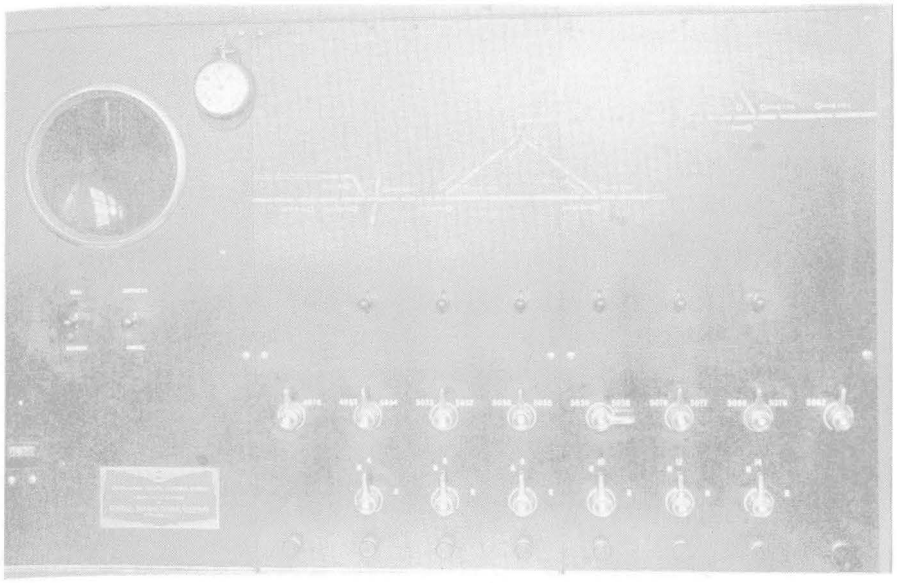


The C. T. C. control machine has 8 levers for signals and 6 levers for switch controls

Each switch is equipped with 1-in. by 9-in. insulated gage plates on four ties, including the one ahead of the points. Rail braces are used on these plates, a special feature being the braces on the gage sides of rails on the tie ahead of the point so that the rails cannot roll. On two ties, the gage plates extend and are attached to the switch machine, thus preventing lost motion.

Color-light signals are used. In the semi-automatic signals, the lamps are arranged in a triangle, using a circular background, which provides a distinguishing difference from the automatic block signals in which the color-light units are in a vertical row with an oblong background. Each C.T.C. controlled semi-automatic signal is equipped with a reflectorized "A" marker, thus designating it is an absolute stop signal.

The concrete signal foundations are of the pre-cast type, furnished by the Concrete Products Company, St. Louis, Mo.

Power Supply

Alternating current at 550 volts single phase is distributed over the territory on a line circuit of two No. 6 weatherproof copper wires. At each power switch, a set of 12 cells of Exide Type-DMGO-7 storage battery, on floating charge, is provided for operation of the switch machine, as well as for operation of the coding equipment. One set of 5 cells of the same type of battery is used at each signal, and one cell of the same type feeds each track circuit.

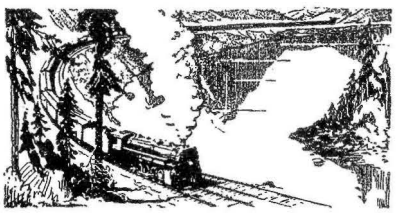
This centralized traffic control project, as well as the automatic block signaling mentioned previously, was planned and installed by the signal department forces of the Missouri Pacific, under the direction of L. S. Werthmuller, signal engineer. The major items of equipment were furnished by the General Railway Signal Company.

Signals Ordered on the Kansas City Southern

On December 30, the Interstate Commerce Commission issued an order as follows:

It is ordered. That the Kansas City Southern be required to install a block signal system which complies with the specifications and requirements prescribed by our order of April 13, 1939, on that part of its line extending between DeQuincy, La., and Beaumont, Tex., and between Joplin and McElhany, Mo., and that said installations be completed on or before July 1, 1944, and *provided* that if a centralized traffic control system is installed to meet this requirement, all hand-operated main track switches within the installation will be equipped with electric switch locks.

It is further ordered. That this proceeding be held open for further consideration with respect to what block signal systems or other similar appliances, methods, or systems should be required to be installed on other portions of respondent's line between Kansas City, Mo., and Port Arthur, Tex.



The report, preceeding this order, stated in part that during the period from August 18, 1941, to May 25, 1942, four serious collisions between trains occurred on the line of the Kansas City Southern. Investigations of the foregoing accidents disclosed that a block signal system was not in use on the parts of respondent's railroad where these accidents occurred, and that had an adequate block signal system been in use these accidents would not have occurred. The establishment of an adequate block signal system was recommended. In connection with the reports upon the Holly and Joplin accidents, orders were issued calling upon the Kansas City Southern and other interested parties to show cause, if any, why that carrier should not be required to install an adequate block signal system on the lines of the districts in which those accidents occurred. In connection with the Acorn accident, a similar show-cause order was issued July 30, 1942, applicable to all portions of its main line between Kansas City, Mo., and Port Arthur, Tex., except one section of about 16 miles on which an automatic block signal system was then in service.

The Kansas City Southern filed a return to each of these show-cause orders setting forth reasons why it believed it should not be required to install a block signal system on any part of its lines. Returns also were filed by representatives of organizations of railroad train-service employees in which it is claimed that the Kansas City Southern does not have an adequate block signal system in use and that such installations as are set forth in the show-cause orders should be required to be made.

At a hearing held September 14, 1942, respondent asked permission to withdraw its returns to the show-cause orders and to file a new return, which request was granted. In its new return it proposed to install a centralized traffic control system on its line between DeQuincy, La., and Beaumont, Tex., a distance of approximately 37 mi., and an automatic block signal system on its line between Joplin and McElhany, Mo., a distance of 26.5 mi. It states that these are the two sections of heaviest traffic density, that between DeQuincy and Beaumont being used also by the Beaumont, Sour Lake & Western, and that between Joplin and McElhany by the Missouri & Arkansas. Applications covering these two proposed installations were approved October 21, 1942.

(Continued on page 46)

passage. Having cut this sheet metal, form it around the baffles and tighten it in place to contact the outer edges of the baffles. This can be done by placing wires around and twisting them tightly. Then spot weld as required.

For application at the left end of the chamber, make up a circular plate with a hole in the center in which a section of 1½-in. pipe is welded. This piece of pipe is made up to length and bent as required to place the end beyond the front of the motor car where it will take in fresh air as the car moves along. In order to force more air into this intake, a funnel-shaped piece of metal can be welded into the end. The plate, with the piece of pipe in place, is then welded on to the front end of the chamber housing.

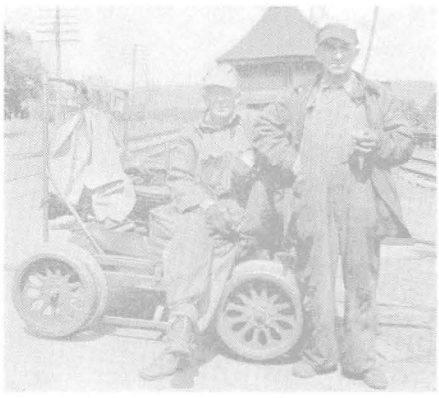
At the rear end of the chamber housing, a piece of 1¼-in. pipe is fitted into a hole in the chamber housing. This pipe is the outlet and is cut to the proper length to exhaust the warm air at the proper place. The right end of the chamber housing is sealed with a ring plate fitted around the engine exhaust pipe. Sheet asbestos, about ½ in. thick, is then applied around the chamber, and the asbestos is covered with a sheet metal shield.

Beyond the right end of the heater, the engine exhaust pipe can be shaped as desired to carry the exhaust gases to the rear.

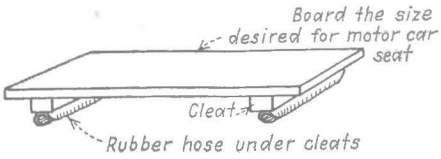
Shock Absorber Seat

JOHN H. HOFFMAN
Assistant Signal Maintainer, Delaware, Lackawanna & Western, Avoca, N. Y.

RAILROAD motor cars which are not equipped with shock absorbers can be equipped with a shock absorbing seat that will eliminate tiresome vibration while riding. Cut a thin board about the same size as the existing motor car seat. A piece of plywood panel is good for this purpose. On one side of the board near each end, nail a wooden cleat across the grain of the wood.



John H. Hoffman, standing, and maintainer W. Markle seated on motor car which is equipped with special seat



Details of shock absorber seat

Next, cut two pieces the same length as the cleats from old rubber garden hose, the larger the size the better. Use a sharp knife to cut the ends of the hose at an angle so that the ends can be nailed easily. Place a length of hose along each cleat on the board and nail them in place, using short nails with big heads, such as used with roll roofing. One nail can be placed near the center of each length of hose by cutting a hole through the upper wall of the hose to allow the nail head to pass through, and then, with a punch, drive the nail down through the lower wall where it will hold the center of the hose to the seat. The new shock absorber seat is then turned over with the cleats and hose section on the bottom; then it is placed on the motor car. The rubber hose has a non-skid surface to hold the new seat in place, but the special seat can be removed easily if desired. The hose absorbs a great deal of the vibration when riding a car.

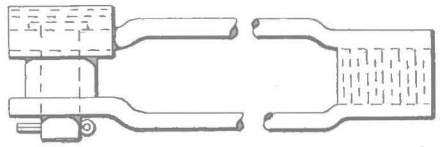
A Pin Holder

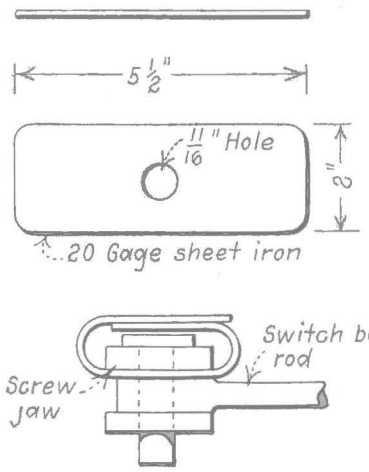
J. J. STEWART
Signal Maintainer, St. Louis-San Francisco Hayti, Mo.

THE pin which connects the crank arm of a switch circuit controller and the connecting rod to the switch point is likely to come out if the cotter key comes out during service. As a means for preventing the pins through these jaws and crank arms from jumping out, I have made up and applied special holding devices.

As shown in the drawing, the material is ordinary sheet iron, which should be from 16 to 20 gage in thickness. If thinner than 16 gage, it might break due to vibration, and if heavier than 20 gage, it would be difficult to bend it.

The metal is cut into strips 2 in. wide and about 5½ in. long. A hole 11/16 in. in diameter is drilled or punched in the center as shown. When installing one of these safety devices, remove the pin, place the device on top of the jaw, insert the pin through the device and the jaw, and then apply the cotter key. Then bend the ends of the piece of metal plate up over the top of the pin as indicated in the drawing. When so applied, these devices





Design of holder

prevent the pins from jumping out, and, therefore, have proved to be a successful safety device on our railroad.

Signals Order on K.C.S.

(Continued from page 31)

The train-service employees, in their reply to respondent's new return, point out that respondent proposes to install block signal systems on but about 63 miles of road, in addition to about 16 miles at present so equipped, whereas the show-cause orders contemplated such installations on a total of 800 miles of line. They contend that respondent's proposal is wholly inadequate to satisfy the orders to show cause, and that it should be required to install an adequate block signal system on all portions of its lines not covered by the present and proposed installations.

While the installations proposed by respondent in its new return do not fully satisfy our orders to show cause, they will materially promote safety on the lines of heaviest traffic where there is greatest need of additional protection, and should be completed as promptly as present conditions with respect to material and labor will permit.