REPAIR OF TRIX WHISTLE UNIT / WHISTLING SIGNAL BOX

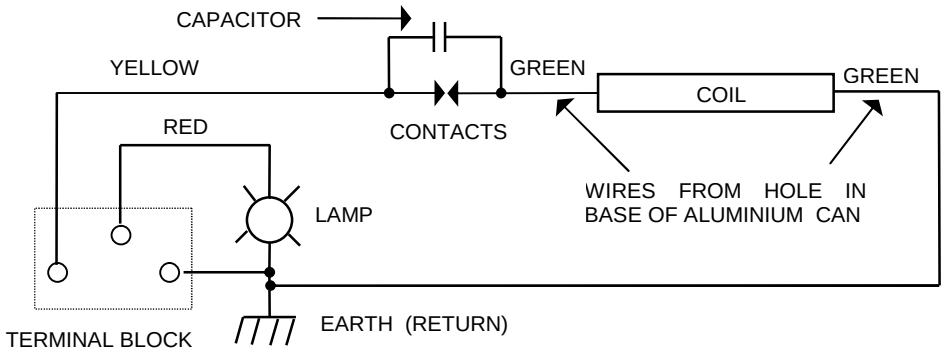
These notes are designed to assist in repairing the TTR whistle unit as used in the whistling signal box, whistling coach and the first version of the Meteor.

The circuit of the whistle unit is the same as that of any electric bell or buzzer. The only difference is that the electromagnet attracts a circular disc or diaphragm which vibrates rapidly to make the whistle sound. In the whistling signal box the supply of 12v dc or 14v ac is connected between the middle and right hand (earth or return) terminal for the light and between the left and right hand terminals for the whistle. The current for the whistle must pass via the contact breaker in the aluminium canister to the coil. In this way, the magnet attracts the disc and opens the contacts as it does so. The current ceases and the disc falls back to the rest position, re-establishing current to the electromagnet. The process repeats some 2,000 times per second. The tone adjusting screw sets the fall back stop for the disc and hence the total movement. It must be just tight enough to get a good tone but not overtight as the disc will then be unable to vibrate.

By connecting power to the wires (one of which is earth) coming out of the can, the magnet will simply become energised and attract the disc permanently. As the coil is supposed to receive intermittent current via the contact breaker, such direct connection could overheat it. The little green disc is a 0.01 microfarad ceramic suppression capacitor wired across the contacts and has no function in the actual operation except to prolong their life. If it failed and became short circuited it would bypass the contacts and permanently magnetise the coil preventing whistling. This is quite rare however.

The plastic cover on the can may be loose due to shrinkage. Once the whistle has been made to work, this may need to be "pinned" in place with four small spots of EVO-STIK to maintain the tone screw setting and get a consistent result. Note that the wire colours shown in the circuit below may vary.

Refer also to the article by Keith Hayman on the Whistle Control unit, Gazette No. 72, September 1993 pages 6 & 7.



CIRCUIT DIAGRAM OF THE WHISTLE UNIT