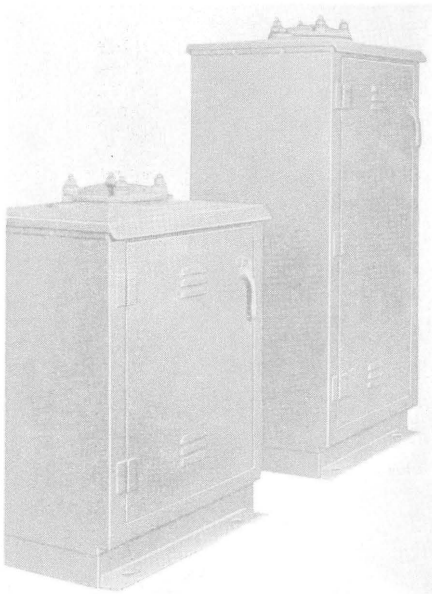


Case with shelving

gether. The top is made of cast-iron with steel inserts cast in place so that a continuous welded steel joint may be made with the side walls. All other exposed joints are similarly welded.



New welded cases

The welded structure, therefore, provides a solid wall with no joints or rivets to serve as a place for rust to attack.

The top casting is designed for mounting standard signal or cable posts. It is tapped to provide for wire conduit fittings or may be plugged if conduits are not required. When posts are not used, the top is sealed with a weatherproof cap and gasket. Commercial requirements may make it desirable to cast the top with no opening or mounting provision for a post.

Doors are of reinforced channel construction and equipped with one handle to operate two inside latches

which close the door securely against the door packing. Provision is made for padlocking the handle. Two standard ventilators are provided in each door, one at the top and one at the bottom. These ventilators have removable screens to facilitate cleaning. A special design of ventilator having a removable screen, but of a reversible type, which permits closing the ventilator openings, is available, if specified.

Standard interior equipment is wood lining and shelves with a removable wood floor for batteries to rest on. A metal floor plate is available. A large-size door permits installation of a maximum number of batteries, relays, etc., and makes their accessibility easy. These cases are interchangeable with designs shown on A.A.R. Signal Section Drawings 1626B, 1627B and 1628B.

Coded Track Control

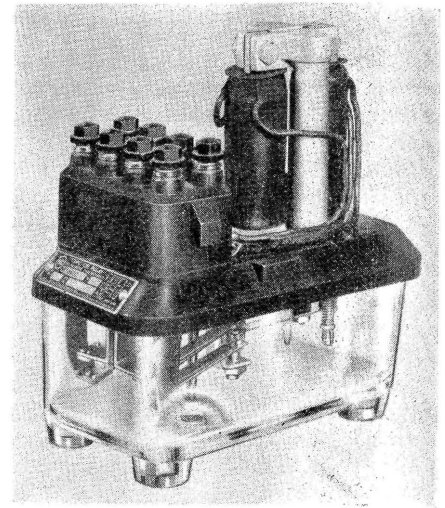
A GROUP of improved devices for use in coded track circuits has been announced by the General Railway Signal Company. They include:

- (1) Code transmitters of the oscillating type, to produce 75-, 120-, and 180-rate codes.
- (2) Code-following relay.
- (3) Master Transformer.
- (4) Decoder units for decoding 120- and 180-rate codes.



Code transmitter

The oscillating type code-transmitter is a d.-c. device operating on 10 volts. A rotary pendulum, supported on a vertical shaft, is set into motion when energy is applied to the coil on the top of the transmitter. The magnetism, resulting from the energized coil, attracts the armature on the pendulum, causing it to rotate counterclockwise. This rotation is resisted by a large clock spring. At a given point

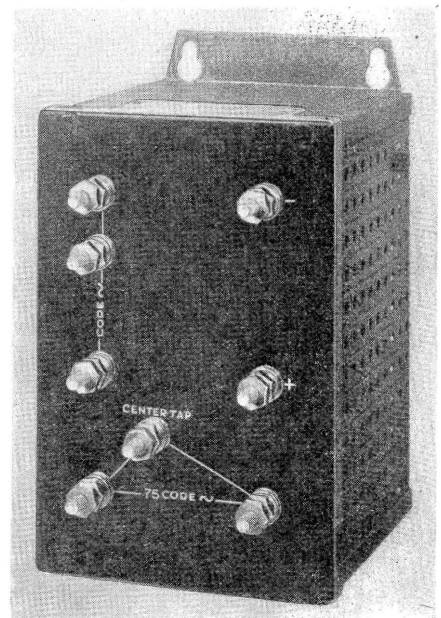


Code-following relay

in the swing, a contact operated by a cam on the vertical shaft, opens the coil circuit and allows the pendulum to rotate in the opposite direction. At a certain point in the clockwise swing, the same contact again closes the coil circuit, causing the pendulum to be driven counterclockwise.

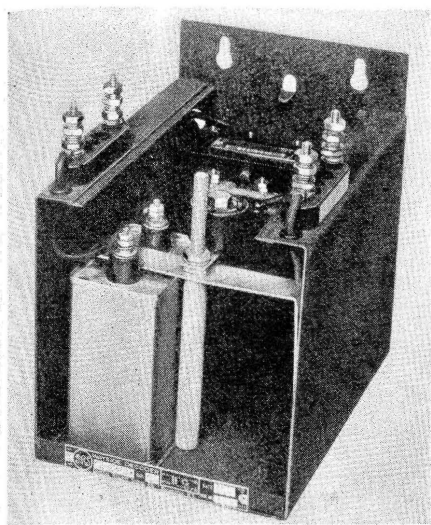
The 75, 120, or 180 codes are obtained by using pendulums of differing weights. One transmitter is required per code. Lower on the vertical shaft, two other cams drive four independent sets of contacts thus making it possible to supply the same code to a maximum of four tracks with the one transmitter. The transmitter is designed for continuous operation for several years without attention. A plug-coupler is standard equipment, and A.A.R. binding posts are optional. The device is adaptable for shelf or wall mountings.

The code-following relay, as its



Master transformer

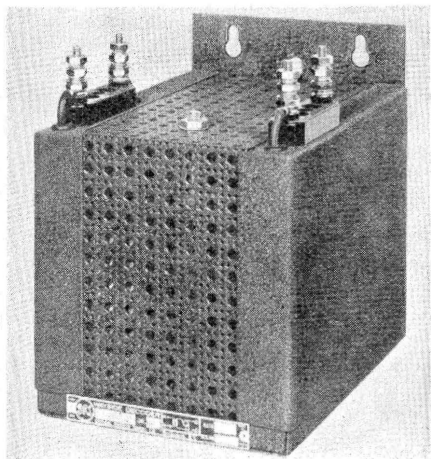
name implies, follows the code that is being transmitted and, through its own contacts, applies the code to decoding apparatus. The relay is furnished with one or two dependent front-back contacts and with windings to fit the application. The magnetic



Decoding unit with cover removed

structure of the relay includes a permanent magnet, so arranged that direct current of only one polarity will operate the relay. This is to preclude any operation by energy of opposite polarity. Such energy would only tend to drive the armature tighter against its back stop.

The mass of the armature is held to a minimum without sacrificing



Decoding unit

strength, so that the relay can easily follow the code frequencies in general use. The bearings are rugged in order to stand up in continuous operation. A plug-coupler is standard equipment; A.A.R. binding posts optional.

The master transformer is used to transform the coded impulses from the code-following relay into low-frequency alternating current, which is fed to one or two decoders, as re-

quired. A Type-U transformer, used for this purpose, is designed to operate on the low code frequencies. Modifications in the windings adapt this transformer to the different decoding circuits. The voltage usually impressed on the primary winding is low, about 10 volts. The output is matched to the load imposed.

The decoder unit receives low frequency a.c. from the master transformer, filters and rectifies it to energize a standard d.c. signal relay. In the decoder unit there are a condenser, a transformer, and a rectifying unit. The capacitance of the condenser and the reactance of the transformer are matched to pass alternating current of the code rate for which it is designed, and no other. Thus the 120 decoder unit filters only the 120-code, the 180 decoder unit, the 180-code. The rectifying unit is built-in so that standard d.c. relays can be operated by the decoder units.

In two-block three-indication signaling, where the 75-code is decoded by relays and not by a decoder, the 180-decoder is the only unit used. When a fourth indication is required, the 120-decoder unit must be used to decode the required 120-code. The decoder unit is arranged for shelf- or wall-mounting.

New Code Transmitter

THE Union Switch & Signal Company, Swissvale, Pa., announces the introduction of its new Style-DM code transmitter for its coded wayside signal system. This transmitter has been designed to make use of a simple pendulum arrangement which is tuned for the three code speeds at which the transmitter is to be operated. This tuning is accomplished by means of a pendulum which is made up of a spring arrangement with weights at

the lower end of the spring, so designed as to provide the required code speed.

The DM code transmitter was designed to provide for long, trouble-free life with a minimum of maintenance. For example, the 180- and 120-code transmitter operates without the use of bearings. The 75-code transmitter has only a knife-edge bearing which is designed to give long trouble-free operation. This bearing will tolerate slight wear without affecting the transmitter operation.

The DM code transmitter has a maximum capacity of 4F-4B contacts. The contacts may be of either silver-platinum for low-voltage circuits, or of tungsten, if high voltage circuits are to be used. The power requirements for this code transmitter are much less than of previous models, 0.25 watts being required for its operation.

As the DM code transmitter has no bearings requiring lubrication, it is capable of satisfactory operation over wider ranges of temperature than has been possible heretofore and, as a consequence, the code speed of the transmitter also remains constant over an extremely wide temperature range. Other features which help keep maintenance costs low are that there are practically no wearing parts on the transmitter; the contact erosion is reduced to a minimum, as the contacts are of large diameter, thus extending the life of the transmitter.

The coil within the transmitter is snubbed by means of a copper-oxide rectifier. The coil is easily removable and can be changed out without affecting the contacts or the magnetic pole pieces. There is practically no sparking on the driving contacts and no appreciable wear. The contacts themselves are readily accessible, and can be easily replaced in connection with regular maintenance work. The trans-

Front and side views of a style-DM code transmitter for wayside signal system

