

As a part of the signal construction program, a local man with a team of horses and a scraper was employed to build up a good embankment around each signal foundation, and at each location the embankment was built large enough to make a motor car set-off. A bed of washed gravel several inches thick is placed over the surface of the embankment. A layer of asphaltic composition, about 2 in. thick, is placed to bring the top surface level with the top of the rail for the area used as a set-off. Between the rails,

the top surface of the asphaltum is 1 in. below the level of the top of the rails.

This automatic signaling was planned and installed by railroad forces under the general jurisdiction of L. S. Werthmuller, signal engineer, Missouri Pacific Lines, with headquarters at St. Louis, Mo., and under the direct supervision of H. L. Robertson, assistant engineer of signals, with headquarters in Houston, Tex. The major items of equipment were furnished by the General Railway Signal Company.

Accident at Movable-Point Crossing

On January 2, 1945, there was a derailment of an Erie passenger train at a movable-point crossing in an interlocking at Sterling, Ohio, which resulted in the death of the engineer, and the injury of the fireman. The Interstate Commerce Commission report of this accident is abstracted as follows.

Within interlocking limits, the Erie double-track main line crosses a double-track line of the Baltimore & Ohio, 553 ft. east of the tower. At this movable-point crossing, the Erie eastward main track intersects the B. & O. westward main track at an angle of 7 deg. 9 min. 10 sec. The movable points of the crossing were 13 ft. long, and were reinforced on the knuckle-rail side by rails 2.9 ft. long, and on the gage side by straps in the web.

Semi-automatic signal 637.2 and interlocking home signal 54, governing eastbound movements on the eastward main track, were, respectively, 8,592 ft. and 833 ft. west of the point of accident. These signals were of the semaphore type. The interlocking machine was of the electric type. Approach and electric-switch locking were provided. Derail 50 was located on the south rail of the eastward main

track 74 ft. east of home signal 54.

The weather was clear at the time of the accident, which occurred at 3:43 a.m. During several hours prior to the accident, the temperature was about 0 deg., F., and snow was being driven by a strong wind. The signal maintainers and section forces were on duty to keep the plant operative. About 3:40 a.m. the operator made unsuccessful attempts to line the route for train No. 2. The lever controlling the derails and crossing 30 functioned properly, but when he placed the lever controlling signal 54 in position to display proceed, this signal continued to display stop. The signal foreman, who was in the tower, immediately proceeded to signal 54, and he said that while he was examining the relay controlling this signal, the indication changed from stop to approach, and the signal was displaying approach when No. 2 passed it.

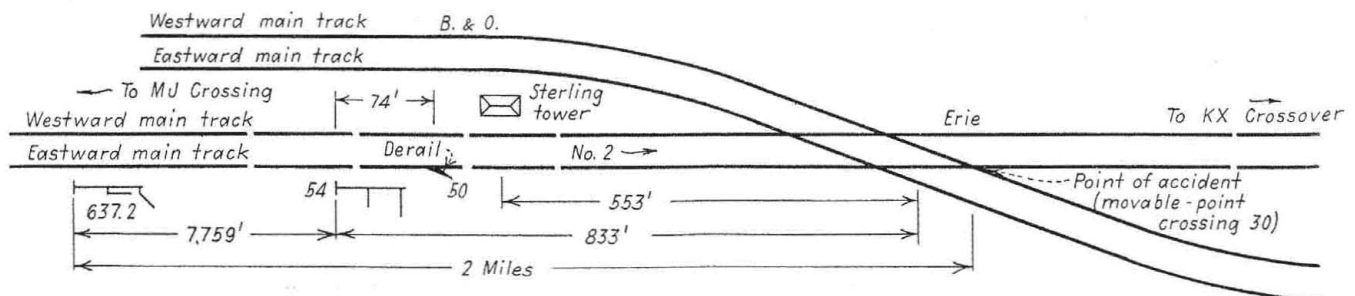
When the engine passed signal 637.2, the speed was about 30 m.p.h. and this speed was maintained until the engine reached a point a short distance west of crossing 30. Then the engineer appeared to be concerned about some condition in front of the engine, and moved the brake valve to service position.

The investigation disclosed that when the accident occurred, crossing 30 was lined for movement on the B. & O. westward main track, but derail 50 on the Erie eastward main track was in non-derailing position and home signal 54 displayed approach for No. 2. Examination disclosed that the south trailing point of crossing 30 had been forced open, the lock rod and the operating rod were broken, and the north facing point was broken. The circuits were so arranged that, when the route was lined for movement on the B. & O., the derails on the Erie tracks would be in derailing position and the home signals governing movements on the Erie tracks would display stop. Since crossing 30 was lined for movement on the B. & O., derail 50 on the Erie eastward main track should have been in derailing position and home signal 54 should have displayed stop.

Under the circumstances present, the only manner developed during the investigation in which derail 50 could be in non-derailing position when No. 2 passed it was for some person in the tower and having knowledge of the operation of the plant to release the locks so that the lever controlling derail 50 could be placed in position for this derail to be moved to non-derailing position, and for another person who had knowledge of the operation of the mechanism and relays, located in the housing at home signal 54, to manipulate the mechanism or relays in such a manner as to cause this signal to display approach. The investigation disclosed that persons having the necessary knowledge were in the tower and at home signal 54 when No. 2 was approaching the interlocking.

If the prescribed rules had been complied with, examination of crossing 30 would have disclosed that the route was not lined for the intended movement, and this accident would not have occurred.

It is found that this accident was caused by making the indication displayed by the home signal and the position of the derail not in accordance with the position of the movable-point crossing.



Track and signal layout of the interlocking at the crossing of the Erie and the Baltimore & Ohio at Sterling, Ohio