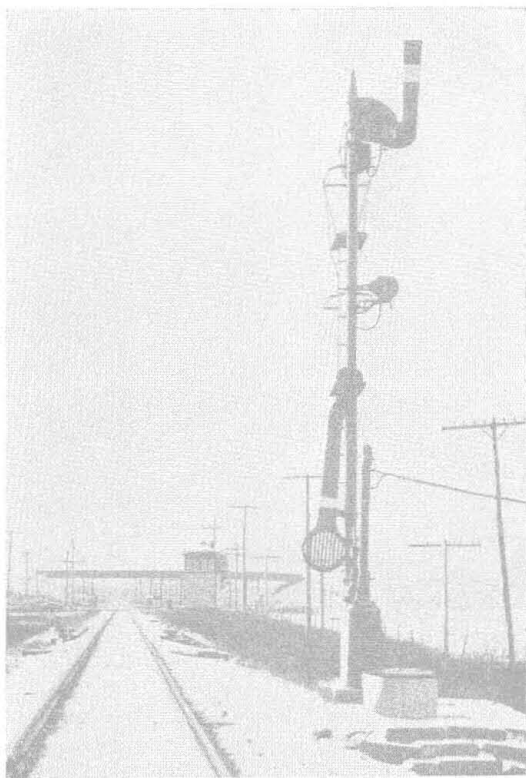


the control of Edison sun relays, while the other two are lighted by oil lamps.

Both of the center, or crossing, track-circuits and all of the track-circuits on the Great Western, are center-fed. This arrangement of the center track-circuit relays is a requisite of the interlocking-relay control scheme used at this crossing, if track-repeaters are to be avoided. Track-circuits *A4T* and *A3T*, on the Great Western, are of the center-fed type in order to overcome trouble resulting from the failure of rail motor trains to hold the shunt.



Home signal on the C. & N. W.

All of the wiring between signal locations is carried on open line, No. 10 weatherproof wire being used for this purpose. Okonite underground cable is used for all local wiring. The interlocking track relays are Union DX13, while the line relays are Model 13. Two Copper-weld bonds are used on each rail joint. Edison primary batteries are used throughout.

The maintenance force was not increased as a result of this installation. A traveling maintainer handles, not only this plant, but also several other interlockings, crossing bells and telegraph lines on this branch.

The plant was installed by Great Western forces under the direction of T. H. Kearton, superintendent of signals of that road. The installation cost, \$10,500, was borne entirely by the Great Western, but the operating and maintenance costs are divided as they were for the former mechanical plant, one-third being charged to the North Western and two-thirds to the Great Western, the junior road at this crossing.

Collision in Signal Territory

ON NOVEMBER 21, a rear-end collision between a freight train and an empty coach train on the Chicago & North Western, at Barrington, Ill., resulted in the death of one person carried under contract, and the injury of two employees. The accident occurred on

the Wisconsin division, which extends between Chicago, Ill., and Harvard. In the immediate vicinity of the point of the accident this is a double-track line over which trains are operated by time-table, train orders, and an automatic block-signal system.

The signal governing eastbound movements in the block in which the accident occurred is interlocking home signal No. 2. This is a three-panel color-light signal, located at a point 565 ft. west of a grade crossing with another railroad. The circuits are so arranged that when this block is occupied the bottom or call-on panel may show yellow with the two top panels displaying red lights, thus indicating "Proceed at restricted speed." The distant signal is located 3,359 ft. west of home signal No. 2. This signal will have the blade in the horizontal position, displaying red and green lights, indicating "Prepare to stop at next signal; train exceeding 20 m.p.h. must at once reduce to that speed," when the track in advance is occupied, or when the home signal displays stop indications on the two top panels with the call-on arm displaying either a red or a yellow aspect.

Eastbound second-class freight train No. 594 departed from Crystal Lake, 11.29 miles west of Barrington, at 11:43 p. m., arrived at Barrington at 12:13 a. m., where it set off five cars, and had just started eastward, and was traveling at a speed variously estimated to have been from 3 to 12 m.p.h., when its rear end was struck by train No. 698.

Conductor Vethe, of train No. 594, stated that he instructed the rear brakeman to ride on the head end of the train and assist the head brakeman in setting off cars at Barrington, and that he himself assumed the duties of flagman. Upon arrival at Barrington, Vethe got off with his flagging equipment and walked back a distance of four or five car-lengths, the rear end of his train having stopped at a point between the home signal and the interlocking tower. He stated that he was watching the brakemen when they gave the signal for their train to proceed after setting out the cars and he then returned to the caboose. At that time he saw train No. 698 approaching, but did not think that it would overtake his own train and did not leave torpedoes or a lighted fusee on the track. Just as his train started he got up on the rear platform and stepped inside the caboose to set his lantern down; then, upon looking back he saw that train No. 698 was getting closer and he reached inside the door, got a fusee, lighted it, and dropped it off, but too late to avert the collision.

Engineman McClosky, of train No. 698, stated that upon approaching Barrington he observed the approach signal for the interlocking plant displaying a caution indication, while the home signal was displaying a stop indication with a yellow light displayed by the calling-on unit; he stated that he called these indications to the fireman and the fireman repeated them. At some point between the approach and the home signals McClosky applied the air brakes, and reduced the speed to between 25 and 35 m.p.h. by the time he passed the home signal. As he approached the crossing it appeared to him that everything ahead was clear and he released the brakes, at which time the speed had been reduced to between 20 and 25 m.p.h. and the throttle was practically shut off, but just as he released the brakes he looked ahead again and saw some one with a white lantern, and immediately applied the air brakes in emergency.

According to the report of the I. C. C. Bureau of Safety, from which this description is abstracted, the accident was caused by the failure of Conductor Vethe to provide proper flag protection and by the failure of Engineman McClosky to reduce the speed of his train in accordance with indications displayed by interlocking approach and home signals.