



Not So Chuffed..... Keeping your Sound Regulated!

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A comment from another Member at the AGM got John Candy thinking.....

It had not been my intention to install sound, initially for risk of over-complication of the wiring and difficulty of finding yet more space into which to squeeze electronics (with radio control battery there is little, if any, space to spare in many tank locos for such 'frills').

The advent of the MyLocoSound cards made in Australia by Peter Lucas ('Moonraker' to G3 Forum members) made me think again. The cards are smallish, quite low-cost and come in both steam and diesel versions. I took the plunge and purchased two steam and one diesel!

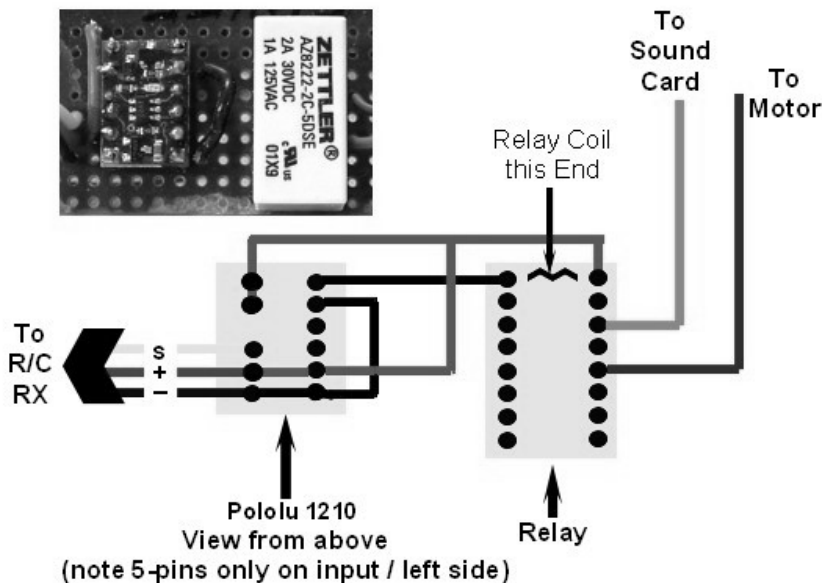
At the AGM I was discussing sound cards with Ian Driver who commented that he would not fit sound to his locos because the 'chuff' continues even when the loco is slowing (or 'coasting') with the regulator closed and that would be unrealistic. I had not thought of that one....a new slant on 'rivet-counting'....and it got me worried. A quick 'think through' and play with the sound cards provided the solution!

I had already ordered a quantity of relays, diodes, resistors and digital switches because I needed to build auxiliary control circuits for the whistle / horn functions, so why not an additional control for the 'regulator closed' effect?

Let me explain that the MyLocoSound card (I cannot comment on how other types perform) draws on the current supplied to the motor to provide the 'chuff', which is synchronized to speed (by reference to voltage) but a separate circuit provides 'steam hiss' which continues when the loco is stationary (i.e. zero current from the motor circuit). The whistle also has its own separate circuit.

So, break the circuit between the motor and sound card and the 'chuff' stops but the steam 'hiss' continues and the whistle can still be sounded (the same of course applies to the diesel, cut the engine 'roar' and it goes back to 'idle' and the horn can still be sounded).

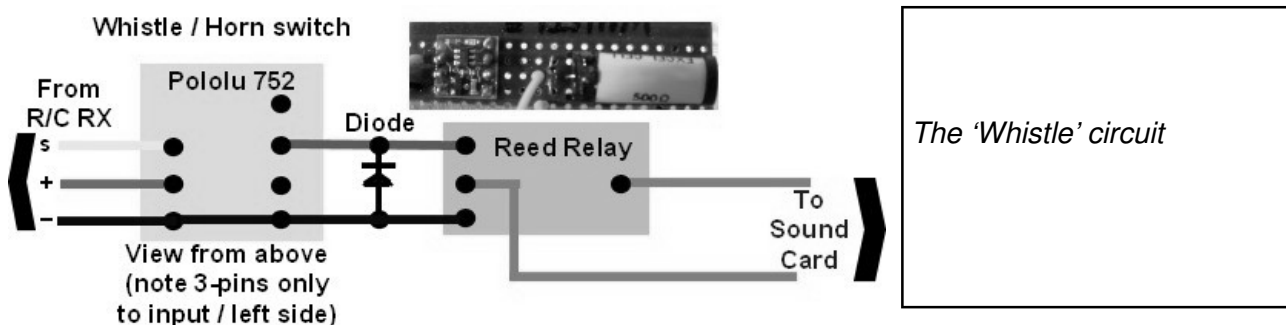
'Chuff' Switch for MyLocoSound Steam Card
(also for Diesel Card for Coasting).



How does all this work? Well, it requires three channels of radio control, one for speed/direction, one to activate the whistle/horn and the other to 'close the regulator'. The whistle control unit (necessary with the Mac5 and Electronize units which I use, since they do not have suitable auxiliary control functions) was constructed from PCB strip-board, a 'Pololu' digital switch plus a reed relay and protective diode.

The 'regulator' control was of similar construction but the reed relay was replaced by a double-throw miniature

relay (the relay is de-activated in normal mode when the 'chuff' is required and activated by the 'Pololu' digital switch when the 'chuff' is to be cut). By choosing the correct channels on the radio control, the speed/direction control and 'chuff' control can be on the same control stick (vertical motion controlling speed and horizontal motion activating the 'chuff' cut-out relay).



Parts List (Sources)

'Chuff' cut-out switch

- 1/ Pololu 1210 radio controlled digital switch with MOSFET output (www.active-robots.com)
- 2/ Miniature relay, double throw, 5 volt (www.active-robots.com part No. RE1)
- 3/ 16-pin DIP socket (to mount relay) (www.active-robots.com part No. DC-16 PIN)
- 4/ Servo lead to connect to R/C RX unit (www.active-robots.com part No. 86230)

Digital whistle switch

- 1/ Pololu 752 radio controlled digital switch (www.active-robots.com)
- 2/ Reed relay single pole / single-throw 5 volt (Maplin part no. JH12N)