must not pass the designated points before the time given. Other trains receiving the order are required to run with respect to the time specified at designated points or any intermediate station where schedule time is earlier than time specified in the order, as before required to run with respect to schedule time of train, or trains, named.

Station names must be written in column formation.

---

(4) NO 16 ENG 6232 RUN 20 MINS LATE ON ORDER NO 17

This order makes the time mentioned at each station in an order issued under example (3) as much later as specified and trains receiving this order are required to run with respect to this later time, as before required to run with respect to time specified in order under example (3).

(5) NO 16 ENG 6232 RUN 20 MINS LATE ON ORDER NO 17 FROM PENGRA

If it is desired that an order to run late on a wait order shall not apply to time given at all of the stations, example (5) may be used, and will have the same meaning except that it applies only to station named in example (5) and succeeding stations.

Examples (4) and (5) may be used in connection with a wait order of an extra when issued in form of example (3).

Examples (1), (2), (3), (4) and (5) may be used in connection with an extra created by example (3) Form G, and times at each point stated in that example have the same meaning as schedule times in foregoing examples.

S-E

Time Orders

(1) NO 1 ENG 6200 WAIT AT
SALIDA UNTIL 950 AM
FOR NO 272 ENG 2720

Train first named must not pass the designated point before the time given, unless the other train has arrived. Train last named is required to run with respect to time specified, at designated point or any intermediate station where schedule time is earlier than time specified in the order, as before required to run with respect to schedule time of train first named.

F

For Sections

Sections will be created at their initial stations by clearance bearing the words "green signals", or "no signals". Sections may be created, withdrawn, or reversed at an intermediate station by use of one of the following examples:

(1) NO 21 ENG 6001 DISPLAY SIGNALS
DAVIS TO OAKLAND FOR ENG 6005

(2) SECOND 42 ENG 6020 DISPLAY SIGNALS
PERSHING TO HEMPSTEAD FOR
ENG MK&T 422

Engine named in example (1) will become Second 21 and engine named in example (2) will become Third 42, from station named.

---

(3) ENG 85 DISPLAY SIGNALS AND
RUN AS SECOND 2 DAYTON TO ECHO
FOLLOWING SECTIONS CHANGE
NUMBERS ACCORDINGLY

This example may be used to add any section other than last section at an intermediate station.

Engine named will display signals and run as directed, and following sections will take next higher number.

To drop any section other than the last, when there are more than two sections, example (4) will be used:

(4) ENG 85 IS WITHDRAWN AS SECOND 2 AT NOME FOLLOWING SECTIONS CHANGE NUMBERS ACCORDINGLY

Engine named will drop out at station named, and following sections will take next lower number, last section authorized will not display signals.

Under examples (3) and (4) it is the duty of train dispatcher to know that each conductor and engineer has in his possession all train orders affecting his train in its new position.

To pass one section by another, example (5) will be used:

(5) ENGS 99 AND 25 REVERSE POSITIONS AS SECOND AND THIRD 2 ALPINE TO SANDERSON

Conductors and engineers of the trains addressed must personally exchange orders, and arrange for display of signals accordingly. Following sections, if any, need not be addressed. Engine 99 will then become Second 2 displaying signals, and Engine 25 will become Third 2 displaying signals if Third 2 displayed signals into first-named station.

Each section affected by these orders must have copies and must arrange signals accordingly.

G

Extras

(1) ENG 99 RUN EXTRA LATHROP TO FRESNO

(2) ENG 2599 RUN EXTRA ROSEVILLE TO MARYSVILLE AND RETURN TO LINCOLN

When example (2) is used extra must go to station second named before returning to station last named, unless order is annulled. If second-named station is an open train-order office, a clearance ok'd by train dispatcher must be obtained. This form of order does not relieve train of providing protection by flagman to the rear in either direction, when required by the rules.

---

(3) ENG 2531 RUN EXTRA LEAVING CALEXICO THURSDAY FEB 17TH AS FOLLOWS WITH RIGHT OVER ALL TRAINS

LEAVE	CALEXICO	1110 PM
	HEBER	1120 PM
	EL CENTRO	1140 PM
ARRIVE	IMPERIAL	1150 PM

This order may be varied by specifying kind of extra and the particular trains over which the extra shall, or shall not, have right. Trains over which the extra is given right must clear time of extra as prescribed by Rule 86 or 87. Work extras, whether required to protect or not to protect against extras, must clear time of this extra in the same manner.

This order must not be issued while an order, example (8) Form H is in effect, and must not be combined with any other form of order.

---

(4) AFTER 210 PM ENG 2175 RUN EXTRA BLACK BUTTE TO WEED

Extra must not leave the station first named before the time stated. This example must not be used in lieu of other forms of orders which provide protection against opposing extra trains.

When an order, Form G, is fulfilled or annulled, other forms of orders held by extra so created, except Forms K, V, and Y and train orders pertaining to track conditions, become void.

H

Work Extras

(1) ENG 292 WORKS EXTRA 645 PM SEP 12TH UNTIL 601 AM SEP 13TH BETWEEN EUGENE YARD AND SWISSHOME

Work extra, whether standing or moving, must protect itself against extra trains within work limits in both directions.

Time of regular trains must be cleared.

Month and date will not be used when time limits do not extend into a second day.

This may be modified by adding:

(a) NOT PROTECTING AGAINST EASTWARD EXTRA TRAINS

When above is added the work extra will protect only against westward extra trains.

(b) NOT PROTECTING AGAINST EXTRA TRAINS

When above is added protection against extra trains is not required.

(c) NOT PROTECTING AGAINST EXTRA TRAINS UNTIL 240 AM

When above is added protection against extra trains is not required until time named, and extra trains must not enter work limits before that time.

When a work extra has been authorized by train order not to protect against extra trains, and later it is desired that after a certain time it clear the track for an extra, or to protect against a designated extra in either direction, the appropriate example of the following may be used:

(2) WORK EXTRA 2560 CLEARS EXTRA 705 EAST BETWEEN DRAGOON AND BENSON AFTER 210 PM

(3) WORK EXTRA 2560 PROTECTS AGAINST EXTRA 705 EAST BETWEEN DRAGOON AND BENSON AFTER 210 PM

To enable a work extra to follow an extra into work limits when it is not practicable to furnish the extra a copy of the work order, the following example may be used:

(4) WORK EXTRA 2560 MUST NOT PASS EXTRA 4302 WEST BETWEEN DRAGOON AND BENSON

---

(5) WORK EXTRA 292 PROTECTS AGAINST EXTRA 5100 EAST BETWEEN VENETA AND SWISSHOME AFTER 1001 PM INSTEAD OF 901 PM

This example will be used when necessary to set back, or advance, the time at which work extra must begin protection against extra or extras named, and must include station limits within which the change is effective. Train against which protection is to be provided may enter the limits named after the time first named.

When necessary to authorize two or more work extras within the same limits or portions of the limits, the following example may be used, and responsibility for thorough understanding as to movements of two work extras, and protection that is to be provided will rest with conductors and engineers of the work extras named:

(6) ENGS 2548 AND 2765 WORK EXTRA 1001 AM UNTIL 501 PM BETWEEN FENELON AND VALLEY PASS NOT PROTECTING AGAINST EXTRA TRAINS EXCEPT PROTECT AGAINST EACH OTHER

If it is desired to authorize two or more work extras within the same limits or portion of limits and permit one of the work extras to move without providing flag protection against the other work extra or extra trains, following example may be used:

(7) ENG 2548 AND ENG 2765 WORK EXTRA 1001 AM UNTIL 501 PM BETWEEN FENELON AND VALLEY PASS NOT PROTECTING AGAINST EXTRA TRAINS EXCEPT WORK EXTRA 2765 PROTECTS AGAINST WORK EXTRA 2548

This permits Work Extra 2548 to move within these limits without providing protection against Work Extra 2765 and restricts the movement of Work Extra 2765 except under flag protection against Work Extra 2548.

To enable a work extra to work on time of a regular train, following example will be used:

(8) WORK EXTRA 3254 PROTECTS AGAINST NO 55 ENG 8701 BETWEEN KINGSBURG AND GOSHEN JCT

Work extra may work on the time of regular train mentioned in order, and must protect against that train.

When a work extra is to be given exclusive right over all trains, following example will be used:

(9) WORK EXTRA 4196 HAS RIGHT OVER ALL TRAINS BETWEEN MERCED AND MADERA 715 PM JUNE 29TH UNTIL 115 AM JUNE 30TH

This order gives work extra exclusive right between points designated, between times named, and other trains must not enter the limits unless permission is obtained from conductor and engineer of work extra.

This order must not be modified or amplified, and must not be issued while an order, example (3), Form G, is in effect.

Work limits should be as short as practicable, to be changed as progress of the work may require.

Work extras must give way to all trains as promptly as practicable.

Whenever extra trains are run into limits of a work extra they must be given copy of the order sent to the work extra. Should work order instruct work extra not to protect against extra trains in one or both directions, extra trains must protect against work extra; if order indicates that work extra is protecting itself against other trains, such trains must run expecting to find work extra protecting itself.

I

Relief of Protection by Flagman

(1) NO 697 ENG 6970 NOT PROTECTING AGAINST WESTWARD EXTRA TRAINS UNTIL 130 PM BETWEEN CORVALLIS AND CHESHIRE

(2) EXTRA 2345 EAST NOT PROTECTING AGAINST EASTWARD EXTRA TRAINS UNTIL 330 PM BETWEEN ALTURAS AND CANBY

This form must not be used to relieve a train of protection by flagman to rear against a regular train, and must not be used when a work extra in territory named has been instructed not to protect against extra trains.

This form must not be combined with other forms, and must not be used in territory where, by special instructions in timetable, trains moving with current of traffic may run extra or work extra without train-order authority, as prescribed by Rule D-97.

J

Holding Order

(1) HOLD NO 2

(2) HOLD ALL TRAINS

When train has been so held it must not be permitted to proceed until order to hold is annulled, or an order is addressed to operator in following form:

(3) NO 2 MAY GO

These orders will be addressed to operator and acknowledged in the usual manner.

Form J will be used only when necessary to hold trains until other orders can be given, or in case of emergency.

K

Annulling a Schedule or Section

(1) NO 1 OF FEB 29TH IS ANNULLED TUCSON TO PHOENIX

(2) SECOND 5 OF FEB 29TH IS ANNULLED BEAUMONT TO HOUSTON

(3) NO 52 OF FEB 29TH HAS ARRIVED MERCED AND IS ANNULLED MERCED TO FRESNO

Date named in the order must be date on which schedule is due to leave its initial station on the subdivision.

Schedule or section annulled becomes void between points named and cannot be restored.

When a section is annulled from an intermediate point, opposing inferior trains must not leave that point until it is ascertained that the schedule has been fulfilled to that point, or an order example (3) is received, or an order is received authorizing train to proceed.

It will be necessary to obtain the annulment of a schedule or section but once, provided conductor and engineer have a copy in their possession on each trip.

L

Annulling an Order

(1) ORDER NO 10 IS ANNULLED

If an order which is to be annulled has been delivered to a train, the annulling order must be addressed to that train. If it has not been delivered, annulling order may be addressed to operator, who must then destroy all copies of order annulled but his office copy, on which he must write the number of annulling order.

Operator or train addressed must have copy of the order annulled.

When an order is annulled on other than date of issue, date as well as number of order annulled must be designated in the annulling order.

(2) THIS ORDER ANNULLED AT 210 PM

Above addition may be made to any order which is to be annulled at a predetermined time.

An order which has been annulled must not be reissued under its original number.

M

Annulling Part of an Order

(1) THAT PART OF ORDER NO 10 READING
NO 1 ENG 10 MEET NO 2 ENG 20
AT HALSEY IS ANNULLED

(2) THAT PART OF ORDER NO 12 READING
NO 13 ENG 130 WAIT AT
MARTINEZ UNTIL 1050 AM
IS ANNULLED

Form M must be used when a particular movement or portion of movement in an order is to be annulled, and does not affect other movements in the order.

N

Calling-On Order

(1) ADVANCE EXTRA 6153 EAST ON MAIN TRACK UNTIL 1101 AM

This form, addressed to operator may be used only after orders have been issued to an approaching train which provide authority and time necessary for train to hold main track and advance at least to the next station, ahead of, and against, all superior trains, provided calling-on signal is acknowledged before time limit shown. Train dispatcher must specify time limit in this form which will safely allow approaching train to move on main track to next station at normal speed.

Provided time limit in Form N train order has not expired operator will illuminate the letter "M" in letter-type indicator if available, or will lower train-order signal arm or blink red light in light-type train order signal several times immediately thereafter restoring signal to stop position, or authorize train orally as a calling-on signal. Engineer must acknowledge orally or by sounding signal 14(g) as prescribed by Rule 211, as indication to his conductor that authority has been received to hold main track.

At points where letter-type indicators are provided, which may display either letter "M" or "S", special instructions in timetable may authorize and require movement otherwise, and must be respected.

P

Superseding an Order or Part of an Order

(1) NO 1 ENG 10 MEET NO 2 ENG 20 AT PARRAN INSTEAD OF TOY

(2) NO 273 ENG 2730 PASS NO 1 ENG 10 AT DEVERS INSTEAD OF FELICIA NO 1 TAKE SIDING

(3) NO 172 ENG 1720 HAS RIGHT OVER NO 3 ENG 30 FAIRBANK TO HEREFORD INSTEAD OF BISBEE JCT

(4) NO 172 ENG 1720 HAS RIGHT OVER NO 3 ENG 30 FAIRBANK TO BISBEE JCT

(5) NO 10 HAS ENG 6000 INSTEAD OF ENG 6020

Engine number of regular trains only may be superseded.

Train addressed must have a copy of order containing movement that is superseded.

Meeting point must not be changed by use of Form P train order more than once. If further changes are necessary, previous order must be annulled.

This form must be used whenever limits in an order Form S-C, are shortened or lengthened.

An order which has been superseded must not be reissued under its original number.

When a train is directed by train order to take siding or to hold main track for another train, such instructions apply only to point named in order, and do not apply to superseding order unless so specified.

Q

Issuance of New Timetable or Supplement

(1) TIMETABLE NO 73 IS EFFECTIVE 1201 AM JAN 1st

(2) SUPPLEMENT NO 1 TO TIMETABLE NO 3 IS EFFECTIVE 1201 AM FEB 15TH

D-R

Providing for a Movement Against the Current of Traffic

(1) NO 1 ENG 10 HAS RIGHT OVER OPPOSING TRAINS ON NO 2 TRACK EDER TO NORDEN

The designated train must use the track specified between points named and has right over opposing trains on that track between those points. Opposing trains must not leave point last named, nor any intermediate point where the order is received, until the designated train arrives.

All trains between points named moving with current of traffic in the same direction as designated train must, when practicable, be given a copy of the order, and they may then proceed on their own schedules, or authority.

This order may be modified as follows:

(2) AFTER NO 4 ENG 20 ARRIVES AT EDER NO 1 ENG 40 HAS RIGHT OVER OPPOSING TRAINS ON NO 2 TRACK EDER TO NORDEN

Train to be moved against current of traffic must not leave first-named point until arrival of the first-named train.

A train must not be moved against the current of traffic until track on which it is to run has been cleared of opposing trains, or until those trains have in their possession a copy of order authorizing movement.

Where trains moving with current of traffic are authorized to run extra or work extra without train-order authority, Form D-R must not be used until all trains and engines which may use either track, have received copy of the order.

D-S

Providing for the Use of a Section of Double Track as Single Track

(1) WESTWARD TRACK WILL BE USED AS SINGLE TRACK BETWEEN WELLS AND MOOR

If it is desired to limit the time for such use, following may be added:

FROM 101 PM UNTIL 301 PM

All trains must use the track specified between stations named and must be governed by rules for single track.

Trains running against the current of traffic on track named must be clear of track at expiration of time specified, or protected by flagman, as prescribed by Rule 99.

Where trains moving with current of traffic are authorized to run extra or work extra without train-order authority, Form D-S must not be used until all trains and engines which may use either track, have received copy of the order.

T

When a train order creating an extra train (extra or work extra) is issued and later it is found that another engine must handle the train, original train order must be annulled and a new train order issued bearing the correct engine number. If original train order is already in possession of trains restricted by the train order and they cannot be reached at a train-order office with the annulment of the original train order, then a copy of the annulment order will be sent to them in care of engineer of the extra train created by the new train order together with a copy of the new train order. Annulments so sent are to be worded as follows:

AFTER RECEIPT OF ORDER NO 159 (new train order) ORDER NO 133 IS ANNULLED

This will provide that, when delivery is made, the crew will receive the new restriction at same time the annulment of first restricting order is received.

V

Check of Trains

(1) REGULAR TRAINS DUE SALINAS BEFORE 930 AM JUNE 4TH HAVE ARRIVED AND LEFT EXCEPT FIFTH 766

"Due" refers to schedule arriving or leaving time, and not to run late or wait order time.

(2) NO 76 OF JUNE 4TH HAS ARRIVED KING CITY

(3) THIRD 43 OF JUNE 4TH HAS LEFT DEMING WITH GREEN SIGNALS

A check of a section will indicate that all preceding sections of the same schedule have also arrived or left, and must state "with no signals" or "with green signals", as the case may be.

(4) EXTRA 1744 WEST HAS ARRIVED ALVARADO ON ORDER NO 425

When necessary to make an exception of a train or trains, such exception will be added. Train addressed is not to be included in the exceptions.

Where not required, the word "arrived" or "left" will be omitted.

When this form is received train may register by ticket, provided it is not necessary to check the register against other schedules.

W

Change in Clearance or Register Requirements

(1) NO 74 DO NOT OBTAIN CLEARANCE AT NEWARK

When example (1) is used, the station named is not a train-order office for train named, regardless of indication displayed by train-order signal, if any, at that station.

(2) NO 12 DO NOT REGISTER AT EUGENE

(3) EXTRA 2376 WEST REGISTER AT INGLE ON ORDER NO 76

When example (3) is used, number and date of the order specified will be inserted in column of train register captioned "Signals".

(4) EXTRA 105 EAST MAY CHECK REGISTER AT INGLE AGAINST EXTRA 2376 WEST ON ORDER NO 76

Examples (3) and (4) may be combined with other orders.

Y

Conditional Stop Sign Order

(1) DO NOT EXCEED RESTRICTED SPEED BETWEEN MP 18 AND MP 20 BETWEEN BESSMER AND CORONA FROM 801 AM UNTIL 501 PM JULY 4TH AND BE PREPARED TO STOP SHORT OF UNATTENDED RED CONDITIONAL STOP SIGN DISPLAYED IN VICINITY OF MP 17.8 FOR EASTWARD TRAINS AND MP 20.2 FOR WESTWARD TRAINS UNLESS ORALLY AUTHORIZED TO PROCEED BEYOND THE STOP SIGN BY FOREMAN IN CHARGE OF WORK OR A PROCEED SIGNAL WITH GREEN FLAG OR LIGHT IS RECEIVED

RESTRICTED SPEED MUST NOT BE EXCEEDED UNLESS FOREMAN ORALLY AUTHORIZES A DIFFERENT SPEED

YELLOW PROCEED PREPARED TO STOP SIGNS ARE DISPLAYED TWO MILES IN ADVANCE OF RED CONDITIONAL STOP SIGNS

When Form Y train order is required, foreman in charge of work must notify chief train dispatcher in writing furnishing location, time and date such protection is desired. After train order has been issued to all trains, chief train dispatcher will advise foreman the time that train order is in effect.

This order will remain in effect for the time and date specified therein unless cancellation is received by chief train dispatcher from foreman. However, when yellow "PROCEED PREPARED TO STOP" or red "CONDITIONAL STOP" signs are displayed and Form Y train order is not in effect or has not been received, such signs must be respected in accordance with Rule 10-I the same as if the train order was in effect or had been received.

At locations specified in this form of train order, M. of W. & S. employes are not required to provide flag protection for roadway equipment or track and Rules 10-G and 10-H will not apply.

Z

Signals Taken Out of Service or Restored

(1) AUTOMATIC BLOCK SIGNALS TEMPORARILY OUT OF SERVICE BETWEEN SIGNAL____ AND SIGNAL____ EXCEPT____ AND ARMS HAVE BEEN REMOVED AND LIGHTS EXTINGUISHED IN SEMAPHORE SIGNALS OR LIGHTS COVERED IN LIGHT SIGNALS SPEED OF PASSENGER TRAINS MUST NOT EXCEED 59 MPH AND OTHER TRAINS 49 MPH AND RULES 11 87 91 93 304 AND OTHER RULES GOVERNING MOVEMENT OUTSIDE OF BLOCK SYSTEM LIMITS WILL APPLY
WHEN ARMS ARE REPLACED ON SEMAPHORE SIGNALS OR COVERING REMOVED FROM LIGHT SIGNALS THEY MUST BE REGARDED AS AGAIN IN SERVICE

(2) AUTOMATIC BLOCK SIGNALS AGAIN IN SERVICE BETWEEN SIGNAL____ AND SIGNAL____

Example (1) may be issued on receipt of advice from signal supervisor that signals are to be taken out of service, and may be prefaced by words "EFFECTIVE____ M____ 19___" when necessary.

These examples must not be used when number plates are reversed, showing yellow.

BLOCK SIGNAL AND INTERLOCKING RULES

RULES GOVERNING THE MOVEMENT OF TRAINS AND ENGINES IN THE SAME DIRECTION BY BLOCK SIGNALS

D-251. On portions of the railroad on designated tracks as specified in the timetable, trains will run with reference to other trains in the same direction by block signals whose indications will supersede the superiority of trains.

D-253. Train dispatcher must be informed in advance of any known condition that will delay the train or prevent it from making usual speed.

D-254. Except as affected by Rule D-251 all block signal rules and other rules remain in force.

FIXED SIGNALS

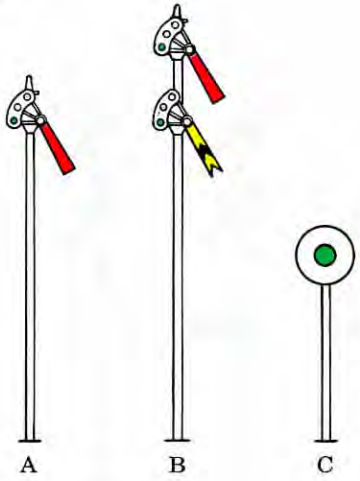
Automatic block signals will bear number plates attached to signal masts. Number plate on distant signal will bear prefix "D".

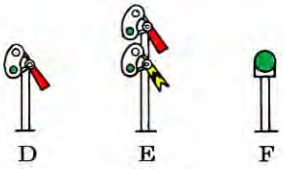
Interlocking signals will not bear number plates, but may have plates bearing letters "SA".

Absolute signals will not bear number plates, but will have plates bearing letters "A" or "SA".

Aspects as illustrated or referred to in these rules are shown by the position of semaphore arms or color of lights, or both, as seen from an approaching train. Other combinations may be used.

RULE 281.



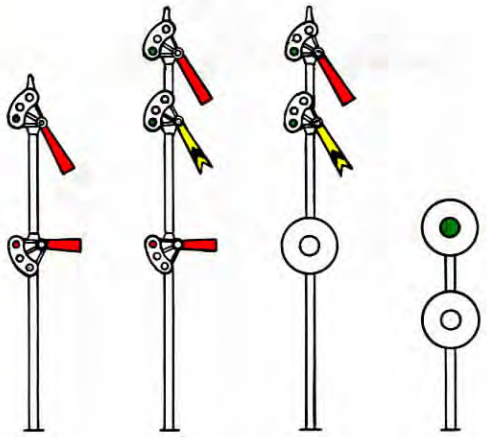


Indication: PROCEED

Name and Aspect: BLOCK SIGNAL GREEN

Movements against the current of traffic or to non-signaled track governed by semaphore type dwarf signals displaying "Proceed" indication (green aspect), Figure D, must be made with caution and position of switches observed.

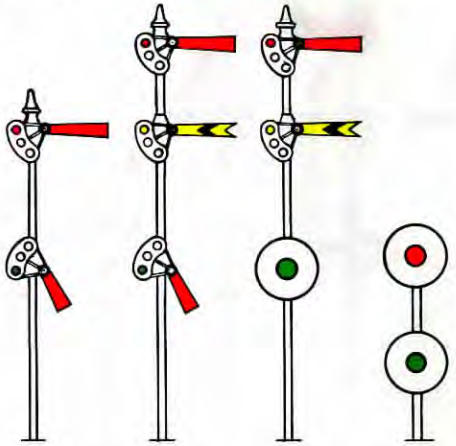
RULE 282.



Indication: PROCEED EXCEPT ON DIVERGING ROUTE

Name and Aspect: BLOCK SIGNAL GREEN

RULE 283.



Indication: PROCEED ON DIVERGING ROUTE

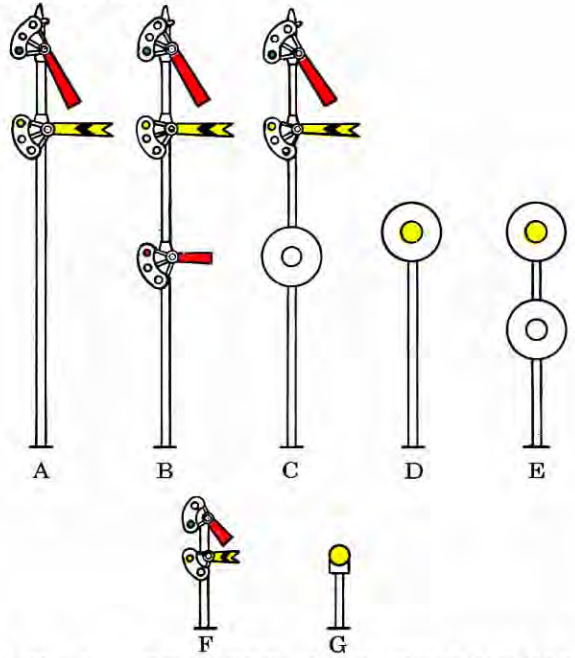
Name and Aspect: BLOCK SIGNAL GREEN FOR DIVERGING ROUTE

RULE 284.

Indication: REDUCE TO MEDIUM SPEED AND PROCEED. NEXT SIGNAL INDICATES "PROCEED ON DIVERGING ROUTE"

Name and Aspect: BLOCK SIGNAL YELLOW OVER GREEN

RULE 285.



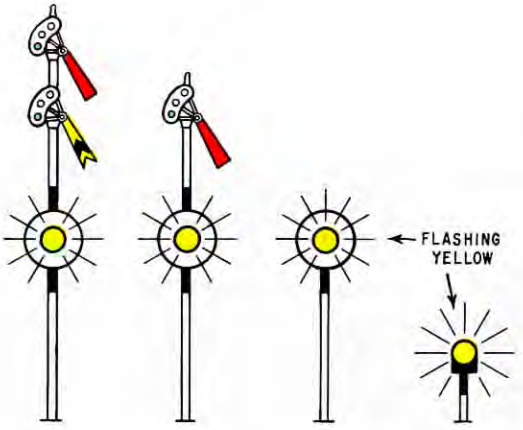
Indication: PROCEED NOT EXCEEDING MEDIUM SPEED, PREPARED TO STOP SHORT OF NEXT HOME SIGNAL

Name and Aspect: APPROACH SIGNAL YELLOW

Trains exceeding medium speed must reduce to medium speed before engine reaches the signal if advance view of the signal permits. After entering the block speed may be resumed provided next signal can be seen displaying proceed indication (green aspect).

Movements against the current of traffic or to non-signaled track governed by light-type signal displaying yellow aspect (Proceed not Exceeding Medium Speed), Figure D or G, must be made with caution and position of switches observed.

RULE 285-A.

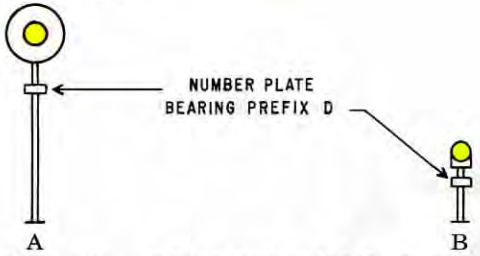


Indication: PROCEED PREPARED TO PASS NEXT SIGNAL AT NOT EXCEEDING MEDIUM SPEED

Name and Aspect: APPROACH MEDIUM—FLASHING YELLOW

After passing signal displaying flashing yellow and next signal displays green aspect, trains may proceed at maximum speed.

RULE 286.

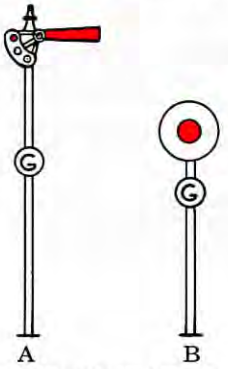


Indication: PROCEED NOT EXCEEDING MEDIUM SPEED, PREPARED TO STOP SHORT OF NEXT HOME SIGNAL

Name and Aspect: DISTANT SIGNAL YELLOW

Trains exceeding medium speed must reduce to medium speed before engine reaches the signal if advance view of the signal permits. After passing the signal speed may be resumed provided next signal can be seen displaying proceed indication (green aspect).

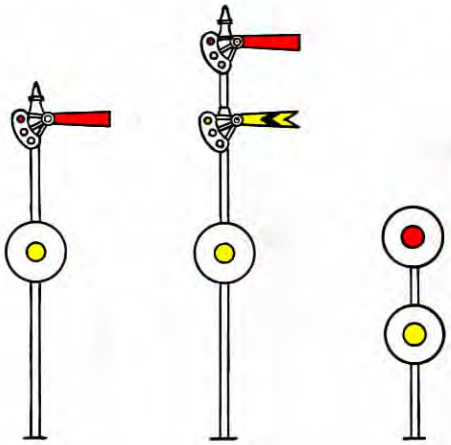
RULE 287.



Indication: REDUCE TO RESTRICTED SPEED AND PROCEED

Name and Aspect: GRADE SIGNAL RED

RULE 288.

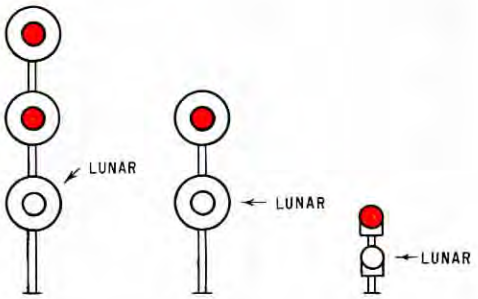


A B C

Indication: PROCEED ON DIVERGING ROUTE AT RESTRICTED SPEED

Name and Aspect: HOME SIGNAL YELLOW FOR DIVERGING ROUTE

RULE 289.

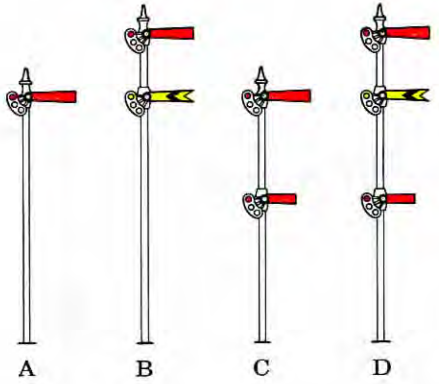


A B C

Indication: PROCEED WITHOUT STOPPING AT RESTRICTED SPEED ON OTHER THAN MAIN TRACK

Name and Aspect: HOME SIGNAL RED OVER LUNAR

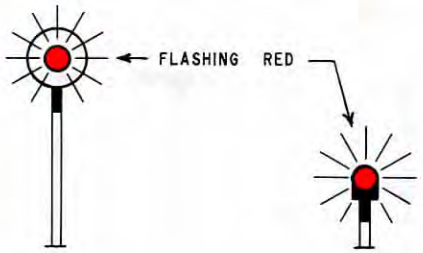
RULE 290.



Indication: STOP

Name and Aspect: HOME SIGNAL RED

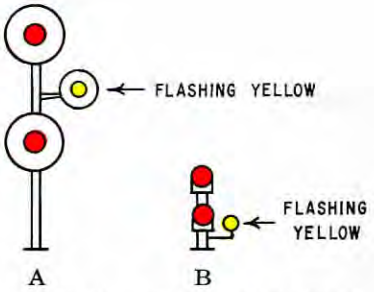
RULE 290-A.



Indication: PROCEED WITHOUT STOPPING NOT EXCEEDING RESTRICTED SPEED

Name and Aspect: FLASHING RED

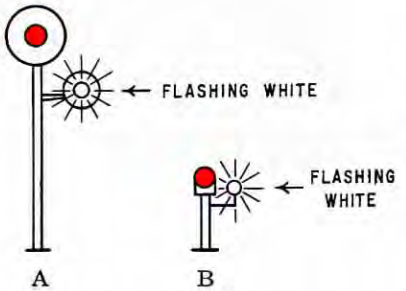
RULE 291.



Indication: STOP. THEN PROCEED AT RESTRICTED SPEED WITHOUT CALLING TRAIN DISPATCHER OR OPERATOR

Name and Aspect: FLASHING YELLOW

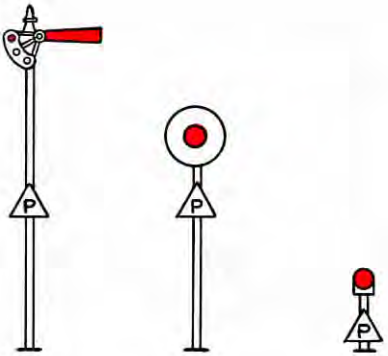
RULE 292.



Indication: STOP. WHEN FLASHING WHITE DISPLAYED BE GOVERNED BY SPECIAL INSTRUCTIONS

Name and Aspect: FLASHING WHITE

RULE 293.

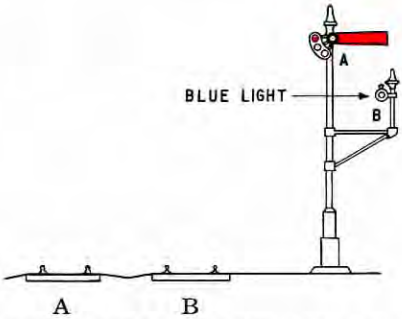


A B C

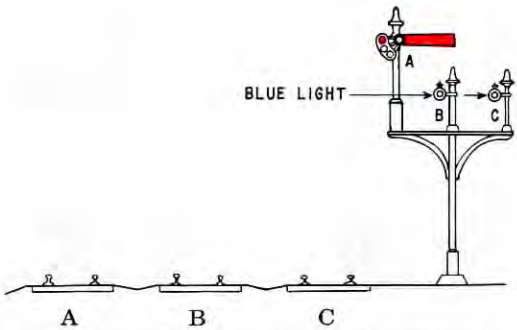
Indication: STOP. INSPECT TRAIN, TRACK OR STRUCTURE AS PROVIDED IN SPECIAL INSTRUCTIONS, AND PROCEED THROUGH REMAINDER OF THE BLOCK IN ACCORDANCE WITH PROVISIONS OF RULE 507, 663, 744, OR 776, AS THE CASE MAY BE

Name and Aspect: HOME SIGNAL RED, WITH TRIANGULAR PLATE

RULE 297. DUMMY MASTS



SIGNAL A GOVERNS TRAIN ON TRACK A
DUMMY MAST B REFERS TO TRACK B



SIGNAL A GOVERNS TRAIN ON TRACK A
DUMMY MAST B REFERS TO TRACK B
DUMMY MAST C REFERS TO TRACK C

RULE 298. BLOCK INDICATORS

FIG. 1
BLOCK OCCUPIED

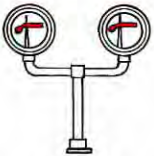


FIG. 2
BLOCK OCCUPIED IN BOTH DIRECTIONS

FIG. 3
BLOCK CLEAR

FIG. 4
BLOCK CLEAR IN BOTH DIRECTIONS

FIG. 5
BLOCK OCCUPIED TO THE RIGHT CLEAR TO THE LEFT

FIG. 6
BLOCK OCCUPIED TO THE LEFT CLEAR TO THE RIGHT

301. A signal improperly displayed, absence of signal at place where signal is usually shown, absence of light or white light displayed where a colored light should be in a block signal, must be regarded as the most restrictive indication that can be given by that signal, except when day indication is plainly seen it will govern.

When a block signal is out of order and not so indicated, or is improperly displayed, or working improperly, or light is out, report must be made to train dispatcher.

303. Interlocking or absolute signals may govern movements into ABS adjoining interlocking or CTC limits. When so arranged they will be designated "semi-automatic" and distinguished by a plate bearing the letters "SA". Trains stopped by such signals must observe interlocking or CTC rules within interlocking or CTC limits, and ABS rules within automatic portion of the block beyond interlocking or CTC limits.

304. When automatic block signals are to be taken out of service for an extended period of time, train order, Form Z Example (1) and timetable bulletin must be issued, and arms removed and lights extinguished in semaphore signals, or lights covered in light signals. Train order and timetable bulletin must remain in effect until signals are restored to service.

When signals are to be again restored to service, train order, Form Z Example (2), and timetable bulletin must be issued.

As soon as arms are placed on semaphore signals, or covering removed from light signals, they must be regarded as in service.

305. After passing a signal indicating "proceed", indication of the next signal may change to "stop". Enginemen and trainmen must be on the alert to observe it.

A train, if delayed in the block, must proceed with caution to the next signal.

306. A home signal with triangular plate bearing letter "P" is also actuated by some special protective device, and when signal displays stop indication, Rule 507, 663, 744 or 776, as the case may be, will govern. In addition, careful examination must be made of train, track or structure for which protection is provided to assure that it is safe for the passage of trains. Number or location of such signals will be shown in timetable, with description of the special protection afforded.

When a signal with triangular plate protecting a spring switch displays stop indication, except when the switch is lined by hand for the movement, member of crew must open and close spring switch by hand, removing any obstruction.

AUTOMATIC BLOCK SIGNAL SYSTEM

505. Automatic block signals govern the use of blocks, but unless otherwise provided, do not supersede the authority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

D-506. Unless otherwise provided, block signals for a track apply only to trains moving with the current of traffic on that track.

507. When an automatic block signal displays stop indication, train, after stopping, may proceed at restricted speed. Under the following conditions train may proceed at restricted speed without stopping:

(a) To enter a siding where switch is not more than one thousand feet beyond the signal and it can be seen that no opposing train has passed the home signal governing such opposing train at opposite end of siding, or that an opposing or preceding train has stopped, or is moving prepared to stop clear of the route to be used.

(b) To enter a yard track when switch is lined for the receiving track and route is clear to fouling point of switch.

(c) To continue on main track when meeting or passing a train when view of track is clear to point where fouled by train which is taking siding, or when engineer is informed by member of the crew of train to be met or passed that stop indication of the signal is caused by train to be met or passed being partly in the siding and not clear of main track.

(d) To continue within limit of a grade signal.

(e) To permit an engine with, or without cars, to couple to its train.

When proceeding under provisions of Rule 507, restricted speed must not be exceeded until rear of train has passed out of the block or has passed a distant signal displaying green aspect.

508. When an automatic block signal number plate is reversed, showing yellow, and signal displays stop indication, train, without stopping, may proceed at restricted speed through the block.

512. Block indicators for one track at a crossover will be located at switch stand for the switch in other track; at other switches they may be placed at switch stand or at derail.

Member of crew required to handle the switch must observe and respect block indicator indication, and may signal his engineer to pass fouling point only after such indication permits switch to be thrown and switch has been properly lined.

Where an automatic signal is located at fouling point, and block indicator is located at the switch, switch may be thrown if indicator indicates block clear. When switch is lined, the signal at fouling point should display proceed indication, and movement may then be made; but if signal displays stop indication after switch is properly lined, movement to main track may be made only after complying with Rule 507.

Where there is no automatic signal at the fouling point, if indicator indicates block clear in both directions for the track which is to be fouled, switch may be lined immediately; but when single indicator indicates block occupied, or when double indicator indicates block occupied in direction in which movement is to be made, switch must not be unlocked, nor track fouled, until the approaching train or engine has passed, or protection by flagman has been provided in direction or directions necessary, to protect the move.

513. Before a train or engine fouls a main track and before main track switch is thrown it must be known by normal operation of electric or mechanical switch lock, observance of signal, block indicator, or by view of track for entire length of the block that there is no train or engine, either within or closely approaching the block to be occupied, moving toward the switch; otherwise protection by flagman must be provided in direction or directions necessary to safeguard the movement. Engineer or conductor, as the case may be, at the fouling point must know that such protection by flagman has been provided, except in yards where switchman's proceed signal is required for trains to enter main track, such signal is also an indication that necessary protection has been provided. Switchman giving signal must know that such protection has been provided.

514. A train or engine entering a block between signals must be properly protected as required by the rules, and must proceed with caution to the next signal.

515. A train having passed out of a block must not back into that block except under protection by flagman.

Reverse movement within a block must not be made except under protection by flagman.

When making a reverse movement on main track after moving out of a siding or other track, train will, unless movement is completed beyond the governing signal, proceed only as prescribed by the applicable portion of Rule 507.

516. Overlaps may be indicated by overlap posts, locations of which will be shown in timetable. A train holding main track at meeting point must not pass overlap post, nor open switch within the overlap, until opposing train has entered the block. A preceding train must clear the overlap as soon as practicable to avoid delay to a following train.

517. Insulated joints are placed near the fouling point. Engines or cars must not be left between insulated joints or fouling point and switch.

SPRING SWITCHES

535. A spring switch will be distinguished by a target bearing letters "SS". After trailing through a spring switch reverse movement must not be made until it is known that both points have moved to proper position. When stop is made before the entire movement is completed, reverse movement must not be made, nor slack taken, until switch has been lined by hand.

Maximum speed for trailing movements when spring is to be actuated, and maximum speed for facing movements with switch points in normal position, as indicated in Speed Restrictions tables must not be exceeded.

536. When trailing movement is to be made over a spring switch equipped with a facing point lock and initial movement of switch points is not to be actuated by the engine, switch must be lined for the movement. Employe so lining switch must again line it for normal position after movement has been completed, unless he has arranged for another employe to do so.

Spring switch must not be trailed through unless switch target displays the letters "SS" in normal position, or switch has been lined for the movement.

538. Location and normal position of spring switches on main tracks, and designation of such spring switches equipped with facing point locks, will be listed in timetable.

D-539. Trains and engines moving against current of traffic must not exceed 35 miles per hour over a spring switch in facing point direction. Unless movement is protected by a block signal displaying proceed indication, or by a switch-point indicator displaying green aspect, stop must be made before reaching the spring switch. Member of crew must examine switch and know before proceeding that points are in proper position for the movement and switch locked.

INTERLOCKING

605. Interlocking signals govern the use of routes of an interlocking, and as to movements within interlocking limits, their indications supersede the superiority of trains, but do not dispense with the use or observance of other signals whenever and wherever they may be required.

Rule D-152 will not apply within interlocking limits.

Movements governed by diverging route or dwarf signals must be made with caution and position of switches observed as such signals may govern movements for various routes.

606. Interlocking limits on main tracks will be designated in timetable, except at railroad crossings, junctions and drawbridges where limits are clearly defined by interlocking home signals. Where necessary, limits on other than main tracks will be indicated by signs.

607. Automatic signals located within interlocking limits will be observed in accordance with Rule 507 as applied to single track.

608. When power-operated switches are dual control type, Rule 771 and Rule 772 will also apply.

611. Unless otherwise provided, signals must be kept in position displaying the most restrictive indication, except when displayed for an immediate movement.

612. Appliances must be operated carefully, and only by those charged with that duty. If any irregularity affecting their operation is detected the signals must be displayed to give their most restrictive indication until repairs are made.

613. When the route is lined, signals must be operated sufficiently in advance of approaching trains to avoid delay.

615. When necessary to change any route for which the signals have been cleared for an approaching train, switches, movable point frogs or derails must not be changed, nor signals cleared for any conflicting route, until the train for which the signals were first cleared has stopped.

616. The lever operating a switch, movable point frog, derail, or lock must not be moved when any portion of a train is standing on or closely approaching the switch, movable point frog or derail.

617. Operating levers must be blocked, or marked, and should not be used, when a track, switch or signal is undergoing repairs, or when a track is obstructed.

619. If the force, whose duty it is to keep switches clear when snow or sand is drifting, is not on hand when required, the fact must be reported to train dispatcher. During storms, high water, drifting snow or sand, special care must be used.

620. If a signal fails to work properly its operation must be discontinued, and, until repaired, the lever secured so signal will display its most restrictive indication.

621. Operator must observe, as far as practicable, whether indications of signals and the position of derails and switches correspond with position of levers.

622. Operator must not make, nor permit to be made, any unauthorized repairs, alterations or additions to the interlocking. Any defects in the interlocking must be reported promptly to signal supervisor; also to the train dispatcher if trains may be delayed.

623. If there is a derailment, or if a rigid switch, movable point frog or derail is run through, or if any damage occurs to track or interlocking, signals must be restored so as to display their most restrictive indication, and no movement permitted until all parts of the interlocking and track subject to consequent damage have been examined and are known to be in safe condition.

624. When necessary to disconnect a switch, movable point frog, derail, lock, or electric locking circuit, all switches, movable point frogs and derails affected must be securely spiked or fastened in the required position and levers blocked, or marked, in such manner that they cannot be operated, before any train is permitted to pass over them.

625. When any part of an interlocking is to be repaired, operator must have an understanding of the scope of work and what route or routes may be affected by such repairs.

When any part of an interlocking is undergoing repairs, signals must not be displayed for any movements which may be affected by such repairs until it has been ascertained from repairman that switches are properly set for such movements.

When repairs or changes necessitate removal of any part of machine locking, operator must ascertain what routes are affected, and must not clear signals over any such affected routes. Trains must be moved over such routes as prescribed by Rule 628, until the locking has been restored.

626. Operator must observe, as far as practicable, each passing train, and note whether it is complete and in order. Should he note any indication of conditions endangering that train, or any other train, operator must take such measures for the protection of trains as may be practicable.

627. When an interlocking signal displays stop indication because of track occupancy by train or engine, operator may authorize another train or engine to enter block if necessary, provided he has assured himself that the train or engine is fully acquainted with the intended move.

628. Hand signals must not be used when the proper indication can be displayed by interlocking signals. When hand signals are necessary, operator must assure himself that switches are properly set and that route is clear. Signals must be given by operator and must be given in such a way that there can be no misunderstanding on the part of enginemen or trainmen as to the signals, or as to the train or engine for which they are given.

A yellow flag must be used by day, a yellow light by night, in giving hand signals.

629. Before granting permission in accordance with Rule 663 for trains or engines to pass an inoperative signal, red tag or wedge must be applied to signal lever, and it must not be removed until it is known that train or engine has completed the authorized movement.

When a switch or signal must not be operated, because of track obstruction or other condition, operator must apply a red tag or wedge to control lever governing the switch or signal, and it must not be removed until switch or signal is reported ready for use.

630. Operator must see that lamps and appliances for hand signaling, and, unless otherwise provided, tools and fire apparatus are ready for immediate use.

633. If a train overruns a signal displaying stop indication or fails to obey a hand signal, the fact must be reported to Superintendent.

634. Operator must not permit unauthorized persons to enter interlocking station.

635. When operators relieve each other they must make a transfer of all unexecuted orders and instructions, and information as to train movements, overdue trains, and conditions of the interlocking.

636. A train-order signal within the limits of an interlocking must not be cleared for an approaching train until the preceding interlocking signals governing the movement of the train have been cleared.

637. Ordinarily, passenger trains must be given precedence over freight trains, but when a signal displays proceed indication for an approaching train, it must not be changed, except as provided in Rule 615.

638. In case of failure of a lever indication, operator must ascertain that all requirements affecting the safety of train movements are fulfilled before releasing indication.

639. Instructions as may be required, governing the operation and manipulation of each interlocking will be placed at that interlocking station, and operators must familiarize themselves therewith.

661. If a signal indication permitting a train to proceed has been accepted, and is changed to display stop indication before it is reached, stop must be made at once. Such occurrences must be reported to Superintendent by engineer.

If for any reason proceed indication of an interlocking signal cannot be acted upon at once, operator must immediately be notified.

662. Interlocking limits must not be entered or fouled on any track unless properly authorized by signal indication, or by permission of operator.

663. When an interlocking signal displays stop indication, train or engine, after stopping, may proceed through the interlocking limits of such signal at restricted speed, under the following conditions:

(a) Upon receiving hand signal as prescribed by Rule 628.

(b) Upon receiving authority from operator, and after a member of the crew has made careful examination of switches and derails.

(c) If no operator on duty, by flagman preceding the train, if interlocking cannot be operated by member of train crew. At railroad crossings and junctions flag protection must be provided on the intersecting tracks unless interlocking signals, or derails, thereon are known to be in position to protect the movement.

Flagman must watch for broken rails or other defects in track while preceding his train; and when not required to send a flagman in advance under these conditions, enginemen must watch for such defects.

669. Trains stopped by operator in making a movement through an interlocking, must not move in either direction until they have received proper authority from operator.

670. A reverse movement within interlocking limits, or a forward movement after making a reverse movement, must not be made without the proper interlocking signal indication or permission from operator.

AUTOMATIC INTERLOCKING

680. Signals will normally display stop indication, and on approach of a train or engine will display proceed indication if no movement is approaching on intersecting track.

681. If home signal does not display proceed indication, and no movement is approaching on intersecting track, member of crew must be sent to the crossing to operate time-release.

After time-release has functioned, if home signal then does not display proceed indication, train may proceed through interlocking limits as prescribed by Rule 663(c).

682. Instructions for operating time-release, and length of time that must be allowed for release to function, will be posted inside time-release box.

LETTER-TYPE INDICATORS

705. Letter-type indicators may display indications by illuminated letters, and when so displayed require movement as shown in special instructions in timetable. They supersede the superiority of trains to the extent shown in such special instructions. Restrictions that may be imposed by automatic block signals or other signals must be complied with.

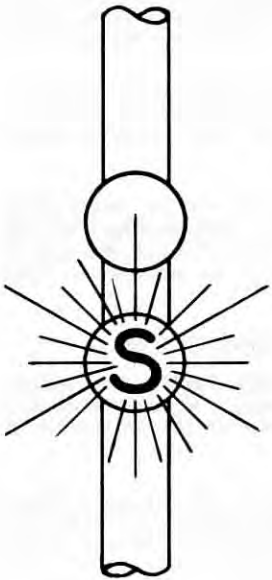


Fig. 1

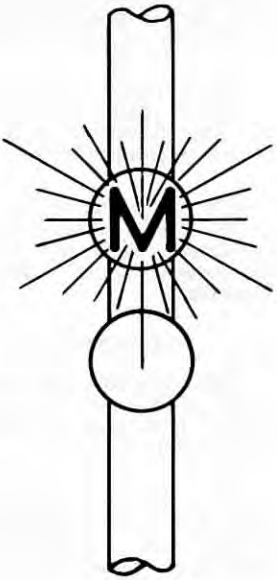


Fig. 2

Following letters may be used in these indicators:

H
M
S
SS
NS
W
T

Other letters or combination of letters, or words may be used.

706. At point where authority granted by letter-type indicator terminates, or when no letter is illuminated in an indicator, timetable and train-order requirements will govern.

707. At stations where indicator is actuated by operator, it must not be illuminated without authority from train dispatcher, except those governing movements for which yardmaster's authority must be obtained.

AUTOMATIC TRAIN STOP

715. On trains operating within ATS limits, engine from which air brakes are controlled must have ATS apparatus cut in, unless otherwise authorized.

At engine terminals where track magnets are provided for test purposes, engineer must, before accepting engine for road service in ATS territory, make the required tests to assure himself that the ATS apparatus is functioning properly, unless such tests were made by Mechanical Department employe.

716. When passing a signal displaying any indication except "proceed", or a signal with number plate reversed, the engineer must operate forestalling valve while passing over track magnet.

717. When stopped by an ATS application at a signal indicating "proceed", train must proceed with caution to the next block signal.

718. When an ATS application occurs in train service, either inside or outside of ATS limits, report must be made on the prescribed form from next open train-order office.

719. When ATS apparatus on engine fails and cannot immediately be repaired, it must be cut out of service. Train may then proceed, not exceeding medium speed to first available point of communication, where report must be made to train dispatcher, after which normal speed may be resumed, but must not pass an engine terminal, if entering or continuing in ATS limits, without permission from train dispatcher.

ABSOLUTE-PERMISSIVE BLOCK

740. On portions of the railroad within limits specified in the timetable and designated as absolute-permissive block, trains will be governed by block signals whose indications will supersede the superiority of trains for both opposing and following movements on the same track.

741. Absolute signals govern use of routes within A-PB limits, and confer authority to the limit of A-PB; but do not dispense with the use or observance of other signals whenever and wherever they may be required.

744. When an absolute signal displays stop indication, train must stop. After waiting ten minutes and no train is seen or heard approaching, flagman must be sent ahead and train may follow, keeping at least one-half mile behind flagman until he reaches next signal displaying proceed indication, or when he has reached opposite end of A-PB.

CENTRALIZED TRAFFIC CONTROL

Note. Where, in these rules the term "train dispatcher" is used it has reference to the train dispatcher or operator, or other employe acting upon authoriy of train dispatcher.

760. On portions of the railroad within block system limits specified in timetable and designated as centralized traffic control trains will be governed by block signals whose indications supersede the superiority of trains, unless otherwise provided.

761. Absolute signals govern the use of routes within CTC limits; and confer authority to next absolute signal, except that the last absolute signal confers such authority only to CTC limit. They do not dispense with the use or observance of other signals whenever and wherever they may be required.

762. Within CTC limits, Rule 93 will not apply.

764. Initial and terminal points of CTC will not affect initial and terminal stations of schedules, nor of extra trains created by train order. Rule 96 must be observed in creating sections.

765. When necessary to perform switching and track is unoccupied, train dispatcher must designate the work limits and clock time limit that must not be exceeded. He must immediately actuate levers on control machine to display stop indication in an absolute signal at the entrance to each end of work limits and place red tags on the levers controlling such absolute signals. The tags must not be removed or attempt made to change position of dual control switches within the limits until train or engine has reported work completed or track cleared.

Trains or engines granted work limits and clock time limit may occupy the main track and move in either direction within such limits without protection by flagman, passing automatic block signals displaying stop indication without stopping but all movements must be made with caution.

To hold work limits for time authorized, main track must be occupied continuously, or main track switch left open. If track is cleared and switches restored to normal position, new authorization must be obtained before re-entering main track.

Unless granted an extension of time, a train or engine must be clear and reported clear of the work limits before clock time limit given. If impossible to clear the limits by the time specified, protection by flagman, in both directions, as prescribed by Rule 99, must be afforded at that time.

Train dispatcher must be notified by member of crew when train or engine is clear of work limits, except that when train dispatcher authorizes by signal indication, a train or engine to move out of work limits in the same direction in which it entered, it will be considered reported clear when such train or engine has passed out of work limits by signal indication.

When train or engine requests work and clock time limits or reports clear of work limits, employe will state his name, occupation, location, and train or engine number. Work and time limits granted must be repeated to train dispatcher, and if correct, response "OK" will be given.

765-A. Before Maintenance of Way and Structures employes obstruct track or in any way render track impassable between stations, foreman will obtain work limits and clock time limit between opposing absolute signals from train dispatcher. Train dispatcher will designate work limits and clock time limit which must not be exceeded. He must immediately actuate levers on control machine to display stop indication in absolute signals at the entrance to each end of the work limits and place red tags on the levers controlling such absolute signals. Tags must not be removed nor attempt made to change position of dual control switches within the limits until foreman reports track safe for passage of trains. After work limits and clock time limit have been granted, foreman must lock

selector lever in hand position or remove crank from crank holder of dual control switch at either end of the work limits and switch must not be returned to motor position until track is safe for passage of trains. Train dispatcher must be notified when dual control switch has been returned to motor position.

Within such work limits and clock time limit flag protection in either direction or compliance with indications of automatic block signals is not required; however, movement of track cars and roadway maintenance equipment must be made with caution.

Unless granted an extension of time, track must be made safe for passage of trains, dual control switch restored to motor position and train dispatcher notified before expiration of clock time limit given. If impossible to make track safe for passage of trains by time specified, protection by flagman in both directions must be afforded at that time.

When necessary to take main track out of service between siding switches or take a controlled siding out of service, foreman must first obtain permission from train dispatcher. After permission has been obtained, dual control switches must be lined by train dispatcher and spiked by foreman for the track to be used for the passage of trains. Spikes must not be removed nor position of switches changed until track has been made safe for passage of trains and train dispatcher so notified by the foreman. Train dispatcher must place red tags on switch levers controlling such switches and tags must not be removed until foreman has reported track safe for passage of trains.

When requesting work and clock time limits or reporting track safe for passage of trains, foreman will state his name, occupation and location. Work and time limits granted must be repeated to train dispatcher, and if correct, response "OK" will be given.

The provisions of Rule 765-A will not apply when Form Y train order is in effect within CTC limits.

766. Levers controlling a dual control switch must not be actuated while an engine, car, or any portion of a train is standing on, or moving over the switch.

767. If a switch or signal is not to be operated because of track obstruction, repairs, or other condition, red tag must be applied to the lever controlling the switch or signal, and tag must not be removed until the switch or signal is reported ready for use.

769. Main track or a controlled siding must not be fouled unless authorized by absolute signal indication or by permission from train dispatcher. Certain main track hand-operated switches are equipped with electric switch locks, and train dispatcher's permission must be obtained before door on high-type switch lock is opened, or switch lock removed from keeper of low-type switch lock.

Before granting authority to enter main track at a hand-operated switch train dispatcher must protect movement by placing absolute signals in stop position.

770. When two or more trains or engines are to be granted work and clock time limits within the same or overlapping territory train dispatcher must inform conductor of each train or engine of this fact and conductors must arrange for necessary protection.

Train dispatchers must not authorize train or engine to pass an absolute signal displaying stop indication for a following move until he has assured himself that conductor of any train already within the block is fully acquainted with the intended move so that proper protection will be provided.

771. Train dispatcher must not operate a dual control switch for switching moves requiring more than one reverse and one normal movement of the switch.

When switching is to be done over dual control switch work and clock time limits must be obtained from train dispatcher. Selector lever must then be placed in hand position or crank removed from crank holder whether switch is to be thrown or not and must not be again placed in motor position until switching has been completed.

When selector lever is placed in hand position or crank removed from crank holder all signals governing movement over the switch will display stop indication. Train or engine granted work and clock time limits may consider indication of such signals suspended and make movements over the switch on hand signals from trainmen.

Before making movements over the switch, trainmen must notify engineer when selector lever is placed in hand position or crank removed from crank holder so that engineer will be governed by hand signals.

When selector lever is to be restored to motor position or crank returned to crank holder engineer must be immediately notified so he will be governed by signal indication.

772. When necessary to hand operate a dual control switch permission from train dispatcher must be first obtained, then be governed by instructions posted at switch.

When selector lever has been returned to motor position and locked, or crank returned to crank holder and locked, train dispatcher must be immediately notified.

774. To enter main track at hand-operated switches where absolute signal is provided to govern movement, permission for movement must first be obtained from the train dispatcher, then line switch and be governed by absolute signal indication.

775. If a change in direction of movement is to be made while any portion of train is occupying, or which will cause any portion of train to occupy, the short section of track between opposing absolute signals at a dual control switch while selector lever is in motor position, train dispatcher's permission must first be obtained, and it must be known that switch points for either facing or trailing movement are in proper position for the movement.

Reverse movement on controlled siding must not be made without first obtaining permission from train dispatcher.

776. When an absolute signal displays stop indication, unless stop indication is known to be caused by the approach of a train, train dispatcher must be consulted promptly by member of crew and the following will govern:

(a) If signal cannot be cleared and there is no opposing or preceding train causing signal to display stop indication and light on control machine is illuminated (indicating that dual control switch is locked), and provided time-

release feature is not operating and movement does not require position of switch to be changed, train dispatcher, after placing opposing absolute signals in stop position, may authorize train to proceed on main track or siding at restricted speed to next absolute signal and trains may pass automatic block signals displaying stop indication without stopping. Member of crew must examine switch to see that points are in proper position for movement, selector lever in motor position and locked, or, at crankover switch, that crank is locked in crank holder.

(b) If desired movement requires that position of switch be changed or if light on control machine is not illuminated (which would indicate dual control switch is not locked), train dispatcher must not authorize movement until dual control switch has been opened and closed by hand. If signal cannot then be cleared, selector lever must be placed in hand position or crank removed from crank holder until movement over switch has been completed. Member of crew must notify train dispatcher when selector lever has been returned to motor position or crank returned to crank holder.

(c) Trains authorized by train dispatcher to pass absolute signal displaying stop indication, and to proceed at restricted speed under the provisions of this rule, may resume maximum authorized speed after rear of train passes next block signal displaying proceed indication.

777. If for any reason proceed indication of an absolute signal cannot be acted upon at once, train dispatcher must immediately be notified.

778. Except as prescribed in Rules 765 and 776, when an automatic block signal displays stop indication, Rule 507 or 508, as the case may be, as applied to single track, will govern. If signal governs entrance to main track, permission from train dispatcher must first be obtained.

781. Instructions relating to track conditions will be issued by train order before train enters CTC when practicable, but when not practicable, may be issued orally to engineer within CTC for such conditions as apply within CTC limits. Conductor of a train, or engineer if train is a light engine, entering CTC at an intermediate point, must ascertain from train dispatcher what instructions are in effect as to track conditions on that portion of CTC over which movement is to be made.

801. Employes will not be retained in the service who are careless of the safety of themselves or others, indifferent to duty, insubordinate, dishonest, immoral, quarrelsome or otherwise vicious, or who conduct themselves in a manner which would subject the railroad to criticism.

Courteous deportment is required of all employes in their dealings with the public, their subordinates and each other. Boisterous, profane or vulgar language is forbidden.

Employes must not enter into altercations, scuffle or wrestle while on duty.

802. Employes must not contract for deductions from wages without the consent of the Company.

Continued failure by an employe to meet his just obligations shall be sufficient cause for dismissal.

804. Any act of hostility, misconduct or wilful disregard or negligence affecting the interests of the Company will not be condoned and must be reported. Withholding such information will be considered proof of negligence or indifference, and treated accordingly.

805. Employes are forbidden to offer presents to their superiors, either directly or indirectly, and those in authority will not accept such presents. Acceptance of gratuities or rewards from passengers or other patrons of the Company is forbidden.

806. Unless specially authorized, employes must not use the Company's credit and must neither receive nor pay out money on the Company's account. Property of the Company must not be sold nor in any way disposed of except by proper authority.

807. Affairs of the Company must not be divulged nor access to Company's records permitted, without proper authorization.

808. Information concerning accidents or personal injuries to other than employes must be given only to authorized representatives of the Company, and then only when known to be authentic. Information as to accidents or personal injuries to employes shall be given only to a person in interest. Information concerning accidents or personal injuries of any character contained in the files of the Company is confidential and must not be divulged without proper authority from the Company.

In case of grade crossing accident it is permissible for crew members on request of law enforcement officer to furnish their names, occupations and addresses; train identification; approximate speed of train; confirmation that the whistle, bell and headlight or headlights were operating; and direction of the vehicle. Signed statements are not to be given. Should police officer desire any additional information he should be courteously referred to Claims Department representative.

809. The Company's communication system must not be used unnecessarily; messages relating to personal affairs of employes must not be transmitted thereover, except in case of illness or accident.

Mail not pertaining to the affairs of the Company must not be sent by train mail; to do so is forbidden by United States postal laws.

810. Employes must report for duty at the prescribed time and place, remain at their post of duty, and devote themselves exclusively to their duties during their tour of duty. They must not absent themselves from their employment without proper authority. They must not engage in other business without permission of the proper officer.

An employe subject to call for duty must not absent himself from his usual calling place without notice to those required to call him.

Employes must not sleep while on duty. Lying down or assuming a reclining position, with eyes closed, or eyes covered or concealed, will be considered sleeping.

811. Employes whose duties connect them with the movement of trains or engines must not absent themselves from their places, substitute others, or exchange duties without proper authority. Trains must not be delayed for trainmen and enginemen to eat, without permission of chief train dispatcher.

812. Employes required to perform service on more than one division, also employes of other railroads while operating trains or engines on this Company's tracks, are under the jurisdiction of the division on which the service is being performed. Employes of this Company, while performing service or operating trains or engines on the tracks of another railroad, are under the jurisdiction of the railroad on whose tracks the service is being performed.

814. When leaving the service, or on demand by proper authority, Company property entrusted to employes must be returned.

816. Protection of the Company's property and property in its custody from fire is a duty of employes under all circumstances. The employe having direct supervision over the buildings, premises, or cars will be held responsible for the observance of safe practices and fire prevention rules and regulations.

Buildings, docks, and wharves must be kept free from accumulation of dirt, rubbish, and flammable material; special attention being given to closets, lockers, fuel bins, attics, stationery cabinets, etc. Gasoline, oil and LPG must be kept in prescribed places and only authorized containers used. Stoves in buildings, outfit cars, cabooses and trailers must conform to prescribed standards, and must be kept free from accumulation of rubbish. Oils, fusees, torpedoes, and matches must be kept in containers provided for that purpose. Fire extinguishers must be kept properly charged and must be located in accessible places ready for immediate use. Fire hose and nozzles must be kept in places provided therefor and in serviceable condition. Fires, open-flame lights and smoking are prohibited near diesel fueling facilities.

817. Employes must keep a sufficient distance from passing trains to avoid possibility of being struck by anything projecting or that may be falling or thrown therefrom. On double track, they should keep clear of both tracks while train is passing. They must not depend on others to notify them of approaching trains, engines or cars.

819. In emergencies, or in case of obstruction by accident or other cause, suggestions based on observation of actual situation are useful and required, and frequent reports of progress must be made. Prompt action is imperative, and in absence of an officer employe on whom the responsibility most naturally falls will assume authority.

820. In case of damage to trains, engines, cars or structures involving security of freight or other Company property, it is the duty of all employes to see that arrangements are promptly made for its protection against loss through pilferage or other causes.

821. In case of extraordinary rain storm or high water, trains and engines must be stopped, and bridges, trestles, culverts, and other points subject to damage, examined by conductor and engineer, or engineer if there is no conductor, before proceeding.

Speed of equipment over inundated tracks must not exceed 3 MPH, and movement must not be made with engines and passenger cars if depth of water above top of rail exceeds three inches.

Careful inquiry must be made at all stopping places, extra stops being made if thought advisable, to ascertain the extent and severity of storms, and no risk must be taken. In case of doubt as to the wisdom of proceeding, train must be moved to the safest available place and there held until it can proceed with safety, chief train dispatcher to be kept informed of conditions from nearest available point of communication.

Trains and engines must run with caution over portions of track which may have been damaged, and if a defect which may cause an accident is discovered, immediate action must be taken to stop movement of trains.

822. Employes are cautioned not to get on or off an engine or car which is in rapid motion.

Employes must not get on cars and engines except when that action is required in performance of their duty.

Employes must face equipment in descending ladders on engines and cars, whether standing or moving.

Employes are forbidden to ride on pilots of engines; are forbidden to take position, either seated or standing, on handrails of engines; and are forbidden to go between moving cars or engines. When movement is being made they must not go between engine and car or ride on leading footboards of engine in direction of movement.

If uncoupling lever on one side fails to work, that on the other side must be used. When necessary to change alignment of couplers, cars must be stopped, and under no circumstances must attempt be made to adjust couplers with foot or hand, or raise lock pin by hand, while cars are moving.

If necessary to make change or repairs to couplers, the circumstances must be understood by all employes who may, through misunderstanding, move or cause cars to be moved; the cars should be separated not less than one car-length to reduce possibility of injury, should they be moved by mistake. Employes should, when possible, avoid standing directly in line with couplers while making repairs.

Trainmen and enginemen must forbid employes whose duties do not connect them with the movement to get on or off trains, engines, or cars, while in motion.

Before fouling, crossing, or walking between tracks, always look in both directions. If in a group, walk in single file. Do not step on rail, switch or frog.

When necessary to climb through cars, employes must not place any part of their body between coupler horn and end sill regardless of whether car is equipped with standard draft gear arrangement, sliding sill arrangement or end-of-car cushioning device, and must not cross between moving equipment.

Employes must not remain in bay window of caboose on side next to track on which a train, engine or car is passing, or being passed.

823. Electric light and power wires must be considered alive at all times. Employes must not depend for their safety on the insulation of wires. Employes noticing dangling wires or wires sagging over track, must avoid coming in contact with them. They must provide, if possible, such protection as will insure the safety of themselves and others, and promptly notify the proper authority.

824. On grades before engine is cut off, a sufficient number of hand brakes must be set to hold the train. Brake pipe pressure must be completely depleted by opening angle cock. Both conductor and engineer will be held responsible for compliance with this rule.

825. Cars must not be left on sidings without permission of chief train dispatcher, except in emergency, in which case conductor must promptly inform chief train dispatcher. Crews are not relieved of compliance with rules requiring that trains using siding must proceed with caution, even though they may not have been notified that there are cars on the siding.

Cars must be kept clear of any street or public crossing, and at least one hundred feet from crossing when practicable.

A sufficient number of hand brakes must be set to hold cars; if brakes are inoperative, cars must be secured otherwise. When cars are set out on a grade they must be coupled, if practicable, and in addition to brakes being set, wheels must be blocked. When brakes and blocking of wheels are not sufficient to hold cars, lead truck of lead car in descending direction must be chained to rail. Rail skid, when available, must be used in lieu of block or chain. When picking up cars on grade, inspection must be made to ascertain that chain, block or rail skid has been removed.

Cars should not be stored on tracks not protected with derails, facing-point switches, or by ascending grades toward main track, except in emergency or on instructions of chief train dispatcher or other proper authority and in such cases, cars must be properly secured. Wheels must be blocked where necessary.

Diesel engines, MofW equipment and outfit cars must not be left adjacent to oil or gasoline loading or unloading locations, lumber yards, or buildings. Diner should not be separated from kitchen car.

Engines must not be operated over live rail of any track scale having both live rail and dead rail. Where there is no dead rail, engine may use live rail at speed not exceeding five miles per hour.

827. Speed of freight trains must not exceed eight miles per hour when starting from initial stations and intermediate stops, for the length of train, or until proceed signal is received from trainman.

Rolling inspection of running gear and brakes of as much of train as practicable must be made when starting from initial station and intermediate stops; and if necessary, stop signal must be given if wheels are found sliding.

Trainmen and enginemen must be in position to observe their train while running.

Unless otherwise provided, when conditions are favorable and in the judgment of conductor it is safe, freight trains need not stop for train inspection. Where stops are made for other reasons, inspection of trains must be made as often as practicable. When weather conditions restrict visibility, or other conditions require, conductor will designate stops for inspection which in his judgment are necessary.

Inspection should include running gear, bearings, brake and draft rigging. If defects are discovered they should be corrected if possible, and cars unsafe to run must be set out and chief train dispatcher notified. Special attention must be given to hot bearings.

Cars bearing placards denoting contents are explosive, flammable, poisonous, or otherwise dangerous, must be given careful inspection at all points where train inspection is made.

Trains, including military trains, made up in part of freight cars or caboose equipped with cast iron wheels are required to comply with rules and instructions applying to freight trains.

829. When a train stops to be met or passed by another train, trainman on head end of train must take position and make rolling inspection from the ground of passing train from side opposite to his train; trainmen at rear of standing train must make rolling inspection on side adjacent to their train.

At meeting or passing points when neither train stops, a trainman must be stationed on rear of rear car or caboose and make rolling inspection of passing train and be in position to observe signals that may be given by crew of either train. When rear car is a private or official car, trainman will take position on rear of caboose or in first accessible vestibule and with vestibule door open make rolling inspection and be in position to observe signals that may be given.

Employes must observe passing trains closely and if hot bearing, brakes sticking, wheel sliding, dragging equipment, insecure lading or any other dangerous condition is detected, they must give stop signals to trainmen and enginemen on passing train. If nothing irregular is noted, they will give proceed signal as rear of train passes, as an indication they have observed train and noted nothing dangerous.

Trainmen and enginemen must be on lookout for signals from employes. If stop signal is received, train must be brought to a stop immediately, inspection made, and it must be known to be safe for movement before proceeding.

830. Trains and engines when standing or switching must not block traffic on street or public road crossings longer than necessary.

Trains must not stand on railroad crossings at grade, on drawbridges, or within the limits of an interlocking, when practicable to avoid it.

831. Pile drivers, locomotive cranes, and other work equipment having butt couplers (no draft gear) and scale test cars must be handled near rear of train ahead of caboose and behind any helper engine. When practicable all other work equipment, including steel underframe outfit cars, power shovels, derricks, spreaders, pile drivers and locomotive cranes should be similarly handled in train.

Women and children must not be permitted to ride in outfit cars when moved by freight or mixed train. Other occupants of outfit cars must remain inside and not ride on top, sides or between these and other cars during course of road or yard movements.

833. Power shovels, pile drivers, derricks, cranes and the like must not be handled in trains without A frames, leads and booms having been lowered and secured. Unless booms are disconnected they must be placed in trains in trailing position when possible.

When spreaders are shipped they should be handled with nose ahead, and with center plow and side wings into clear and properly chained and bolted.

When such roadway machines are operated on double track, or on track next to a main track, or on ground adjacent to a main track, boom or other parts of machine must not be operated to foul main track without proper protection. Such equipment must be at rest and clear of main track when a train is passing.

When ballast or other material is being loaded or unloaded on track adjacent to main track, proper flag protection must be provided on main track, and loading or unloading must be stopped while a train is passing.

Rail, pipe, poles, tanks, structural steel or similar lading must not be handled on or off open top car on track adjacent to main track when other track is available.

834. Open top cars loaded with rail, pipe, logs, lumber, structural steel, poles, or mounted wheels, when lading projects above sides or end walls of car, must not be placed in trains next to engines, cabooses, occupied outfit cars, nor cars placarded "Explosives", "Dangerous", "Poison Gas" or "Flammable Poison Gas". This does not apply to trains consisting entirely of logs. Federal regulations must be observed in handling placarded cars in proper location in train.

835. Yardmaster must inform conductor and conductor must inform engineer and chief train dispatcher when there is equipment in train requiring reduced speed.

836. Outside of yard limits cars must not be shoved ahead of engine between stations when it can be avoided. When necessary to so handle, speed must not exceed 20 MPH and on descending grade cars must be chained unless air brakes are cut in and operative on all cars.

837. Switching must be carefully done, and trains and engines must be carefully handled, to avoid shocks from abrupt starting or stopping; from impact in making coupling, and to prevent personal injuries, and damage to equipment or contents.

Before fouling any track it must be known that engines or cars on adjacent tracks are clear. Cars must not be shoved to foul leads or adjacent tracks until it is known that it is safe to do so. Cars and engines must not be left foul of an adjacent track if possible to avoid it.

Except at points where by special instructions a specified number of hand brakes must be set, cars standing on grade must not be coupled to in descending direction until it is known that sufficient hand brakes are set to prevent uncontrolled movement of cars should coupling fail or cars not be securely coupled.

When passenger cars are coupled, and before beginning to shove passenger cars or freight cars, slack must be stretched to insure that all cars are properly coupled.

Movements into spur tracks must be controlled to prevent damage at end of spur. Before coupling to cars on spur tracks it must be known that such cars are secured by hand brakes, if necessary, to prevent damage should coupling fail.

Movement into a track to set out or pick up cars must be made with caution to avoid injury to persons or damage to property when coupling is made.

Cars occupied by passengers, and occupied outfit cars must not be switched unless air brakes are in service on all cars, and must not be detached while in motion. When making coupling to such cars, air brakes must be cut in and operative on all cars being handled, and they must not be kicked nor dropped against other cars, and other cars must not be kicked nor dropped against them.

837-A. Open top cars on which load is liable to shift; cars containing livestock; or cabooses (at points where cabooses layover), must not be kicked nor dropped against other cars or cabooses, and other cars and cabooses must not be kicked nor dropped against them.

A car placarded "Explosives", "Poison Gas" or "Flammable Poison Gas", or any flat cars carrying a trailer placarded "Explosives", "Poison Gas", "Dangerous" or "Dangerous-Radioactive Material" shall not be cut off while in motion. No car moving under its own momentum shall be allowed to strike any car placarded "Explosives", "Poison Gas" or "Flammable Poison Gas", or any flat cars carrying a trailer placarded "Explosives", "Poison Gas", "Dangerous" or "Dangerous-Radioactive Material", nor shall any such car be coupled to with more force than is necessary to complete the coupling.

Loaded tank cars with any of these placards must not be cut off in motion until hand brake has been tried and found in proper working condition, and not until previously cut off cars have cleared ladder track or lead, if any. Such placarded cars must be into clear of ladder track or lead before another car is allowed to follow them.

Any other car placarded "Dangerous" must not be cut off in motion until hand brake has been tried and found in proper working condition.

838. Employes must avoid making unnecessary noise in or about sleeping cars. Employes should pass through them only when necessary, and in a quiet manner. Careless coupling or switching of cars, or the disturbance of occupants of sleeping cars in any manner, must be avoided.

Uniform caps must be removed while passing through dining cars when occupied by passengers, except when engaged in collecting transportation.

839. Careless throwing of articles from engines and cars is dangerous and is forbidden.

840. The display of advertisements or banners upon freight or passenger cars must not be permitted, except upon authority of the Superintendent.

842. Yardmasters are responsible for conditions within yards. Trains and engines are under control ot the yardmaster, and all employes in train, engine and yard service will be subject to his direction as to movements within yard limits. Road crews of trains will be responsible for their respective trains and engines until yardmaster or his representative takes charge.

Yardmasters must make every effort to expedite movement of important freight trains through the yard with least possible delay. They must see that Federal regulations are observed in placing placarded cars in proper location in trains.

843. The general direction and government of a train is vested in the conductor, and all other persons employed on the train must obey his instructions. Should there be any doubt as to authority or safety of proceeding, he will consult with the engineer, who will be responsbile with him for the safety and proper handling of the train and such use of signals and other precautions as circumstances may require. Conductor must obey instructions of yardmasters within yard limits and be governed by direction of agents in doing work at stations, and conform to instructions issued by the Traffic and Accounting Departments.

When conductor is not present, trainmen must promptly obey instructions of engineer relating to rules, safety and protection of train.

844. Before leaving initial station, conductor must be assured that all crew members are available, hand brakes are released, and train is provided with proper tools, supplies and flagging equipment.

845. Conductors must assure themselves that their subordinates are competent and instruct them if necessary in the proper performance of their duties. Incompetence and disobedience must be reported.

846. The protection of trains is of the first importance, and conductors must not allow other duties to interfere therewith. Conductors must require their flagmen to act with utmost promptness and in strict accordance with the rules. A trainman must be stationed, when practicable, on rear of every train while in motion.

847. When rear car is a private or official car, trainmen, except in emergency, must not get on or off the observation platform.

Train employes must not use or occupy space in rooms of sleeping cars if other space available. Permission to use such space must be obtained from conductor. They must not occupy seats with passengers or enter into conversation with them, or with other employes, further than is required in the discharge of their duty; but, so far as possible, they will contribute without being officious, to the safety, convenience, and comfort of passengers.

848. Should a passenger train be stopped in a tunnel, air conditioned cars within the tunnel must promptly have the air conditioning systems, including ice engines and engine generators, shut off, fresh air intake shutters closed, and blower fans shut off.

Should a train be stopped with the engine in a tunnel and it is found that, in the case of a passenger train it cannot be moved within five minutes after stopping, and in case of a freight train it cannot be moved within a reasonable length of time, trainmen and enginemen must take necessary precautions to prevent movement. Independent brake and sufficient hand brakes on cars and engines must be applied. Engine wheels must be secured by blocking chain and power plants and steam generators, if any, on engine shut down.

849. Particular attention must be given to heating, lighting and ventilation of cars occupied by passengers, or being made ready for use.

On a passenger train when approaching a station where engine is to be changed, or train-heat line is to be parted, trainman will open train-heat valve on rear of train, one mile or more before reaching station, and sound signal 16(m), and engineman will shut off train heat at least one-half mile from station. Care must be taken to select location for this operation where there is the least probability of injury to persons or damage to property.

850. End gates must be in position to protect all open vestibules of occupied equipment. Vestibule curtains should be secured. When making backward movement of trains or cars, passengers must not be permitted on rear platform.

851. When a passenger train is standing to meet or be passed by another train at a point where no passengers are to be received or discharged, vestibule doors must be kept closed on side on which the approaching train is to pass, unless member of crew is in position to prevent passengers from alighting.

852. Flammable motion picture films and firearms, unless enclosed in cases, must not be carried in cars occupied by passengers; except firearms may be carried by police, military or naval officers whose duties require them. Home motion picture films (8mm. and 16 mm.) are not considered flammable.

Agents must not accept for shipment on passenger trains explosives or dangerous articles except as authorized by Federal regulations covering transportation of explosive and other dangerous articles in express or passenger service.

853. Passengers must not be allowed to carry bulky packages or other articles into coaches which may obstruct aisles, seats, or the space between seats, to the inconvenience of other passengers, nor to place heavy or bulky hand baggage or packages in overhead racks.

Passengers may be allowed to take canaries or other small birds in cages into passenger cars. Guide dogs, when accompanying blind persons, may be allowed in Pullman rooms; and in coaches if muzzled.

Dogs, cats or other small animals may be taken into private room accommodations in Pullman cars, but not into other passenger carrying cars. Not more than two animals may be taken into any one room. Animals must be in suitable containers when taken to and from the room, but dogs may be on leash and muzzled in lieu of in container.

854. Disorderly persons must not be allowed to board trains, nor may offensive language or other misconduct be permitted in or about cars.

855. If necessary to eject a passenger from the train, discretion must be used. Local rules, state laws, and the proprieties shall govern. Conductors will call upon duly constituted peace officers or upon railroad police for assistance when necessary.

If passenger is ejected from a train, name and address of such passenger, as well as names and addresses of all witnesses and their statements in writing if possible, should be obtained. Passengers must not be ejected from trains except at a station where shelter and food may be obtained.

If there is doubt as to the right of a passenger to continue on transportation presented, or as to the proper course to be pursued, the facts in the case must be reported by wire to the Superintendent.

856. So far as possible, conductors must see that passengers are provided with seats, and that no one is allowed to occupy more than a single seat to the exclusion of others. Employes traveling on passes should not occupy seats to the exclusion of revenue passengers. When seats are not available in the coaches and there are vacant seats in any parlor or sleeping car (except chartered cars), passengers may be seated therein and train conductors will arrange with sleeping car conductors accordingly. Such seats must be surrendered as soon as there is room in the coaches or whenever required for regular use. Seats in the sleeping cars must not be so assigned or occupied at night after the passengers have retired.

858. Conductor or head brakeman of passenger train must patrol train frequently. Train employes must inform conductor promptly of all irregularities or improper conduct on the train.

Approaching a station at which the train is to stop, a member of crew must pass through each coach occupied by passengers and twice distinctly announce the name of the station. Approaching junctions, names of principal stations on connecting line, names of other stations when it is known there are passengers on the train for those stations, location of connecting trains, and any other helpful information, must be announced. At night when passengers are sleeping in coaches, each passenger must be individually notified when train is approaching his destination, to avoid disturbing other passengers.

Conductors must require employes of parlor, lounge, and sleeping cars to inform their occupants when train is approaching their destination.

860. Telegrams entrusted to the care of conductors must be promptly delivered, if possible. Receipts may be taken for commercial telegrams. If telegram cannot be delivered, that information must be endorsed on the envelope and telegram left at the next open office where train stops.

861. Articles found on trains must be delivered to person authorized to receive them at terminal stations or division headquarters.

862. Passenger trainmen must remain by their train at terminals to answer inquiries and assist passengers, until train is vacated or until they are relieved.

863. In case of personal injury, loss of life or damage to property, conductors must furnish wire reports of facts, with name and address, and written statement when possible to obtain it, of each person who witnessed or has information concerning the accident. In case of death from accident or other cause on their train, or of fatal injury to a person by their train, they must see that the proprieties are observed and that the body receives appropriate care and is removed as soon as possible to a proper place and left in charge of a public officer or an agent of the Company. In case of serious injury they must see that suitable arrangements are made to care for the injured person before train proceeds.

864. Persons, other than employes in the discharge of their duties and holders of properly endorsed transportation, must not be permitted to ride on an engine, or in a baggage, mail, or express car without a written order from the proper officer, except that conductors may permit passengers to enter baggage car to gain access to their checked baggage, to inspect corpse, or to care for pets. Unless entrance and exit are made during station stop, passenger must be accompanied by a member of the crew.

865. Unless authorized, passengers must not be carried on freight trains. Upon presentation of proper transportation employes traveling on Company business may be carried between points at which trains stop. Trainmen must caution persons carried on freight trains to remain seated while trains are moving and guard against possiblity of injury on or around such trains.

866. Freight conductors are responsbile for the security of freight while in their charge. Doors of loaded cars must be closed and sealed properly unless left open for ventilation.

Doors of refrigerator cars and cars equipped with plug doors must be closed or otherwise secured before moving cars.

867. A car must not be taken from a station if it is unsafely loaded.

868. When necessary to set out cars which are bad order, report must be made to chief train dispatcher stating nature of defect, giving initials and number of car, and if loaded, contents, destination, and waybill reference. Cars containing livestock, perishable or manifest, or cars placarded "Explosives" or "Dangerous" must not be set out without permission of chief train dispatcher.

869. When practicable, a trainman must ride rear platform or in rear car of all trains when passing through wooden-lined tunnels and over long open-deck trestles, in position to observe fire that might be set from moving train and to take such action as may be necessary.

870. Conductors must see that their cabooses are kept in a clean and tidy condition.

871. Engineers must assure themselves that subordinate employes on engines are competent and instruct them if necessary in the performance of their duties. Incompetence and disobedience must be reported.

872. Unless otherwise provided, enginemen must know before starting each trip or day's work that their engine has an ample supply of water, fuel and sand; and is equipped with prescribed signals, tools, supplies and flagging equipment in serviceable condition. When a seal has been applied to the tool box, prescribed tools are contained therein and seal must not be broken unless necessary to use tools. Absence of a seal or a broken seal on the tool box must be reported on prescribed form.

873. Sanders must not be operated manually within 150 feet of or while passing over a dual control or spring switch, movable part of an interlocking, or location of rail lubricators.

874. Enginemen and trainmen on engine must be alert in all matters pertaining to safety and while running must keep a vigilant lookout, carefully note all signals, observe position of switches and derails affecting their movement, and watch for obstructions and defects in track. They must frequently look back for signals and indications of defects in train, especially while rounding curves and approaching or leaving stations.

Enginemen must make inspection of engines in their charge at each stop where time will permit. They must watch for indication of hot bearings and other defects while engine is in motion and give necessary attention to prevent failures.

875. So far as practicable crew members must observe all crossing warning devices, and report from first available point of communication any that are out of order.

877. When stock is found on right-of-way, train dispatcher must be notified. Should stock be killed or injured, report on prescribed form must be made.

879. If a train makes an improper stop at a station or elsewhere, and it becomes necessary to move the train, it must not be done without the proper signal being given, nor while passengers are leaving or entering the train.

880. The engineer is responsbile for the safe and proper operation of the engine in his charge. He must not permit any unauthorized person to handle or ride on engine.

The leading engine of a passenger train must be handled by an engineman who has had the prescribed experience.

883. When an engine is left without an employe in charge, it must, when practicable, be placed on track affording protection against entry to main track; hand brakes must be fully applied, wheel secured with blocking chain or if not available other suitable blocking material, reverse lever removed from control stand and cab doors locked. If live engine, independent brake also must be placed in full application.

Trains, engines or cars must not be left on main track without protection, nor left on any track blocking movements on adjacent tracks.

When possible to avoid it, engine must not be left standing within 100 feet of a street or highway crossing, nor near cars occupied by passengers, when noise may disturb occupants. Engine, when practicable, must be left at least 400 feet back of fouling point of any main track switch.

Engines coupled to passenger trains must not be left without an employe in charge.

885. Agents and subordinates must acquaint themselves with the business interests of the people with whom they come in contact, use proper means to secure traffic and act with the view of accommodating the public and promoting the best interests of the Company. Agents must notify the Superintendent and heads of departments, of anything affecting their departments either prejudicial thereto, or conducive to their good, present or prospective.

886. Notices to the public must be neatly posted in the station. Other advertising matter must not be posted on premises, except when properly authorized, and then only at places designated for this purpose. When train bulletin boards are provided, proper entries must be made thereon.

887. Agents must not be absent from their stations, grant leave of absence to their subordinates, or make any change in their forces without permission.

888. Frequent inspection of station grounds, platforms, offices and buildings is required, and agents must keep stations clean and orderly.

889. Agents must report to Superintendent all cases of attempted robbery, theft of property belonging to or in charge of the Company, damage to property by fire or storm, personal injury and other extraordinary occurrences, at or in vicinity of stations.

891. Order must be preserved in and about stations. Disorderly persons, or loungers, and persons engaged in unauthorized occupations must be excluded from stations and station platforms.

894. Prompt attention must be given to correspondence. Books and accounts must be promptly and neatly written, in manner prescribed by departments to which they relate, and must be submitted to authorized officials for examination as may be required.

896. Freight must be loaded safely and stowed properly, and, when necessary, fastened securely by brackets, cleats, stakes, chains, or other means, as the nature of the freight may require, to prevent loss or damage by falling, shifting, chafing, breaking or by contact with any contaminating substance. In loading cars, freight must be stowed in station order.

The loading of lumber, timber, scrap metal, and other freight on open top cars must be in conformity with Rules Governing the Loading of Commodities on Open Top Cars as published by the Association of American Railroads, printed copies of which will be furnished for use of shippers upon application to the Superintendent.

Loading must conform to the prescribed weight and clearance restrictions applicable to the entire route over which shipment is to move.

898. Effort must be made to have consignees remove from cars and station grounds all accumulation of dunnage, decayed fruit, or vegetables for which they are responsible.

899. When unloading of cars is unreasonably delayed, circumstances must be reported to the proper official.

906. Freight, baggage, mail or express matter, trucks or carts, must not be left between tracks, nor within six feet of any track, and must be secured with appliances provided. Handles on four-wheel trucks must be turned under, or secured in raised position.

907. Skids, trucks, carts and scales, when not in use, should be placed in baggage room or warehouse. If necessary to leave on platform, they must be arranged at end or rear of station building if possible, and secured so they cannot roll out of position. Tongues of trucks not in use must be fastened in position to prevent accidents.

908. Station employes must not handle switches for trainmen, except where, by special instructions, it is made their duty.

909. When there are indications of windstorms, cloudbursts, or abnormal weather conditions, agents must take precaution to prevent cars from moving and obstructing the main track.

Agents and operators must notify chief train dispatcher promptly regarding severity of storms and extent of damage that may result.

910. Agents must know boundaries of the Company's property at their stations and be familiar with leases thereon.

The use of Company property for storage purposes must not be permitted without authority from the Superintendent.

911. When agents are authorized to act as agents of Express or other Companies, preference must be given to business of the Railroad Company.

912. Agents and operators must not permit unauthorized persons inside their offices. Business with the public or trainmen must be transacted in area provided for that purpose.

913. Agents and operators must see that their stations are supplied with necessary signal appliances.

Should anything endanger the safety of trains, proper signals must immediately be displayed.

915. Unless otherwise provided, operators are subordinate to agents and chief train dispatcher and will give train orders preferred attention. They must not absent themselves or close office without permission from the train dispatcher, except when means of communication fail.

916. When trains are passing, unless other duties prevent, operator must be on platform prepared to make rolling inspection.

917. Contents of telegrams must be held strictly confidential and in no manner made known to any person, except the one addressed. Violations are punishable under state laws.

Telegrams addressed to officers of the Company must be enclosed in envelopes and sealed.

918. A copy of all train orders issued must be filed in station records. Each month's business must be labeled and tied in a package showing month and year.

920. Operators at stations where offices are not open continuously, must post notice showing location of their place of residence, so they may be called in an emergency.

RAILROAD RADIO RULES

GENERAL

950. Following rules and requirements cover use of railroad radio systems and govern employes using such systems.

950-A. Definition: A railroad communication system is one employing radio for the transmission of intelligence between moving equipment, between moving equipment and a fixed point, or between fixed points.

950-B. Radio communications systems are under the jurisdiction of the Federal Communications Commission. The Railroad Company and its employes are governed by the Commission's operating rules. Violation is a Federal offense for which severe penalties are provided.

OPERATING RULES

951. All employes, except those specifically authorized to do so, are prohibited from making any adjustments to a railroad radio set. Employes so authorized must carry their FCC operator license or verification card when on duty. If it appears that a radio transmitter is not operating properly its use shall be discontinued and the designated official notified as soon as possible.

The designated railroad official will be named in notice posted in cab of engine, in caboose or in the base station.

952. No employe shall knowingly transmit any false distress communication, any unnecessary, irrelevant or unidentified communication, nor utter any obscene, indecent, or profane language via radio.

953. No employe shall divulge or publish the existence, contents, purport, effect or meaning of any communication (distress communications excluded) except to the person for whom the communication is intended or to another employe of the railroad whose duties may require knowledge of the communication. The above applies either to communications received direct or to any that may be intercepted.

954. Before transmitting, any employe operating a radio transmitting set shall listen a sufficient interval to be sure that the circuit is not already in use, particularly for distress traffic.

When a train order is being transmitted to a train by radio, employes not addressed shall not use the radio, except in case of emergency, until the train order has been completed.

955. A distress call will be preceded by the word "Emergency" repeated three times. Such calls shall be used only to cover initial reports of derailment, storms, washouts, fires, obstruction to tracks, or other matters which would cause serious delay to traffic, damage to property, injury to employes or the traveling public, and shall contain as complete information thereon as possible. All employes shall give absolute priority to communications from another station in distress, and except in answering or aiding a station in distress shall refrain from sending any communications until there is assurance that no interference will result to the station in distress.

956. The railroad company is required to answer an official notice of violation of the terms of the Communications Act of 1934, as amended, within ten days from receipt of notice and any employe receiving inquiry concerning any violation shall answer such inquiry within 48 hours after receipt of notice.

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

958. Employes, except in yard operation, shall identify the radio station from which they are calling by prefacing their call with the railroad name, for example: "SP Caboose Train Second 802 calling SP Engine Second 802, over" and to answer a call, announce, for example: "This is SP Caboose, Train Second 802, over."

Radio station must be identified at the end of each transmission, except that, in event of continued exchange of communications, identification shall be made at the end of a series of such transmissions or at the end of each 15-minute period if the exchange continues without substantial interruption.

959. In certain cases at crossings, junctions or paralleling tracks some interference may develop with another railroad. In such cases special care in making identification shall be used and the employes concerned shall cooperate in handling their business by alternating calls and being as brief as possible.

960. If any communication from a station other than another railroad radio station interferes with railroad radio service, the railroad employe will endeavor to ascertain the identity of such station and report the occurrence as soon as possible through authorized channels to the designated railroad official, giving the exact time, nature of the communication and identity of the station, if possible.

Internationally, the word "Mayday" indicates a distress message, the word "Pan", an urgent message and the word "Security", a safety message. Railroad employes may hear such messages sent by aircraft or, in coastal areas, by boats. Railroad employes hearing such messages must report them immediately through authorized channels to the designated railroad official in addition to taking such appropriate action to relieve the distress as may be possible.

The designated railroad official will be named in notice posted in cab of engine, in caboose or in the base station.

961. The use of radio is restricted to transmission of information and instructions essential to railroad operation.

962. Radio communication system may be used in lieu of hand, flag or lamp signals prescribed by Rule 12 when such signals cannot be passed to engineer. When movement is being controlled by use of radio, continuous voice transmission must be maintained, using train or engine identification in conjunction with the signal; and movement must be made with caution. Failure of engineer to receive continuous voice transmission must be construed as a stop signal.

963. Radio communication, if distinct, may be used the same as any other means of communication to effectuate the following:

(a) Operator communicating direct with engineer, after assured train is stopped, may authorize train to pass an interlocking signal displaying stop indication, as prescribed by Rule 663(b).

(b) Operator communicating direct with engineer may authorize train to make reverse or forward movement within interlocking limits when no interlocking signal is provided to authorize movement, as prescribed by Rule 670.

(c) Operator communicating direct with engineer may authorize train to proceed under provisions of Rule 211.

(d) Train dispatcher communicating direct with engineer, after assured train is stopped, may authorize train to pass an absolute signal displaying stop indication within CTC limits as prescribed by Rule 776.

(e) Train dispatcher communicating direct with conductor may designate work limits and clock time limit as prescribed by Rule 765.

964. Radio communication, if distinct, may be used to transmit and receive line-up of trains for track car operators. Radio communication, when distinct, may also be used by MofW foremen to receive and release work limits and clock time limit under provisions of Rule 765-A.

965. Radio communication, when distinct, may be used as herein provided:

(a) Train dispatcher may transmit train order to train-order operator as prescribed by Rule 206-A.

(b) Train-order operator may relay train order as prescribed by Rule 206-C.

(c) After assured train is stopped, train order may be transmitted to conductor or engineer or designated employe promoted to conductor or engineer as prescribed by Rule 208-B.

Train orders transmitted shall be copied in the prescribed form. After train order has been transmitted, conductor or engineer shall repeat train order one to the other, then to train dispatcher or operator, and train dispatcher shall then issue "complete", the time and chief train dispatcher's initials.

(d) The information contained in train orders shall not be acted upon by other than those to whom the train orders are addressed. Before a train order is acted upon, both the conductor and engineer shall have a written copy of the train order and both the conductor and engineer must understand its contents.

Except as provided in paragraph (c) and in Rule 211, train dispatcher and train-order operator must not use radio to inform enginemen or trainmen as to the contents of any train order. Enginemen or trainmen must not request train-order operator to advise position of train-order signal. Train-order operator must not furnish this information.

966. When radio communication system is used, employe must plainly identify himself by giving his name, occupation, location and, when applicable, schedule or engine number. Train dispatchers and operators must not transmit information to a train until employe requesting information has properly identified himself.

AIR BRAKE RULES AND REGULATIONS

Governing

Train Handling, Testing and Operation of Air and Dynamic Brakes and Air Signal Apparatus

RULES GOVERNING TESTING AND OPERATION OF AIR AND DYNAMIC BRAKES AND AIR SIGNAL APPARATUS

FREIGHT AND PASSENGER TRAINS

Air Compressors

1. Air compressors must not be permitted to load unnecessarily nor to operate without adequate supply of lubricating oil. If difficulty develops with air compressor which cannot be corrected by positioning of the manual unloader valve, diesel engine must be stopped. Diesel engine must be stopped before measuring oil level in air compressors not equipped with dial gage.

Enginemen

(Where, in these rules, the term engineman or enginemen appears, it also applies to hostlers.)

2. Before starting each trip or shift, and at every opportunity thereafter, condensation must be drained from reservoirs, and from moisture and dirt collectors. Condensation in the reservoirs causes unsatisfactory operation of control air and brakes; in freezing temperatures it may cause frozen pipes and connections.

Enginemen, when taking charge of engines, must know that the brakes are in operative condition; that all brake cylinders are cut in, and that all hand brakes are released. Pressure indicated on the brake cylinder gage does not necessarily mean brake cylinders are cut in.

Engineer must know the sanders are operating properly when taking charge of an engine and must inspect the sanders at every opportunity while the engine is in his charge.

When taking charge of an engine, the engineer must report any flat spots found on wheels to the foreman in charge. If flat spots are detected after leaving departure track or wheels are slid flat en route, report

to Superintendent and Master Mechanic must be made from first available point of communication with written report on prescribed form rendered on arrival at terminal.

Enginemen taking charge of engine(s) at location where locomotive maintenance forces are on duty are relieved of requirement for preparation of their engine(s), except they will put units on line, check to see that cut-out cock on brake valve is properly positioned, that brakes apply on engine consist, remove venting device from train line, remove blocking chain from under wheel and release hand brakes.

On train where the incoming engineer is relieved by the outgoing engineer, the two will confer on the condition of the equipment.

On engines used in passenger service, engineer must know that communicating signal is operating and cut-out cocks are closed to signal reducing valves, except at the leading control. Signal valve cut-out cocks must be closed, except where controls are being operated.

On engine so equipped, the charging change-over cock on control valves must be in PASSENGER position on engines dispatched in passenger service; and in FREIGHT position on engines dispatched in freight service. Other selective feature control cocks must be in position for service or movement to be made.

Engines moving without cars must be operated from the leading controls in the direction of movement when possible except for short direct movements.

When engines are moved with or without cars, automatic brake valve must be cut out on all units except on the unit controlling the movement, and brake valve handle removed (if removable) on all units except on units with controls in operation.

On 6-SL and 6-BL equipment, the three-position brake pipe cut-out cock must be placed in LEAD position when engine is operated as a single unit or as the lead unit of a multiple-unit engine. When operated as the second engine in a train, it must be placed in DEAD position. When operated as the trailing unit, it must be placed in TRAIL position with the automatic brake handle removed in LAP position and the independent brake handle removed in RUNNING position.

Rotair valves on units equipped with 24-RL equipment must be in proper LAP position, except when controls are being operated rotair valve must be in FREIGHT position. On engines equipped with dual-ported cut-out cock, cock must be cut in on control unit and cut out on trailing units.

When 26-L brake equipment is used to control automatic air brakes, the MU-2A valve must be placed in LEAD OR DEAD position and the cut-off valve in FREIGHT position, except that on trains of less than 25 cars having passenger brake equipment the cut-off valve must be placed in PASSENGER position. When operating in a train as the lead unit of an engine other than the engine handling such train, the cut-off valve must be in the CUT-OUT position and the MU-2A valve in the LEAD OR DEAD position. When operated as a trailing unit in a multiple unit engine the cut-off valve must be in the CUT-OUT position and the MU-2A valve in TRAIL 24 OR 26 position, except when a unit having No. 6 brake equipment is controlling the automatic air brake on the engine, the MU-2A valve must be in TRAIL 6 position.

Some engines with 26-L air brake equipment are equipped with brake pipe cut-out cock marked CUT-OUT and CUT IN, others CUT-OUT and FREIGHT, also PASSENGER, FREIGHT and CUT-OUT. Some engines with 26-L air brake equipment are equipped with a dual-ported cut-out cock in lieu of MU-2A valve marked IN and OUT.

When engine handling train is provided with means for maintaining brake pipe pressure at a constant level during service application of train brakes, this feature must be cut out during train air brake tests. The following method will be used to cut out this feature when making brake pipe leakage test with 26-L brake equipment: With the brake system fully charged and cut-off valve in FREIGHT or PASSENGER position, move the automatic brake valve handle promptly into the SERVICE zone to a position that will reduce equalizing reservoir pressure 15 pounds then stop and leave the handle in this position. As soon as brake pipe pressure has reduced to the level of the equalizing reservoir pressure, depress the brake valve cut-off-valve handle and move it to CUT-OUT position. Immediately observe the brake pipe gage for making

leakage test in accordance with the rules. At the completion of leakage test, move the brake valve handle farther into the SERVICE zone and reduce the equalizing reservoir pressure slightly below the brake pipe pressure before moving the cut-off valve handle to FREIGHT or PASSENGER position depending upon the intended use.

Engineer must reduce power, according to conditions, when cause for train speed reduction is unknown or train brakes are applied.

2-A. After starting the initial movement of an engine without cars, an automatic brake application must be made to test braking power while speed is still low.

ENGINE BRAKE MUST BE CUT IN AT ALL TIMES AND OPERATED TO AVOID SLIDING OF WHEELS OR HARSH SLACK ACTION. THE INDEPENDENT BRAKE VALVE HANDLE MUST NOT BE FASTENED OR BAIL BLOCKED IN RELEASE POSITION.

The independent brake must be fully applied, and the reverse lever centered on engines in service except when starting, moving or making an air brake test.

The reverse lever must not be placed in a position opposite to the direction of movement while engine is in motion, except as provided in Rule 13.

Enginemen must make every effort to control wheel slips on engines by proper handling of throttle and use of sand. Wheel slip relays must not be prevented from performing their intended function. When stopping trains, unless otherwise prohibited, sand must be used for at least two car lengths short of stop to be made regardless of condition of the rail. When starting trains, sand should be used until sufficient speed is attained to prevent slippage. Manual sanding valve must be left open not less than five seconds each time sand is required. When slipping occurs, sand should not be applied until throttle has been reduced and wheels have stopped spinning. Engineer will be held responsible for unnecessary slipping of engine wheels.

When necessary to change operating controls on engines equipped with No. 6, 14-EL or 24-RL brake equipment the following will govern:

Make a full service reduction with the automatic brake valve;

Move independent brake valve handle to full application position;

Close brake pipe cut-out cock by placing handle in CLOSED (24-RL) or TRAIL (No. 6) position;

Place rotair valve in correct LAP position, or if equipped with dual-ported CUT-OUT cock, place cock in the closed position (24-RL);

Place automatic brake valve in RUNNING position with 24-RL equipment and in LAP position with No. 6 and No. 14-EL equipment and remove handle (if removable). Place independent brake valve handle in RELEASE position with 24-RL and 6-BL equipment, and in RUNNING position with other No. 6 equipment and No. 14-EL equipment and remove handle (if removable);

Remove reverse lever;

Open switches required for lead operation when similar switches are closed at the opposite end of the engine;

On passenger trains, close cut-out cocks in communicating signal system;

Move the automatic train stop, double-heading and release valve to the double-heading position, if engine so equipped.

Controls should be cut in without delay as follows:

Move the automatic train stop, double-heading and release valve to the normal (running) position, if engine so equipped;

Close switches required for lead unit operation;

Insert brake valve handles and move the independent brake valve handle to full application position;

Place rotair valve or dual-ported cut-out cock in proper position (24-RL equipment);

Open brake pipe cut-out cock slowly, pausing in midway position, by placing handle in OPEN (24-RL) or LEAD (No. 6) position;

Insert reverse lever;

On passenger trains, open cut-out cocks for communicating signal system.

When necessary to change operating controls on engines having 26-L brake equipment the following will govern:

Make a full service automatic brake application and a full application of the independent brake;

Move the cut-off valve to CUT-OUT position;

Move the MU-2A valve to the TRAIL 24 or 26 position, except when a unit having No. 6 brake equipment will be controlling the automatic air brake on the engine, the MU-2A valve must be in TRAIL 6 position. On engine equipped with dual-ported cut-out cock, cock must be in the CLOSED position.

Remove the automatic brake valve handle in HANDLE OFF position and remove the independent brake valve handle in RELEASE position.

After positioning electrical controls and cocks in communicating signal and A.T.S. systems, if unit so equipped, controls should be cut in without delay as follows:

Apply handle of automatic brake valve in HANDLE OFF position and insert handle of the independent brake valve in RELEASE position;

Move independent brake valve handle to full APPLICATION position and then cut in this brake valve by depressing the handle of the MU-2A valve and moving it to LEAD OR DEAD position or placing the dual-ported cut-out cock in the open position;

Move the automatic brake valve handle to full SERVICE position and slowly move the cut-off valve handle to a point just short of PASSENGER position, allowing the equalizing reservoir pressure to be restored to slightly below brake pipe pressure

before placing the cut-off valve handle in FREIGHT position or PASSENGER position, depending on service being performed. On units with two-position cut-out cock, movement can be made directly into position desired;

When handling trains of less than 25 cars having passenger brake equipment, place the cut-off valve handle in PASSENGER position.

2-B. The dynamic brake must be used whenever practicable in reducing and controlling train speed, and with its use care must be exercised to prevent harsh slack action.

In using dynamic brake, ten seconds should elapse after throttle is placed in idle position before making any move to initiate dynamic braking. When speed of train and dynamic braking characteristics of units comprising the engine are such that harsh slack action would result from dynamic braking, it is permissible to use the independent brake in lieu of the dynamic brake to gather the slack gently.

THE INDEPENDENT BRAKE MUST NOT BE USED WHEN USING THE DYNAMIC BRAKE. When conditions necessitate changeover from dynamic brake to independent air brake, or vice versa, such changeover must be accomplished without undesired train slack action and without excessive braking force that would cause wheels to slide.

The results of placing the dynamic brake controlling lever in the braking range will be indicated by movement of the load meter pointer. Failure of the pointer to respond is an indication of circuit trouble, in which case the dynamic brake controlling lever should be moved to a motoring position, and the throttle opened to the first notch momentarily before again attempting to use the dynamic brake. The dynamic brake controlling lever must not be moved farther into the braking range when circuit trouble is indicated.

Automatic service brake application will not apply the air brake on the engine when the dynamic brake controlling lever is in the braking range. A brake-valve-initiated emergency brake application or an

Automatic Train Stop brake application will nullify the dynamic brake and allow the air brake to apply on the engine.

Dynamic braking effort increases in proportion to the load meter indication up to the point of maximum allowable grid current which, depending upon the class of unit, occurs between 15 and 25 MPH. Thereafter with train speed increase dynamic braking effort decreases while grid current is held at its maximum by movement of the dynamic braking lever toward a lesser braking position; 2500 and higher horsepower engines equipped with extended range dynamic braking maintain near maximum braking strength down to a nominal 8 MPH. Care must be exercised, especially at speeds higher than that when maximum dynamic braking effort occurs, to prevent excessive current through dynamic brake grids as indicated on the load meter, and/or the lighting of the brake warning light, and/or the lighting of the wheel slip light when using dynamic brake. REGARDLESS OF THE ENGINE CONSIST, THESE WARNING LIGHTS MUST NOT BE PERMITTED TO STAY ILLUMINATED WHEN USING DYNAMIC BRAKE.

Extended range dynamic brake units are equipped with an independent brake valve pressure switch that knocks out extended range dynamic brake at 23-lb. brake cylinder pressure with composition brake shoes and 15-lb. brake cylinder pressure with cast iron shoes.

When two or more engines are coupled running light, engineers in charge of trailing engines must not use dynamic brake.

Field Loop (when provided):

1. Unit selector switch must be placed in position corresponding with total number of units in locomotive consist.

2. Place operation selector switch in FIELD LOOP or POTENTIAL position depending upon makeup of the locomotive consist.

a. If all units in a mixed consist are equipped with potential line control of dynamic brakes, do not connect the field loop cables. If the units are equipped with an operation selector switch, place all such switches in the POTENTIAL position.

b. If one or more units in a mixed consist are equipped only for field loop control of dynamic braking, connect all units in the field loop, and place the operation selector switches on all units in the FIELD LOOP position.

c. Dynamic brake variables:

(1) Field loop and selector switch (1 through 4 positions).

(2) Potential only (no switches).

(3) Field loop and potential:

Unit selector switch (1 through 4 positions).

Operation selector switch (Potential and Field Loop positions).

(4) Dynamic brake and cut-out switch:

Field Loop or Potential dynamic braking to be used and switches to be positioned accordingly.

2-C. The air brake equipment on engines equipped with either safety control or overspeed or both includes a brake application valve as part of the air brake schedule. On Schedule 24-RL, the brake application valve is incorporated in the automatic brake valve pedestal. The cut-out cock (normally sealed open) for cutting out this brake application valve is located on the front of the portion.

When brakes are released and equipment charged, removal of foot from safety control pedal causes air to be exhausted through warning whistle from the face of the brake application valve piston, allowing piston and slide valve to initiate a service brake pipe reduction.

This brake application can be released by replacing foot on safety control pedal and lapping automatic brake valve. When application pipe pressure is restored to approximately main reservoir pressure (as denoted on application gage, where used) the automatic brake valve handle can be moved to running position to release the brakes and recharge the equipment. P.C. switch must be reset (unless automatic type) with throttle in idle position, following release of a safety control brake application.

Engine overspeed equipment consists of a micro-switch in speed indication, a magnet valve and warning whistle. When engine speed exceeds the predetermined speed setting the speed indicator speed arm mechanism operates the micro-switch contact which electrically de-energizes the overspeed magnet valve allowing application pipe air to blow the overspeed warning whistle. This drop in application pipe pressure causes the brake application valve to assume applied position in the same manner as with safety control.

An overspeed application can be released after speed is reduced by lapping the automatic brake valve until application pipe pressure is restored to approximately main reservoir pressure setting. The brake valve handle can then be moved to running position to release the brakes and recharge the equipment.

P.C. switch must be reset (unless automatic type) with throttle in idle position following release of an overspeed application.

A defect in either the speed indicator, magnet valve or in the safety control equipment may cause an undesired service brake application which may be released by breaking the seal and closing the cut-out cock on the brake application valve.

On 26-L brake equipment, automatic brake valve must be placed in suppression position until application valve moves to release position, then move automatic brake valve to running position.

A sudden drop in application pipe pressure is an indication of a safety brake application. To recover, place the automatic brake valve handle in LAP position and the throttle in idle on 24-RL brake equipment, or SUPPRESSION position on 26-L

brake equipment. After the application pipe pressure is restored, release brakes if it can be done with safety to train movement. Should the brakes fail to release after two or three attempts have been made to recover, cut out the safety control cut-out cock.

Nullifying the intended operation of any safety brake application or automatic train stop application is prohibited except in cases when normal recovery is not possible and then only by closing the cocks controlling such features or in the case of a broken pipe, by closing the break.

2-D. Known defects or unusual operation of equipment on engines must be reported promptly on the prescribed form.

Standard Pressures

3. Pressure for the air brake system must be kept as near as possible to the standard pressure for the service being performed.

Engineers will be held responsible for knowing that feed or regulating valves are adjusted to the brake pipe pressure standard for cars, equipment or trains which are to be handled.

Standard brake pipe pressure for passenger trains is 110 lbs., except for Rail Diesel Car (RDC) which is 90 lbs.; for freight and mixed trains 90 lbs. Brake pipe pressure for yard engines is governed by class of equipment handled.

Main reservoir pressure must be maintained at least 15 pounds above adjustment of the feed or regulating valve.

Observing Equipment

4. Engineers must observe the air gages with sufficient frequency to note promptly and act accordingly on any improper condition shown thereby. It is essential they observe them just before and while making applications and releases. Engineers must observe length and strength of brake pipe exhaust during automatic brake operation as an added assurance that there is no closed angle cock or other obstruction in the brake pipe near the head end of train. When engines are coupled, each engineer must note if running test is made and if brakes are operative on engine in his charge.

The conductor is responsbile for frequent observance of the air gage on caboose. If any hazard to safe operation develops while running, needed precautions must be taken promptly by the use of signals, conductor's valve, emergency brake valve or the setting of hand brakes, as circumstances warrant.

The automatic air brake must not be depended upon to hold an engine, cars or train when standing on a grade, whether engine is attached or detached from cars or train. When required by the rules, a sufficient number of hand brakes must be applied to hold train before air brakes are released. When ready to start, hand brakes must not be released until it is known that the air brake system is properly charged.

Surprise Stop

5. Should conditions arise where time will not permit the adjusting of slack, make a full service or emergency application, as circumstances require, allowing engine brakes to apply with train brakes according to conditions, close throttle promptly and apply sand.

In case an emergency brake application originates from any source other than the brake valve, the brake valve handle must be placed in emergency position.

When the automatic brake valve handle is placed in emergency position it must be left there until train stops. When stop has been completed and the PC switch recovered, allow sufficient air to pass through the brake pipe to enable trainmen to locate the cause. On freight trains release must not be attempted until after 70 seconds have elapsed.

Except as otherwise provided, should the air brakes apply from other than the engineer's brake valve at less than an emergency rate of reduction, gradually reduce the throttle to idle if in an open position, and when approximately 100 feet from point where train will stop, place the automatic brake valve in LAP position on 24-RL brake equipment or SUPPRESSION position on 26-L brake equipment and apply the independent brake. If using dynamic brakes, continue their use making change-over from dynamic to independent brake as prescribed by the rules.

Enginemen must be on the alert to observe reduction in train speed caused other than by a reduction of power or ascending grades, and note the need for power in excess of normal requirements as shown on the loadmeter, the cause of which may or may not be indicated on air gages in engine cab. When necessary, power must be reduced to avoid break-in-two.

Engineer must check for brake pipe leakage before starting train stopped by application of train brakes other than by engineer's brake valve. After air gages in engine cab indicate brake pipe pressure has been restored, check must be made to assure there is no break or opening in the train line.

Application Before Releasing

6. When stop is made with a light application, make an additional reduction of brake pipe pressure sufficient to insure release. Do not attempt to start a freight train until air brakes are fully released.

As a guide, the following may be used for release:

Two minutes	with	60 to	80 cars.
Three	"	"	80 to 100 cars.
Four	"	"	100 to 120 cars.
Five	"	"	120 to 140 cars.
Six	"	"	over 140 cars.

Tail Hose Test

8. When tail hose is used for back-up movement the engineer must charge brake system to not less than five pounds below the standard pressure, make a reduction of ten pounds, place automatic brake valve handle in LAP position and give one sound of engine whistle. An additional service reduction must then be made with tail-hose cock. When the engineer notes brake pipe pressure falling he will signal with two sounds of the engine whistle. When brake pipe pressure hand stops falling engineer will release the brakes.

When the tail hose is used, if the train brakes become applied other than by the engineer, the throttle must be placed in IDLE position and the automatic brake valve handle in LAP position until the train stops.

On engines so equipped, maintaining cut-off valve must be placed in the cut-out position while testing and making back-up movement using tail hose.

Adding Cars To Train

9. WHEN ONE OR MORE CARS ARE ADDED TO A TRAIN BETWEEN TERMINALS TRAINMEN MUST SEE THAT HAND BRAKES ARE RELEASED BEFORE CARS ARE MOVED.

When cars with LN equipment are placed in freight trains of more than 25 cars, the cut-out cock in the pipe between the supplementary reservoir and the brake cylinder head must be closed and drain cock left open on the supplementary reservoir.

When cars with UC, D-22 or 26 equipment are placed in freight trains of more than 25 cars, close the cut-out cock in the branch pipe, drain all reservoirs, set direct and graduated release cap in direct release position. To set cap in required position, remove cap screws and turn cap until the letters cast on cap and body of flange indicate required position, then open cut-out cock and close drain cocks.

Brake Pipe Ruptured or Train Broken-In-Two

10. If brake pipe has been ruptured or the train parted, sufficient hand brakes must be set to hold train, and angle cocks closed on both sides of defect before attempting to make repairs. On ascending grade hand brakes will be set starting from the rear; on descending grade hand brakes will be set starting from the head end. Hand brakes must not be released until the brake pipe pressure has been restored throughout the train. On grades release the hand brakes in the reverse order of their being set.

Brakes Sticking

11. If brakes apply on a moving freight train and cannot be released manually, train must be stopped and the cause ascertained and corrected.

If brakes apply on a moving passenger train, the engineer must make not less than two reductions totaling at least 15 pounds, then release brakes. If brakes cannot be released, train must be stopped and the cause ascertained and corrected.

The following method will be used when necessary to release air brakes manually:

With AB, ABD, D-22 or 26 equipment, open the release valve partly until the brake begins to release, then close it. If fully opened, the emergency reservoir will also be drained, which is not desirable.

With PM equipment, open the drain cock until the brake begins to release, then close it.

With LN equipment, open the drain cock on the auxiliary and supplementary reservoirs, leaving them open until the brake is released.

With UC equipment, open the drain cocks on the auxiliary and emergency reservoirs, leaving them open until the brake is released.

With UC, D-22 and 26 control valves a side vented cut-out cock, which vents brake cyclinder pressure when closed, is installed in the brake cylinder pipe to each truck and can be used to cut out brakes in cases of failure of foundation brake rigging. If necessary to cut out the brake on a car, close the branch pipe cut-out cock (which is combined with the dirt collector) and drain both the auxiliary and the emergency reservoirs by pulling the duplex release valve handle its full travel and holding until pressure is depleted.

When necessary to release air brakes manually and there is no pressure in the brake pipe, completely drain all reservoirs.

To release brakes manually on cars equipped with a brake cylinder release valve requires only an initial brief pull on the release rod.

Setting Out Cars

12. When cars are set out and sufficient number of hand brakes are applied, brake pipe pressure must be completely depleted by opening angle cock. On passenger cars, 10-lb. brake pipe reduction must be made before setting hand brakes.

Brake Failure

13. If train cannot be satisfactorily controlled with the air brakes, it must be stopped. If on a grade, it must be secured by hand brakes before beginning an inspection to determine the cause.

In case the trouble cannot be corrected or complete air failure occurs from any cause, train must not be moved unless it can be done with safety and then only to the first available point of communication with train dispatcher, where authority must be received before proceeding.

Except when due to compressor failure, the followind data must be developed at the next terminal and forwarded to the Superintendent or Master Mechanic:

Number of engine and name of engineer.
Initial, number and tonnage of cars.
Number of operative brakes.
Piston travel of each car.
Brake pipe leakage.
Brake cylinder leakage of each car.
Condition of retaining valves.

If automatic brake equipment on lead engine fails on trains being handled by more than one engine, train must be stopped, automatic brakes left applied and control of brakes transferred as follows:

(a) When second engine is immediately behind lead engine, lead engineer must signal second engineer by two short and one long sounds of engine whistle to take control of the brakes, then close brake pipe cut-out cock. When the second engineer has taken control of the brakes, he must repeat the signal.

(b) When second engine is not immediately behind the lead engine, sufficient hand brakes must be set to hold the train and an oral understanding must be had between the conductor and engineers before the train is moved. When descending a grade, sufficient hand brakes must be set on head end of train to control slack and insure safety while train is being moved.

Should it become impossible to stop an engine or train with the air brakes or hand brakes, apply dynamic brake if engine is so equipped. If engine is not

so equipped or dynamic brake is inoperative, place the switch marked "Rule 13, Sand" in the ON position (if unit so equipped), or apply pneumatic sanders, place throttle in IDLE position, move transition lever to No. 1 position, place reverse lever in the opposite position and move the throttle to No. 1 position.

Should the compressor on the lead engine fail the train must be stopped, automatic brakes left applied, dead-engine feature cut in and control of the brakes transferred to the second engine.

In case of compressor or main reservoir supply failure the train must not be moved beyond the next point where an engine with suitable air equipment can be placed in the lead.

IF DYNAMIC BRAKE FAILS IN RETAINING VALVE TERRITORY, stop must be made immediately and after brake pipe pressure has been restored, train may proceed being governed by retaining valve rules applicable to engines without dynamic brakes. In the event tonnage per operative retaining valve exceeds the maximum prescribed for engines without dynamic brakes, speed must be reduced to insure safety but must not exceed 15 MPH.

Should all power units of an engine become inoperative on a grade, light engine or train after stopping must be immediately secured with hand brakes and engine wheel secured with blocking chain.

Double Heading and Helper Engines

14. When more than one engine is attached to a train the engineman of the leading engine shall operate the brakes. On all other engines in the train the brake pipe cut-out cock to the brake valve must be closed, the maximum main reservoir pressure maintained and brake valve handles kept in the prescribed position. In case it becomes necessary for the leading engine to give up control of train short of destination of train, a test of the brakes must be made to see that the brakes are operative from automatic brake valve of engine taking control of train.

Before an additional engine is coupled to the head end of a train the incoming engineer must apply the train brakes with an application of not less than 15 pounds on passenger trains and 20 pounds on freight

trains, close brake pipe cut-out cock and, if engine so equipped, position the automatic train stop, double-heading and release valve to the double-heading position. After the additional engine is coupled to the train the lead engineer must release the brakes. This procedure must be followed in reverse order when the lead engine is detached. In each instance trainmen must note that the brakes on rear car apply and release.

In starting trains with two or more engines on the head end, the lead engineer will, if possible, start the train. If unable to start, he will signal the other engineer to assist in starting. If necessary to take slack, engineer will close throttle and allow the lead engineer to take the slack. When double heading, engineers must agree on the procedure to be followed in handling the train at various points en route.

With one or more helper engines back in train, power must be applied in such manner as will cause train to move promptly. If the train cannot be started, the lead engineer, unless otherwise provided, should take slack back to lead helper. When taking slack, care must be used to avoid damage to equipment. Helper engineers back in train must not, unless otherwise provided, take the slack without an oral understanding with lead engineer.

When drifting or on descending grades and dynamic brakes are not in use, throttle must be kept in RUN 1 position. When completing stop, throttle must be placed in IDLE position and the independent brake applied on the lead engine and on other engines when necessary.

When dynamic brakes are used on both road and helper engines when moving on descending grades, additional tonnage in the same ratio per unit as specified for road engine may be handled without retaining valves.

Dynamic brake may be used on descending grades by helper engines when handled by road engine with dynamic brake in operation. When dynamic brake is used on both road and helper engines, engineer on helper engine should maintain a constant dynamic braking force while lead engineer controls variations in train speed. If dynamic brake fails on either the

road or helper engine, the independent brake must be applied on engine with dynamic brake failure to prevent severe slack action; train must be stopped and provisions of next to last paragraph of Rule 13 applied.

Dummy Couplings

15. Air hose on end of an engine, car or caboose in service not coupled to mating hose must be coupled to the dummy coupling when so equipped.

Conductor's Valve

16. Should there be immediate danger to life or property the valve must be immediately opened to full extent and left in that position until train stops, then closed.

When imperative that train be stopped within a reasonable distance and a stop signal cannot be transmitted to the enginemen, the valve must be opened gradually and with care to avoid emergency action until it is known that the brakes are reducing the speed of the train and opening maintained until train stops, then closed slowly.

Conductor's valve in caboose must not be used for any other purpose or in any other manner than that described above.

Retaining Valves

17. Retaining valves are ordinarily located near the hand brake or control valve on freight, baggage, express and mail cars and in the vestibule of passenger cars.

Pressure retaining valves in service retain a predetermined pressure in brake cylinders while control valves are in release position and auxiliary reservoirs are being recharged. The amount of pressure retained in brake cylinders depends on the type of retaining valve used. This valve performs no function when in cut-out position (handle perpendicular or down) as it then allows brake cylinder pressure to be discharged freely.

The 10 and 15-pound types have two positions of the control handle, viz: perpendicular or down position when not in use and horizontal or up position

when in use. The 10-20 or 15-30-pound type has three positions of the control handle, viz: perpendicular or down position when not in use, midway or high pressure position at an angle of 45 degrees when retaining 20 or 30 pounds pressure in the brake cylinder and horizontal or up position when retaining 10 or 15 pounds. High pressure position must not be used on empty cars.

The four-position release control retaining valve requires the same operation as the three-position type, with the exception that in slow direct exhaust position the handle is turned to the position marked SD (45° above horizontal).

Another three-position release control retaining valve requires the same operation as the four-position type with the exception that low pressure position is omitted.

Placing retaining valve control in any other position is forbidden.

The Superintendent will prescribe the number and points between which retaining valves must be used. Additional valves will be turned up if requested by the engineer. Unless specified by the Superintendent or requested by the engineer, use of retaining valves is not required when air brakes are being operated under the provisions of Rule 19 and dynamic brake is in operation.

17-A. At locations where necessary to make road or yard retaining valve test, the brake system must be charged to not less than 5 pounds below standard pressure and a 15-pound reduction of brake pipe pressure made. Retaining valve handles must be turned to horizontal position on the number of valves to be used on the run, after which the brakes must be released. After waiting one minute, retaining valve handles must be turned to perpendicular position and where there is a restricted or no discharge of air at the exhaust port the cause must be ascertained and corrected. It must be known that the small vent port is open.

Before a train is operated on a descending grade requiring the use of retaining valves, it must be known that sufficient number of them are placed in service to enable the engineer to control train speed properly.

When retaining valves are required on train of 10 or more cars, not less than 10 retaining valves must be used.

The required number of retaining valves must be turned up solid on the head end of the train before beginning the descent and left in that position until the train has descended the grade, except that retaining valves must be turned down on cars developing excessive wheel heat and an equal number turned up on other cars.

In turning down retaining valves to allow freight trains to start, trainmen must commence at the rear.

When turning down retaining valves on passenger trains while running, start from the rear and work forward. After retaining valves have served their purpose, trainmen must know they are turned down.

When retaining valves are used, unless otherwise provided, the speed for any one mile in the first 5 miles must not exceed 20 MPH, after which speed must not exceed 25 MPH. This does not constitute authority to exceed specific speed restrictions. The first stop to permit wheel heat radiation and train inspection must not be less than 4 nor more than 10 miles from the point where braking commenced. Trains must remain at such stop at least 10 minutes.

Grade Braking

18. When using the cycle method of braking on descending grades, particularly when retaining valves are not required, build up brake cylinder pressure by making light brake pipe reductions consistent with grade, speed and weight of train. When dynamic brake is not in use, engine brake may be used to avoid harsh slack action. Use of air brakes to supplement dynamic brake on descending grade should be such as to avoid harsh slack action. Precaution must be used to keep from overheating wheels and damaging brake rigging.

When using retaining valves and the cycle method of braking, the one application method must be employed. The brake system must be charged to standard pressure before leaving the summit of the grade and, after leaving, one or more brake pipe reductions made before train is permitted to attain the desired speed which must not exceed the prescribed maximum speed.

After this has been accomplished, brake pipe pressure on the gage must be observed and the brakes released. Just before the train begins to gain speed, one reduction must be made, bringing brake pipe pressure to where it was immediately before releasing. After brake valve exhaust closes and train is about to slow down again, release must be made as before. This operation must be continued while descending the grade and speed kept sufficiently low to permit restoring the amount of air used on the previous application.

To control train properly, the brake system must be fully recharged when releasing after each brake application. Speed must be controlled to prevent slack action and to allow sufficient time for recharging.

Pressure Maintaining Braking

19. When using the pressure maintaining system of braking, the equalizing reservoir pressure must be reduced to not less than 4½ pounds below the point where the equalizing piston raises to give a brake pipe exhaust. This applies for all initial brake applications or reapplications after a release. Close observation must be made of the equalizing reservoir pressure for at least two minutes after reduction, promptly reducing any build-up in equalizing reservoir pressure over that of the initial reduction.

On descending grades brake applications should be sufficiently light to prevent train from stalling and application held, controlling train speed variations within limits by use of dynamic brakes. Brakes must not be released on descending grade unless conditions are such that release can be made with safety and brake system fully recharged before application of train brakes is necessary. Should circumstances arise that would require reapplication of the brakes before there is sufficient time to fully recharge the brake system, subsequent reapplication should be such as to reduce brake pipe pressure to at least two pounds lower than before the release was made.

When conditions are such that running release cannot be made with safety train must be stopped. When stopped on grade and, if necessary, sufficient number of hand brakes or retaining valves must be set on head end cars in train to prevent movement before train brakes are released. The recharging period must be one minute for each twelve cars or fraction thereof.

Should conditions arise making it unfavorable to use the pressure maintaining system of braking, train must be stopped and the air brake system fully recharged as outlined above. Speed of subsequent train movements must be so controlled according to conditions to insure ability to stop train within required limits.

Pressure maintaining and the quick service feature in AB valves provide for sustained minimum brake cylinder pressure of approximately ten pounds. This feature does not relieve employes from making frequent observation of train for defects while moving.

Cutting Out Brakes

20. The proportion of air brakes in operation must at no time be less than 85% of all the cars in a train. On ascending grades rear car must have operative air brake.

When defects in the air brake equipment develop between repair points and cannot be corrected without serious delay, cut out the brake. If with the brake pipe charged a brake fails to release after using the methods outlined in Air Brake Rule 11 or by turning the retaining valve down, disconnecting the retaining valve pipe, or releasing the hand brake (or if a brake repeatedly fails to release), cut out brakes on the car. Not more than two consecutive brakes in a train may be cut out and still maintain emergency action throughout the train. (Unless equipped with A-1 Reduction Valve or Vent Valve).

Before adjusting piston travel or working on the brake rigging, brakes must be cut out by closing cut-out cock in the branch line, all reservoirs drained and necessary precautions taken to avoid personal injury if car moves. When side vented cut-out cock is closed in brake cylinder pipe it is unnecessary to drain reservoirs.

The following method will be used when necessary to cut out brakes:

Car with AB or ABD brake equipment: Close the branch pipe cut-out cock and drain both auxiliary and emergency reservoirs by fully opening release valve. If brakes fail to release, drain supply reservoir if car is so equipped.

Car with AC-1B air brake equipment: Close the branch pipe cut-out cock and drain both auxiliary and emergency reservoirs by fully opening release valve.

Car with PM brake equipment: Close cut-out cock and drain auxiliary reservoir.

Car with LN brake equipment: Close cut-out cock and drain both auxiliary and supplementary reservoirs.

Car with UC brake equipment: With double equipment having independent brake rigging for each truck, the brakes can be cut out individually by opening brake cylinder side vented cut-out cock on each end of car. If this is not practicable, close branch pipe cut-out cock and drain all reservoirs.

Car with D-22 or 26 control valve: This equipment has side vented cut-out cocks for each brake cylinder which should be used as required. If this is not practicable, close the branch pipe cut-out cock (which is combined with the dirt collector) and drain both the auxiliary and the emergency reservoirs by pulling the duplex valve handle its full travel and holding until the pressure is depleted. If brakes fail to release, cut-out cock in branch pipe to the relay valve should be closed if car is so equipped.

When necessary to cut out the air brakes on the rear car of a passenger train, a trainman must station himself on such car and know the hand brake is operative. The car must be switched ahead of other cars with operative air brakes at the first available point.

Should the brake pipe on any car in a passenger train break, the communicating signal pipe may be used as a brake pipe by coupling the brake pipe hose on cars ahead of and behind the break to the communicating signal pipe hose and draining reservoirs on cars with the broken pipe. Communicating signal on these cars and others to the rear will be inoperative.

Engineer must be advised when a brake is cut out on a passenger train.

The conductor on arrival at terminal must report on prescribed form known defects and overheated wheels on cars in his train.

Train Air Brake System Tests

21. Supervisors are jointly responsible with inspectors, enginemen and trainmen for condition of air brake and air signal equipment on engines and cars to the extent that it is possible to detect defective equipment by required air test.

Communicating signal system on passenger equipment trains must be tested and known to be in a suitable condition for service before leaving terminal.

Each train must have the air brakes in effective operating condition and at no time shall the number and location of operative air brakes be less than permitted by Federal requirements. When piston travel is in excess of 10 inches the air brakes cannot be considered in effective operating condition.

Condensation must be blown from the pipe from which air is taken before connecting yard line or engine to train.

FREIGHT TRAINS

Initial Terminal Road Train Air Brake Test

22. All trains must be given inspection and test as specified in this rule at points: (1) Where a train is originally made up (Initial Terminal); (2) where train consist is changed other than by adding or removing a solid block of cars and train brake system remains charged; (3) where train is received in interchange.

Train air brake system must be charged to required air pressure, angle cocks and cut-out cocks must be properly positioned, air hose must be properly coupled and must be in condition for service. An examination must be made for leaks and necessary repairs made to reduce leakage to a minimum. Retaining valves and retaining valve pipes must be inspected and known to be in condition for service.

After the air brake system on a train is charged to within 15 pounds of the setting of the feed valve on the engine, but to not less than 60 pounds, as indicated by an accurate gage at rear end of train, and upon receiving the signal to apply brakes for test, a 15-pound brake pipe service reduction must be made in automatic brake operation, the brake valve lapped, and the number of pounds of brake pipe leakage per minute noted as indicated by brake pipe gage, which must not exceed five pounds per minute, after which brake pipe reduction must be increased to full service. Inspection of the train brakes must be made to determine that angle cocks are properly positioned, brakes are applied on each car, piston travel is correct, that brake rigging does not bind or foul and all parts of the brake equipment are properly secured. When this inspection has been completed, the release signal must be given and brakes released and each brake inspected to see that all have released.

At initial terminal, piston travel of body mounted brake cylinders which is less than seven inches or more than nine inches must be adjusted to nominally seven inches.

Minimum brake cylinder piston travel of truck mounted brake cylinders must be sufficient to provide proper brake shoe clearance when brakes are released. Maximum piston travel must not exceed six inches.

Piston travel of brake cylinders on freight cars equipped with other than standard single capacity brake, must be adjusted as indicated on badge plate or stenciling on car located in a conspicuous place near brake cylinder.

When test of air brakes has been completed, the engineman and conductor must be advised that train is in proper condition to proceed.

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

22-A. When train air brake system is tested from a yard test plant, an engineer's brake valve or a suitable test device must be used to provide increase and reduction of brake pipe air pressure at the same or a slower rate as with engineer's brake valve and yard test plant must be connected to the end which will be nearest to the hauling road engine.

When yard test plant is used, the train air brake system must be charged and tested as prescribed in Rule 22, and when practicable, should be kept charged until road engine is coupled to train, after which an automatic brake application and release test of air brakes on rear car must be made.

If after testing the brakes from a yard test plant the train is not kept charged until road engine is attached, the brakes must be tested as prescribed by the third paragraph of Rule 22.

Make-up of Trains

23. Before leaving a terminal or at points where cars are added to the train, trainmen must report to engineer, advising number of loads, empties, tonnage and tons per operative brake. They must also advise the number and location of passenger cars and dead engines.

When passenger cars or dead engines are handled in freight trains, it must be known that brakes are released on such cars or engines before proceed signal is given after each stop.

ABEL brake system has an automatic change-over feature to provide proper brake function when car is empty and when loaded. Before leaving a station or point where such cars have been added to consist or made empty in consist and brake pipe not depleted, engineer must be advised to actuate the automatic change-over feature by reducing brake pipe pressure to 20 pounds above zero to insure proper brake function.

Road Air Brake Tests

24. At designated points, additional inspection will be made to determine that: (1) Brake pipe leakage does not exceed five pounds per minute; (2) brakes apply on each car from a 20-pound service brake pipe reduction; (3) brake rigging is properly secured and does not bind or foul.

24-A. Before engine is detached or angle cocks are closed on freight trains, brakes must be applied with not less than a 20-pound brake pipe reduction. **Angle cocks must not be closed until engineer signals that 20-pound reduction is completed and brake pipe pressure in train has had time to equalize.** After recoupling and angle cocks are opened, it must be known that brake pipe pressure is being properly restored as indicated by the caboose gage and that brakes on rear car are released.

In the absence of a caboose gage, after recoupling, brake system must be recharged to required air pressure and before proceeding and upon receipt of proper request or signal, application and release test of brakes on rear car must be made from engine in automatic brake operation. Inspector or trainman must determine if brakes on rear car of train properly apply and release.

24-B. At a point other than initial terminal where engine or caboose is changed, or where one or more consecutive cars are cut off from rear end or head end of train with consist otherwise remaining intact, after train brake system is charged to within 15 pounds of feed valve setting on engine, but not less than 60 pounds as indicated at rear of train, a 20-pound brake pipe reduction must be made and it must be determined that brakes on rear car apply and release properly.

BEFORE PROCEEDING, IT MUST BE KNOWN THAT BRAKE PIPE PRESSURE AS INDICATED AT REAR OF TRAIN IS BEING RESTORED.

24-C. At a point other than a terminal where one or more cars are added to a train, and after the train brake system is charged to not less than 60 pounds as indicated by a gage at the rear of train, tests of air brakes must be made to determine that brake pipe leakage does not exceed five pounds per minute as indicated by the brake pipe gage after a 15-pound brake pipe reduction. After the leakage test is completed, brake pipe reduction must be increased to full service and it must be known that the brakes on each of these cars and on the rear car of train apply and release. Cars added to train which have not been inspected in accordance with Rule 22 or 22-A must be so inspected and tested at next terminal where facilities are available for such attention.

BEFORE PROCEEDING, IT MUST BE KNOWN THAT BRAKE PIPE PRESSURE AS INDICATED AT REAR OF TRAIN IS BEING RESTORED.

24-D. At a terminal where a solid block of cars which has been previously charged and tested as prescribed by Rule 22 or 22-A is added to a train, test must be made to determine that brakes on the rear car of train apply and release.

BEFORE PROCEEDING, IT MUST BE KNOWN THAT BRAKE PIPE PRESSURE AS INDICATED AT REAR OF TRAIN IS BEING RESTORED.

24-E. Trains arriving at terminals where facilities are available, and at which special instructions provide for immediate brake inspection and repairs, shall be left with air brakes applied by a service brake pipe reduction of 20 pounds so that inspectors can obtain a proper check of the piston travel. **Trainmen will not close any angle cock or cut the engine off until the 20-pound service reduction has been completed and brake pipe pressure has had time to equalize, signal to be given by engineer.** Inspection of the brakes and needed repairs should be made as soon thereafter as practicable.

24-F. Transfer train and yard train movements not exceeding 20 miles must have the air brake hose coupled between all cars, and after the brake system is charged to not less than 60 pounds, a 15-pound service brake pipe reduction must be made to determine that the brakes are applied on each car before releasing and proceeding.

Transfer train and yard train movements exceeding 20 miles must have brake inspection in accordance with Rule 22 or 22-A.

Air Brake Test at Summit of Grades

25. At locations designated by Special Instructions, trains must stop before passing summit of grade and make air brake test. If stop is made by use of the automatic air brakes, trainmen must observe that brakes apply on rear car. If stop is made without use of automatic air brakes, an application of brakes must be made to determine that brakes are operative throughout train and have applied on rear car. Trains must not proceed until brakes have been released and brake system fully recharged.

Freezing Weather Precautions

26. Precautions must be taken to prevent freezing of accumulation of condensation in brake systems and air lines during seasons when temperature of 32° F. above zero or less is encountered and in no case to be in force later than November 1, continuing through March 31 or later, as conditions may require.

At outlying points, drain cocks must be left open on air compressor intercooler and aftercooler, main reservoirs, control reservoir, dirt collectors and air filters and strainers on units when diesel engine is not running.

After engine leaves enginehouse track and before leaving turnout track and when an engineer takes charge of a yard engine, brake system must be blown out after first draining any condensate that may have accumulated in air compressor intercooler and aftercooler, main reservoirs, control reservoir, dirt collectors and air filters and strainers as follows:

When the brake system is fully charged, open angle cock which is most distant in the engine consist from the brake valve in use.

If this is a 26-C brake valve, move its handle to the HANDLE OFF position; if not, move the brake valve handle to the LAP position. When main reservoir pressure is 140 pounds, move the brake valve handle suddenly to running or release position to cause the heaviest rapid flow of air throughout the brake pipe which should blow out any condensation therein.

At all inspection points and at other points whenever opportunity permits, engineman must open drain cocks and blow out condensation from air compressor intercooler and aftercooler, main reservoirs, control reservoir, dirt collectors and air filters and strainers on engines in service on freight trains.

Condensation must be blown from the pipe from which air is taken before connecting yard line or engine to train.

Before descending grades specified by the Superintendent with a freight train when the temperature is 32° F. above zero or less, and at other times that may be designated by the proper authority, the brake pipe hose must be blown out on the head end of train as follows:

After making a 20-pound brake pipe reduction, close angle cocks between second and third cars, uncouple air hose; close angle cocks between first and second cars, uncouple air hose; close angle cocks between first car and engine and uncouple air hose. During this test engineman must drain condensate from lead unit as prescribed. After recoupling hoses and reopening angle cocks, release train brakes. Before proceeding, it must be known that brake pipe pressure, as indicated on caboose gage at rear of train, is properly restored.

Undesired Emergency Application Test

27. When an undesired emergency application of brakes recurs the following tests will be made: Charge brake system fully, then make a 6-pound reduction, engineer noting the brake pipe leakage. If no undesired emergency application results, trainmen must check

brakes starting from each end of train. Brakes of any car on which the brake cylinder piston has not moved should be cut out. If cutting out brake on any car does not correct the condition, brake or brakes that have been cut out must be cut in. Retaining valves must be inoperative when making this test.

If test is made on grade, sufficient hand brakes must be set to hold the train and must not be released until test has been completed AND BRAKE PIPE PRESSURE RESTORED.

Service Stop

28. In making a service stop while working power, an initial brake pipe reduction of six to eight pounds will be made, keeping the engine brakes released. As speed is reduced and if further reductions are made in brake pipe pressure, engine brakes must be permitted to apply, and if working power, throttle must be gradually reduced to RUN 1 or IDLE position. If stop is to be made with slack bunched, throttle must be closed and independent brake applied gradually to prevent harsh change in slack, completing stop with light applications of train brakes if necessary. **Using either method a final service reduction must be started, throttle closed and sanders opened approximately 100 feet from where train will stop.**

Short movements with heavy trains should be avoided if possible.

Release While Running

29. Where a light application of brakes is made (not in excess of 8 pounds), it should be increased consistent with conditions before attempting to release.

When dynamic brakes and/or retaining valves are used on trains of any length, air brakes may be released at speeds of 8 miles per hour or over if descending grades favor this release. This rule not to govern on level or rolling territory.

When retaining valves or dynamic brakes are not used, no attempt should be made to release brakes unless the slack can be, and is, properly controlled. To control slack action, the following conditions and rules govern:

(1) Main reservoir pressure must be at maximum.

(2) Slack in train must be in favorable position.

(3) Sufficient time must have elapsed since last brake pipe reduction to permit slack adjustment.

(4) Proper allowance must be made for grade conditions, viz.: sags, humps and curves.

Unless the above conditions are favorable, do not attempt to release the brakes but follow the safe course and bring the train to a stop.

After brakes are released while running, additional power must not be used until the slack has had time to adjust itself and it must thereafter be gradually increased.

Stop with Helper Engine Back in Train

30. When a stop is made on level track or ascending grade, lead engineer must gradually move throttle to RUN 1 or IDLE position at the proper time to allow the slack to move in gently before making a brake application to stop. The engineer of each helper engine back in train must continue working power, keeping engine brakes released and gradually closing throttle until stalled. When a stop is made on descending grade or just over summit of grade, helper engineers must use only enough power to keep slack bunched until train stops.

Stop While Backing

31. When stopping a train while backing on level track or descending grade, with one or more engines ahead, lead engineer will adjust slack by making light application of engine or train brakes and, if necessary, light brake pipe reductions will be made to complete stop. When ascending a grade he will gradually close throttle allowing train to stall and, if necessary, make a light brake pipe reduction to complete stop, keeping engine brakes released until stop is completed.

With one or more helper engines back in train, lead engineer must prevent engine brake from applying and helper engineers must hold the slack in by use of dynamic or engine brakes. If necessary, make light brake pipe reductions but avoid having brake valve exhausting at completion of stop.

Standing On Grade

32. When stop is made on a grade independent brake must be fully applied and, unless it is known that the independent brake will hold the train, train brakes must be left applied until ready to proceed. If necessary to restore air brake pressure to safe level before proceeding, sufficient hand brakes must be set to hold the train while restoring air brake pressure. After air brake pressure has been restored to safe level, a minimum brake pipe reduction must be made to hold train while hand brakes are being released. Hand brakes must be set on rear end of train when on ascending grade and on head end of train when on descending grade.

When one or more helper engines are back in train, the lead engineer before his engine is detached must make a brake pipe reduction of 20 pounds, then signal lead helper engineer by two short and one long sound of the engine whistle to take control of the brakes. Lead helper engineer must then release the train brakes and repeat the signal. After lead engineer notes the brake pipe pressure is being restored, the engine may be detached. When the lead engine is again attached, the engineer will signal with one sound of the engine whistle. Lead helper engineer must then make a reduction of 20 pounds and close brake pipe cut-out cock, after which the lead engineer will release the brakes. Trainmen must observe caboose gage and must not authorize train to proceed until it is known that the pressure is restored to within 15 pounds of feed valve setting on engine but not less than 60 pounds and the rear brakes have released.

When engine whistle signals cannot be distinctly heard, lead helper engineer must be orally instructed to take control of train brakes before the lead engine is detached.

When a train without a helper engine back in train stops on an ascending grade with slack bunched and train brakes applied, sufficient hand brakes starting from the rear must be set to hold train before air brakes are released. Engineer after releasing train brakes must stretch slack before hand brakes are released in the same order in which they were applied.

Tonnage Per Operative Brake

33. The maximum tonnage per operative brake that may be handled on descending grades of 1.8 per cent or over will be prescribed by the Superintendent.

Freight trains handling cars with single capacity brakes(*), with tonnage exceeding 80 tons per operative brake, must not exceed 45 MPH, except maximum speed must not exceed:

(1) 25 MPH or (2) 20 MPH in grade territories as designated by Superintendent by milepost locations under appropriate subdivision.

***Loaded** cars with empty-load (ABEL) brakes are to be considered the equivalent of one and one-half (1½) cars in determining tons per operative brake.

Tonnage of operating unit(s) not in dynamic braking is not to be used in determining tons per operative brake.

Overcharge

35. If the brake system has been overcharged 10 pounds or more while running, brake valve handle, feed valve or regulating valve can be placed in a position or adjusted to maintain such overcharge until correction can be made.

In reducing an overcharge the automatic brake valve may be used, making the necessary number of reductions to overcome any overcharge.

With AB equipment for every 10 pounds overcharge, two full service brake applications and releases must be made or auxiliary and emergency reservoirs drained.

Initial Terminal Road Train Air Brake Test

36. All trains must be given inspection and test as specified in this rule at points: (1) Where a train is originally made up (Initial Terminal); (2) where train consist is changed other than by adding or removing a solid block of cars and train brake system remains charged; (3) where train is received in interchange.

Train air brake system must be charged to required air pressure, angle cocks and cut-out cocks must be properly positioned, air hose must be properly coupled and must be in condition for service. An examination must be made for leaks and necessary repairs made to reduce leakage to a minimum. Retaining valves and retaining valve pipes must be inspected and known to be in condition for service.

It must be ascertained that supplementary reservoirs on cars with LN equipment are cut in and that direct and graduated release cap is set in graduated release position on UC, D-22 and 26 control valves.

After the air brake system on a train is charged to not less than 95 pounds, as indicated by an accurate gage at rear end of train, and upon receiving the signal to apply brakes for test, a 15-pound brake pipe service reduction must be made in automatic brake operation, the brake valve lapped, and the number of pounds of brake pipe leakage per minute noted as indicated by brake pipe gage, which must not exceed five pounds per minute, after which brake pipe reduction must be increased to full service. Inspection of the train brakes must be made to determine that angle cocks are properly positioned, brakes are applied on each car, piston travel is correct, brake rigging does not bind or foul and all parts of the brake equipment are properly secured. When this inspection has been completed, the release signal must be given and brakes released and each brake inspected to see that all have released.

At initial terminal, piston travel of body mounted brake cylinders which is less than seven inches or more than nine inches must be adjusted to nominally seven inches.

Minimum brake cylinder piston travel of truck mounted brake cylinders must be sufficient to provide proper brake shoe clearance when brakes are released. Maximum piston travel must not exceed six inches.

When test of air brakes has been completed, the engineman and conductor must be advised that train is in proper condition to proceed.

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

36-A. When train air brake system is tested from a yard test plant, an engineer's brake valve or a suitable test device must be used to provide increase and reduction of brake pipe air pressure at the same or a slower rate as with engineer's brake valve and yard test plant must be connected to the end which will be nearest to the hauling road engine.

When yard test plant is used, the train air brake system must be charged and tested as prescribed in Rule 36, and when practicable should be kept charged until road engine is coupled to train, after which an automatic brake application and release test of air brakes on rear car must be made.

If after testing the brakes from a yard test plant the train is not kept charged until road engine is attached, the brakes must be tested as prescribed by the fourth paragraph of Rule 36.

Road Air Brake Tests

38. At designated points, additional inspection will be made to determine that: (1) Brake pipe leakage does not exceed five pounds per minute; (2) brakes apply on each car from a 20-pound service brake pipe reduction; (3) that brake rigging is properly secured and does not bind or foul.

38-A. At points where engine crew, train crew or both are changed, but train consist remains intact, incoming engineer after completing stop will make a full service brake application leaving brakes applied.

38-B. Before engine is detached or angle cocks are closed on a train, except when closing angle cocks for cutting off one or more cars from the rear end of train, automatic air brake must be applied. After recoupling, brake system must be recharged to required air pressure, and before proceeding and upon receipt of proper request or signal, application and release tests of brakes on rear car must be made from engine in automatic brake operation. Inspector or trainman must determine if brakes on rear car of train properly apply and release.

38-C. At a point other than initial terminal where engine is changed or where one or more consecutive cars are cut off from rear end or head end of train with consist otherwise remaining intact, after train brake system is charged to at least 95 pounds, and upon receipt of proper requests or signals, a 20-pound brake pipe reduction must be made and it must be determined that brakes on rear car apply and release properly.

38-D. At a point other than a terminal where one or more cars are added to a train and after the train brake system is charged to not less than 95 pounds, tests of air brakes must be made to determine that brake pipe leakage does not exceed five pounds per minute as indicated by the brake pipe gage after a 15-pound brake pipe reduction. After the leakage test is completed, brake pipe reduction must be increased to full service and it must be known that the brakes on each of these cars and on the rear car of train apply and release. Cars added to train which have not been inspected in accordance with Rule 36 or 36-A must be so inspected and tested at next terminal where facilities are available for such attention.

38-E. At a terminal where a solid block of cars which has been previously charged and tested as prescribed by Rule 36 or 36-A is added to a train, test must be made to determine that brakes on the rear car of train apply and release.

38-F. Transfer train and yard train movements not exceeding 20 miles must have the air brake hose coupled between all cars, and after the brake system is charged to not less than 95 pounds a 15-pound service brake pipe reduction must be made to determine that the brakes are applied on each car before releasing and proceeding.

Transfer train and yard train movements exceeding 20 miles must have brake inspection in accordance with Rule 36 or 36-A.

Running Test

39. When engine, operating controls, engine crew or train crew has been changed, angle cocks have been closed, or helper engine added or detached, except for cutting off one or more cars from the rear end of train, running test of train air brakes on train must be made as soon as speed of train permits by use of the automatic brake. Power must not be shut off unless required and running test must be made by applying train air brakes with sufficient force to ascertain whether or not brakes are operating properly. This test will also be made not more than three miles before reaching railroad crossings at grade outside block system limits or descending grades of 1.8 per cent or over and at such other points as may be designated by Superintendent. If air brakes do not properly operate, train must be stopped, cause of failure ascertained and corrected and running test repeated.

During test a trainman must station himself near the retaining valve of the last car so equipped and if air escapes from it while brakes are being released, must signal the engineer to increase speed. In case retaining valves are not accessible, trainman will ascertain that brakes apply and release on rear car before giving a proceed signal. Communicating signal should be used when possible, in which case one long sound must be given. If air does not escape or engineer does not receive the required signal, train must be stopped and test made to determine that brakes on rear car apply and release.

Communicating Signal

40. Communicating signal must be tested by use of cord on rear car before leaving a terminal, lay-over point or when the cut-out cock in the signal pipe has been closed.

When transmitting signals the length of the train determines the discharge valve timing. For nine cars or more the discharge valve should be opened for two seconds and closed for four seconds.

When one or more cars have been added to or detached from rear of train, trainmen must know before starting that discharge valve on the rear car is cut in.

If any defects develop in communicating signal system en route that cannot be corrected without delay to train, trainmen must be so advised and will use hand signals in lieu thereof.

Reduction of Speed

41. When it is desired to make a reduction of speed with a train of 25 cars or less, apply the brakes with an initial reduction of 4½ pounds keeping engine brakes released. This should be followed by an additional reduction or reductions as needed allowing engine brakes to apply. When speed has been reduced sufficiently, engine brakes should be released, followed by release of train brakes.

Service Stop

42. When making a station or service stop with a train of 25 cars or less and air brakes alone are used, gradually reduce the throttle while making an initial reduction of 4½ to 6 pounds keeping engine brakes released. After slack is adjusted throttle must be further reduced with trains of 11 to 25 cars and be placed in IDLE position with trains of ten cars or less. Apply sand when conditions warrant. An additional single reduction sufficient to stop train short of objective, if held fully applied, should then be made allowing engine brakes to apply and at the same time reducing throttle to RUN 1 or IDLE position. When speed has been reduced sufficiently, start a graduated release of the brakes by moving the brake valve handle to RELEASE position and then back to LAP position with trains of 11 to 25 cars and to RUNNING position then back to LAP position with trains of ten cars or less. Graduated release with self-lapping pressure maintaining type brake valve (26-L) is accomplished by a slight movement of automatic brake valve handle in the service braking zone toward release position (note increase in equalizing reservoir and brake pipe pressures on the gages). This procedure should be continued until stop completed, holding light brake cylinder pressure applied. Throttle must be in IDLE position before stop is completed. Necessity for making further brake pipe reductions to complete the stop should be avoided.

Trains of more than 25 cars must be handled under freight train rules.

Stopping on Grades

42-A. When stopping on ascending grades, after speed has been reduced sufficiently to insure stopping before reaching the desired point, train may be pulled to a stop with or without the train brakes being applied; on descending grades train brakes and/or engine brakes may be used in stopping but must be handled so as to avoid slack action, overheating wheels and damaging brake rigging.

Trains must be stopped on grades in such a manner as to prevent slack from running in or out when train brakes are released.

Overcharge

43. If the brake system becomes overcharged while running, the automatic brake valve handle must be placed in such position as to maintain the overcharge until correction is made.

When necessary to change to a lower brake pipe pressure, reduce brake pipe pressure to 60 pounds with automatic brake valve and drain the supplementary reservoir on LN and emergency reservoir on UC, D-22, AC-1B and 26 brake equipment. Drain cock must be left open for approximately 10 seconds, then brakes released. This must be done with the train standing and the brakes inspected to see all release.

Coupling and Uncoupling Engines

44. When coupling engines to cars care must be exercised in opening angle cocks to prevent emergency brake application.

A full service reduction must be made and exhaust at brake valve completed and signal from engineer obtained before angle cocks are closed preparatory to detaching engine from cars.

Undesired Emergency Application Test

45. Charge brake system fully and then make a six-pound reduction. If undesired emergency application of brakes does not occur, trainmen should check brakes, starting from head end. The brakes on any car,

except the last car, on which the brake cylinder piston has not moved, should be cut out and reported at the first terminal where repairs can be effected.

Anti-Slide Device

48. Switch controlling electrically operated "anti-slide" device on passenger cars in trains must be in the ON position, if so equipped.

60. The engineer will make every effort to control the slack by exercise of forethought in the use of power, train brakes, engine brakes, dynamic brake and sand. The heavier the engine and the longer the train, the greater is the care required.

When the makeup of trains or grade conditions are such as to have a tendency to bunch the slack, slack should be gathered gently and brakes operated with slack bunched. When the tendency is to stretch the slack, train should be operated with slack stretched. A number of factors determine at how low a speed brakes may be released without likelihood of damage. These factors include how heavily brakes are applied, the time interval since last brake pipe reduction, the amount of main reservoir pressure, the length of train, whether slack is in or out and whether track conditions (sags, humps and curves) favor releasing. Engineer must exercise good judgment in this but if in doubt he should bring train to a stop.

Changes in dynamic braking force must be made gradually when practicable. On descending grades, dynamic brake on freight trains must be reduced to one-half of maximum 500 feet before entering and 1500 feet after passing through turnout or crossover and during adjustment of slack following release of train air brakes.

64. Most breaks-in-two occur while starting or stopping; therefore, engineers should apply their knowledge and skill of train handling at those times. In a service stop with a freight train using automatic and/or dynamic brake when making the final reduction, engineers must assure themselves that such reduction is not made too soon or too late; either action will defeat the purpose. The object of this rule is to apply the brakes heavier on the head end of train and at a time when the reduction will not have a chance to reach the rear before the train has stopped. Engine brakes must be kept applied until stop is completed.

65. In making a service stop with a freight train, good practice dictates only one application divided into several reductions, allowing 7 to 10 seconds between reductions, all of which are to be made in normal service position of the brake valve. The first reduction should be of an amount that will apply the brakes only

to a degree that will prevent harsh slack action. Following the first light reduction, time should be allowed for the slack to become adjusted, after which further reductions can be made. These reductions should not be of sufficient amount to stop at the objective point. A final reduction to complete the stop must be made.

The amount of initial reduction should be approximately 4½ pounds but speed and grade are the deciding factors. The objective is to have all slack action take place at low brake cylinder pressure to insure gradual adjustment.

66. Some of the fundamentals of braking can be summed up as follows:

(a) On level track the entire braking power is available for stopping.

(b) On descending grade a certain portion of the braking power is required to prevent an increase in speed. The braking power available for stopping is that which is in excess of what is necessary to prevent an increase in speed.

(c) The braking power obtained from brake shoe pressure increases as the speed reduces.

(d) Brake cylinder leakage increases the distance required for a stop.

67. The ability to obtain the maximum braking power possible is dependent on the brake system being charged to standard pressure and the proper use of same.

The engine brake operated simultaneously with the train brakes when a short stop is desired adds greatly to the braking power of the train and the brakes can be applied alike to all wheels for ordinary stops. In an emergency the greatest possible braking power is at once obtained by one movement of the brake valve handle.

68. Although a standing brake test with knowledge of tons per operative brake and number of cars is necessary before starting, the ability to control or stop a train must be confirmed by the first running application after passing the summit. Speed should be kept low until this is determined. Where conditions are not favorable speed should be reduced or, if necessary, train stopped.

Following is summary of important features in the foregoing:

(a) The relation between the number of operative brakes and tonnage, with number of cars in the train, should be known before beginning the descent.

(b) The indicated ability to control train should be tested by the first running application and the average speed down the grade should be determined by the result of this test.

(c) Brake system should be kept as near the standard pressure as possible, recharging when using the cycle method of braking whenever the grade, curvature and main reservoir pressure offer an opportunity.

During periods of freezing temperatures, the brakes should be applied as soon as possible after starting and while working power the enginemen must make periodic use of the air brake at sufficient intervals to keep the braking surfaces free of ice and snow and the brake equipment conditioned for service. This is especially important before the entire train enters a descending grade.

69. Due to the high starting tractive effort of engines, it will seldom be necessary to take slack when starting. Care must be exercised in the amount of power used in starting and accelerating trains especially when some, but not all, of the slack has been taken and when helper engines are used. After the engine starts reduce the throttle, if necessary, to a position which will keep the engine moving at a slow and uniform speed for three car lengths, using sand continuously and do not vary this distance even though the entire train may be started in a shorter distance. The throttle may then be advanced, delaying between each throttle position a sufficient time to avoid a development of power that may cause the train to part.

24-RL Schedule Equipment

70. When D-24 and DS-24 brake valves have been converted for pressure maintaining braking, the first service position becomes the pressure maintaining position and the first service cut-out cock becomes the pressure maintaining cut-out cock.

Safety Brake Application: A cut-out cock on the automatic brake valve controls this feature. When the handle is in the down position, the features are cut in; when in the up position (not midway, but 180° from the down position), the features are cut out. The handle is sealed in the down or cut-in position, but when necessary, can be cut out in accordance with the rules.

Brake Pipe Maintaining Feature: A maintaining cut-off valve is located on some automatic brake valves. When the maintaining cut-off valve handle is turned to IN position, the brake valve is conditioned to provide the maintaining feature, and brake applications should be made according to applicable rules. When the handle is turned to the OUT position, the maintaining feature is cut out and the brake valve will function in the same manner as a brake valve not equipped with the maintaining feature.

On engines so equipped the charging change-over cock on the service portion of D-24 control valves determines fast or retarded charging or recharging of the auxiliary reservoir. Cast letters on the cock body FRGT and PASS indicate positions of the cock, for freight and passenger service, respectively. In FRGT position, the rate of recharge is retarded.

The dead-engine cock on D-24 control valves provides a means for charging the main reservoirs from the brake pipe on units that do not have their main reservoir equalizing pipe connected to an air supply and are unable to furnish air from their air compressors. When such condition exists, as when moving engine dead in train, the dead-engine cock handle should be placed over the designation DEAD. When the air compressors are operating on a unit or the unit is receiving its supply of main reservoir air through the main reservoir equalizing pipe from another unit, the dead-engine cock handle must be placed over the designation LIVE.

Equalizing Reservoir Reduction Time

Service equalizing piston must respond to a 3-pound reduction of equalizing reservoir pressure and seat promptly when brake valve handle is returned to LAP position. Equalizing reservoir pressure should reduce from:

110 to 90 lbs. in 5 to 7 seconds
90 to 70 lbs. in 7 to 9 seconds
80 to 60 lbs. in 8 to 10 seconds
70 to 50 lbs. in 9 to 11 seconds

26-L Schedule Equipment

70-A. The 26-C brake valve is a self-lapping automatic brake valve arranged for use with the 26-L brake equipment. When used to charge a train or release an automatic brake application, the 26-C automatic brake valve handle should be placed in RELEASE (running) position at the extreme left to the quadrant. When making a normal service brake application, move the automatic brake valve handle to the right against the first raised portion on quadrant. This is MINIMUM REDUCTION position which will provide a 4½ to 6-lb. reduction. If necessary to increase the reduction, move the handle progressively farther to the right. The farther the handle is moved to the right the greater will be the reduction. The brake valve will lap off automatically at whatever point movement of handle is stopped in the SERVICE or SUPPRESSION position, compensating for brake pipe leakage. A brake pipe reduction of approximately 23 pounds is obtained by moving brake valve handle to the extreme right of the service zone against the second raised portion on quadrant. Further reductions can be obtained by moving handle to the right on this second raised portion of the quadrant into the SUPPRESSION position.

Other positions of the 26-C brake valve handle to right of the SUPPRESSION position are: HANDLE OFF and EMERGENCY. SUPPRESSION position is used to nullify safety brake applications. HANDLE OFF position causes the brake pipe pressure within the brake valve to reduce to zero and makes the normal operating functions of the brake valve inoperative. Placing the automatic brake valve handle in HANDLE OFF position will prevent further loss of main reservoir air through an open brake pipe. Placing handle back in RELEASE position will supply air to the brake pipe for determining location of leak. An emergency brake application is obtained even with the brake valve cut out by moving brake valve handle to the extreme right of quadrant.

The cut-off valve (double-heading cock) handle must first be depressed against a spring loading before

it can be moved to any of the three positions—FREIGHT, PASSENGER and CUT-OUT. For all normal operations of the engine as a controlling unit, the cut-off valve must be placed either in FREIGHT or PASSENGER position as prescribed by the rules. Operating with the cut-off valve in PASSENGER position when rules prescribe it shall be in FREIGHT position is prohibited. When in the CUT-OUT position, the cut-off valve causes the connection between the brake valve and the brake pipe to close. Some units with 26-C brake valve have cut-out cock identified for positions as CUT-OUT and CUT-IN, others identified as CUT-OUT and FREIGHT.

A knob on the 26-C brake valve is used for setting the brake pipe pressure desired. Adjustment of the knob with the automatic brake valve in RELEASE position determines the equalizing reservoir pressure which, in turn by means of a self-lapping relay valve, governs the brake pipe pressure.

The SA-26 independent brake valve controls engine brake cylinder pressure. When applying the engine brake, move the independent brake valve handle to the right into the APPLICATION zone (a full independent application is to the extreme right), and when releasing, move the handle to the left. The brake valve, being of the self-lapping type, will lap off automatically at any point in the APPLICATION zone where handle is stopped.

To make an INDEPENDENT RELEASE of an automatic brake application, depress the independent brake valve handle.

The MU-2A valve serves as a cut-out cock for the independent brake valve as well as conditions 26-L brake equipment to trail another unit. The handle of the MU-2A valve must first be depressed against a spring loading before it can be moved to any of the three positions—LEAD OR DEAD, TRAIL 6 and TRAIL 24 OR 26. The functions of the independent brake valve are available only when the MU-2A valve is in LEAD OR DEAD position. The two TRAIL positions condition the 26-L brake equipment for control from another unit.

Some units with 26-C brake valve are equipped with a dual-ported cut-out cock in lieu of an MU-2A valve. Positions are identified as IN and OUT. Cut-in position is equivalent to the LEAD or DEAD position

and the cut-out position is equivalent to the two TRAIL positions.

When a unit with 26-L equipment is operated in multiple with 24-RL or No. 6 equipped unit, the following hose connections must be made:

26-L	with	**24-RL**	or	**No. 6**
Brake Pipe	to	Brake Pipe	to	Brake Pipe
M.R. Equalizing	to	M.R. Equalizing	to	M.R. Equalizing
Actuating Pipe	to	Actuating Pipe		
B.C. Equalizing	to	Ind. App. & Release	to	B.C. Equalizing
Sanding	to	Sanding	to	Sanding

26-L and 24-RL equipped units can be operated together in any combination. 26-L and No. 6 equipped units can be operated together in any combination. With 26-L equipped unit leading one or more 24-L equipped units, No. 6 equipped units can trail.

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