

New Signals Being Installed at the Chicago Union Station

Use of Five Position Light Indications Results in Maximum Visibility

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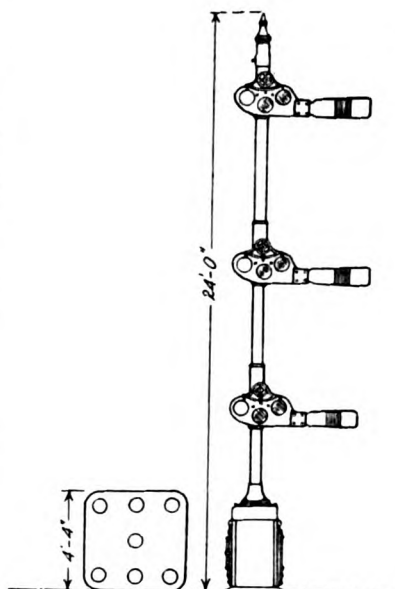


Fig. 1—Comparing the Size of the Position Light Signal with a Three-Arm Semaphore

THE elimination of movable parts in the signal and the simplification of the signal indication are features being developed in signaling at this time. Pronounced advancement has been made in the use of lights for both day and night indications, thus eliminating the semaphore arm with its motor and operating mechanism. Two types of light signals are being used. One type extends the use of the colored lights as formerly used only at night through the daylight period. This type is called the colored light signal. The other type reproduces by lights the semaphore positions, extending them through the night period. This type is called the position light signal.

Giving signal indications by lights allows a flexibility of arrangement that is impossible with the semaphore arm, because the semaphore arm must always be in evidence, while the light arrangement can be made to vanish at will. This makes it possible to reduce the size of signals materially and still give the required indications.

Advantage was taken of this in arranging the signal system for the Chicago Union Station where viaducts of a very attractive design cross the tracks approximately 800 ft. apart, the bottom of which are only 17 ft. from the top of rail, at points where signals are required.

To have used the standard semaphore signal would have necessitated signal bridges on both sides of these viaducts which would have entirely obstructed the view of these attractive structures from the tracks. Hence a signal was designed of such a size that it could be attached readily to the viaducts and not interfere with the attractiveness of their design.

The signal indications required for the proper operation of the terminal were as follows:

(1) "Stop Signal," indicating STOP, the route is not lined up.

(2) "Permissive Signal," indicating that the route is lined up but that the track immediately ahead is occupied, giving authority to proceed with caution prepared to stop short of a train or obstruction.

(3) "Slow Speed Signal," indicating a divergence over

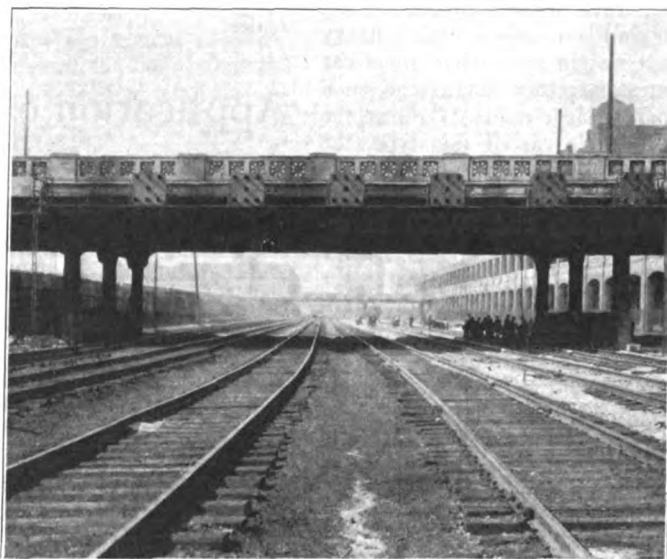


Fig. 2—The Light Signals, Supported from the Viaducts

a slow speed crossover to a track which is unoccupied but on which there may be a stop signal.

(4) "Caution Signal," indicating that the immediate block is clear and the movement is being made without divergence but to approach the next signal prepared to find it at stop.

(5) "Clear Signal," indicating that the route is lined up, the movement is being made without divergence, the next signal is at caution or clear and the track is unoccupied at least to the second signal, i.e., authority to proceed at authorized speed.

The arrangement of the

Pos. Light Signal	Semaphore	Name	Indication
		Stop Signal	Stop
		Permissive Signal	Track immediately ahead is occupied. Proceed with caution prepared to stop short of train or obstruction.
		Slow Speed Signal	Track is set to diverge over slow speed turnout. Track is unoccupied to next signal. Proceed at slow speed prepared to stop.
		Caution Signal	Approach next signal prepared to stop
		Clear Signal	Proceed at authorized speed.

Fig. 3—The Five Position Light Signal Indications with Corresponding Indications of Semaphore Signal and What Each Indication Means

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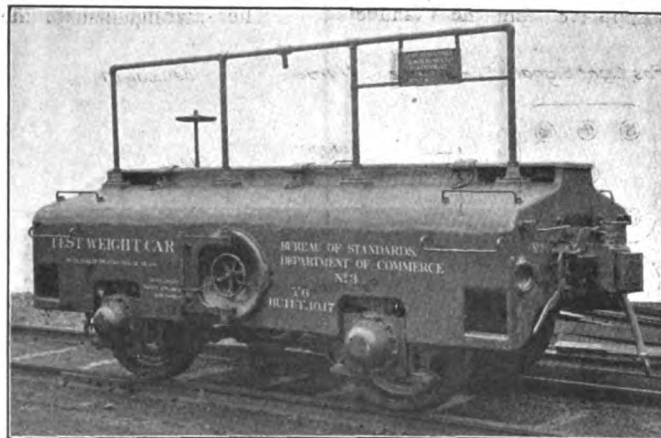
lights to give these indications is shown in Fig. 3, together with the corresponding indications which would have been given had semaphore signals been used.

An idea of what was accomplished in reduction in size may be gained from Fig. 1, which shows the size of the new light signal as compared with a standard three-arm semaphore signal. A photograph of one of the viaducts on which the light signals are attached shows the final results.

Southwark Scale Test Weight Car

THE ACCURACY of railroad track scales can best be assured by periodical tests and comparison with a heavy known weight. For a test weight a small compact car has been found to be the most satisfactory device and such cars are now in use on a number of large roads. To meet the demand from railroads for a reliable car of this type, the Southwark Foundry & Machine Company, Philadelphia, recently has undertaken the manufacture of scale test weight cars in two sizes, weighing 40,000 lb. and 80,000 lb. respectively.

These cars are of the same design as those adopted by the United States Bureau of Standards, Department of Commerce, and are the result of careful study and experimental investigation, followed by extended use in continued service. They are constructed entirely of metal, the frame being made of two castings machined and bolted together along the center line. They are carried on two axles with 36-in. forged steel wheels pressed on the axle. The journal boxes, which are fitted to machined pedestals, are of the roller bearing type with side thrust bearings and being entirely enclosed are thoroughly protected from dirt or from being tampered with. The



Weight Car for Testing Track Scales

friction is, of course, much lower than with the ordinary type of car bearings. Semi-elliptic springs transmit the weight to the journal boxes. The wheelbase is 7 ft.

The center running board or floor plate is of the self-draining type and acts as a hinged cover to the storage space for the calibrating weights. These consist of 50 lb. cast iron weights which are used to bring the car up to its final test weight. The covers are kept locked after the weight is once adjusted.

In the center of the body of the car and crosswise with it is a cylindrical chamber to carry the tool box or supercargo. This box contains such tools as are needed in adjusting track scales. Doors on both sides are of the hinged hatch type, closed with a screw against a lead gasket, which insures protection against water leaking into the chamber and affecting the weight. The tool box should be removed before using

the car, as the tools are liable to vary some from time to time.

A. R. A. couplers, draft gear and United States standard safety appliances are provided. Standard air brake pipe and hose couplings run through the car, but only hand brakes are operative on the wheels. The air pipe is made self-draining to prevent accumulation of water.

Flag and lamp sockets are fitted to the four corners, but it is generally preferable to carry this car just ahead of the caboose, where it can be quickly detached or connected to any train.

The whole car is low with sloping sides as a protection from the influence of wind and water and is built without obstruction underneath, preventing accumulation of foreign matter. The construction meets all the requirements laid down by the American Railway Association for testing track scales.

Application of Frisco to Acquire I. G.-N. Denied

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION, by Division 4, on May 18 denied the application of the St. Louis-San Francisco for authority to acquire control of the International-Great Northern by purchase of its capital stock, as "not in the public interest." The commission named no specific reason for the refusal of authority, although it stated that in the commission's tentative plan for the consolidation of railroads the Frisco line is placed in System No. 18—Frisco-Katy-Cotton Belt, while the International-Great Northern is included in System No. 19, Chicago-Missouri Pacific. Hearings have been held in relation to the grouping of lines in these systems, but a final determination has not been made.

The Missouri Pacific has asked that if the proposed acquisition be authorized, the order be so conditioned as to provide for the maintenance of the existing through route and service and to be without prejudice to its rights in the event the tentative plan becomes ultimately effective. The report of the commission states that the state of Texas, by its attorney general, had recommended that in the event the application be granted, the order authorizing such acquisition be so conditioned as not to create a consolidation of the two companies. Communications had been received from representative organizations of business men and shippers in the interested territory and from public officials and individuals, all recommending that the application be granted.

A hearing was held on the application, at which an intervening petition was filed by the Missouri Pacific. The testimony showed that the voting trustees had declined to negotiate with the Frisco for the sale of the stock until after they had been advised by representatives of the Missouri Pacific that the latter did not desire to purchase it. The Missouri Pacific at the hearing took the position that the International was constructed to form a continuous line from St. Louis to Houston, Laredo and Gulf ports in connection with the Texas & Pacific and Missouri Pacific, that for 40 years it had been preferentially used by the Missouri Pacific between the points named and because of such long and continued use there had been created a route and channel of trade and commerce in competition with the lines of the Frisco, and the largest interchange of traffic by the International is with the Texas & Pacific in connection with the Missouri Pacific.

THE FLORIDA RAILWAY SURGEONS' ASSOCIATION held its fourth annual convention at Jacksonville, Fla., on May 14, with an attendance of about 75. Dr. H. C. Dozier of Ocala was chosen president.