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**JERSEY CENTRAL LINES**

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**THE NEW YORK AND  
LONG BRANCH RAILROAD  
COMPANY**

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**INSTRUCTIONS**

**GOVERNING**

**Signalmen**

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## JERSEY CENTRAL LINES

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The Central Railroad Company of New Jersey  
Walter P. Gardner, Trustee

The Central Railroad Company of Pennsylvania  
Mount Hope Mineral Railroad Company  
Wharton and Northern Railroad Company

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THE NEW YORK AND LONG BRANCH  
RAILROAD COMPANY

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INSTRUCTIONS  
GOVERNING  
SIGNALMEN

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BOOK No.

Form No. 17361

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The Rules herein set forth govern Signalmen of the Jersey Central Lines and The New York and Long Branch Railroad Company.

They take effect October 15, 1946 (superseding instructions of August 1, 1934), and supplement, but do not supersede any other existing rules or special instructions.

E. T. MOORE,  
*General Manager.*

APPROVED:

W. M. WYER,  
*Chief Executive Officer.*



## **SAFETY IS OF THE FIRST IMPORTANCE IN THE DISCHARGE OF DUTY.**

### **1. General**

(a) The term "Signalman" applies to an employee who operates or directs the operation of signals from an Interlocking Station.

(b) These instructions supplement but do not supersede any rules or special instructions in effect.

(c) When an employee who is posting feels that he or she has qualified at a particular interlocking, the regularly assigned Signalman shall advise Chief Train Dispatcher in writing. Chief Train Dispatcher or his representative shall then pass upon the qualifications of the employee with respect to the handling of traffic. The Signal Supervisor or his representative shall examine the employee in matters relating to handling of the interlocking machine, time releases, indicators and special conditions at the station.

(d) Signalman must not open a power (electro-pneumatic or electric) interlocking machine, or the enclosed electric levers on an electro-mechanical interlocking machine.

(e) Signalman must not complete a lever movement or clear a signal when the electric lock is released by the Signal Maintainer until he has assured himself by personal observation, or by written advice from the Maintainer, that condition of track and switches in route affected are proper for train movement.

(f) Signalman must not interfere with the normal operation of interlocking machine or em-

ploy any unauthorized means to defeat its purpose.

(g) At drawbridges, Signalmen must be fully posted on and observe Federal Rules and Regulations governing the opening of drawbridges. A copy of these Rules and Regulations are posted at the Interlocking Station. They will also be governed by special instructions in effect at each drawbridge.

(h) Buildings and surroundings, the care of which is assigned to Signalman, must be kept clean and the requirement for the protection against fire observed.

(i) Interlocking machine and locking must be kept free of litter and obstructions and in neat and clean condition.

(j) Conditions that may affect the view of a signal or the reading of a signal indication, or, any other abnormal or unusual condition in the interlocking and signal apparatus adjacent to the interlocking, which come to the attention of the Signalman must be immediately reported to the Chief Train Dispatcher.

(k) Emergency tools and appliances are provided at interlockings and are in the custody of the Signalman. They shall be stored in a convenient location and may only be used by or at the direction of the Signalman.

### **2. Special Conditions**

(a) Signalmen must familiarize themselves with all Special Conditions, a description of which will be posted in the Interlocking Station.

(b) Any special condition not listed must be reported immediately in writing to the Chief

Train Dispatcher, who in turn will notify the Signal Engineer, Signal Supervisor, and Maintainer, so that necessary correction can be made.

### 3. Transfer Record

In addition to requirements of Operating Department Rule 1302, note on Transfer Record any abnormal or irregular condition observed or reported in the interlocking plant or adjacent thereto.

### 4. Track and Signal Layout

Diagram of tracks, switches and signals or illuminated model-board indicating the normal position of switches and signals is provided in Interlocking Stations.

### 5. Operation of Interlocking Machine Levers

(a) Levers must be operated in their proper sequence and the lever latch seated to release the locking in the machine for the operation of other levers or the clearing of signals.

(b) Do not use undue force in the operation of a lever, as this may result in the breaking of the machine lever or its connections and destroying its effectiveness.

(c) When operating a switch or detector lever on an electro-pneumatic machine, after raising the latch and starting the stroke, the latch must be released until the indicating point is reached, then raised and the stroke completed.

#### (d) *Signal Levers:*

Before a lever is operated to clear a signal:

1. Signalman shall check the position of levers to determine that they are set for the proper route.

2. Signalman must determine that there is no known reason why signal should remain at stop.

3. In addition, before clearing a SIGNAL NOT CONTROLLED BY TRACK CIRCUITS (either by lever direct or lever in conjunction with push button)—

- a. Signalman must know that track section or block is unoccupied, unless it is known what train is occupying the track section and that a following move can be made with safety. If conditions are not fully known, a definite understanding must be had with crew of the train which is to be moved.

- b. Where track indicators are in service AND SHOW TRACK OCCUPIED but Signalman knows there is no train on these track sections, he must, before clearing signal, determine that there is no broken rail or other obstruction within the interlocking limits that would make a move over such track sections unsafe.

- c. Track indicators in service, show whether or not the track section or track sections which they indicate are unoccupied, except where there are rusty or sanded rails or other special conditions.

4. When placing signal lever normal, observe that the electric lock picks up

before attempting to complete the lever movement.

## 6. Traffic Levers

Where there are levers controlling "reversible traffic" between Interlocking Stations, Signalman at the beginning of his daily tour of duty or as soon thereafter as practicable, must test these levers and signals. Test must be recorded on Transfer Record. Permission must be obtained from Train Dispatcher before the test is made.

## 7. Interlocking Lever Blocking Device

(a) Reminder, in the form of a lever blocking device, must be used when a LEVER IS NOT TO BE OPERATED, as when:

1. Switch, signal or other function is out of service, due to failure of apparatus or to permit of making repairs.
2. The use of track or tracks is restricted for movement of all or certain types of trains.
3. Stop signal is displayed for Train Orders or by direction of Train Dispatcher.
4. Rusty or sanded rails interfere with proper operation of track circuit.

(b) When lever blocking device is attached to a lever, except as provided in Paragraph 3, Signalman must attach a tag to such lever, indicating why the blocking device is used.

(c) When a Signal Maintainer or other authorized Signal Repairman reports in writing that signal apparatus or interlocking levers are out of service, Signalman must acknowledge the same in writing.

(d) When such a report is received from the

Maintainer on the telephone, it must be written by the Signalman who must see to it that the Signal Maintainer or Signal Repairman signs the report when he returns to the Interlocking Station.

(e) When possible, these reports and acknowledgments should be placed directly on Transfer Record.

## 8. Time Releases and Electric Locks

(A) Time Releases:

1. If it is desired to change the route for a train that has been given a clear signal, the Signalman must move the signal lever toward the normal position as far as the electric lock will permit. He must then start the time release and after release has operated and train stopped at the interlocking signal, the route may be changed.

(B) Electric Locks on Mechanical Interlocking Machines:

(a) General:

1. Glass or seal in key box or seal on electric lock must not be broken or electric lock released by hand unless authorized by the Chief Train Dispatcher. When an emergency exists and it is impossible to communicate with the Chief Train Dispatcher, Signalman, after taking necessary precautions and knowing the location of all trains, may release the lock by hand.

2. When electric lock has been released by hand, Signal Maintainer must be notified immediately and notation made in Transfer Record.

3. Before an electric lock may be released by hand and for each subsequent move until normal



operation is restored, the following precautions must also be taken:

(b) Signal Levers:

1. If a signal lever cannot be latched in the normal position after the time release has operated, as called for in Section 8, Paragraph (A), and the Signalman knows that the home signals controlled by that lever are in the stop position and that distant signals are displaying their proper indication, he may proceed to release the electric lock by hand.

2. If the Signalman knows that the home signals controlled by that lever are in the stop position but cannot determine that distant signals are displaying their proper indication, an arrangement may be made by the Chief Train Dispatcher to notify all trains governed by distant signals controlling the lock affected, that they are out of order, and to proceed as though the most restrictive indication were displayed. Signalman may then proceed to release the lock by hand.

(c) Smashboard Levers:

If a smashboard lever cannot be latched in the normal position and the Signalman knows that the smashboard is in the stop position, he may proceed to release the electric lock by hand.

(d) Switch Locking Levers:

If a facing point lock lever or a special switch detector lock lever cannot be unlatched due to a failure of the detector lock, the Signalman must know that no engine or cars are approaching, on or between the switches or derails affected by such lever. If a signal governing over such a switch or switches has been cleared, Signalman must know

that train approaching has stopped. He may then proceed to release the electric lock by hand.

## 9. Indicators

(a) Where indicators are in service at Interlocking Stations, they convey to the Signalman useful information. The meaning of these indicators must be understood, and levers should not be operated until indications have been noted and the meanings complied with. Any unusual operation of these indicators must be reported immediately to the Train Dispatcher and Maintainer.

(b) Maintainer will go over the meaning of indicators with the first trick Signalman once a month, the first trick Signalman will in turn handle with the second trick Signalman and second trick Signalman will handle with third trick Signalman in like manner, providing Signal Maintainers are not available for the purpose.

(c) Signalman must make record of such transaction on the Transfer Record and a monthly report to the Chief Train Dispatcher.

(d) Indicators are classified as follows:

### 1. Track Indicator

A light, semaphore or disc indicator used as a track indicator indicates the condition of one or more track sections. While the prime purpose of the indicator is to show the presence of trains on such track sections, it may also show a track occupied indication due to a broken rail, obstruction on rail, failure of track circuit, etc. When indicator shows a track occupied indication no attempt should be made to operate switch or lock lever for functions in such track sections until it is known by inspection on the ground that conditions are safe.

## 2. *KR Indicator*

KR Indicator, when lighted, indicates that a given function (such as switch, derail, rail lock, bridge lock, etc.) is not properly locked in either the normal or the reverse position. When operating a lever controlling such a function, Signalman must observe that KR indicator "lights" and then goes "dark" before he accepts the interlocking-machine-lever indication and completes the movement of lever. If indicator fails to function properly Signalman must know by inspection on the ground that conditions are safe before completing lever movement.

## 3. *Signal Indicator*

(a) When a red light provided under a signal lever or marked for a signal lever on a panelboard is lighted, it indicates that the signals controlled by the lever are at stop, but that the signal lever is not in the normal position.

(b) When signal indicators are provided on a modelboard or in an indicator cabinet to repeat the indication of signal in either the clear or stop position, they show red when the signal is at stop and green when a less restrictive indication than stop is displayed.

## 4. *Traffic Direction Indicator*

Traffic Direction Indicator when lighted indicates that traffic levels are properly set for traffic in a given direction.

## 5. *Power Indicator*

Where this type of indicator is in service it is described in instructions under Special Conditions posted in Interlocking Stations.

## 6. *Indicators at Drawbridge*

Mitre rail, power current, power circuit controller and drawbridge indicators are described in instructions under Special Conditions posted in Interlocking Stations.

## 7. *Train Starting Indicator*

Train Starting Indicators are described in instructions under Special Conditions posted in Interlocking Stations where train starting signal system is in service.

## 8. *Special Indicators*

Electrically locked hand switch, cross protection, centralized traffic control, poweroff alarm, capacity ground indicators, etc., are described in instructions under Special Conditions posted in Interlocking Stations.

## 10. **Signal Lights**

(a) Where electric current for signal lighting is controlled by the Signalman, lights must be used on all signals from sunset to sunrise and whenever the signal indications cannot be clearly seen without them.

(b) High power must be used on color light signals at all times during foggy weather, snow storms or other conditions affecting visibility, and during normal weather from the period of complete darkness before sunrise to the period of complete darkness after sunset.

(c) Low power or dimmer must be used on color light signals only during the period of complete darkness, except as provided in Paragraph (b).



## 11. Gas Electric Sets

(a) Gas electric set for furnishing electric power in emergency is located at certain Interlocking Stations, or substations adjoining Interlocking Stations.

(b) When gas electric set is running the proper ventilation should be given by opening the windows and doors in room or building where gas set is located.

(c) Instructions relative to power indicators, control of the emergency equipment and precautions to be taken are described under Special Conditions where this type of apparatus is in service.

(d) Before restoring normal supply make certain, by consulting Train Dispatcher, that no moves are being made in territory controlled by the power furnished by gas electric set, except in case the emergency power does not function to supply the power.

## 12. Air Pressure

(a) Air pressure gauges are located at certain Interlocking Stations. Observe and report anything unusual to Train Dispatcher and Maintainer and note on Transfer Record.

(b) When the air pressure is below normal at an electro-pneumatic interlocking plant, care must be used in throwing switch levers. DO NOT operate more than one switch lever at a time. The operation of one switch lever must be completed before starting to operate another.

## 13. Emergency Signals—Whistle or Horn

(a) For railroad traffic and employes the following code shall be used:

NOTE:—The signals prescribed are illustrated by “o” for the short sounds; “—” for the longer sounds.

SOUND	INDICATION
(a) ———	All movements within interlocking limits stop immediately.
(b) o o	Resume normal movement after receiving the proper signal or permission from the signalman.
(c) o o o	Whistle or horn test.
(d) o o o o	Calling signal maintainer or repairman.
(e) o o o o o	Calling section foreman or trackmen.
(f) o o o o o o	Calling yard master or other designated employe.
(g) o o o o o o o	Calling catenary maintenance repairmen.

NOTE:—The use of these horns or whistles to give audible signals for purposes other than those prescribed is prohibited except as authorized in Special Conditions at Interlocking Stations. None of these signals, except (a), shall be used while train is moving through plant.

(b) For navigation at drawbridges use code prescribed in the Federal Rules and Regulations, copy of which is posted in the Interlocking Station.

(c) Care must be taken to avoid confusion of railroad and navigation whistle signals.

(d) Whistle or Horn must be tested daily on each trick when Signalman comes on duty and at

such other times as special conditions may require. Record of test must be entered on Transfer Record.

(e) Tests must not be made when trains are passing or navigation is approaching or passing through draw.

#### 14. Failures in Interlocking Plants

(a) When there is a failure in an Interlocking Plant, notify the Train Dispatcher and the Maintainer immediately.

(b) If the trouble is with a switch or derail and NO MAINTAINER IS AVAILABLE,

1. Signalman must then make examination on the ground and remove any obstruction.

2. If still unable to operate and lock the function, notify the Train Dispatcher again and be governed by his instructions.

3. No train movements must be made over a switch which is not properly locked from the interlocking machine until the points operated by such lever are fully secured as provided in Section 15.

4. Before giving a train a hand signal over such switch, the entire route must be patrolled and the Signalman must know that all switch points in the route are in proper position for the train movement.

5. The same procedure must be followed for each subsequent move of the switch or derail until the arrival of the Maintainer.

6. When necessary to leave the Interlocking Station account of making examination on the ground, the Train Dispatcher must direct

which signals for routes not affected are to be cleared.

#### 15. How to Secure a Switch

(a) The closed point must be securely held against the stock rail by two spikes, one driven in each of the two head ties; each spike to pass through hole in the tie plate where possible.

(b) Where regulation switch wedges are provided, the closed point must be securely held against the stock rail by a spike driven in the head tie and when possible through hole in tie plate and a wedge driven between the open point and stock rail.

(c) Spikes should be well driven in such a manner that the passages of a train over the switch will not loosen the spikes or allow the points of the switch to open.

(d) The lock plunger at a mechanical interlocking plant must be inserted through lock rod when possible.

(e) The controlling lever must be secured in position corresponding to that of the switch when possible.

#### 16. Mechanically Operated Interlocking Plant

(a) If a switch or derail cannot be locked, the switch lever must be placed opposite and again moved to the position desired. Attempt should then be made to reverse the facing point lock lever. If movement of the lock lever cannot be completed after at least four attempts as described, it should be considered a failure.

(b) If there is a failure of a switch or derail and the points or function are found unob-

structed, the entire pipe line and all cranks and compensators must be examined.

(c) If a lever controlling a mechanically operated signal cannot be properly latched, examination must be made on the ground to determine if pipe or wire lines are obstructed.

#### 17. **Electro-Pneumatic Interlocking Plant**

(a) Before attempting to remove an obstruction from a switch point, place the switch lever in the position opposite that in which the failure occurred.

(b) When switch points follow the movement of the lever, but the switch indication fails to come in, preventing the placing of lever in the full normal or the full reverse position, operate lever as far as it will go in the desired direction. Then examine switch on the ground and after making certain that the switch is in the proper position, corresponding with the lever, secure the switch as provided in Section 15, after which keep away from lever.

(c) When switch points fail to follow the movement of the lever, and switch indication prevents the restoring of lever to its full normal or reverse position, and it is desired to use switch points in the position in which they lie, Signalman must operate lever to the corresponding position. Examination must then be made on the ground and after making certain that the switch is in the proper position, corresponding with the lever, secure the switch as provided in Section 15, after which keep away from lever.

#### 18. **Electro-Pneumatic Bridge and Rail Locks at Drawbridges**

(a) When unable to complete stroke of bridge-lock-lever after indicator shows that draw is down, notify the Train Dispatcher, then go on the ground and observe if drawbridge is in place. If not, remove any obstruction that may be preventing the proper seating of the bridge.

(b) If still unable to complete stroke of the bridge-lock-lever after indicator shows that draw is down, and it being advisable to again apply power to the bridge, place the drawbridge lock lever in the normal indication position, break the glass or seal for the bridge-lock-lever emergency push button, and then while pressing button restore the bridge-lock-lever to normal in accordance with instructions described under Special Conditions for such interlockings.

(c) When the mitre rails cannot be locked, notify the Train Dispatcher, then go on the ground and remove any obstruction that may be preventing the proper seating and locking of the mitre rails.

(d) If still unable to complete the stroke of the rail-lock-lever, due to rails not being down in place, and it being advisable to again move the draw to determine the cause of the trouble, place the rail-lock-lever in the normal indication position, break the glass or seal for the rail-lock-lever emergency push button, and then while pressing button restore the rail-lock-lever to normal in accordance with instructions described under Special Conditions for such interlocking.



## 19. Electric Interlocking Plant

(a) Before attempting to remove an obstruction from a switch point, place the switch lever in the position opposite that in which the failure occurred.

(b) At Interlocking Plants where the switches and derails are operated by electric motors, such switches and derails in emergency may be operated by hand in accordance with Special Instructions posted in the Interlocking Station.

## 20. Signal Failures and Hand Signals

(a) An interlocking signal which fails to give a less restrictive indication than "stop" after the signal lever has been moved to clear the signal, should not be considered out of order until Signalman knows:

1. That route is properly lined up and that the movement of signal lever is fully completed.
2. That route over which signal governs is unoccupied.
3. That switches have been checked on ground and found to be locked in proper position.
4. That track has been checked and no broken rails found.

(b) Before a hand signal is given in accordance with Operating Department Rule 628 the signal lever for the route to be used should be moved to the clear position when this is practicable.

## 21. Sanding of Rails

Should Signalman observe any violation of Operating Department Rule 667 regarding the

use of sand through interlockings, the violation must be immediately reported to the Train Dispatcher and Maintainer and utmost care used in the operation of the switches until sand has been removed from the rails. Use lever blocking device—see Section 7, Paragraph 4.

## 22. Rusty Rails

(a) Where a certain portion of track is so infrequently used as to interfere with the proper shunting of the track circuit, levers controlling functions in such track sections must be protected with a lever guard and a Rusty Rail Tag. If a lever guard or a rusty rail tag is in place instead of both as prescribed, either will indicate the same as both.

(b) Where rusty rails interfere with proper shunting of track circuits, approach, route and detector locking may not be effective. See Operating Department Rule 616.

(c) Where track indicators are provided the Signalman should when within his range of vision, observe the movement of trains to check that detector circuit is operating properly. The purpose of this visual check is to disclose an improper detector indication which may result from rusted or heavily sanded rails.

(d) Signalman going on duty must check the list of interlocking levers marked "Rusty Rail" daily, and see that all levers so listed are provided with lever guards and "Rusty Rail" tags. Signalman will then make the following notation on Transfer Record:

"All levers marked on 'Rusty Rail' list are provided with lever guard and 'Rusty Rail' tags".

### 23. Signaled Track Used for Storage of Cars

(a) When cars are stored on a track protected by automatic block signals, the Signalman handling the movement shall notify the Maintainer or Signal Supervisor that the track is blocked.

(b) When cars are stored within the limits of an Interlocking, the Signalman must protect the lever with a blocking device. See Section 7, Paragraph 2.

(c) When the cars are to be removed, Signalman must notify the Maintainer or Signal Supervisor, who will advise when track is safe for normal operation.

### 24. Light Weight Equipment

(a) Light weight gas-electric and oil-electric engines or cars do not provide reliable approach, route and detector indication.

(b) Signalman must observe closely all track indicators during the time these engines or cars pass over track circuits, reporting promptly any irregularities to the Train Dispatcher. After Signalman has set up a route for this type of equipment over an interlocked switch or switches beyond his range of vision or at a remote location, the route must not be changed until crew of such engine or car has reported that it is either stopped short of or clear of switch or switches involved, or has been reported clear of block by Signalman at next block or Interlocking Station. When the movement is beyond the Signalman's range of vision such engine or car must not be reported or considered clear of block or interlocking limits

on information received through track circuit indicators. See Operating Department Rule 616.

(c) The same precautions as outlined in paragraph (b) must be taken by Signalman in the handling of track cars and Maintenance of Way equipment whether or not such track cars and equipment are insulated.

### 25. Electrified Territory

(a) Signalmen observing any exceptional flashes on the overhead trolley or transmission wires must immediately advise the Chief Train Dispatcher. Signalmen shall observe passing trains and report damaged pantographs or foreign material such as limbs of trees caught in the pantographs.

(b) The contact wires over each track are fed through circuit breakers at each substation along the right of way. In the event of a short circuit, the circuit breakers in the substation on either side of the short circuit will automatically open, de-energizing that particular section of line. The Power Dispatcher will attempt to reclose the circuit breakers and if the trouble has cleared itself the section of trolley affected will be energized at once. If, however, the trouble has not cleared, the breakers will not remain closed and the section of trolley will remain de-energized until the trouble has been located and the lines properly sectionalized. With each reclosing of the breaker, if the short circuit has not cleared, there will be a flash which should be reported at once by the Signalman.

(c) In order to prevent the entire section of track between substations being out of service in the event of trouble on the trolley lines, addi-



tional sectionalizing has been provided. By means of switches, sections of the contact wire may be de-energized and the remainder of the lines left free for electric operation. The switches or sectionalizing points are usually located at Interlocking Stations. A colored diagram has been provided in each Interlocking Station showing in color the sections of catenary wires that may be de-energized in that Interlocking Plant.

(d) Whenever it becomes necessary to de-energize a section of trolley wire, the Power Dispatcher will communicate with the Chief Train Dispatcher, who in turn will issue instructions to the Signalman concerned. In an emergency the Power Dispatcher will communicate directly with the Signalman, in order to prevent running a train into a de-energized section.

(e) When it is necessary to block a section of track or tracks prohibiting movement of electric trains, the Signalman shall place an interlocking lever reminder or Blocking Device on the signal lever or route key switch governing movement to the track affected. Extreme caution shall be exercised in routing trains when certain tracks are out of service, as the misrouting of an electric train into a de-energized section will transmit energy from energized to the de-energized section, jeopardizing the lives of maintenance men engaged in repairs.