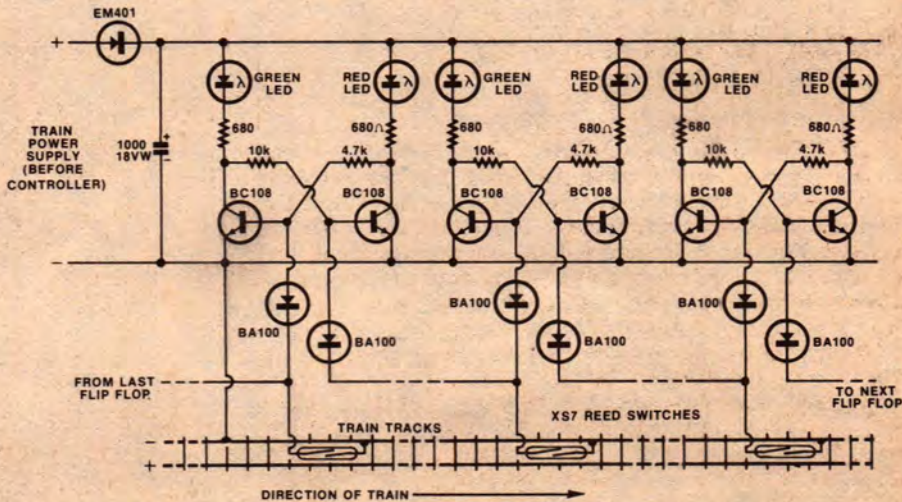


Model Train Signaller

One of the most useful devices for the model railway enthusiast is the reed switch, a simple and extremely reliable unit which can be located between the rails of a track and used to sense the passing of a train. A small magnet mounted under the loco will trip these switches. One very obvious application is to operate an automatic signalling system.

A suitable system is shown in the accompanying circuit. It is based on a two-transistor configuration called a "flip-flop", one being needed for each signal.

It uses a basic signalling system employing two light emitting diodes (LEDs) — red for stop and green for go — and any signal remains on green until a train passes it, whereupon it changes to red. The signal remains on red until the train has cleared the next section of track, that is, up to the next signal. When the next signal changes to



MODEL TRAIN SIGNALLING SYSTEM

red the first signal reverts to green.

Each reed switch is connected to two flip-flops, isolated from each other by silicon diodes. These diodes stop unwanted interaction between signals behind the train.

When the train passes over the reed switch, the contacts close, connecting together the base and emitter of the associated transistors. The forward bias is removed, cutting each transistor off and forward biasing its partner.