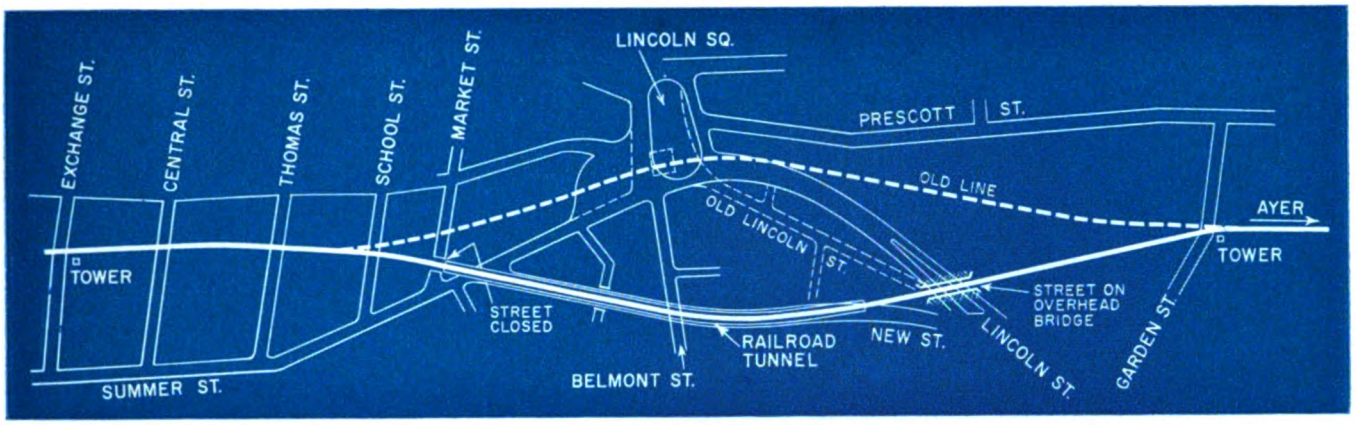


New B&M mainline goes underground to avoid heavy vehicular traffic area of Lincoln Square

Improved Signaling Results

. . . from Grade Elimination

To eliminate a highway grade crossing in a heavy vehicular traffic area, B&M main line was relocated and put underground. Changes also required a new interlocking and moving controls of an existing interlocking to a new location

AT WORCESTER, MASS., the Boston & Maine has recently completed several interesting track and signal projects. These included a grade crossing elimination involving a main line relocation, installation of a new interlocking, and relocation of control of another interlocking. The new interlocking ties in with an interlocking of the New York, New Haven & Hartford. Train stops and interchange of train equipment had to be taken into consideration for Worcester Union Station, which is located between these two interlockings.

Beyond Worcester the double track main line extends easterly to Ayer, Mass., where it joins with the Fitchburg division main line. Daily traffic includes two passenger trains and 10 freight trains. Numerous yard and switching moves are also involved.

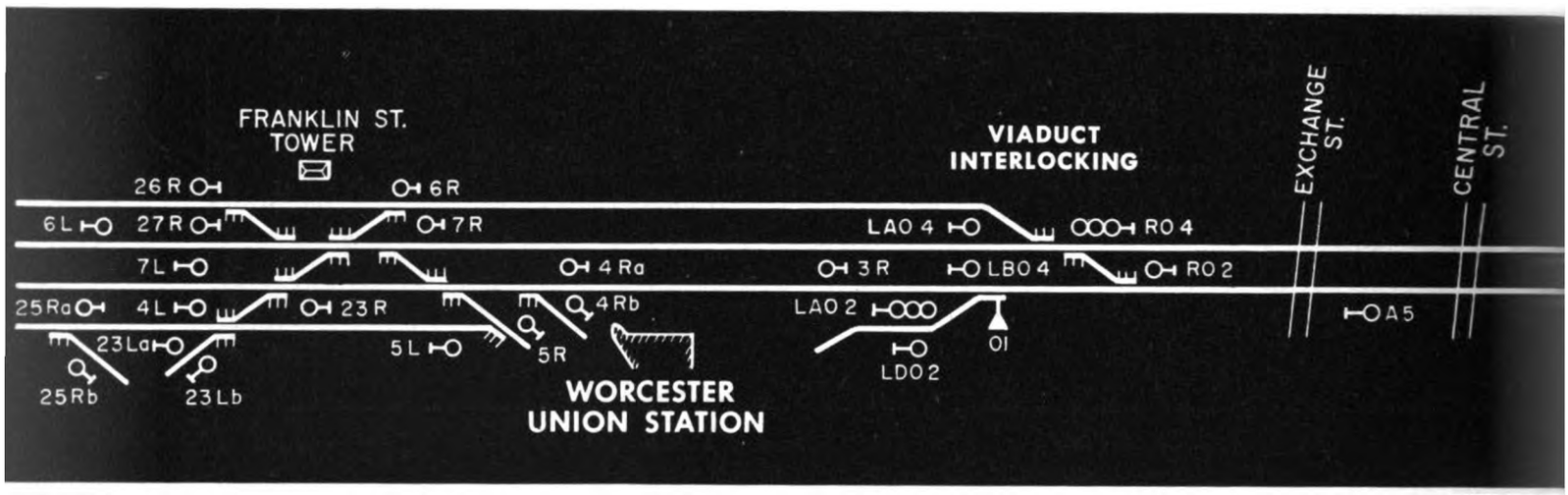
In the May 1953 issue of Railway Signaling and Communications there was a description of automatic highway crossing gate installations made in 1952 at five crossings shown in the plan: Exchange St., Central St., Thomas St., School St. and Market St. Superimposed manual control of these installations for switching movements was provided in a new tower at Exchange St.

To improve traffic conditions at Lincoln Square where there was a double grade crossing and extremely heavy traffic, public authorities proposed a traffic circle and the elimination of the grade crossings by constructing a tunnel for the railroad 1,456 ft long and about 550 ft easterly. Total relocation was about 3,550 ft.

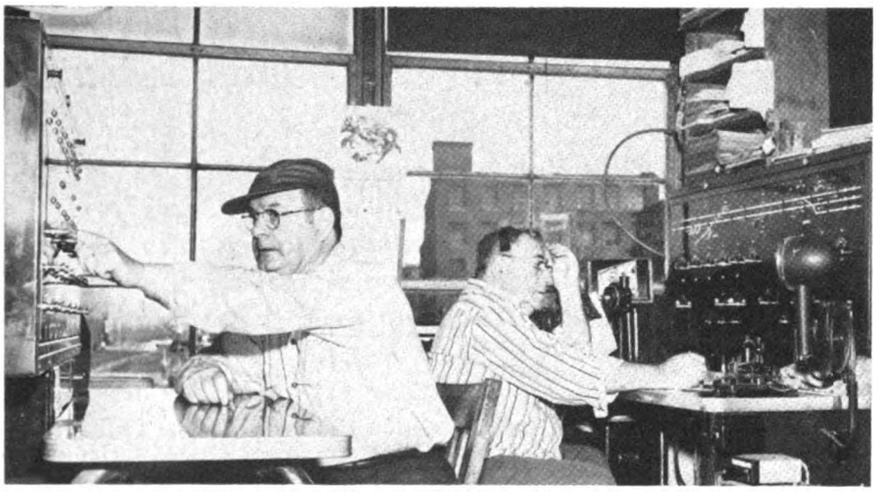
Main Line Is Relocated

Complicating this project was the relocation of a large drainage stream called Mill Brook. To accomplish this the double track main line was converted to single track between Lincoln Square and Gar-

Mouth of tunnel looking east with part of the old mainline on the left



Track and signal diagram of new Boston & Maine line including the new signaling



Supervisory manual control panel (left) in Exchange St. tower for highway crossing protection, and interlocking control panel (right) for Viaduct interlocking

Thomas St. automatic gates and flashing-light signals may be under supervisory manual control from a panel in Exchange Street tower

den St., with a spring switch and interlocking signals at each end of the single track. As work progressed, interlockings were relocated or changed to permit use of first one track and then the other of the two main tracks. Control point was in the tower at Garden St. When the new double track was completed, color-light automatic block signals were installed.

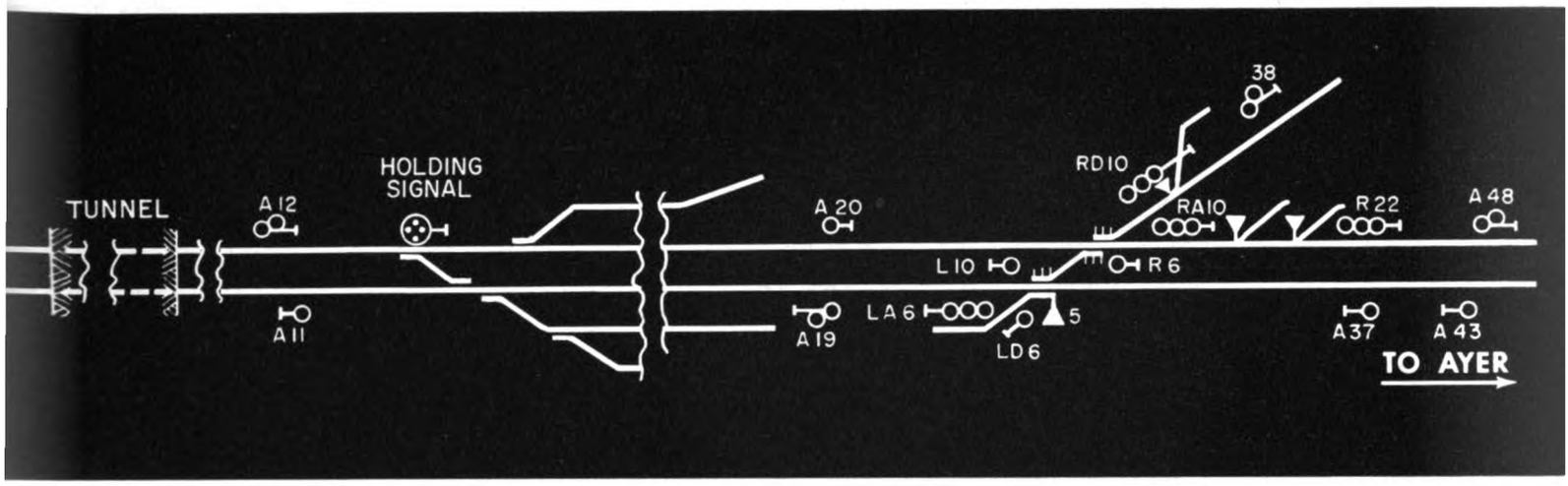
This project not only eliminated the double grade crossing at Lincoln Square, but also the Market St. crossing. On the former line there were manually operated crossing gates at Garden St. Temporarily these had to be relocated to the new line. Automatic gates were then installed.

New Interlocking at Viaduct Is Remote Controlled

From the New York, New Haven & Hartford, three tracks lead through Worcester Union Station to Viaduct, from which double track extends easterly. Hand-operated switches at Viaduct were thrown by switchmen who worked in conjunction with the New Haven tower at Franklin St. These have now been replaced by an interlocking. Control of switches and signals is located in the tower at Exchange St. Traffic locking has been installed between this interlocking and the Franklin St. interlocking.

Interlocking Control Relocated

Still another project, although handled at the same time as the foregoing, was the relocation of control of Barber interlocking from Garden St. tower to Exchange St. tower. Barber is an interlocking



Tower at Exchange Street controls Viaduct interlocking and interlocking (at right in plan)

about 2.5 miles east of Exchange St. at a junction with the Peterboro Branch. It includes three controlled switches, five electric switch locks and seven signals. This released the two-story steel tower at Garden St. for use on another project.

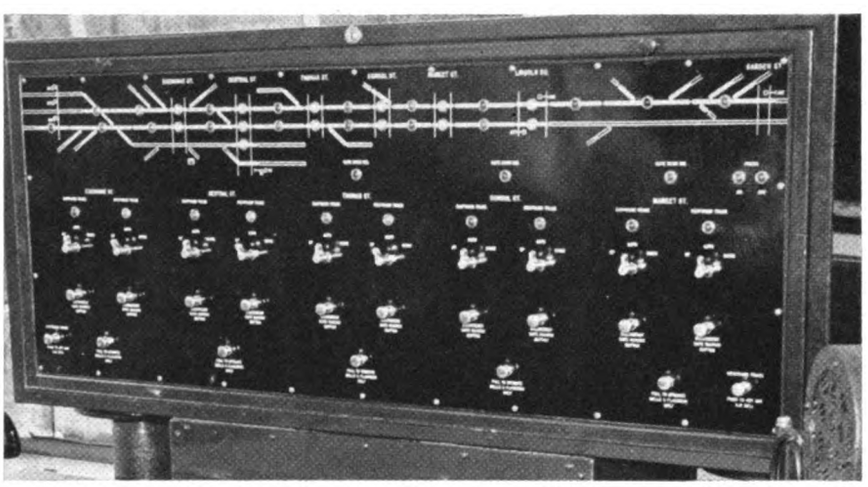
Color Position-Light Type Signal for Holding Trains

An interesting feature is the holding signal installed 600 ft east of Garden St. and controlled from Exchange St. tower to hold back trains which, if advanced to signal RO4, might block the intermediate grade crossings where traffic is rather heavy. This is a position-light signal. Normally two vertical lunar white lights indicate "clear." When train is to be held, two horizontal red lights indicate "stop and phone Exchange St. tower." Approach indication is then displayed on signal A20. When this holding signal indicates stop, the operating circuit for the automatic gates at Garden St. is cut out east of the signal. Consequently gates do not obstruct traffic while trains are being held.

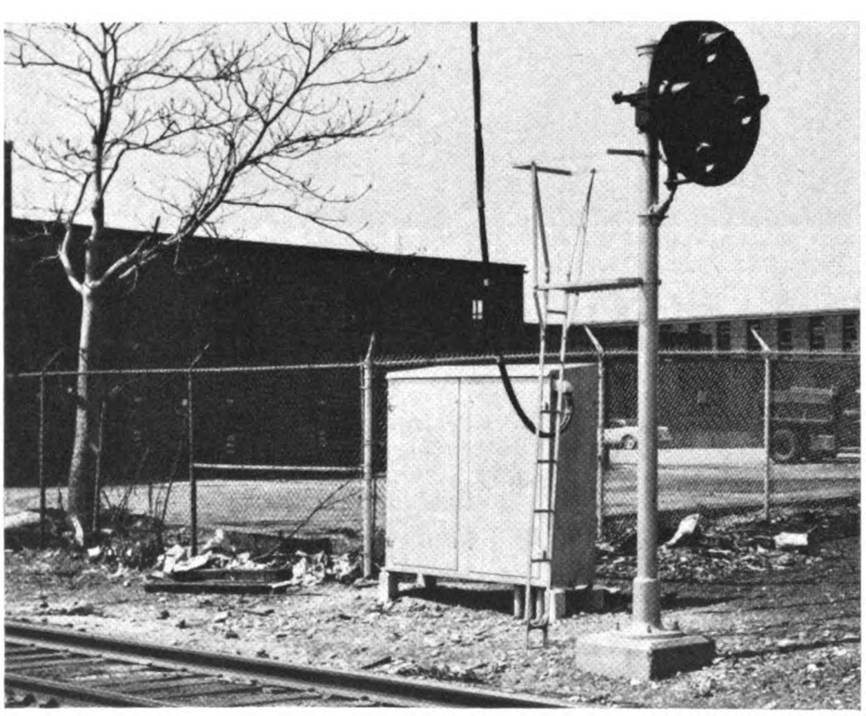
Horns to Call Trainmen at Viaduct Interlocking

Dwarf signal 3R at Viaduct is controlled from Franklin St. tower and was installed on account of switching and train make-up moves at Worcester Union Station. Horns to call trainman to the phone were installed at both ends of Viaduct interlocking.

These projects were designed and installed by Boston & Maine forces under the direction of E. N. Fox, Engineer of Signals and Communications, now retired.



Supervisory manual control machine for highway crossing protection equipment



Holding signal is the color-position-light type