WHAT'S THE ANSWER?

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block switches when, in automatic switching, an attempt is made to move such switch to the opposite position. Since the car cannot be stopped when this condition occurs, an accident will occur unless the switch is returned quickly to its original position. Since the restoring circuit does prevent some accidents and the disadvantages are of minor importance, it is my thought that this feature should be used in classification yards. It may be desirable also to apply the restoring circuit to the manual operation of the switches, as a derailment may occur before the retarder operator realizes a switch is obstructed, and can take action to restore the switch manually.

Advantages and Disadvantages

D. F. COBOURN, Car Retarder Foreman, Norfolk & Western, Portsmouth, Ohio.

Let us first consider the purpose of the switch restoring circuit. The idea is that when a switch starts to change its position and for some reason, say, because of sand, coal or some other matter in the switch points is unable to complete its movement, the restoring circuit cuts in and moves the switch points back to the position they were in before movement was started. This is to prevent a derailment.

Next, let us consider how this is accomplished. Ordinarily, each switch has a normal switch repeater relay and a reverse switch repeater relay. To accomplish the restoring circuit, there is added an additional relay known as "switch repeater relay" or "WP." It is of sufficient slow drop-away to span the time it requires a switch to move from normal to reverse or vice versa, when nothing interferes with its movement. The WP relay is picked up through a back contact on the track relay that detector locks the switch we are discussing, i.e., it picks up if either the N or R switch repeater relays are up. Positive stick energy is furnished to the WP relay direct and its negative through a rectifier stack that serves as a directional unit off the feed of either normal or reverse SW repeater relay circuit. The normal and reverse control wires for the switch come to heel of WP relay and, if the WP relay is up, the controls go on to the switch movement to control the switch as intended. When the code enters the unit for the switch we are discussing, the switch starts to move, the switch repeater circuit is open and current is removed from the WP relay we use as restoring control. If the switch goes over with no hesitation, the slow drop-away feature does not permit the WP relay to get down, so operation is as intended. However, if the switch points are unduly relayed in operation or completely stalled, the slow drop-away will not retain the WP relay. It drops and, through its back contacts, supplies energy to the opposite controls and restores the switch to its last position.

Advantages are: (1) It could well prevent a derailment, as mentioned; (2) if a switch should get lazy due to dry plates or some defect in switch movement, it will attract attention before complete failure.

Disadvantages are: (1) The restoring control system gets energy from rectifier instead of storage battery, so in case of power failure, if only a matter of seconds, it throws the entire plant into trouble. (2) In cold weather, a switch that operates slow when first used may, after being thrown a few times, go to working normal and cause no more trouble. Where no maintainer is on duty either (1) or (2) could cause delay until maintainer is called. As I see it, consideration should be given to both sides of the question and the person in authority should make the decision.

Should Use

R. E. TESTERMAN, Superintendent Signals, St. Louis-San Francisco, Springfield, Mo.

In my opinion the switch obstruction restoring circuit should be used with automatic switching in classification yards. With properly maintained switches, failures due to this type of circuit will be rare. Our experience with operation during snow storms has demonstrated the usefulness of this feature. I would not recommend the automatic switching without this feature.

Teletype Cleaning

What is your procedure for cleaning teletypewriter equipment?

30 Day and 12 Month Programs

COMMUNICATIONS MAINTAINER

This is our general maintenance procedure for cleaning Teletype equipment. Every 30 days machines receive a routine cleaning: removal of paper dust, excess oil, old grease, etc. On page printers using a special ribbon for making Ditto copies, the typing unit has to be removed and "Gunked" to remove the heavy residue on the keys. A visual inspection for worn parts is made and the machine is given a thorough lubrication.

Every 12 months machines are completely torn down and Gunked. All worn parts are replaced. The main shafts are refelted and a thorough lubrication is given to the machine. The complete alignment procedure is followed. Motors are inspected for worn brushes, armatures inspected, bearings cleaned and lubricated.

The procedure is based on a division maintainers job, where we are involved with five page printers, a reperforator, perforator, and a tape transmitter. The monthly routine usually involves two to three eight-hour days, the yearly routine usually one day for each machine. In our message relay offices the routine is much more complex, due to the number of machines in use. There we have a maintainer who works exclusively on Teletype machines and equipment.

Gunk is a commercial liquid solvent (instrument shampoo) manufactured by the Gunk Chicago Co., 5829 West 66th St., Chicago 38, Ill., and distributed by the Teletype Corp., listed under part number 101431. The part of machine to be cleaned is completely immersed in the liquid for about 15 minutes and a brush is used to help the cleaning process. The machine is then removed from the liquid and washed or rinsed with hot water and dried with compressed air or with a blower type vacuum cleaner. This is more or less a standard cleaning procedure with Teletype machines with our road. It does a good job of removing all old grease and oil and dirt.

Absolute Signals

Do you use a name plate, symbol, light or other device to indicate that a signal is an Absolute (stop and stay) signal? If so, why is this preferable to marking permissive signal and leaving absolute signals unadorned? How is fail-safe protection provided in the event the device becomes inoperative or is knocked off?

Use "A" for Absolute

H. B. GARRETT, Signal Engineer, Southern Pacific, San Francisco, Calif.

Practice on the Southern Pacific is to designate absolute signals by the use of a plate bearing the letter "A." These are in some cases applied to the signal mast, others applied to the signal case, and if the signal is located on a cantilever signal mast or bridge, the plate is applied adjacent to the signal and on the leg of the cantilever mast or bridge. The plates are made of cast iron with reflective material applied to front surface.

So-called permissive signals are provided with number plates with location to the nearest tenth of a mile, even numbers used for eastward signals and odd numbers for westward signals.

Since we designate the limits of traffic control territory where absolute signals are employed, and since the marker is not an operative device, we do not feel it is necessary to take any precautions

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against possibility that the plate might be knocked off.

As a matter of additional information, we do not use a designating plate of any type for interlocking signals. Therefore, we do in effect provide for so-called "fail-safe" protection, in that the absence of a number plate or letter would indicate an interlocking signal which is equally restrictive to an absolute signal.

Steel Wheels

What effect, if any, have you noticed in retarder shoe wear that might be attributable to the use of the new cast steel wheel replacing the cast iron wheel? Has the change in wheel material had any effect upon retardation?

Insufficient Tests So Far

J. W. HANSEN, Manager, Sales Promotion and Advertising, Union Switch & Signal-Division of Westinghouse Air Brake Co., Swissvale, Pa.

We are unable to provide an answer to your question, since the appearance of cast steel wheels is rather new. We have had a few reports of cars with cast steel wheels not performing in the same manner in our retarders as those equipped with wrought steel or cast iron wheels. However, to date sufficient tests have not been performed nor observations made that would permit us to reach a conclusion with regard to the question asked. Perhaps at some later date we may have sufficient information to answer your question.

Automatic OS

Do you have any type of automatic OS device in use in non-CTC territory? What is it, how does it work?

Two Types in Service

J. A. NIEDECK, Signal, Telephone and Telegraph Inspector, Lehigh Valley, Sayre, Pa.

We use two types of OS systems. The first, installed in 1940 and still in use, consists of a telephone transmitter connected to our dispatcher's line mounted in a pole box. Transmitter battery is turned on and off by the use of a self-locking relay controlled by a 60 AP selector. One installation of this so-called "Charley McCarthy" is located close to a whistle sign so the dispatcher can tell the direction of the train by loudness of the whistle. On double track railroad it is usually possible to tell which track the train is on as the rumble of the cars on the track nearest the transmitter will be louder than the rumble of the cars on the far track.

We also have one installation of an OS system manufactured by Communication Development, Inc. This circuit works through a contact on the track relay and sends a telegraph code signal on the dispatcher's line to indicate the passing of a train and the track it is on. This system has been in service for about five years and is working satisfactorily.

Transmit Sound of Train

W. W. KUEPFER, Telephone and Telegraph Plant Superintendent, Spokane, Portland & Seattle, Portland, Ore.

We use a system which was redesigned using two low voltage rectifiers in place of primary batteries, and electrically locking relays in place of the mechanical locking device, Automatic Electric No. RE-42 series LEL relay.

A standard local battery transmitter mounted in a metal box is used to transmit sound of a train passing the OS point. The unit can be turned on or off with a WE 60BP type selector using C and D combinations. An audible signal is transmitted to the train dispatcher by a buzzer located in the same housing as the transmitter. The signal is heard only when the set is operated to the on position.

The use of rectifiers in place of dry cells and primary batteries has reduced the maintenance cost considerably.

Can You Answer These Questions?

- A branch line message and dispatcher circuit is to be connected at approximately the mid-point of a 100-mile long mainline message and dispatcher circuit. Selector ringing (3½ cycle) is to be used on main and branch lines of both circuits. The branch line circuits have a phantom circuit, but the mainline message and dispatch circuits do not. How would you connect the coil, transformer and condenser at the junction point? Please include a sketch.

- At automatic highway crossing protection installations involving several slow speed tracks with island track circuits only, do you connect these tracks in series so that only one track feed and relay need be used? What are the arguments for or against this practice?

Please send us your answers to these questions. We pay for all answers when they are published. Answers will be published anonymously if requested. Write Editor, Railway Signaling and Communications, 30 Church St., New York 7, N.Y. Also please send us questions for this department.