

# ICC PROPOSES RS & I CHANGES

The following is abstracted from briefs of the ICC, AAR, and RLEA, which present the parties' positions. Future RS&C coverage will include the examiner's report and final ICC disposition of this Ex Parte 171 hearing. (Note: material in italics denotes the latest proposed changes in the rules.)

**136.2 Grounds**—Each circuit, the function of which affects the safety of train operation, shall be kept free of any ground or combination of grounds which will permit a flow of current equal to or in excess of 75% of the release value of any relay or other electromagnetic device in the circuit, except circuits which include any track rail and *except the common return wires of single-wire, single-break, signal control circuits using a grounded common, and alternating current power distribution circuits which are grounded in the interest of safety.*

#### Bureau of Safety and Service, ICC

When the common return wire of a single-wire, single-break signal control circuit is intentionally grounded, any undesired ground which may occur in such circuit will result in the signal displaying its most restrictive aspect and it is not possible to get "false clear" aspects as a result of such undesired ground.

The common practice in the electrical industry is that all alternating current distribution circuits be grounded. The evidence is clear that alternating power distribution circuits are never connected directly to the signal control circuits because such power is not in usable form. The voltage must be reduced by a transformer before it can

be used in a signal control circuit. Hence the alternating current power distribution system of necessity must always be isolated from the signal control circuit by a transformer. The suggestion that such power distribution circuits be isolated accomplishes nothing not already provided for by the rules.

It therefore appears this modified rule is supported by substantial evidence and should be adopted.

#### Association of American Railroads

The AAR supports the proposed revision in its entirety.

As Mr. Billingslea testified, grounding of the common return in a single-wire, single-break common return signal system is essential to the safety of train operation. If an unintentional ground should occur in the negative or in the grounded return circuit there would be no undesirable result since the negative system would already be grounded. If such an unintentional ground should occur in the positive or control circuit it would result in a short circuit between the positive and negative batteries which, in turn, could never result in an aspect less restrictive than intended. The Southern Pacific Lines, which have altogether some 4,000 miles of single-wire, single-break common return signal systems, have never had a false clear or an aspect less restrictive than intended as a result of any combination of grounds where a grounded common is used.

#### Railway Labor Executives' Association

It is clear that the ICC has not established an adequate justification for its proposed revision of Rule 2. The use of single-wire, single-break, signal control circuits with a grounded common is unsafe; there is no need to revise the rule for the few such installations presently in service. Where AC power distribution circuits are grounded, signal circuits fed from such source should be isolated in the interest of safety. The present rule should be strengthened to require that circuits be kept free of grounds which permit a flow of current of 50% of the release value of any relay or device.

**136.6 Hand-operated switch equipped with switch circuit controller.**—Hand-operated switch equipped with switch circuit controller connected to the point, or with facing-point lock and circuit controller, shall be so maintained that when point is open  $\frac{1}{4}$ " or more on facing-point switch and  $\frac{3}{8}$ " or more on trailing-point switch, track or control circuits will be opened or shunted or both, and if equipped with facing-point lock with circuit controller, switch cannot be locked. *On such hand-operated switch, switch circuit controllers, facing-point locks, switch-and-lock movements, and their connections shall be securely fastened in place, and contacts maintained with an opening of not less than  $\frac{1}{16}$ " when open.*

#### Bureau of Safety and Service, ICC

The record shows that all parties to this proceeding concurred in the proposed modification of this rule and in addition there is substantial evidence in the record that said modification merely clarifies the intent of the present rule and does not alter the degree of safety now provided. Hence this rule should be modified as proposed.

**136.11 Adjustment, repair, or replacement of apparatus.**—Any piece of apparatus or any part thereof which fails to perform its intended function shall be promptly adjusted, repaired, or replaced. [Proposed revision is as follows:]

**136.11 Adjustment, repair or replacement of component.**—*When any component of a system or interlocking, except track rails, the proper functioning of which is es-*

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*essential to the safety of train operation, fails to perform its intended function, it shall be adjusted, repaired or replaced without undue delay.*

### Bureau of Safety and Service, ICC

The crux of the problem appears to be a difference of opinion as to what components are essential to train operation and the promptness with which corrective action must be taken when such components are out of order. The testimony establishes that the purpose of the proposed modification is for clarification of the original intent of the present rule and that this modification will not reduce the safety of train operations. In this connection the term "component" has been substituted for "piece of apparatus" so as to clearly bring within its scope parts which cannot be characterized as "apparatus" such as "bond wires," etc. However "component" also includes track rails because they are used in connection with track circuits, but track rails are not signal equipment. Therefore they should rightly be excluded from the application of this rule.

It is submitted rule 136.11 as proposed is supported by substantial testimony and should be adopted.

### Association of American Railroads

This proposal is admirably in accord with the language, purpose and scope of the Signal Inspection Act. It requires the repair of faulty signal devices that would adversely affect safety if the fault were not corrected before the unsafe potential of the defect became actual. More than this cannot be justified under the limited authority conferred by the Act.

Rule 11 as proposed ought to be adopted. It assures that repairs to signal devices will be made quickly and properly whenever they are needed to preserve safety, and thus fully discharges the Commission's duty under the law.

### Railway Labor Executives' Association

The proposed revision of this important rule would vastly restrict the application of this rule. Only false proceed signal indications would be required to be repaired without undue delay, as that term may be interpreted. In effect, the rule proposed would permit the deterioration of signal equipment and signal systems. For all practical purposes there would be no requirement for proper maintenance and repair of components of signal systems. Safety of operations requires that the proposed rule be rejected.

**136.51 Track circuit requirements.**—Track relay shall be in deenergized position whenever any of the following conditions exists, and the track circuit of an automatic train-stop, train-control, or cab-signal system shall be deenergized in the rear of the point where any of the following conditions exists:

(a) When a rail is broken or a rail or switch-frog is removed except when a rail is broken or removed in the shunt fouling circuit of a turnout or crossover, provided, however, that shunt fouling circuit may not be used in a turnout through which permissible speed is greater than 45 mph. It shall not be a violation of this requirement if a track is energized: (1) *When a break occurs between the end of rail and track circuit connector; within the limits of rail-joint bond, appliance or other protective device, which provides a bypath for the electric current,* or (2) as result

of leakage current or foreign current in the rear of a point where a break occurs or a rail is removed.

(b) When a train, locomotive, or car occupies any part of a track circuit, including fouling section of turnout except turnouts of hand-operated main track crossover. It shall not be a violation of this requirement where the presence of sand, rust, dirt, grease, or other foreign matter on the rail prevents effective shunting.

(c) Where switch shunting circuit is used:

1. Switch point is not closed in normal position.
2. A switch is not locked where facing-point lock with circuit controller is used.
3. An independently operated fouling-point derail equipped with switch circuit controller is not in derailing position.

### Bureau of Safety and Service, ICC

The record in this proceeding shows that the proposed revision of rule 136.51 is necessary because literal compliance is impossible under the present rule. Nothing is either added or taken away from its intent and purpose. At best, broken rail protection is very limited because of the various metal parts in track construction which are used to contribute to its stability and safety. Those parts cannot be eliminated without creating much greater hazards to train operation than the occasional broken rail they conceal. Also while greater broken rail protection can be and is provided by series fouling circuits at crossovers or turnouts, expense of installation far outweighs the added possible broken rail protection provided. The Commission by its present rule requires such series fouling circuits for speeds in excess of 45 mph. There appears to be no practical reason why this requirement now should be expanded to speeds in excess of 25 mph. Also, it is not practical to adopt the Brotherhoods' suggestion to limit the location of the track connector to within 3" of the end of the joint bar because installation machines are so designed that such installation is often impossible.

### Association of American Railroads

The Bureau's proposal is a sound one that takes due account of the necessary relation between signal rules and safe track structure. The RLEA's proposal utterly disregards the need for protective rail devices, thus treating signal detection of rail defects as all-important and the prevention of such defects as of no importance at all. Other elements of the RLEA proposal would combine unlawful infringement on managerial prerogatives with featherbedding. The Bureau's proposal should therefore be adopted and the RLEA's rejected.

### Railway Labor Executives' Association

Safety of train operations requires that this important rule concerning track circuits be revised to promote the greatest possible broken rail protection and effective shunting as detailed in the RLEA's proposed revision. The rule should be revised to strengthen the intent of the rule to provide greater safety at times when the track is unsafe for the passage of trains.

**136.201 Track-circuit control of signals.**—Signals shall be controlled automatically by track circuits extending through the entire block. [Proposed revision is as follows:]

**136.201 Track-circuit control of signals.**—*The control circuits for home signal aspects with indications more favorable than "proceed at restricted speed" shall be controlled automatically by track circuits extending through the entire block.*

### Bureau of Safety and Service, ICC

The rule as proposed does not change any of the

requirements of the present rule. It merely clarifies those requirements. "Controlled automatically by track circuits" in signal engineering means "controlled through the front contacts of the track relay." The aspect "proceed at restricted speed" is displayed when the current flow to the track relay is interrupted and the track relay is in open position. Under such circumstances it is impossible to control that aspect automatically by track circuits, although the aspect is automatically displayed because some condition in the track circuit caused the relay to open and break its front contact.

Hence it appears the proposed modification is supported by substantial evidence and will not reduce safety of train operation. Therefore this rule should be modified as proposed.

#### Association of American Railroads

The witness for the AAR, Mr. J. R. DePriest, SAL, testified that virtually all signals in automatic block signal territory must be considered as home signals, with the exception of the distant signal.

"At the beginning of an automatic block signal system, an approach signal is usually provided. Sometimes this is called a distant signal. It is defined in Rule 136.803 as a roadway signal used to govern the approach to another signal and, if operative, so controlled that its indication furnishes advance information of the indication of the next signal."

"Since this approach or distant signal is not a block signal, it is obvious that the track circuit is not needed until the first home signal of an automatic block signal system is reached. The approach or distant signal only furnishes information with respect to the indication of the first home signal which governs trains using the first block."

A review of all the testimony on the question whether "proceed at restricted speed" and less favorable aspects are, should be, or can be controlled automatically by track circuits leads to but one conclusion—the answer depends on the witness's definition of the words "controlled automatically." But the significant point is that no witness even attempted to deny that under the present rule signals work as they should—i.e., automatically. Since the proposed rule makes no change in this automatic element of the signals, it follows that adoption of the proposal cannot affect either safety, the design and operation of signal systems, or the operation of trains.

#### Railway Labor Executives' Association

The justification for this revision of the rule is in essence a technical argument that proceed at restricted speed aspects are not now controlled by track circuits since these aspects are governed by signal control circuits chosen through the back contacts of the track relay. However, when these back contacts are used to cause approach lighting of the signal, it cannot be said that the track circuit does not control the approach lighting of the signal. The stop aspects of signals are similarly controlled by the track circuit. It is not correct to say that control circuits for all signals more favorable than proceed at restricted speed are broken through front contacts of track relays. Control circuits for such aspects can be started over the back contacts of track relays.

There is no justification for this proposed change in the rule which would permit certain signal aspects not to be controlled by track circuits.

**136.204 Track signaled for movements in both directions, requirements.**—On track signaled for movements in both directions, a train shall cause one or more opposing signals immediately ahead of it to display *the most restric-*

*tive aspect, the indication of which shall be not more favorable than "proceed at restricted speed".* Signals shall be so arranged and controlled that if opposing trains can simultaneously pass signals displaying proceed aspects and the next signal in advance of each such signal then displays an aspect requiring a stop, or *its most restrictive aspect*, the distance between opposing signals *displaying such aspects* shall not be less than the aggregate of the stopping distances for movements in each direction. Where such opposing signals are spaced stopping distance apart for movements in one direction only, signals arranged to display restrictive aspects shall be provided in approach to at least one of the signals. Where such opposing signals are spaced less than stopping distance apart for movements in one direction, signals arranged to display restrictive aspects shall be provided in approach to both such signals. *In absolute permissive block signaling when a train passes a head block signal it shall cause the opposing head block signal to display an aspect requiring a stop.*

#### Bureau of Safety and Service, ICC

The proposed revision of this rule will not change any of the basic requirements of the present rule and will not adversely affect safety of train operation. The purpose of this revision is to clarify the intent of the present rule which is that it is not necessary to stop at a signal when it displays a "proceed at restricted speed aspect." Such aspects long have been in use on certain railroads at various locations such as heavy ascending grades, etc., when it was deemed undesirable to bring a train to a full stop. That practice has not been found to be hazardous. The proposed revision also insures a head block signal in an absolute permissive block signal system to display an aspect requiring stop as its most restrictive indication. The footnote was deleted because no longer applicable.

Since safety of train operation will not be reduced and this proposal is supported by substantial evidence, the rule should be modified as proposed.

#### Association of American Railroads

The only present issue with respect to Rule 204, is whether the existing practice of permitting opposing train movements at restricted speed in automatic block signals territory is proper and safe. And Mr. DePriest testified that restricted speed operations are a common occurrence, arise every day on railroads throughout the country, and are absolutely essential for railroad operations. He showed, moreover, that it would be impossible to operate a railroad entirely by signal indication without the "proceed at restricted speed" aspect.

The proposed rule recognizes the existence, desirability, and even necessity of grade and tonnage signals and in this very limited area does nothing more than allow the railroad industry flexibility in designing signal systems and improving the efficiency of train operations. The rule as further proposed should be adopted.

#### Railway Labor Executives' Association

This proposed revision permits an inherently dangerous and unsafe condition when two opposing trains are permitted in the same block at speeds up to 20 mph each. The positive protection of stop signals for each train, required by the present rule, would be abandoned. The revised rule would eliminate the requirement of a positive stop for opposing movements, and would permit a train to pass signals without stopping and enter a block occupied by an opposing train. This creates a situation where a train crew, because of the nature of the air brakes and train handling problems, may have difficulty in complying with the speed restriction of 15 or 20 mph upon entering a block con-

taining an opposing train. Practical operating problems exist for the engine crew which may result in accident and injury in releasing brakes at slow speed or in danger of collision.

The RLEA submits that the proceed at restricted speed aspect should not be authorized by the Rules where hazardous conditions are created. The RLEA does not oppose the use of this signal aspect at all times. The RLEA opposes the Rule permitting such hazardous signal aspect (1) for opposing movements in automatic block-signal territory, Rule 204; (2) for opposing and conflicting movements in traffic-control territory, Rules 404 and 405; (3) for movements into interlocking route containing switch, frog, or derail not in proper position, Rule 303; and (4) for movements at interlockings not protected by approach or time locking, Rule 305.

The requirement of stopping before proceeding past an aspect of stop and proceed insures that the importance of maintaining a sharp lookout ahead and keeping the speed of the train within restricted speed limits will be definitely impressed upon the engine crew and that the train will be operated with the care and caution that is necessary.

It can clearly be seen that the signal aspect proceed at restricted speed is a highly dangerous signal aspect which should not be used to permit opposing and conflicting moves in automatic block-signal and traffic-control territory, for movements into interlocking route containing switch, frog or derail not in proper position, and for movements not protected by approach or time locking at interlocking. The ICC proposed revisions of Rules 204, 404, 405, 303 and 305 would permit such signal aspects under the hazardous conditions discussed, and thus should not be adopted.

**136.301 Where signals shall be provided.**—Signals shall be provided to govern train movements into and through interlocking limits, *except that a signal shall not be required to govern movements over a hand-operated switch into interlocking limits if the switch is provided with an electric lock and a derail at the clearance point, either pipe-connected to the switch or independently locked, electrically.*

*Note.*—*Relief from the requirements of this section will be granted upon an adequate showing by an individual carrier. Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.*

#### **Bureau of Safety and Service, ICC**

The proposed revision of this rule does not require a signal in an interlocking where a hand-operated switch is electrically locked and a derail is provided either pipe connected to the switch or independently electrically locked. The Commission has received many applications for relief from the present requirements of section 136.301 because it has been found impractical to install a signal for every hand-operated switch in an interlocking. Relief has always been granted upon the same conditions as now proposed in this rule. The practical effect of this rule change is that it would relieve both the Commission and the industry of the burden of processing applications for this sort of relief. Also the rule as proposed virtually provides the same protection as presently provided by the signals, because approach and time locking are required by the rules for the switch and derail. Also the effect of this revision is to provide the absolute protection of a derail for that protection provided by a signal. It has not been found unsafe to permit trains to enter interlockings at hand-operated switches, equipped as here pro-

posed, even though no interlocking signal was provided. Therefore the record supports modification of the rule as proposed.

#### **Association of American Railroads**

The witness for the AAR, Mr. DePriest offered reasons why the change is desirable:

"It seems clear, therefore, that if the electric lock is provided in lieu of the signal, then (1) the switch equipped with the electric lock could not be opened if a signal for conflicting movements through the interlocking had been cleared; and (2) once the switch had been unlocked or the detector circuit occupied, it would be impossible for any signal to clear that would permit a conflicting movement.

"Rule 301, as further proposed, is needed by the railroad industry, because, at [m]any interlockings, situations arise where it is not practicable to install signals for the protection of industrial and other tracks. Adequate protection, however, can be provided for railroad traffic by equipping the hand-operated switch with an electric lock and derail at the clearance point.

"Such an installation will provide virtually the same approach or time locking protection as is now provided by signals."

An electric lock, when used in place of such a signal at a hand operated switch as permitted by proposed Rule 301, gives exactly the same protection. Under Rule 314, which is no longer in issue here, approach or time locking must be provided at such locks; and under Rules 760 and 768, such approach or time locking is necessarily accompanied by prevention of conflicting movements in interlocking limits.

Existing safety will be fully maintained under proposed Rule 301. The proposal will remove an administrative burden from the Commission's staff and will allow the railroads necessary flexibility in situations where installation of signals is impracticable. The proposal should therefore be adopted.

#### **Railway Labor Executives' Association**

Movement into an interlocking should not be permitted by means other than signals which indicate conditions affecting the movement of trains. The proposed rule sets aside the time proven protection provided at interlockings.

It is assumed that it is the intent of the rule that a signal need not be provided only on the industrial track to govern movements from that track into and through the interlocking. However, the rule does not clearly state this; under the plain wording of the rule it would not be necessary to provide a signal on the main line over the hand-operated switch. Rule 314 containing similar language would support this interpretation. Rule 314 refers to "movements over such switch or derail" in referring to signals on the main track governing movements over a hand-operated switch. The same wording is used in proposed Rule 301, and could be interpreted to mean that no signal is required for movements on any track, main line or other, that contained a hand-operated switch with an electric lock.

In the interests of safe operations into and through interlocking plants the present rule should be retained.

**136.302 Track circuits and route locking.**—Track circuits and route locking shall be provided. *Route locking shall be effective when the first pair of wheels of a locomotive or car passes a point not more than 13 ft in advance of the signal governing its movement.*

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Note 1.—Relief from the requirements of this section will be granted upon adequate showing by an individual carrier. Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.

Note 2.—Existing installations on each railroad, which do not conform to the requirements of this section shall be brought into conformity *within 5 years of the effective date of this rule.*

**Bureau of Safety and Service, ICC**

The record in this proceeding shows that the parties concur in the proposed modification of this rule. Also, there is substantial evidence in the record which justifies adoption of the rule as proposed. While the present rule requires route locking between opposing home signals in an interlocking, it has never been so literally construed either by the railroads or the Bureau of Safety and Service. Insulated joints are almost never placed directly opposite the home signals. Where the variance is not great, there is no hazard. Therefore in order to permit some latitude in the placing of insulated joints, it is proposed that such insulated joints be not more than 13 ft in advance of the signal. This change if adopted will not adversely affect the safety of train operation.

**136.303 Control circuits for signals, selection through circuit controller operated by switch points or by switch locking mechanism.**—*The control circuit for each aspect with indication more favorable than "proceed at restricted speed" of power-operated signal governing movements over switches, movable-point frogs and derails shall be selected through circuit controller operated directly by switch points or by switch locking mechanism, or through relay controlled by such circuit controller, for each switch, movable-point frog, and derail in the routes governed by such signal. Circuits shall be arranged so that such signal can display an aspect more favorable than "proceed at restricted speed," only when each switch, movable-point frog, and derail in the route is in proper position.*

*Note: Relief from the requirements of this section will be granted upon an adequate showing by an individual carrier. Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.*

**Bureau of Safety and Service:**

The record in this proceeding shows that the proposed modification of this rule in part is to clarify the present rule's intent. That intent is that every aspect more favorable than "proceed at restricted speed" must be circuit controlled. The Bureau of Safety and Service found some railroads construing this rule so as not to require switch selection circuits for any signal regardless of the aspect displayed, when speed through the interlocking is restricted by special instruction or time table to not exceeding 20 mph. Should the proposed rule be adopted, it will no longer be possible to evade the requirements for switch selection circuits by fixing a maximum speed of 20 mph through the interlocking.

The proposed modification of section 136.303 would include trailing point switches, movable point frogs and derails not now provided with switch circuit selection. Such requirement will make this rule more restrictive and will result in some expense to the carriers. However, switch circuit selection is an important safety feature in the use of power operated signals. The present rule recog-

nizes this safety feature by requiring switch circuit selection in connection with future installation of all switches, movable point frogs and derails in routes governed by power operated signals. Cost of compliance should not be permitted to outweigh the increased safety benefits derived from the proposed rule. However it would appear only reasonable to provide for some interval of time for the railroads to bring such non-conforming installations into compliance. In line with the suggestion made by the witness for the Bureau of Safety and Service, it is suggested a note be appended to section 136.303 in substantially the following form:

"Existing installations of trailing point switches, movable point frogs and derails not in compliance with the requirements of this section must be brought into conformity within 5 years from the effective date of this rule."

As to the contention that conflicting movements can be established, it should be noted when a train is authorized by signal indication to proceed over a route in an interlocking, even at restricted speed, it is not possible to display a signal for a conflicting route. Hence the danger anticipated by the opponents to this rule modification do not exist and the rule should be modified as proposed.

**Association of American Railroads**

Prior to the revision of the signal rules in 1950 there was no requirement that circuit controllers be used to select control circuits at interlockings as respects trailing point switches, frogs, or derails in connection with movements at greater than restricted speed (though many such installations had been put in service before 1950). The present Rule 303, adopted in that year, required that this additional feature be made a part of new systems "hereafter installed," thereby exempting from the requirement those interlockings not then in conformity. During the 13 years that have elapsed since then, all new installations subject to the rule have of course contained trailing point circuit controllers. Since many of these new plants replaced older ones that did not contain the trailing point feature, the number of the latter in service has dwindled considerably in the interval.

Mr. Anderson suggested that the proposal be modified to require conformity when the older interlockings are rebuilt or modernized and Mr. Youngwerth agreed that this would be both acceptable and desirable. This result can and should be brought about by the addition of the following note to Rule 303 as proposed:

Note: Existing installations that do not meet the trailing-point switch, movable-point frog, or derail requirements shall be brought into conformity with such requirements when major modification of the interlocking is made.

**Railway Labor Executives' Association**

The RLEA supports the ICC proposed revision of the rule with one change to require that control circuits shall prevent signals from displaying an aspect more favorable than stop unless each switch, frog, and derail in the route is in the proper position. The ICC proposal would permit an aspect of proceed at restricted speed to be given without the signal checking to insure that switches, frogs and derails are in the proper position. The ICC proposal would permit a signal to be given for a train to proceed at restricted speed without stopping with a switch open more than ¼ inch.

This rule should require that a movement be held at stop in event of an improperly positioned switch, frog, or derail.

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**136.305 Approach or time locking.**—Approach or time locking shall be provided in connection with signals displaying aspects with indications more favorable than “proceed at restricted speed.”

**Bureau of Safety and Service, ICC**

The proposed revision of this rule is to clarify the rule's present intent and to prevent circumvention. Some railroads have fixed a maximum speed, by timetable or special instruction, of 20 mph through the interlocking in lieu of approach locking. The intent of the present rule is to require approach locking for all signal aspects with indications more favorable than “proceed at restricted speed.” The revision proposed clarifies this intent and will insure against its requirements being circumvented. The proposed rule is no less restrictive than the present requirements and does not decrease safety. Approach or time locking is not necessary when an interlocking signal displays a “proceed at restricted speed” aspect, because such aspect cannot be displayed unless the approach signal displays an aspect “approach the home signal prepared to stop.” There is no possibility that a train will pass an approach signal displaying a “clear” or “proceed” aspect and then encounter a home signal displaying “stop” or “proceed at restricted speed” aspect. Also it is not necessary to provide time locking for a dwarf signal with its most favorable aspect being “proceed at restricted speed” because any movement governed by such aspect would not be approaching such signal at a speed greater than “approach signal prepared to stop.” Thus it appears the opponent's suggested rule is not necessary to insure safety of train operation. Conflicting movements are not possible under the rule as proposed. Also, whether the home signal displays “stop” or “proceed at restricted speed,” the approach signal will display the same aspect, namely, “approach signal prepared to stop.” Therefore it appears the rule as proposed should be placed in effect.

**Association of American Railroads**

This proposal is more restrictive than any comparable rule the Commission has ever enforced. The 1939 Code required approach or time locking for only those “signals governing movements at high or medium speed”. The Commission has never required such locking for signal aspects governing movements at restricted speed—nor is there any evidence of record indicating that it should do so now.

Mr. G. B. Anderson, ICC, testified that time locking is provided in connection with these signals, primarily

“to insure that after a train has passed an approach signal for an interlocking, when that signal displayed a proceed aspect, the integrity of the route for the train through the interlocking will be insured, even though the train may encounter a stop signal at the interlocking because action has been initiated to change the route after the train has passed the approach signal. This insurance is accomplished by providing a predetermined time interval which must elapse after the home signal is caused to display a stop aspect, preparatory to changing the route, before the route can be changed and a signal authorizing a conflicting movement can be displayed. Therefore, if a train passes an approach signal displaying an aspect more favorable than approach, the engineman will expect to find the home signal displaying an aspect authorizing his train to proceed through the interlocking at higher than restricted speed. How-

ever, if action has been initiated to change the route after this train has passed the approach signal, the train will encounter the home signal at stop, and the speed more than likely will be too great to enable the train to be stopped before passing the signal. But this presents no hazard, since the time locking prevents the route from being changed and a signal from being displayed for a conflicting movement.

“Now, if a proceed-at-restricted speed aspect is displayed by the home signal for a movement through the interlocking the approach signal cannot display an aspect more favorable than ‘approach,’ the indication of which is ‘approach home signal prepared to stop.’ Therefore there is no necessity for time locking in this case, since there is no possibility of a train passing the approach signal displaying a clear or proceed aspect and then encountering the home signal at stop.

“In the case of dwarf signals, whose most favorable aspect is proceed-at-restricted speed, it is not necessary to provide time locking because a train whose movement is governed by such signals is either standing or approaching the signal prepared to stop when this aspect is displayed.”

The AAR is in full agreement with this position. It is manifestly sound.

**Railway Labor Executives' Association**

The RLEA proposed a revision of the rule to provide approach or time locking for all signal aspects more favorable than stop. In the interests of safety a train proceeding on a route into an interlocking should be protected by this locking. All signals displaying an aspect more favorable than stop should be provided with this locking. All aspects more favorable than stop authorize a movement into the interlocking.

This rule should not permit these hazardous conditions. The RLEA proposed revision to provide for approach or time locking for all aspects permitting movements into an interlocking is necessary to provide for safe operations and should be adopted.

**136.311 Signal control circuits, selection through track relays, and through signal mechanism contacts and time releases at automatic interlocking.**—The control circuits for aspects with indications more favorable than “proceed at restricted speed” shall be selected through track relays for all track circuits in the route governed, or through repeating relays for such track relays. At automatic interlocking, signal control circuit shall be selected (1) through track relays for all track circuits in the route governed and in all conflicting routes within interlocking limits, or through repeating relays for such track relays; (2) through signal mechanism contacts or relay contacts closed when signals for such conflicting routes display stop aspects; and (3) through normal contacts of time releases for such conflicting routes or contacts of relays repeating the normal position of contacts of such time releases.

*Note.*—Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.

**Bureau of Safety and Service, ICC**

There is no change whatsoever in the proposed revision of this rule except by the addition of a footnote which relates to relief heretofore granted. This footnote is necessary to extend prior relief to the rule as proposed and safety of train operation will not be affected. Since all parties to this proceeding concurred in this proposed modification, and the record shows substantial ground in support thereof, it would appear appropriate that this modification

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be placed in effect.

**136.312 Movable bridge, interlocking of signal appliances with bridge devices.**—When movable bridge is protected by interlocking, the signal appliances shall be so interlocked with bridge devices that before a signal governing movements over the bridge can display an aspect to proceed, *the bridge must be locked and the track aligned*, with the bridge locking members within 1" of their proper positions and with track rail on the movable span within  $\frac{3}{8}$ " of correct surface and alinement with *rail seating device* on bridge abutment or fixed span.

**Bureau of Safety and Service, ICC**

The proposed rule substitutes the phrase "bridge must be locked and track aligned" for "bridge and track must be aligned and locked." This change was prompted because in modern draw bridge installations track is no longer locked by plunger locks or other mechanical locks. Alinement is now checked by circuit controller or other electrical devices. Since these devices are just as reliable, if not more so, the rule was modified accordingly. The term "rail seating device" was substituted for the term "rail" in the last sentence by agreement of the parties in the interests of clarity. Since the rule as proposed has received the support of all parties to the proceeding, and the modification is in the interests of safety, it would appear appropriate this proposed rule be placed in effect.

**136.314 Electric lock for hand-operated switch or derail.**—Electric lock shall be provided for each hand-operated switch or derail within interlocking limits, except where train movements are made at not exceeding 20 mph. At manually operated interlocking it shall be controlled by operator of the machine and shall be unlocked after signals governing movements over such switch or derail display aspects indicating stop. Approach or time locking shall be provided.

*Note.*—Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.

**Bureau of Safety and Service, ICC**

The only change proposed from the rule now in effect is the deletion of the first sentence of the note which provided for relief upon adequate showing by an individual carrier. This deletion was simply a compromise between the various parties and will not in any way alter the present requirements of section 136.314 or the safety of train operation. Since the parties to this proceeding concurred in the rule as modified, and safety of train operation is not affected, it is appropriate to place the rule as modified in effect.

**136.328 Plunger of facing-point lock.**—Plunger of facing-point lock shall have at least 8" stroke. When lever is in reverse position plunger shall pass through lock rod  $\frac{1}{2}$ " or more. [Proposed revision is as follows:]

**136.328 Plunger of facing-point lock.**—Plunger of lever operated facing-point lock shall have at least 8" stroke. When lock lever is in unlocked position the end of the plunger shall clear the lock rod not more than 1".

**Bureau of Safety and Service, ICC**

The term "lever operated" was added to the proposed rule so as to limit the application of this rule to lever operated facing point locks. Also the second sentence was

changed so as to set the standard for the unlocked rather than the locked position. The rule as proposed reverts to the requirements of former rule 322, which language appears to be much more preferable than the current text of rule 136.328. Also safety of railroad operation will not be affected by the proposed change. Since all parties to this proceeding have concurred in the rule as modified and since safety of train operation will be maintained, it appears this rule should be placed in effect.

**136.339 Mechanical locking, maintenance requirements.**—Locking and connections shall be maintained so that, when a lever or latch is mechanically locked, the following will be prevented:

(a) *Mechanical machine.*

(1) Latch-operated locking. Raising lever latch block so that bottom thereof is within  $\frac{3}{8}$ " of top of quadrant.

(2) Lever-operated locking. Moving lever latch block more than  $\frac{3}{8}$ " on top of quadrant.

(b) *Electromechanical machine.*

(1) Lever moving in horizontal plane. Moving lever more than *five-sixteenths inch* when in normal position or more than *nine-sixteenths inch* when in reverse position.

(2) Lever moving in arc. Moving lever more than 5°.

(c) *Power machine.*

(1) Latch-operated locking. Raising level latch block so that bottom thereof is within  $\frac{7}{32}$ " of top of quadrant.

(2) Lever moving in horizontal plane. Moving lever more than  $\frac{5}{16}$ " when in normal position or more than  $\frac{1}{16}$ " when in reverse position.

(3) Lever moving in arc. Moving lever more than 5°.

**Bureau of Safety and Service, ICC**

The only change proposed in this rule is in paragraph (b)(1) under electro-mechanical machine. The fractions  $\frac{7}{16}$ th and  $\frac{1}{16}$ th are increased to  $\frac{5}{16}$ th and  $\frac{1}{16}$ th, respectively. These changes make such requirements identical for both the electro-mechanical machine and the power machine. There is no logical reason for prescribing different requirements as to those dimensions for these two types of machines. Also safety of train operation will be maintained. Since the proposed revision of this rule has received the concurrence of all parties to this proceeding and safety of train operation will be maintained, this rule should be adopted as modified.

**136.402 Signal control, track circuit and control operator.**—Signal governing movement at higher than restricted speed shall be controlled by continuous track circuits. Also, in addition, at controlled point they shall be controlled by control operator, and, at manually operated interlocking, manually in cooperation with control operator. [Proposed revision is as follows:]

**136.402 Signals controlled by track circuits and control operator.**—The control circuits for home signal aspects with indications more favorable than "proceed at restricted speed" shall be controlled by track circuits extending through entire block. Also in addition, at controlled point they may be controlled by control operator, and, at manually operated interlocking, they shall be controlled manually in cooperation with control operator.

**Bureau of Safety and Service, ICC**

The phrase "signals governing movements at higher than restricted speed" has been replaced in the proposed rule by "the control circuits for signal aspects with indications more favorable than proceed at restricted speed." This change was proposed because it was found that some carriers sought to circumvent the rule by imposing by timetable or special instruction a speed limit of 20

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mph through the control point. The change was proposed to clarify the rule and insure that it could not be so circumvented.

It is universally understood by the railroad industry that "control" only occurs through the front contacts of a relay. The interlocking of a traffic control system makes it impossible to set up conflicting routes, regardless from what locations the control point is controlled.

Since the proposed revision simply clarifies the present requirements and will not reduce safety of train operation, the rule as proposed should be put into effect.

### **Association of American Railroads**

"The last sentence of Rule 402, as proposed, seems to be unclear to several of the witnesses. Of course at manually operated interlockings, it is necessary that both the control operator and the local operator at the manually controlled interlocking be able to set or hold the interlocking signals to prevent conflicting routes. In order to make this clear the last sentence of the proposed rule has been suggested to read as follows:

"Also, in addition, at controlled point, they may be controlled by control operator, and, at manually operated interlockings, they shall be controlled manually in cooperation with the control operator."

This additional change in proposed Rule 402 was acceptable to all parties. It would appear that little controversy of substance now surrounds this proposal. It should be adopted.

### **Railway Labor Executives' Association**

To permit more than one person to control the signals at controlled points destroys the basic plan of a traffic-control system and sound railroad principles. The rule would permit two persons to have control over a given territory without the knowledge of what the other intended to do.

All of the hazardous operating conditions of the proceed at restricted speed signal aspects would be permitted by the field circuits. In addition, the proposed revisions of Rules 404 and 405, discussed below, must be considered in this connection. The proposed revision of Rule 402 to provide for hazardous control of signals at controlled points should not be adopted.

**136.404 Signals at adjacent controlled points.**—Signals at adjacent controlled points shall be so interconnected that aspects to proceed on tracks signaled for movements at greater than restricted speed cannot be displayed simultaneously for conflicting movements.

### **Bureau of Safety and Service, ICC**

The proposed rule will permit carriers to display "proceed at restricted speed" aspects at both ends of a siding for entry into such siding. The present rule does not permit this installation, yet there is no hazard because opposing trains entering the same siding must proceed prepared to stop short of the other. Also the intent of the present rule was only to apply to aspects greater than proceed at restricted speed. The proposed rule simply expresses that intent. Also under rule 136.404, conflicting movements only may occur on some yard tracks and sidings, never on the main track. The rule as revised does not reduce safety of train operation. Therefore it appears this rule as proposed should be adopted.

### **Association of American Railroads**

Mr. DePriest pointed out that the proposed rule has

very limited application and that it will not affect the present method of train operations:

"I would like to emphasize the fact at this point that proposed Rule 404 has limited application, since it authorizes conflicting movements only on tracks which are so signaled that the maximum authorized speed at any time is restricted speed or less."

This rule has absolutely no effect on train operations on the main track; is applicable only to some yard tracks and sidings; does nothing more than state in unequivocal language exactly what was intended by the present rule; and merely authorizes restricted speed train operations over certain yard tracks and sidings.

Inasmuch as proposed Rule 404 only clarifies the present rule, will not affect train operations as presently conducted, and may actually improve safety, it should be adopted.

### **Railway Labor Executives' Association**

The plain meaning of the proposed rule would permit conflicting signals to be given on any track that was signaled for restricted speed as the most favorable signal aspect.

This rule should provide for stop indications for conflicting movements in traffic-control territory. The proposed rule would permit proceed at restricted speed indications for certain conflicting movements. The hazardous conditions presented to opposing movements by proceed at restricted speed signal aspects are pertinent here. The present rule provides the high degree of safety which is required to be built into a signal system by forbidding proceed aspects from being displayed for conflicting movements. The operating employees, based upon their operating experience, all considered the proposed rule as creating hazardous operating conditions.

**136.405 Track signaled for movements in both directions, change of direction of traffic.**—On track signaled for movements in both directions occupancy of the track between opposing signals at adjacent controlled points shall prevent changing the direction of traffic from that which obtained at the time the track became occupied, *except that when a train having left one controlled point reaches a section of track immediately adjacent to the next controlled point at which switching is to be performed, an aspect permitting movement at not exceeding restricted speed may be displayed into the occupied block.*

### **Bureau of Safety and Service, ICC**

The proposed revision of this rule is designed to provide a signal indication in traffic control territory to permit a locomotive to return to its train after having been cut off from its train immediately adjacent to a control point and having made a movement through such control point. Under the present rule such signal indication cannot be displayed and carriers must provide for these movements by special instructions. The Bureau of Safety and Service has received complaints because enginemen were required under such conditions to proceed back to their trains past a stop signal. The proposed rule is designed to overcome these complaints. Also, safety of train operations will not be reduced under the proposed revision of this rule. Hence section 136.405 as proposed should be adopted.

### **Association of American Railroads**

If the proposal is adopted it will eliminate the necessity for locomotives or trains to pass by "stop" indications on verbal authority supplemented by hand signals. Instead they will be enabled to return on the authority of a "proceed at restricted speed" signal. The exist-



ing procedure is plainly subject to misunderstanding and confusion and hence is more dangerous than movement authorized by "proceed at restricted speed" indication.

The proposal should be adopted to provide for the RLEA's members the additional protection that their leaders would deny them for the sake of formal consistency.

#### Railway Labor Executives' Association

The proposed rule would in effect destroy traffic locking in traffic-control territory. The only way in which opposing signals could be permitted would be to remove the traffic locking protection. In addition, under the proposed revision of Rule 402, someone other than the control operator would be able to authorize such opposing movements into a block without the knowledge of the control operator.

A return to train movement has been cited as the reason for this rule revision. However, such moves are possible now without the change in the rule. Such moves can be authorized by the control operator by verbal permission by return to train signals as at automatic interlockings in traffic-control territory. Since the necessary movement can now be authorized without the loss of traffic locking, the rule should not be revised in such a manner as to remove traffic locking protection from the traffic-control territory. The present rule providing for stop indications for conflicting movements in traffic control territory should be retained.

**136.407 Approach or time locking.**—Approach or time locking shall be provided for all controlled signals. [words "and for all electric locks on hand operated switches" deleted according to proposed revision.]

#### Bureau of Safety and Service, ICC

The proposed revision of this rule differs from the present rule in that the phrases "where required" and "and for all electric locks on hand operated switches" are deleted. This requirement is now contained in Section 136.410 as revised. Hence it is only repetitious in Section 136.407. The proposed revision neither adds anything to or takes anything away from the requirements. Also, safety will not be reduced if this revision is placed in effect.

All parties to this proceeding concurred in the proposed revision of this rule. Therefore since safety of train operation will be maintained, this revision should be placed in effect.

**136.408 Route locking.**—Route locking shall be provided where all switches are power-operated. *Route locking shall be effective when the first pair of wheels of a locomotive or car passes a point not more than 13 ft in advance of the signal governing its movement.*

*Note 1.—Relief from the requirements of this section will be granted upon adequate showing by an individual carrier. Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.*

*Note 2.—Existing installations on each railroad, which do not conform to the requirements of this section shall be brought into conformity within 5 years of the effective date of this rule.*

#### Bureau of Safety and Service, ICC

The purpose of the proposed revision of this section is to make its requirements conform to the proposed requirements of section 136.302 hereinbefore discussed. The reasons for the proposed changes are identical to those advanced in our discussion of said section 136.302. Since

control points are essentially interlocking, the same route locking requirements should prevail for interlocking and control points of traffic control systems. Safety of train operation will be maintained by the rule as proposed.

Since all parties to this proceeding concur in the proposed revision of section 136.408 and safety of train operation will be maintained, this rule should be revised as proposed.

#### **136.502 Automatic brake application, initiation by restrictive block conditions stopping distance in advance.**

—An automatic train-stop or train-control system shall operate to initiate an automatic brake application at least stopping distance from the entrance to a block, wherein any condition described in 136.205 obtains, and at each *main track* signal requiring a reduction in speed.

#### Bureau of Safety and Service, ICC

The proposed modification of this rule differs from the present rule only in the insertion of the words "main track" between "each" and "signal" in the last clause. This change simply conforms to the intent of the present rule that initiation of an automatic brake application is required only at signals governing main track movements. To further clarify the intent of this rule, definitions have been proposed for "main track" and "siding." The revised rule will maintain safety of train operation. Since the proposed revision of section 136.502 is simply for clarification of intent, it should be adopted.

#### Railway Labor Executives' Association

The scope of protection of automatic train-stop and train-control systems as presently installed would be reduced under the proposed rules. Signals governing the approach to main tracks would no longer be required to be equipped with the protection presently afforded. Thus, the proposed rules eliminate protection presently provided and reduce the scope of the requirements for these safety devices. The present rules should be retained to provide a greater protection through the extended use of train-stop and train-control systems.

#### **136.504 Operation interconnected with automatic block-signal systems.**

—An automatic train-stop or train-control system shall operate in connection with an automatic block-signal system and shall be so interconnected with the signal system as to perform its intended function in event of failure of the engineman to obey a *main track* signal requiring a reduction in speed.

#### Bureau of Safety and Service, ICC

The only change proposed in this rule is the insertion of the words "main track" between "a" and "signal." This change was suggested to clarify the intent of the present rule. The proposed modification will maintain safety of train operation. Since this revision is merely for purpose of clarification and safety of train operation will be maintained, section 136.504 should be adopted as revised.

**136.553 Seal, where required.**—Seal shall be maintained on any device other than *brake-pipe cut-out cock* (double-heading cock), by means of which the operation of the pneumatic portion of *automatic train-stop or train-control* apparatus can be cut out.

#### Bureau of Safety and Service, ICC

The proposed rule differs from the present rule in that the term "lock" has been deleted and its application is restricted to automatic train stop and train control apparatus. Thus said rule as proposed does not apply to auto-

matic cab signal systems. The requirement for a lock was deleted because few systems use locks in lieu of a seal and a seal adequately serves the purpose. Also, a seal which has been broken is much more readily detected than the unlocking of a lock.

It was never the intent of section 136.553 to require the pneumatic portion of an automatic cab signal to be sealed and when relief was requested from this requirement it has been granted without exception. The opponents indicate concern because of possible deliberate or inadvertent closing of the whistle cut-out cock, if not sealed. However, much doubt is cast upon the merits of that concern because of the location and position of the whistle cut-out cock in the locomotive cab and when relief has been granted, no hazardous conditions have resulted. The whistle is merely a warning device to call the enginemen's attention to the change of aspect and has no effect upon the operation of the signal system. Therefore this rule should be revised as proposed.

#### Association of American Railroads

Mr. P. S. Earley, testifying as to the experience of the Pennsylvania, which since 1929 has operated cab-signal-equipped locomotives and presently operates 1830 such locomotives without a "seal," was unequivocally of the opinion that the absence of a seal does not result in any decrease in the safety of operation. Mr. Earley based his opinion on the fact that the cut-out cock in the cab signal whistle line is so designed and installed that the cut-in position of the cut-out cock handle is in the down position parallel with the pipe, whereas the cut-out position is horizontal to the pipe and, consequently, any vibration that might exist would cause the handle to go to the cut-in position. In other words, it is designed on the so-called "fail-safe" principle.

The Bureau's proposal is practical, will not in any fashion result in any decrease in the safety of operation, and should be adopted. The cut-out cock is so designed and positioned that any vibration sufficient to move the handle will result in the cock moving to the open or cut-in position. The presence of a seal does not deter any rule-violating individual who is intent on nullifying the whistle and, in any event, the failure of the whistle to function necessitates that the locomotive be operated under the restrictive provisions of Rule 567.

#### Railway Labor Executives' Association

The whistle of the cab-signal system provides additional warning, when it sounds, that a signal indication of other than clear, proceed, has been passed. The whistle increases the efficiency and safety of operation of the system by providing an additional means of warning over and beyond the change in the color lights of a cab-signal system. Such changes of color lights might not be immediately observed by an engineman under conditions where his attention could be diverted. The absence of the whistle diminishes the presently available warning by 50% at times when the engine crew's attention might be momentarily diverted. If carriers with cab-signal systems were permitted to remove the seal from the whistle feature of the cab-signal system, it is at the expense of safety. The whistle could be cut out for various reasons purposely or accidentally, to the detriment of the usefulness of the system. Sealing the whistle device deters the indiscriminate cutting out of the pneumatic portion of the cab-signal device. The seal thus insures the full benefit and protection of the cab-signal devices.

There is no justification to the rule revision which would permit the removal of seals from the whistle

device on all cab-signal systems. The present rule should be retained.

**136.564 Acknowledging time.**—Acknowledging time of intermittent automatic train-stop device shall be not more than *thirty* seconds.

#### Bureau of Safety and Service, ICC

The sole modification proposed in this rule is the increased acknowledging time from 20 to 30 seconds. This increased interval of time is necessary because the electro-pneumatic timing device employed in some automatic train stop systems takes longer to operate when high main reservoir pressure is used. Also, there is a tendency for railroads to increase main reservoir pressure in train operation. Hence it is necessary to increase the acknowledging time. This increase in time does not adversely affect safety of train operation because acknowledging time has no effect whatsoever on stopping distances.

All parties to this proceeding concurred in this proposed revision and since safety of train operation will be maintained, rule 136.564 should be revised as proposed.

**136.576 Roadway element.**—Roadway elements, except *track circuits*, including those for test purposes, shall be gaged monthly for height and alignment, and shall be tested at least [word "*once*" deleted according to proposed revision] every six months.

#### Bureau of Safety and Service, ICC

The proposed revision of this rule differs from the present requirements solely in that track circuits are specifically excluded therefrom. This conforms to the intent of the present rule because while inductors and their controlling circuits must be tested frequently, track circuits do not need the same frequent attention. Also, track circuits are designed on the "fail safe" principle while inductors are on the open circuit principle. This means a misplaced or displaced inductor may result in a false proceed operation of the automatic train stop system, whereas failure of a track circuit results only in a false restrictive indication. The proposed modification will maintain safety of train operation.

Since there is substantial evidence in the record to support the suggested revision of section 136.576 and safety of train operation will be maintained, this rule should be revised as proposed.

**136.587 Departure test.**—A test of the automatic train-stop, train-control or cab-signal apparatus on each locomotive, except locomotives and multiple-unit cars equipped with mechanical trip stop *only*, shall be made over track elements or test circuits *or with portable test equipment*, either on departure of locomotive from its initial terminal, or if locomotive apparatus is cut out between initial terminal and equipped territory prior to entering equipped territory, to determine if such apparatus is in service and is functioning properly. *If a locomotive makes more than one trip in any 24-hour period only one departure test shall be required in such 24-hour period.* If departure test is made by an employee other than engineman, the engineman shall be informed of the results of such test and a record kept thereof.

#### Bureau of Safety and Service, ICC

The present rule requires that a departure test be made at the initial terminal and if the automatic train stop, train control or cab signal system is cut out en route, a test must also be made immediately before entering such equipped territory. The proposed rule would permit a test either at the initial terminal or if the locomotive is

cut out en route prior to entering equipped territory. The proposed rule also permits the use of portable test equipment and where a locomotive makes more than one trip in any 24-hour period, only one departure test is required in that 24-hour period.

Because diesel locomotives often are used for long distances, (as much as 2,000 miles) before entering equipped territory, the test at the initial terminal is not always practical or desirable. This equipment is presently very dependable. Hence a test at either the initial terminal or when cut out immediately before entering equipped territory will attain the purpose of this rule.

Portable equipment has proved its value and should be permitted. Likewise, one test in 24 hours will also attain the purpose of this rule because of the few failures which occur.

Since the rule as proposed will not reduce safety of train operation, this modification should be approved.

#### Association of American Railroads

Present-day practice, whereby diesel locomotives frequently operate for several thousand miles after leaving their initial terminal and prior to entering equipped territory, clearly indicates the wisdom of permitting departure tests to be made either at the initial terminal or prior to entering equipped territory. Such an election cannot result in any sacrifice in safety because, here again, in the event the equipment does not function as intended when the test is made at the entrance to equipped territory, the locomotive must be operated in accordance with the restrictive provisions of Rule 567.

On the record there does not appear to be any disagreement between the Commission, the RLEA and the AAR as to the propriety, safety-wise, of permitting the use by trained personnel of portable equipment, properly constructed and maintained, for conducting departure tests on any of the devices mentioned in the rule. In the absence of any such disagreement, reason and common sense would indicate that the use of such equipment be permitted.

The various component parts of the devices involved, such as amplifier tubes, transistorized amplifiers, sealed relays, wire and insulation, receiver bars, etc., are far superior both in quality and durability as compared to the time when the present rule was adopted. That technological improvements have drastically minimized the incidence of malfunctioning in the devices under consideration is portrayed by the impressive performance of the nation's largest fleet of such locomotives equipped with cab signals. As evidenced by Mr. Earley's testimony, The Pennsylvania, during the years 1960 to 1962, inclusive, operated cab-signal-equipped electric locomotives in its densest traffic center a total of 43,466,559 train miles and experienced only 1 failure per 65,560 miles of operation.

It is extremely significant that the failures referred to occurred enroute and after the locomotive had received a departure test at its initial terminal.

The 24-hour departure test, as proposed, should be adopted. There no longer exists any need for the "test each trip" inspection, as shown by the reliable and impressive performance of the Pennsylvania. Technological advances which have vastly improved the reliability and durability of such devices, and the passing of the steam locomotive, have eliminated the problems which faced the carriers when the original rules were adopted. The failure of any of these devices to function as intended results in the locomotive being operated in accordance with the restrictive provisions of Rule 567 and safety is in no wise impaired.

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## ICC PROPOSES RS&I CHANGES

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### Railway Labor Executives' Association

It is not often enough to test this equipment only once every 24 hours. The apparatus is vital to safe train operation and any malfunction is likely to be disastrous. The equipment is, as compared to all locomotive equipment, delicate. Vibration is just as much a factor now, if not more so, as it ever was in steam days. Often with this equipment defects are discovered which must be corrected on incoming tests. After shop forces make incoming tests and inspect the equipment, defects are still discovered on the departure tests. When the departure test is made at an initial terminal, defects can be corrected quickly by shop forces or another engine used.

Safety of operations requires frequent departure tests of train-stop and cab-signal devices that are dependable tests. There is no justification for the proposed revision in the rule which would drastically alter the requirements for departure tests. The proposed rule is less restrictive than the present requirements of the rule and would not promote the safety of train operations. The present rule should be retained to afford greater protection to train operations.

**136.602 Operation in conjunction with automatic block-signal system.**—Where these devices are in use in automatic block-signal territory they shall be arranged to operate in conjunction with the automatic block-signal system.

Note: Relief from the requirements of this section will be granted upon an adequate showing by an individual carrier. Relief heretofore granted to any carrier by order of the Commission shall constitute relief to the same extent from the requirements of this part.

[Proposal is to delete this rule.]

### Bureau of Safety and Service, ICC

It is proposed to delete the requirements of this section in their entirety. The present rule requires that dragging equipment, slide detectors and other similar protective devices be arranged to operate in conjunction with the automatic block signals. Because of technological developments in communication, it is no longer necessary or desirable to require these devices to be operated in conjunction with the signal system. Also, hotbox detectors, where used, provide other readily available means of communication which can be used for dragging equipment detectors. Practical necessity under the present rule dictates that dragging equipment detectors be located sufficiently in advance of the signals to which connected so as to provide sufficient stopping distance. Thus trains usually travel several miles after dragging equipment is detected before they are stopped by the signals. Communication media utilized by hotbox detectors are superior to signals for alerting train crews to defects in their trains, because trains can be stopped sooner and more precise information can be given as to the location of the defect or defects.

The deletion of section 136.602 would leave it optional with the railroads as to the means of communication to be used. Also, safety of train operation will not be adversely affected. Hence this rule should be deleted.

### Association of American Railroads

In sum, Messrs. G. B. Anderson, ICC, and H. A. Hudson, SOU, testified that the advance of technology

in recent years has afforded ways of conveying the information from detection devices to train crews more quickly and certainly than was formerly feasible, or is now possible using automatic block signals as the vehicle for giving this information to train crews. Through the use of radio communications, trains can be stopped immediately when a dangerous condition is detected, and precise information passed on to the crew.

Since the invention of the hotbox detector, which is not within the coverage of Rule 602, railroads have made installations allowing transmission of the output of hotbox detectors either directly to train crew or to a central point from which the information is broadcast to the crew. This device was not even invented, much less installed, in 1950 when Rule 602 was adopted. If Rule 602 is deleted, the railroads will be able to install dragging equipment and other detectors at the same locations as hotbox detectors, when this is practicable and in the interest of safety, and utilize the existing hotbox wire and radio communication facilities.

Use of radio or other instantaneous and precise warning method is also superior to use of automatic block signals, in that the speed and length of today's trains make it necessary in many cases to have trackside detectors in automatic block signal territory over six miles from the controlled signal in order to comply with Rule 602. This would mean the train must travel over six miles with the dangerous condition, after that condition was detected, rendering the protection of the detector device at least in part nugatory.

There are many ways detectors and the information from them might be used; and certainly new ways not now even dreamed of will be invented in the future. Surely the railroads should not be confined to any given state of the art in their efforts to improve the safety and efficiency of their operation. Therefore, the proposal calling for deletion of Rule 602 should be adopted by the Commission.

### Railway Labor Executives' Association

The only justification for the elimination of the rule is the allegation that recent technological developments afford means by which a train crew is informed more promptly of the presence of dragging equipment than automatic signals, namely radio.

Signals are the basic device for the control of train movements. If a carrier considers that the danger is great enough to install one of the various protective devices, such device should operate in conjunction with the automatic block-signal system which has proven for many years to be safe and reliable. The use of radio can and does fail to function; if so, then the block-signal system can positively warn the train of hazardous conditions.

These protective devices detect a condition immediately and reflect this condition instantaneously by means of a signal indication. If radio were used, such information would have to be relayed to trains by dispatchers or other employees, after receiving it, if the radio were found to be working. The operation would be subject to a dispatcher's option and he could relay information or not, as he so desired or as his other duties might permit.

There is no justification for the elimination of this rule from the Rules, Standards and Instructions. It is clear that greater safety is afforded when these protective devices are arranged to operate in conjunction with the automatic block-signal system. The safest and most dependable means of conveying the information of the various protective devices is by means of signal indication. The present rule should be retained to provide the safe and dependable protection to train operations that is required to promote the safety of railroad operations. RS&C