

Electro and Electro-Mechanical Locking - Archie Campbell M1707

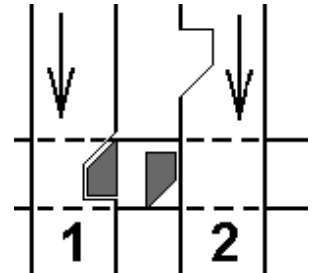
Introduction

Some model rail enthusiasts delight in mimicking real life on a railway as closely as possible including the interlocking lever frames. Unfortunately mechanical interlocking frames are both difficult to build and require complete reconstruction for anything more than the most minor modification. Electrical interlocking saves a great deal of difficult fitting and changes in the interlock can be easily accommodated by minor changes to the circuit or by reconfiguring an interlock chip (well it would be easy if such existed!).

This article discusses alternative methods of achieving the interlocking and possible circuits or modules. This includes the possibility of using CBUS and especially the CANACE3 with a modified programme, for which module I have coined the name "CANint".

Frames

Of course a real frame uses mechanical interlocks to prevent movement of the levers, see the sketch (right) and Rodney's excellent use of Lego in the August (Autumn) 2009 journal. As shown here lever 1 is locked by the horizontal locking bar, however if lever 2 is pulled the locking pin may move to allow lever 1 to be pulled. Conversely if lever 1 is then pulled lever 2 becomes locked.



Mechanical interlocks can be implemented on a small scale and I've built three such frames using the Modratec kits. These are complicated to build with a few hundred holes to be drilled very precisely and a lot of fitting and, worse, modification requires the complete reconstruction of the whole interlock system.

Interlock by Non Activation and Feedback

The simplest systems to construct wouldn't actually lock levers at all but rather would ignore illegal moves and provide an audible or visible indication that the move was illegal and needed correction. This would allow ordinary switches to be used initially until a round tuit can be found to construct something more imposing. It also avoids the need for strength in case Geoff Capes [#] gets frustrated because the lever he wants to pull is locked out. Leslie Bevis-Smith [see below] uses steel levers and an aluminium sacrificial locking bar for his interlocking system designed so that the bar would break before damage occurred to the other components of the frame!

Rodney provided the delightfully apposite picture, I trust that he'll add the appropriate acknowledgements.



[Indeed he will. "Puddlecombe No.2" appeared at the head of the 'Advice Bureau' column in the June 1960 issue of 'Railway Modeller' magazine. Tim Rayner, RM's present Production Editor, has allowed it to appear here: "We've no objection to your reproduction of the Dax cartoon, credited 'courtesy: Railway Modeller'.

As to the artist's identity, we cannot say I'm afraid. The Living Lineside series ran for just over two years (June 1958 - July 1960), and Dax produced the contemporary artwork to illustrate the letters pages and advice bureau columns too – but no idea I'm afraid."

The Dax series "The Living Lineside" offered in each short item a delightful sketch of a quirky animated accessory, together with operating notes and some constructional suggestions. In these days of micro-motors, servo drives, memory wire and micro-processors etc, one or more of Dax's proposals might form the basis of an off-beat project for any MERG member looking for a new challenge. Should go down well on an exhibition layout!

- Geoff Capes is the former British and Commonwealth shot-put champion. I had to look that up. - Ed]