roads were entitled to representation and President Robinson of the American Short Line Railroad Association when consulted by the commission said that the short lines were perfectly willing to have the railroads represented by the Association of Railway Executives.

The Interstate Commerce Commission on March 9 announced a hearing at Washington on March 15 for the purpose of its investigation as to what classes of officials shall be included within the term "subordinate official" and at the same time hearing will be had upon the question whether or not the regulations governing the making and offering of nominations for appointments as members of the labor group on the Railroad Labor Board shall be modified or supplemented. The commission ordered copies of its order sent to carriers, to "organizations of railroad employees and subordinate officials whose addresses are known" and to the public press.

The railroad labor organizations held a rather stormy meeting at Washington on Tuesday for the purpose of making their nominations.

President Barker of the maintenance of way employees announced in Washington on Tuesday that his organization had decided not to strike.

Small Change In Signal System Makes Material Saving

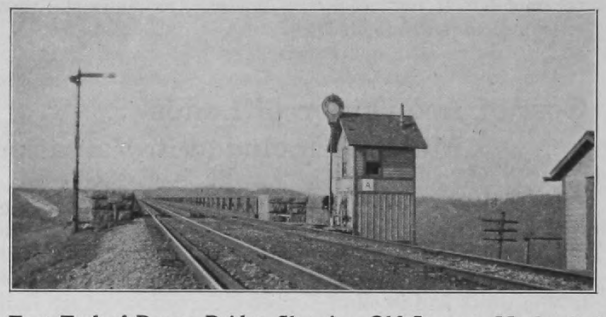
By R. M. Phinney
Assistant Signal Engineer, Chicago & Northwestern, Chicago.

A saving of at least $4,300 per year has been made as a result of removing a small interlocking plant at Boone bridge on the Chicago & North Western and the substitution of automatic features without eliminating any of the safety factors or changing the operating conditions. This work was done at an estimated cost of $900. The bridge is located west of Boone, Iowa, where the C. & N. W. crosses the Des Moines river and its valley. It is ½ mile long and at its highest point is about 180 ft. above the water.

Even though this bridge is double tracked, only one train is allowed on it at one time, simply as a safety measure. Since its installation, the use of the bridge has been governed by stop signals located at each end. These signals were originally controlled by dwarf interlocking machines located in cabins, with suitable check-locking between them. When automatic signals were installed about 10 years ago the machine at the west end was removed and the signals at that end were then controlled electrically from the interlocking at the east end. Bridge watchmen were still retained at the west end. With the advent of the eight-hour day this arrangement required six men; three operators and three watchmen.

Recently the arrangement was changed in order to reduce operating expenses. The dwarf interlocking machine was removed and the home signals were made automatic, standing normally at stop, clearing upon the approach of a train, while the distant signals were made fixed. The clearing circuit operates on the principle of "first come, first served" as a train passes the distant signals. Only one signal can be cleared at a time. This is assured by controlling each signal through the opposing control relay. The circuits also break through the opposing signals at stop to give greater safety in case of improper operation. The signals are controlled through the track circuits on both tracks across the bridge. With this arrangement alone, a number of trains in one direction might hold up an important train in the other direction, or an important train might be held up by an unimportant one. To obviate this difficulty a control circuit was run to the despatcher's office at Boone, four miles away. This circuit is designed to control direction when desired, but normally the trains operate the signals automatically. If the despatcher desires to give one train preference over another he operates a direction key, east or west as the case may be, and also pushes a button. This opens the control circuit of one signal and closes the other. The signal, however, does not clear until the train reaches the clearing track section.

An indicator is provided on the despatcher's desk which indicates when selection has been completed. This indicator when energized remains so through its own contact and is de-energized automatically when the engine passes the signal onto the bridge; or the despatcher may de-energize these

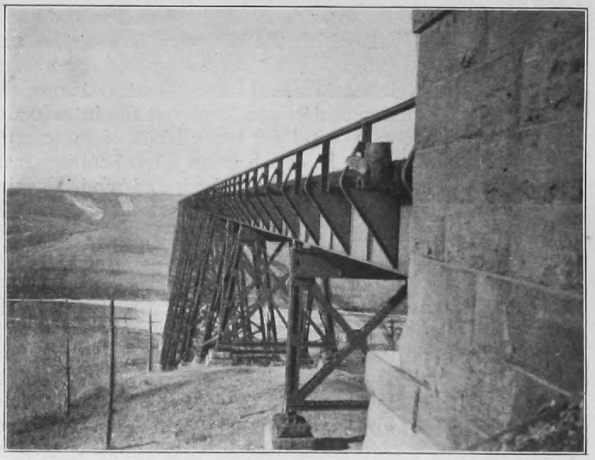


East End of Boone Bridge Showing Old Layout, Mechanical Home Signal Later Changed to Power Operated Signal

relays by opening the direction key in case he desires to cancel the selection.

It is impossible to effect selection while a train is on the bridge. Also, after either signal has been cleared by a train, the selection circuit cannot be operated as its circuit depends upon both signals being at "stop" at the time when the selection is made. Therefore, selection cannot be made by the despatcher after a train has done so; the despatcher is informed of such a situation when the indicator will not pick up.

If a following move is desired in one direction ahead of a



The Boone Bridge from the East Abutment

train in the opposing direction, the despatcher must, after the indicator drops for the first train, hold the push button down until the indicator picks up, when the selection is effected.

There is a minimum time limit of two minutes for a train to cross the bridge. The despatcher can check this time limit for a train by pressing the button as would be done for a following train and timing the interval between the dropping of the indicator, caused by the engine passing the signal, and the picking up of the indicator when the rear of train passes

out of the section. Of course allowance must be made for the length of the train.

The direction key and push button are standard telephone apparatus mounted on the despatcher's table. A dry battery is used since the selecting circuit is required infrequently and also because there was no convenient place to locate a soda battery. Telephone communication is provided in the cabins at each end of the bridge for trainmen so that they can get permission from the despatcher to pass the signal at stop in case of necessity.

These changes have made it possible to eliminate the three operators at the interlocking, thus saving an average of $360 per month. It was necessary, however, to retain the three watchmen to patrol the bridge.

Cost of Acquisition of Lands Must Be Included in Valuation

WASHINGTON, D. C.

THE UNITED STATES SUPREME COURT on March 8 rendered an important decision affecting the railroad valuation proceedings by reversing decrees of the court of appeals and of the supreme court of the District of Columbia which had in effect dismissed the petition of the Kansas City Southern for a writ of mandamus to require the Interstate Commerce Commission to find the present cost of acquisition of its carrier lands. The case is of importance because it will require the commission to take into consideration the cost of acquisition of lands in the other cases. In the Texas Midland case the commission said that present value of lands is stated by ascertaining the number of acres and multiplying this by a market value determined from the present fair average market value of similar adjacent and adjoining lands, making due allowance for any special value by reason of the peculiar adaptability of the lands for railroad use, but adding nothing additional for the expense of acquisition, for severance damages, for engineering or interest during construction. The same method was also employed in valuing the lands of the Kansas City Southern.

The carrier introduced evidence to show land values in one county along its lines which did not vary in essential particulars from testimony of a like character which had been introduced in the Texas Midland case. After receiving this testimony the commission declined to permit the introduction of evidence of the same kind for other lands of the carrier.

At the final hearing in the Kansas City Southern case counsel for the railroad filed an affidavit and motion asking leave to present the further evidence, which motion was denied by the commission. Thereafter a mandamus proceeding was brought in the Supreme Court of the District of Columbia to compel the commission to receive evidence to enable it to ascertain and report separately the "present cost of condemnation and damages or of the purchases in excess of original cost or present value" of the lands included in the rights of way, yards and terminals of such carriers. The railroad rested its case upon the provision of Section 19-A of the valuation act, which provides that the commission's investigation and report shall state in detail and separately, present improvements, original cost of all lands, rights of way and terminals owned or used for the purpose of a common carrier, ascertained as to the time of dedication to public use and the present value of the same, and "separately the original and present cost of condemnation and damages or of purchase in excess of such original cost or present value."

The Supreme Court of the District of Columbia dismissed the proceedings and an appeal was taken to the Court of Appeals. The case was argued before the Supreme Court on December 10 by counsel for the Kansas City Southern and the chief counsel for the Interstate Commerce Commission and a brief *amici curiae* was filed for the Presidents' Conference Committee on behalf of all the railroads.

The lower court was directed to issue the writ of mandamus asked for.

The court said in part:

"It is true that the commission held that its non-action was caused by the fact that the command of the statute involved a consideration by it of matters 'beyond the possibility of rational determination,' and called for inadmissible assumptions,' and the indulging in 'impossible hypotheses' as to subjects 'incapable of rational ascertainment,' and that such conclusions were the necessary consequence of the Minnesota rate cases.

"We are of the opinion, however, that, considering the face of the statute and the reasoning of the commission, it results that the conclusion of the commission was erroneous — an error which was exclusively caused by a mistaken conception of the commission of its relation to the subject, resulting in an unconscious disregard on its part of the power of Congress and an unwitting assumption by the commision of authority which it did not possess. And the significance which the commission attributed to the ruling in the Minnesota rate cases, even upon the assumption that its view of the ruling in those cases was not a mistaken one, but illustrates in a different form the disregard of the power of Congress which we have just pointed out, since, as Congress indisputably had the authority to impose upon the commission the duty in question, it is impossible to conceive how the Minnesota rate ruling could furnish ground for refusing to carry out the commands of Congress, the cogency of which consideration is made particularly manifest when it is borne in mind that the Minnesota rate cases were decided prior to the passage of the act in question."

Wire Capacity Increased by Modern Brevity Methods

BY THE EMPLOYMENT of modern brevity methods of coding the Grand Trunk has been enabled to handle a greater message traffic with a smaller force and in less time than was formerly the case. In one relay office there has been a decrease of two operators and a further decrease of one hour a day per operator, with an average increase of nine messages handled hourly by each operator. The saving represented is $425 monthly, or $5,000 yearly in this one office.

Many railroad men have been more or less opposed to coding, due very largely to the conditions in vogue under the old coding methods in use in the old rate-cutting days—when messages were codified more for secrecy than for economy, little attention then being paid to the time taken in coding in order to disguise thoroughly the meaning intended. Economy in tolls was then a secondary consideration. At that time it was not considered practicable to codify a message transmitted over railroad wires unless secrecy was desired.

That the old theory no longer holds true is well illustrated by what has been accomplished on the Grand Trunk, as shown by the figures below, which represent one day's performance by the car-tracing clerk in the office of the superintendent of transportation at Toronto, Ont.:

Number of	June 10, 1919.
Messages sent	130
Perfect messages	117
Other messages	13
Characters in all messages	*6,091
Characters saved by coding	1,576
Could have saved by further coding	65
Could have been saved by elimination	122
Messages that could not have been coded	48
Messages that could be coded	82
Messages coded, per cent	78 or 96

* A character is a letter or a figure.