AAR and RLEA reply to RS&I exceptions

The following material is abstracted from briefs filed by Association of American Railroads and the Railway Labor Executives' Association in reply to each other's exceptions to the Examiner's Report on the signal RS&I proposed changes Ex Parte 171. For the exceptions refer to *RS&C Feb. 1965, page 13 (RLEA) and Mar. 1965, page 20 (AAR)*. Material in bold face in a rule represents proposed new words and phrases. Under each rule is the reply of the AAR to the RLEA exception followed by the RLEA reply to the AAR.

136.2 Grounds.—Each circuit, the functioning 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 percent 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.**

AAR reply: The RLEA criticism that no rule change is required to permit the continuance of the single-wire, single-break systems, but that relief from the rule would suffice, is a criticism of form, not one of substance. The rule change method is preferable since it would obviate the necessity of obtaining relief. Rules should be established in a manner intended to minimize the need for relief in special circumstances.

AAR witness C. C. Billingslea defined the word "return," as used in Rule 720 and in proposed Rule 2, as "In a DC system current in external circuits flows from the positive terminal to the negative terminal. 'Returns' as used in Rule 136.720 is the conductor extending from the control apparatus back to the negative terminal of the battery". This is clear. There is no need for the additional definition the RLEA requests.

The RLEA also would have the Commission limit the exceptions of the single-wire, single-break circuits from the rule to existing systems. As the Examiner correctly finds, there are today over 4,000 miles of such signalling in the country today. Southern Pacific is one of the railroads having a great deal of such signalling. It has never experienced a false clear signal resulting from the grounded common return wire. Its overall experience with this signalling is entirely favorable. The railroads should not be precluded from extending this system to new installations where circumstances warrant and the RLEA has given no reason as to why they should be so limited. The AAR opposes any such needless limitation.

The RLEA's request that the rule specifically exclude grounding of two-wire polarized circuits should not be granted. The rule, as proposed, would exclude such grounding.

The RLEA also requests that an interpretation be made requiring the use of transformers or other similar devices to isolate signal circuits from grounded distribution circuits. The same effect would result from printing of the [Examiner's] report with the revised rules.

The AAR submits that the RLEA has failed to point out any error in the Examiner's finding that Rule 2 should be adopted as proposed. It merely offers its opinion that the Rule is ambiguous and indefinite. It is not, and the Commission should adopt the rule, as proposed.

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

As further proposed in Examiner's report:

136.11 Adjustment, repair, or replacement of Component.—When any component of a system or interlocking, the proper functioning of which is essential to the safety of train operation, fails to perform its intended function, it shall be adjusted, repaired or replaced without undue delay.

AAR reply: "Without Undue Delay"—The RLEA has no objection to this language as such. It asks, however, that the words be expanded by grafting on to them a lengthy explanation of their meaning as contained in the Examiner's report. This would be improper and unnecessary. First, the quotation suggested for inclusion contains no hint of the Examiner's directly related comments that repairs need be made "without undue delay" *only* in the case of false proceed signals. The suggestion, if adopted, would thus tend to create exactly the kind of confusion the RLEA professes to fear. Second, if the RLEA's own suggestion as to printing of the report with the Rules as revised is followed, the identical interpretation will be readily available and will be undistorted because it will remain in context.

"Essential to the Safety of Train Operations"—The RLEA devotes some 10 pages of its exceptions brief to arguing that the railroads should be required, under

penalty of Federal law, to repair *with immediacy* all signal components that are *not* essential to safety. Its argument, however, does nothing to support this extraordinary position.

There can be only two consequences of the failure of a signal component, assuming that such failure has any effect at all on the signal system of which it is a part: the signal affected will display either a false proceed or a false restrictive indication. The first is capable of luring a train into danger; the second cannot possibly do so. The Examiner's report makes it abundantly clear that under recommended Rule 11 the only defective components that must be repaired "without undue delay" are those that create false proceed indications because it is only this type of defect that impairs safety, either actually or potentially. The RLEA correctly points out that the number of false proceed failures experienced is infinitesimal. The number of false restrictive interruptions is likewise insignificant when compared with the many millions of signal components that are subject to malfunctions.

The RLEA fails in its effort to show that false restrictive conditions should be subject to the immediate repair requirement because it fails to show that they create danger. These interruptions *protect* train operations because they *restrict* train operations. This follows necessarily from the closed circuit signal principle, which the Commission's Rule 5 requires the railroads to adopt.

RLEA attempts to show that a "dark" signal, one with a burnt-out lamp, could be dangerous. This attempt, though not a major point, is worth analyzing because analysis demonstrates the misunderstanding of how signals work that has pervaded the RLEA's participation in this case from the beginning. In this instance the misunderstanding (if that is the proper word) arises from use of evidence applicable to one situation in a totally different situation to which that evidence has no relevance. A dark signal, of course, is an example of a restrictive failure since, as the RLEA concedes, it must be treated as if it were displaying its most restrictive aspect. It therefore could not be dangerous in itself. But, the RLEA asserts, dangers flowing from this situation were admitted by the Bureau. For this proposition it cites its cross-examination of the Bureau's witness, where the questions included no mention of a train in the block governed by the dark signal. The witness responded, quite correctly, that in this ordinary situation with the block unoccupied there would be no approach indication shown by the signal immediately in the rear of the dark signal. The RLEA then asserts, however, that "a serious rear-end collision . . . could occur with a train stopped just beyond a dark signal" because the "following train did not receive an approach signal."

This could never happen: if there were such a train in the block beyond the dark signal, that signal would be mechanically and electrically at its most restrictive aspect, whatever the state of the light, and the signal to the rear would automatically display the proper approach aspect. Automatic block signal systems are designed so that at least one signal (sometimes two or more) to the rear of a restrictive signal showing block occupancy will automatically display an approach aspect. All trains will therefore be warned in the normal manner to approach the restrictive signal (completely independent of the light or dark condition of the restrictive signal) prepared to stop at that signal. This point is recognized by one of the RLEA's own witnesses and is made amply clear in such elementary texts as *Phillips, Railroad Operation and Railway Signaling* (1953) pp. 49-52.

The RLEA concludes its argument on this point by suggesting that if the railroads are not compelled to repair "without delay" signal components that do *not* affect safety, proper "maintenance" of all signal systems will suffer and thus indirectly affect safety. But Rule 11 is not a "maintenance" or a "standards" rule at all; it is only a rule that tells the railroads *when*, under penalty of the law, they must make certain repairs. The general safety and constant maintenance of the system are assured by numerous *other* rules not even in issue in this proceeding (*e.g.*, Rules 101, 102, 103, 104, 105, 106, 107, 108, 109, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 476).

RLEA also cites a third accident report which even its own statement proves to be inapposite. The contact arm the RLEA mentions was in perfect condition. It was wrongfully moved in violation of instructions.

The Labor Executives thus lack any justification for their effort to saddle the railroads with legal penalties unrelated to railroad safety.

RLEA rebuttal: This important rule provides the only requirement in the rules for the maintenance and repair of all signal systems and their components. There is no dispute that track rails are components of signal systems and interlockings. The Bureau's witness agreed "wholeheartedly" with the concept that track rails are essential and integral components of a signal system, since they are indispensable parts of the track circuit and indicated that a broken rail is not a desirable condition and should be repaired or replaced as soon as possible.

The track rail is not only a vital part of the track circuit, it is also a vital part of other components of a system or interlocking. Track rails are used exclusively for the transmission of all circuits of the systems that use no line wires, in audio-frequency overlay signal circuits and for DC coded track circuits.

The signal systems are more dependent now upon rails and properly working track circuits than when the present rule was adopted in 1950. The presence of a broken rail may affect the operation of other signal devices such as electrically locked hand-operated switch. Broken rails do not always affect the track circuit and may affect the circuit only intermittently. In such case, a broken rail could cause a signal to display its most restrictive aspect for one train and not the next train.

Track rails are an integral part of the signal system forming a physical portion of the track circuit which is the most vital part of a signal system. Their proper maintenance and repair is essential to the functioning of the track circuit and all signal systems and hence to the safety of train operations. As with other components, when the track rail fails to perform its intended function, it should be repaired or replaced

without undue delay. The failure of any component of a system, including track rails, is detrimental to the system and safe train operations. There is no justification for excepting one vital signal component from the requirements of the rule for repair and maintenance of signal components.

There is no support for the AAR's position that track rails should not be treated as are other components of a signal system. There is no basis for an exclusion from Rule 11 of any component of a signal system, and especially not such a vital component as track rails. The fact that track rails, aside from their function as a signal component, have a function of carrying trains, provides no basis for disregarding their important function as a signal component. Because track rails carry trains, the AAR would remove any consideration of rails as signal components. However, dealing with the admitted function of rails as signal components and requiring prompt repair when rails fail to perform this function, does not in any way interfere with the function of carrying trains. In fact, the repair of rail because of its signal function enables it to better perform all of its functions as intended.

Similarly there is no merit to the AAR's assertion that the repair of an admitted vital signal component is outside the scope of the Commission's jurisdiction in writing "signal" rules. This is an attempt to severely limit the scope of the rules contrary to the plain intent and purpose of the rules. The Signal Inspection Act and the rules adopted thereunder are obligations of the carrier. The scope of the present rules indicates they are not addressed to any one department of a carrier.

The present Rules specifically provide, in Section 136.0, that the rules, standards and instructions are prescribed for observance by each common carrier subject to the provisions of Section 25 of the Interstate Commerce Act. The 1939 rules stated the matter clearly in providing that: "The railroad company is responsible for the installation, inspection, maintenance, and repair of block-signal systems, interlocking, automatic train-stop, train-control and cab-signal devices, and other similar appliances, methods, and systems used or permitted to be used on its line. It must know that all installations, inspections, tests, and repairs are made and reports are made and filed as required, and that all parts and appurtenances of the devices used are maintained in condition to meet the requirements of the law and these rules, standards and instructions."

The rules are addressed not to the signal department, or the maintenance of way department, or any other particular department of the carrier; they are addressed to the carrier as such. It is the responsibility of the carrier to see that all components of the signal systems are functioning properly so, and that train operations may be safely maintained. When a vital component fails or a track rail is broken, corrective action is required by the carrier. The fact that the signal system may display a restrictive aspect because of a broken rail should not relieve the carrier of the responsibility of correcting the signal component and the hazardous track condition. It is clear that the individual carrier, and not one department, is charged with the duty and responsibility of complying with the rules, and the scope of the requirements of the rules cannot be measured by the responsibility of any one department of an individual carrier.

The recommended report correctly found that there is no justification for excepting track rails from the requirements of Rule 11.

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, the shunt fouling circuit may not be used in a turnout through which permissible speed is greater than 45 miles per hour. It shall not be a violation of this requirement if a track circuit is energized: (1) When a break occurs **between the end of rail and track circuit connectors; within the limits** of rail-joint bond, **appliance or other protective device, which provides a bypath of 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 the track circuit, including fouling section of turnout except turnouts of hand-operated main track cross-over. It shall not be a violation of this requirement where the presence of sand, rust, dirt, grease, or other foreign matter prevents effective shunting, **except that where such conditions are known to exist adequate measures for insuring safety of train operation must be taken.**

(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.

AAR reply: The RLEA's "Loss of Shunt" Proposal—Rule 51(b) now requires that the track relay shall be in de-energized position when a train occupies the track through which a signal circuit passes. The rule then provides that "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."

The RLEA would eliminate this provision entirely and create in its stead a new railroad obligation: that of calling out signalmen to operate the signals manually so that they will display their most restrictive indications whenever shunt is lost for the causes listed in the present rule. The Examiner properly declined to countenance this make-work proposal and instead adopted a substitute proposal advanced by the Bureau in its brief, but not at the hearing. Even assuming that the existing exception in the rule should be turned into a requirement (a point on which substantial evidence is lacking), it is obvious that the re-

quirement should not be one that can be satisfied solely by calling signalmen to the scene to move the signals manually—because in any given situation there may be a dozen better ways of solving the problem. This would negate all discretion in dealing with an operating problem for the sole benefit of a single employee craft. If such a proposal were adopted the Commission would not only be intruding into the sphere of railroad operating rules, which it may not lawfully do, but it would in a very real sense be setting itself up as the signalmen's employment agency.

The Hearing on the Bureau Proposal—The Examiner discusses the "new thought" raised for the first time in the brief of the Bureau to the Examiner filed after hearings in this proceeding had closed. In place of the existing exception to Rule 51(b) already discussed above, the Examiner adopted this suggestion as an amendment to the rule. In so doing, however, he adverted to the motion to strike filed by the AAR on November 5, 1963. The Examiner recognized that that motion set forth valid reasons why the AAR has not yet had and must have, under the applicable constitutional and statutory provisions, notice and an opportunity to be heard respecting the proposal. The RLEA would deny it that right. Appropriate exception to the Examiner's action in accordance with his report has already been taken by the AAR and nothing remains but to hold the hearing in question. The RLEA's objection to this course, which embodies elementary fairness as well as the requirements of law, is obviously without merit.

The RLEA complains because its general proposal for revision of this rule was not adopted. It professes to find the only reason for rejection of this proposal to have been the absence of evidence pertaining to the exclusion of a comparable rule from the signal code at the time of the 1950 revision.

This is not so. Mere reading of the RLEA's proposal shows that in most respects it has no relation whatever to existing railroad signals or to any type of signals that might be devised. This proposal would require the calling of an army of signalmen to position signals manually if any of various stated conditions prevailed. Among these are "wide gauge," "insecure track," "obstruction," or "other condition" which may make a track unsafe. A track may be "obstructed" by any of a thousand causes ranging from varieties of malicious mischief to a drift of snow, none of which are capable of being detected by the signal system.

Actually, as appears from the proposal itself, the RLEA is here making another of its periodic efforts to intrude governmental authority into the operating rules and practices of the railroads. This proposal has almost nothing to do with the "installation, inspection, maintenance or repair" of signal systems, which are all the Act governs. Instead it is a proposal that under the guise of "signal rules" railroads be compelled to employ members of the signalmen's union in the case of any conceivable track danger or impediment, whether related to signals or not. The Examiner very wisely rejected it.

RLEA rebuttal: There is no practical or legal necessity for a further hearing concerning the adoption of a proposal for loss of shunt. A new provision for loss of shunt should be adopted for Rule 51(b) without further hearing or any severance of this one matter from the main proceeding.

The Commission is requested to deny the AAR's request for a further hearing on all issues involved in the proposed revision of Rule 51(b). In accordance with the RLEA exceptions, the Commission is requested to adopt the proposed revision for Rule 51(b) without further hearing or a severance of this issue from the remainder of the proceeding.

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.

AAR reply: The RLEA refers to "great confusion at the hearing" respecting the meaning of "home signal" as included in the Examiner's recommendation. It omits to mention that this "confusion" was confined exclusively to its own witnesses, who, it admits, were even unable to understand the clear definition of "home signal" in Rule 806. The RLEA suggests that clarity be promoted by appending to the new rule an "interpretation" which it has extracted from the Examiner's report (though it is by no means an exact quotation). Here again, the appending of the report itself to the published rule booklet will amply satisfy all needs for "interpretation."

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 restrictive 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 restictive 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.**

AAR reply: RLEA objects to the Examiner's recommendation that Rule 204 be revised to permit use of "proceed at restricted speed" aspects on track signaled for movements in both directions. Although this revision "simply takes cognizance . . . of operating practices which have been in use for many years and which have not been found to be hazardous in any

way," the RLEA contends that such revision would permit opposing movements within a block, which would be an inherently dangerous operation.

This contention has no validity when the language of rule 204 as proposed, is read.

Rule 204 is applicable only to single-track automatic block signal systems, and the primary control of trains in such territory is by timetables, train orders, and operating rules, and *not* by signal indication. Timetables, train orders, and operating rules constitute the basic system for the safe operation of trains. The automatic block signal system serves as an adjunct to timetables, train orders, and operating rules. Assuming *arguendo* that (a) the timetable is disregarded by one or both of the opposing train crews, or (b) the train orders are either in error or overlooked by one or both of the train crews, then in any such eventuality, compliance with the "proceed at restricted speed" aspect in accordance with the stopping distances prescribed by Rule 204, as proposed, would prevent the head-on collision of opposing trains within a block. Even assuming that one of the aforementioned eventualities occurred and, in addition, two opposing trains entered the block as a result of simultaneously passing opposing signals, then under this situation subsequent observance by the train crew of the "proceed at restricted speed" aspect displayed by the intermediate signals within the block would prevent a head-on collision because such signals are spaced braking distance apart, which is in compliance with the stopping distances prescribed by Rule 204.

As a matter of fact, the signal aspects in an automatic block system, if observed and complied with, are arranged and designed so as to make it impossible for opposing trains to enter the same block at unrestricted speed except in those rare instances when such trains simultaneously pass the opposing signals at each end of the block. Even then, safety is provided because the trains will be proceeding at restricted speed as dictated by the intermediate signal aspects within the block.

The proposed change in Rule 204 allows opposing intermediate signals to display "proceed at restricted speed" instead of "stop, then proceed at restricted speed." Whether the signal displays a "stop" aspect or whether it displays a "proceed at restricted speed" aspect, the speed of the train between that signal and the next signal will *continue* to be *"restricted"* and the engineman will know that the block ahead is occupied. Since, under the proposed rule, there will be no change in the speed of the train while operating between the first restrictive signal and the next signal to be passed by that train, the RLEA's professed desire to retain the present rule suggests that it has not been harmed, or even impressed, by the very practices it now objects to. The AAR therefore submits that the RLEA's contention that the proposed change in the signal aspect would permit a dangerous and unsafe condition is completely unfounded and should be rejected.

The use of grade or tonnage markers on automatic signals permitting operation at restricted speed without stopping involves following movements. Although restricted speed operations are a common occurrence and are absolutely essential for railroad operations (*i.e.*, for an engine entering an occupied block to couple to its train or to add cars thereto, or an engine entering to remove a caboose), such operations do not constitute opposing movements. Under the proposed rule, a broken rail, open switch, or washout ahead of a train, would cause the automatic signal to display a "proceed at restricted speed" aspect. Obviously, these conditions do not involve opposing movements. Moreover, the automatic block signal system is so designed and arranged that opposing trains could not make a meet designated by train order, at a siding within the block, for example, without use of the "proceed at restricted speed" aspect. The fact that the meeting of opposing trains pursuant to train orders occurs countless times each day on the railroads across the nation clearly shows beyond any possible doubt that the Examiner did not have this type of opposing movement in mind when he said that the proposed "proceed at restricted speed" aspect is not intended "to authorize the movements of trains toward each other on the same block or within the same area of signal protection."

Finally, although no one at the hearings in this proceeding questioned the desirability of the proposed additional sentence at the end of Rule 204 requiring a head block signal to display a "stop" aspect in absolute permissive block signaling, the RLEA now contends in its exceptions brief that if a "stop" aspect is required in APB signaling, it should also be required in overlap signaling, the signal arrangement affected by the first proposed change in Rule 204.

Basically, in APB, absolute block extends between sidings for opposing movements, whereas in the overlap scheme there is no such absolute block for either opposing or following movements. In overlap signaling an opposing train could enter an occupied block on permissive aspects displayed by the signals in that system. In an effort to clarify this matter, Mr. DePriest testified as follows:

> ". . . The record should be somewhat clear if everyone understood that the head block signal referred to in the last sentence of Rule 204 is the signal passed by a train when it is leaving the siding and entering the single track portion of railroad located between adjacent sidings. It does not refer to the signal passed by a train when entering the siding".

The RLEA's contention has no support in the record.

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.**

AAR reply: RLEA requests that Rule 301 be "inter-

preted" by the addition of language that the AAR suggested in its brief to the Examiner. It would be undesirable to append such an "interpretation" to the rule itself; but the AAR would have no objection to the following addition to the Examiner's language concerning this rule:

> "Electric locks installed under Rule 301 must conform to the time and approach locking requirements of Rule 314 (without reference to the 20-mile exception), and those of either Rule 760 or Rule 768, as may be appropriate."

The RLEA's second paragraph under this head should be rejected for substantially the same reasons outlined above in discussing Rule 201.

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.

Note. Existing installations on each railroad, which do not conform to the requirements of the section shall be brought into conformity therewith on or before December 31, 1969.

RLEA rebuttal: There was no error in regard to the Examiner's recommendation of a note for Rule 303 to require that existing installations be brought into conformity with the requirements of the revised rule within five years. The AAR requests that the compliance with the requirements of the revised rule be required only when "major modification" of an interlocking is made.

The requirements of the rule provide for selection of the control circuits for certain signals through switch circuit controllers or switch repeating relays and apply to both interlockings and traffic control systems. The present rule requires switch circuit selection for facing point switches, movable point frogs and derails in service at the time the rule was revised in 1950, and for all switches, movable point frogs and derails installed thereafter.

The rule revision proposed by the Bureau and recommended by the Examiner would require switch circuit selection for all switches, movable point frogs and derails no matter when installed. This revision will apply to trailing point switches, movable point frogs and derails not now provided with switch circuit selection. The recommended report then provides for a five year period for compliance with the rule.

The Bureau's witness at the hearing suggested such a proposal for a five year period for compliance with the revised rule. The Bureau, in its brief to the Examiner supported such a note as the recommended report and order adopts for a five year period for compliance. In addition, the Bureau did not file exceptions to the Examiner's recommendation in this respect. Thus, there is no uncertainty in the Bureau's position concerning this point. There is no support for the assertion of the AAR in its exceptions that the Bureau supports both the five year compliance period and compliance at the time when major modification of an interlocking is undertaken as "alternatives of equal suitability."

The position of the AAR was that the revision of Rule 303 should continue to provide for an exception from the rule for installations not presently equipped because they were installed prior to 1950. The AAR now continues this position by requesting that compliance with the rule not be required unless and until a major modification of the interlocking is made. Thus there would be no definite requirement for compliance with the revised rule.

The recommended report correctly found that ". . . the Bureau is equally right in insisting that the many and obsolete interlockings should be brought into full conformity when they are modernized, as they are likely to be in the next few years." The five year period is reasonable for compliance with the revised rule and should be adopted.

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AAR and RLEA EXCEPTION REPLIES

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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.

AAR reply: The RLEA's first paragraph respecting this rule relates to the "home signal" point discussed above under Rule 201. The remainder of its comments relate to the need for "interpretation" which can be satisfied by appending the full report to the rules as aforesaid.

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.

AAR reply: There is no need to reply in detail concerning this proposal in the RLEA's exceptions brief. This because the RLEA concludes with the suggestion that the revised rule should be "interpreted" so that it would be clearly applicable "to permit opposing movements only on non-signaled sidings in traffic control territory where the maximum authorized speed at any time is restricted speed or less".

But this is exactly what the Examiner has plainly stated the proposal to mean, if one changes the RLEA's word "sidings" to "tracks." At that point he said that the proposal

> "would authorize conflicting movements *only* on tracks [in traffic control territory] which are so signaled that the maximum authorized speed at any time is restricted speed or less" (emphasis added).

This rule cannot be restricted to "sidings," for there are non-signaled yard tracks in traffic control territory to which it also applies; but it is obvious that under the proposal the same safeguards that extend to sidings will and must extend also to such tracks. The RLEA thus has nothing to fear from the proposal because the essence of what it asks for in the way of "interpretation" is already plainly stated in the report.

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.**

AAR reply: The Examiner's recommendation respecting Rule 405 demonstrably improves safety. The rule applies only in traffic control territory, where train movements are governed by signal indications rather than by timetables and train orders. The present rule forbids changing the direction of traffic on track signaled for movements in both directions once a train has occupied a portion of the track between opposing signals at adjacent controlled points. This creates a problem in the situation where a train has entered a portion of track between two adjacent controlled points (as defined in Rule 782) in order to drop or pick up cars. This situation is most easily considered with [this example]:

A northbound train has entered the track through controlled point C and has stopped on that part of the track lying between adjacent controlled points C and B. The train proper is intended to stay there, but the engine and a cut of cars to be delivered to the crossing railroad on the connecting track must leave the train, pass controlled point B over the tracks of the crossing railroad, and enter the segment of track lying between controlled points B and A.

As the engine and cars make this northbound movement they are protected by the signals, which prevent not only opposing movements on that line, but also on the crossing line. The control operator of the crossing railroad could not clear his tracks for movement

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at this point even if he mistakenly tried to do so. When the cars have been delivered, however, and when the engine must return to the train by going southward past controlled point B (and also over the high-speed crossing), the signal at point B governing southbound movements is, and under the existing rule must be, at stop. In this situation the essential return-to-train movement must be made with two undesirable consequences: 1) It must pass the signal at B in direct violation of the signal aspect; and 2) because this signal cannot be cleared, there is no protection against authorization by signal indication of movement over the crossing tracks.

This return-to-train movement is usually authorized today by verbal permission from the control operator conveyed by hand signals or, in a few areas, by a return-to-train indicator, which is no more than an electrified hand signal which may or may not check the crossing route and which cannot be a part of the traffic control system. These methods of authorizing the movement are not satisfactory because they entail obvious dangers and because they require the engineman to disregard a signal in territory where signals alone are supposed to govern train movements. It is little wonder that the Commission has received "several complaints" about these possible dangers from labor organizations. Mr. Anderson, the Bureau's witness, unequivocally said

> "The Commission has received several complaints from employee organizations who objected to this method of operation. . ."

For these reasons and in response to these complaints the Bureau proposed and the Examiner adopted the following exceptive clause to be added at the end of the existing rule

> ". . . 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."

It is obvious that this addition to the rule will affirmatively increase safety because it permits the direction of movement to be changed in the limited area where this is required and thereby carries with it significant traffic locking that would prevent a serious accident.

136.587 Departure test.—A test of the automatic train-stop, train-control, or cab-signal apparatus on each locomotive, except locomotive 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.

AAR reply: The RLEA reiterates its opposition to the adoption of the proposed rule which would permit the "either/or departure test." This position is based not on any relevant evidence which that organization presented at the hearing, but solely on references to the testimony of Mr. Gardner. However, Mr. Gardner was not referring to departure tests as contemplated by the proposed rule, but to the inbound inspection in the roundhouse of intermittent inductive train stop.

Significantly enough, this witness, who was called by the RLEA, readily agreed that his only criticism of proposed Rule 587 was the use by inexperienced personnel of portable equipment on departure tests. He agreed that there was nothing contained in the other provisions of the proposed rule which would materially decrease the safety of operation and that even his objection to the use of portable equipment would vanish if such equipment were properly constructed according to proper specifications, properly maintained, and used by a properly trained individual.

As the Examiner points out in his proposed report, a failure enroute of the devices involved causes the provisions of Rule 567 to come into play and requires the train to be operated under more restrictive conditions than would be the case if the locomotive involved had not been equipped with such devices. The RLEA entirely overlooks the provisions of 567.

One Test Per Twenty-Four Hour Period—The RLEA would limit this provision of the proposed rule to permit relief only for suburban or turn-around service, a distinction which is nebulous if safety is to be the governing factor. But regardless of the number of inspections made, the type of motive power involved, or the distance traveled, the failure of the equipment involved to function as intended gives rise to the restrictive provisions of Rule 567.

The RLEA's argument against the use of portable equipment is predicated solely upon the fear that the carriers would utilize equipment for this purpose which was not in accordance with any standard specifications or instructions. The record provides no foundation for this apprehension but, on the contrary, is rebutted by RLEA witness Mr. Gardner, who testified that he had been using portable equipment for inbound tests and found it quite satisfactory.

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.

AAR reply: The RLEA objects to the Examiner's recommendation that Rule 602 be deleted, as proposed by the Bureau. Rule 602 requires certain protective devices to be interconnected with the signals when installed in automatic block signal territory. In essence the RLEA position appears to be that only

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the block signal system is sufficiently reliable to be used to transmit to train crews warnings from the various protective devices of hazardous conditions on the track or about the train. Any other means of transmission is unreliable, the RLEA claims, and, if used at all, should be used sparingly and only as a supplement to automatic block signal warnings. Specifically, the RLEA contends that radio is an unsafe and unreliable means for conveying information from the detector devices to trains, is less efficient than signals, and provides less prompt notice of dangerous conditions. Therefore, according to the RLEA, the Examiner's recommendation as to Rule 602 is wrong and should be overruled by the Commission.

There is no support in the record for the contentions of the RLEA. On the contrary, the record shows clearly that the deletion of Rule 602, far from reducing safety, will increase safety and at the same time enable the railroads to perform their duty to the public more efficiently. Hence, the Examiner was correct in his reading of the evidence and his findings based thereon.

RLEA asserts that on the AAR witness's railroad all the protective devices, except hotbox and dragging equipment detectors, are interconnected with the block signal system, then says:

> "All of the carrier's dragging equipment detectors in block signal territory are interconnected with the system. In addition, the AAR witness did not know of any installations of dragging equipment detectors that are not interconnected with the block signal system."

This also is not so. The carrier involved has on its lines 22 dragging equipment detectors *not* interconnected with a block signal system, as the AAR witness (Mr. Hudson) unequivocally testified. Only those in automatic block signal territory are so interconnected.

It is freely admitted that there are circumstances whereunder the carriers would probably continue to interconnect some detector devices with the automatic block signal systems. Under present conditions, it may be more practical to do so in those cases. But who can predict the course of tomorrow's technology? Even today, radio is at least as safe as the signal system as a means of telling the crew of a dangerous condition. The way the present rule works to deter installation of new detecting devices was well put by Mr. Hudson:

> ". . . railroads make installations of detecting equipment voluntarily at such locations as they deem necessary in order to increase safety of operation. Therefore, if a road is sufficiently interested in safe train operation to invest money in detectors, it logically follows that they would provide the safest and most practicable method of transmitting the message from detector to train. Present Rule 136.602 discourages roads from installing such detecting equipment as dragging equipment detectors because the rule prevents them from taking advantage of present-day technology in utilizing the devices . . .".

It will be remembered that the railroads are under no obligation to put *any* detector anywhere on their lines.

Today most trains are longer and faster than ever; often there are 200 or more cars in a train. There are situations in which a trackside detector would have to be six or more miles from the controlled signal in order to comply with the Rules. If the trains to be protected contain as many as 200 cars, then the detector must be at least 200 car lengths in advance of the approach signal under Rule 601. There may be then a four or five mile block from approach signal to the next signal, the stopping point. Mr. Hudson has situations like that on his railroad. Under those circumstances, a train with dragging equipment would have to travel over six miles after the defect was tion. In that six miles, an accident would be all too likely. By contrast, if the defect were spotted in a detector center or by a dispatcher (depending on the procedure in use), the train crew could be informed immediately via radio and abate the danger forthwith, by stopping the train.

Then, when the train was stopped, safety would be served further by the possibility of telling the crew exactly how many defects there are, and where they are—important when the train is long or the night dark or weather inclement, and when a dangerous condition might otherwise be overlooked. **RS&C**