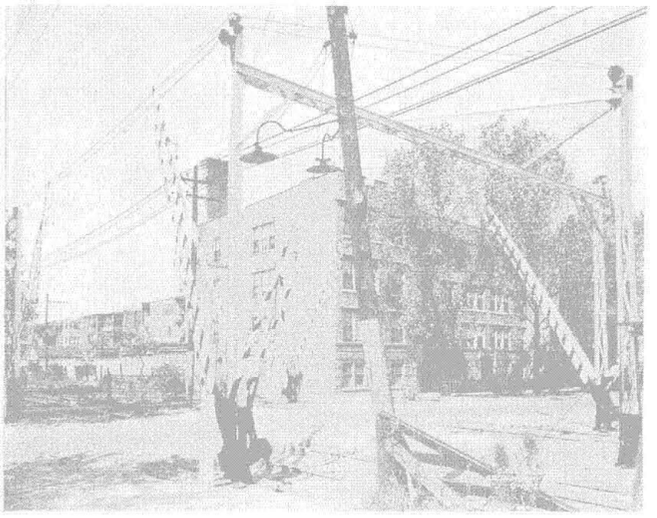
right beams 22½ ft. high and one cross span carries the ⅜-in. cables connecting the gate arms with the levers in the operating shelter. There are two levers, each lever controlling the gate arms on one side of the crossing. Turnbuckles in each cable connection permit of making any slight adjustments to take care of temperature changes.

The principal feature making this new gate an improvement over other manually-operated types, is its greater operating efficiency. The gate arms can be



This overhead cable-controlled gate installation eliminated the need of sub-surface construction work

stopped almost instantaneously at any position, when being raised or lowered. Another factor that makes for greater grade crossing protection is the elimination of all danger of the cables freezing in cold weather, which may happen when the control apparatus is underground. Maintenance costs also are reduced by the new gate, due to its simplicity of construction.

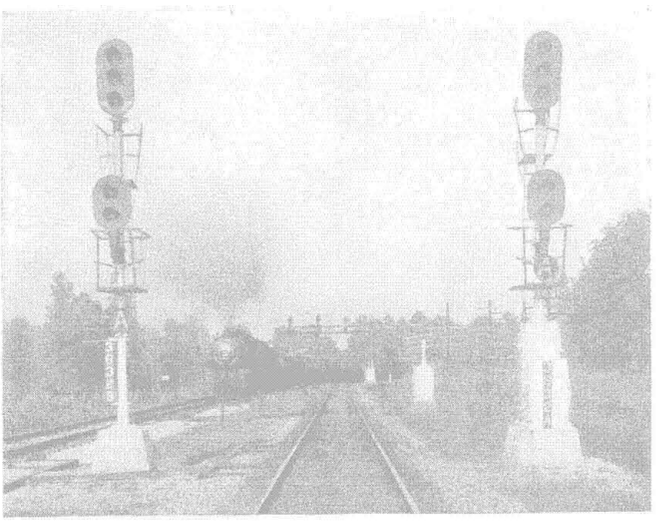
C. & E. I. Derailment and Collision at Chicago

FAILURE to observe and obey a signal indication is given as the cause of the C. & E. I. derailment and collision at West 21st street and Stewart avenue, Chicago, on December 6, 1928, according to a report issued by W. P. Borland, director of the Bureau of Safety of the Interstate Commerce Commission. A Chicago & Eastern Illinois passenger train moving over the tracks of the Chicago & Western Indiana was derailed and then collided with the side of a Pennsylvania express train at the intersection of the tracks of the two last named roads. One employee was injured.

In the vicinity of the point of accident, this is a six-track line, the tracks being numbered from east to west; tracks 1 and 2 are used by passenger trains and train movements over these tracks are governed by time-table train orders, and an automatic block signal system. Train movements over the Pennsylvania crossing are protected by an interlocking plant, and the derailment occurred within these interlocking limits on track 1, the northbound main track, at a derail located about 100 ft. north of the home signal, while the collision occurred about 450 ft. beyond the derail, where the Pennsylvania tracks cross those of the Chicago & Western Indiana.

This accident was caused by the failure of the engine man of the train properly to observe and obey signal indications. The engineman maintained that he took proper precautions to bring his train to a stop in obedience to the caution indication displayed by the distant signal and the stop indication displayed by the home signal, as well as observing the requirement that all trains come to a full stop at the crossing, regardless of the position of the signals. He attributed his failure to stop to the fact that the air brakes did not apply properly on the train. The weight of evidence, however, did not support such a contention. Aside from the difficulty experienced in making stops with an Atlantic-type engine with 79-in. driving wheels, and a light train of only two cars, it appeared that the brakes operated properly on the southbound trip, that they operated in making several stops enroute on the northbound trip, the last such stop having been made about five minutes prior to the occurrence of the accident, and, according to the engineman's own statement, they had operated properly up to the time of the accident. It appeared from the engineman's statements that the brakes on the engine were set at the time the fireman reversed the engine and the conductor examined the brakes immediately after the accident and found them set on the cars in the train, while officers reaching the scene within a comparatively few minutes found all angle cocks open, with the brake valve handle in the emergency position.

Under these circumstances, with the air brakes in the same condition as they had been throughout the southbound and northbound trips, it seemed incredible that an experienced engineman in full possession of his faculties could have misjudged speed and distance to such an extent as to cause an accident of this kind, and it is believed, therefore, that, "the engineman was not in full possession of his faculties and that this condition resulted in his failure to operate his train in accordance with signal indications. That something was wrong with the engineman is obvious in view of the fact that he ran his train off the derail and then continued on the ties a distance of 450 ft. and over three railroad crossings to the point where it collided with the Pennsylvania train, but on the record as it stands, it is believed that any attempt to explain why he failed to obey signal indications is a matter of mere conjecture."



Remote control signaling on Missouri Pacific double-track line