

Each man is provided with a velocipede car on which he carries the maintenance supplies and a kit of tools. Any improper operations of the signal system are reported by the maintainer by joint wire to the Chief Engineer, Superintendent and Signal Supervisor. Copies of report are forwarded by train mail to Signal Supervisor and Chief Engineer, with full explanations of cause. The Signal Supervisor investigates each case personally and works up a record which shows the performance of the entire signal system for a given period. The Sig-

nal Supervisor also keeps a record of all labor and material chargeable to signal maintenance, so that maintenance costs can be determined for the entire system or any part thereof. The cost of maintenance per mile per month is about \$16. Ordinary maintenance supplies are carried in stock at the general storehouse at Hamilton, and a few emergency supplies are kept on hand at maintainers' headquarters.

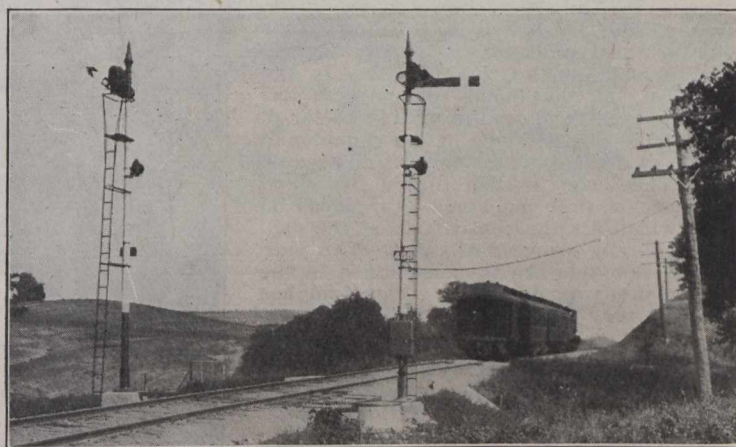
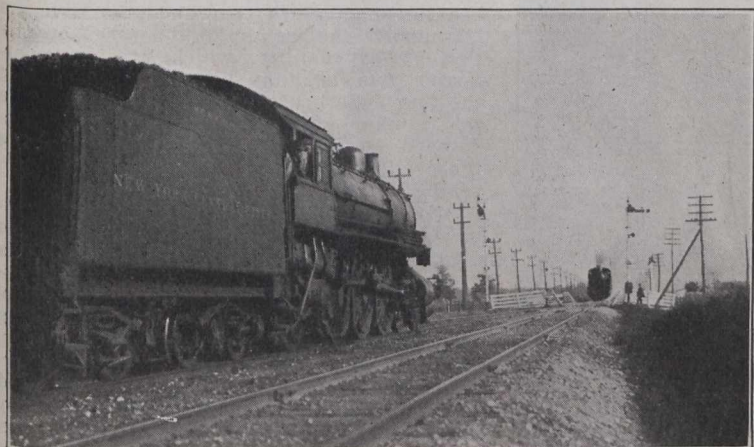
line, as one train can follow another as soon as the first train passes the first signal in advance, which is accomplished in considerably less time than the prescribed time interval of the telegraph block. 4. The signals afford maximum protection at meeting and passing points, serving as a check on dispatchers' orders, also as a reminder to trainmen at scheduled meeting and passing points. 5. The signals more than double the safety factor in connection with flagging, as an approaching train would, in most cases, meet a caution or

Reclamation of Hose Couplings.

By E. J. McVeigh, General Storekeeper, Grand Trunk Railway.

We are all interested as never before in the reclamation question, and while the ground has been pretty well covered lately, there is always room for something more, if it is to the point, and there is one small item that I would like to call attention to.

I presume every road on this continent has a hospital track on which stands locomotives waiting repairs. Some of these machines will never go through the shop,



Absolute-Permissive Block System, Toronto, Hamilton and Buffalo Railway.

stop indication before the flagman could go out far enough to insure adequate protection. 6. Owing to the high degree of protection which the automatic signals afford, "19" orders may be used in many cases where "31" orders would otherwise be used. These features and others combine to accomplish the desired end—safe and economical operation.

What the Signals are Accomplishing.—The officers of the T.H. & B.R. state that they are well satisfied with the results

"Gasol," a semi-natural gas, is being introduced as a substitute for acetylene and hydrogen for autogenous welding. It is ob-

and many of them will not be taken in for a considerable time.

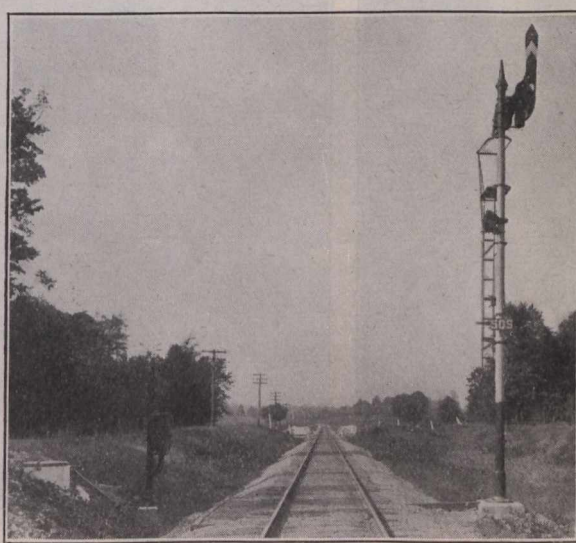
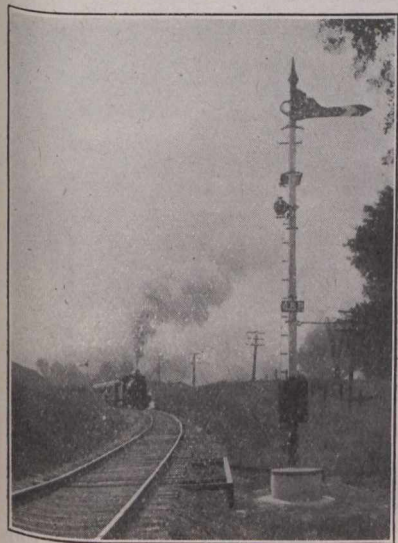
I have for years been particularly interested in the care of steam heat hose and couplings, and a few days ago, while walking along the hospital track at a certain railway shop, I counted the number of steam heat and air hose that were still attached to a line of disabled locomotives. Counting them all as good useable parts, there was in that line \$80 worth of material that was rapidly going to waste.

Now, no matter what the condition of these parts when the locomotives go into the shop, they are removed, and may or may not be properly reclaimed. But one thing we can be sure of that they will not be re-applied to that locomotive when it comes out.

Supposing that all of these hose and couplings were in good order when the locomotives were placed on a repair siding, as they would very likely be. If they had been removed at that time, and it would only take a few minutes to do this, they could have been at once put into service and the purchase of new ones saved. But granting that the rubber was of an age that would make it advisable to remove it, you still have the couplings and nipples to put into service, and if these are left on the locomotive, a fair proportion of them will be so damaged that they can never be put in use again.

What I have said here about locomotives applies also to a greater or less extent to cars, and while this may be comparatively a small thing, I consider it is worth while, and if there are any who have not given this attention, I would suggest that they take the first opportunity of examining their hospital tracks to see what they find. If we cannot save \$100 every day, that is no good reason why we should not make the effort to save \$10.—Railway Storekeeper.

The elimination of dense black smoke by locomotives requires the supplying of sufficient air to the fire, the thorough mixing of the air and combustible gases and the maintenance in the firebox of a temperature that will cause the combustible gases and oxygen of the air to unite.



Absolute-Permissive Block System, Toronto, Hamilton and Buffalo Railway.

obtained by the automatic signals, which may be briefly summarized as follows: 1. Under proper observance of the indications, the signals provide for opposing as well as following movements, a definite space interval which practically eliminates the liability of collisions. 2. Misplaced switches, broken rails, or any breaks in the continuity of the track cause the display of a stop indication at the signal governing entrance to the block, and thus greatly reduces the liability of derailments. 3. The signals increase the traffic capacity of the

tained from the waste gas from oil wells, and is said to cost only 0.1 ct. per cu. ft., a material reduction on the other gases.

What is said to be a record in loading rails was accomplished recently by the Lehigh Valley Rd., when 171,988 ft. of 90-lb. relaying rail was loaded from alongside the main line in a day by the use of a locomotive crane and ditching machine. This amount of work equals over 2,300 tons, or over 16 track miles.

Interlocked milling cutters are said to give better results than plain cutters.