

New Type of Signals Being Installed at the Chicago Union Station

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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 bottoms 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 oc-

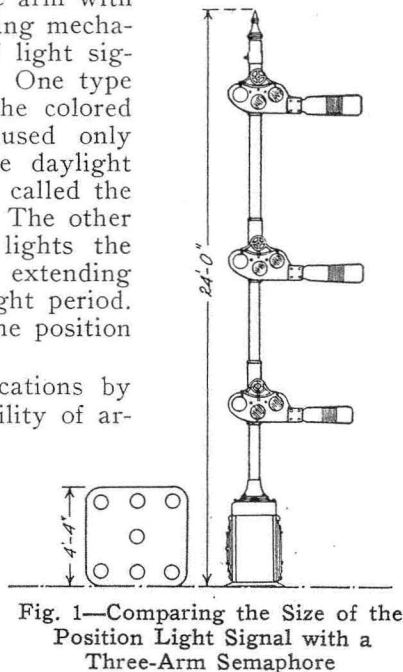


Fig. 1—Comparing the Size of the Position Light Signal with a Three-Arm Semaphore

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

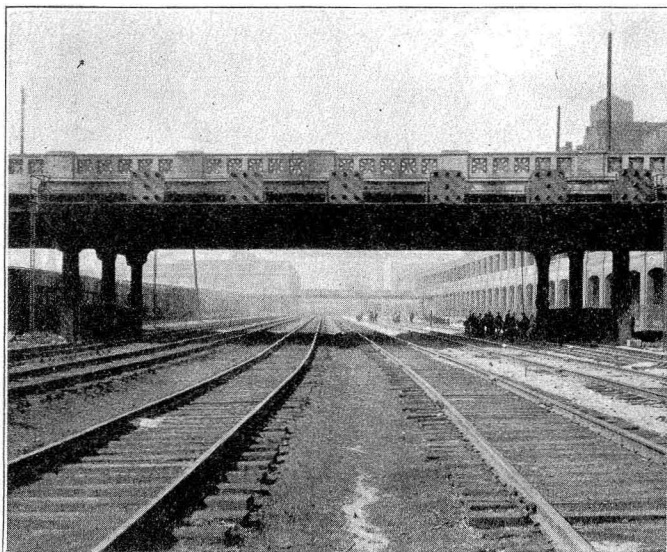


Fig. 2—The Light Signals, Supported from the Viaducts

cupied, giving authority to proceed with caution prepared to stop short of a train or obstruction.

(3) "Slow Speed Signal," indicating a divergence over 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, thus giving authority to proceed at authorized speed.

The arrangement of the lights to give these indications is shown in Fig. 3, together with the corresponding indications which would have been given by semaphores.