



Lollypop railcar with radio control

By RICHARD BENNETT

A simple battery-powered railcar is given simple radio control. RICHARD BENNETT explains how he went about it. Photos and illustrations by Richard Bennett.

I read with great interest, Brian Dominic's account of the construction of his IP Engineering Lollypop Railcar in issue 155 of *16mm Today*. I followed a similar process when I constructed my kit a couple of years ago at a time when I was exploring the potential of battery power for the Peckforton Light Railway.

Deltang radio control

At the time, I was evaluating the plausibility of using Deltang radio control equipment for my planned conversion from track powered locomotives to battery power and was interested in how effectively a Deltang receiver would work with a low powered vehicle, in this case a 4.5 volt motorised railcar. The three AA alkaline 1.5v batteries used for testing have now been replaced with three AA 1.2v Low Self Discharge (LSD) NiMh

rechargeable batteries from Hobbyking. Once I had established that Deltang gear worked successfully with low voltages (in fact it works very effectively down to 3v), I set about detailing the fairly basic kit.

Detailing the kit

Like Brian, I opted for coffee stirrers, though mine represented vertical planking rather than horizontal. I also retained the lamps which are provided with the kit and installed red/white bi-colour LEDs in them. Interestingly, the only source of 5mm red/white LEDs I could find at the time was an online trader located in the USA. I made enquiries as to whether he would be willing to post to the UK and discovered the owner previously lived in Burnley which is about 25 miles from where I live in Cheshire.

The LEDs were wired directly to the output pads of the Deltang Rx60

receiver. Most Deltang receivers include an onboard Electronic Speed Controller (ESC), together with various outputs which can be programmed by the user to operate in a range of different ways. For example, the outputs can control servos, LEDs or trigger effects on soundcards, such as a whistle. The Rx60 is ready-programmed for direction lighting using output pad 1 (forward) and pad 2 (reverse), and so these were wired to the LEDs (see circuit diagram) using a fine-pointed soldering iron – the pads on the Rx60 are extremely small.

Control system and lighting wiring

The wiring for the control system and lighting is fairly straightforward. In the 'off' position, the two-way switch connects the positive terminal of the battery pack to the charging socket,

while in the 'on' position, the switch powers up the receiver. Two wires run from the Rx60 to the motor and, as has been mentioned, the two front LEDs and the single rear LED are wired directly to the output pads on the receiver/controller.

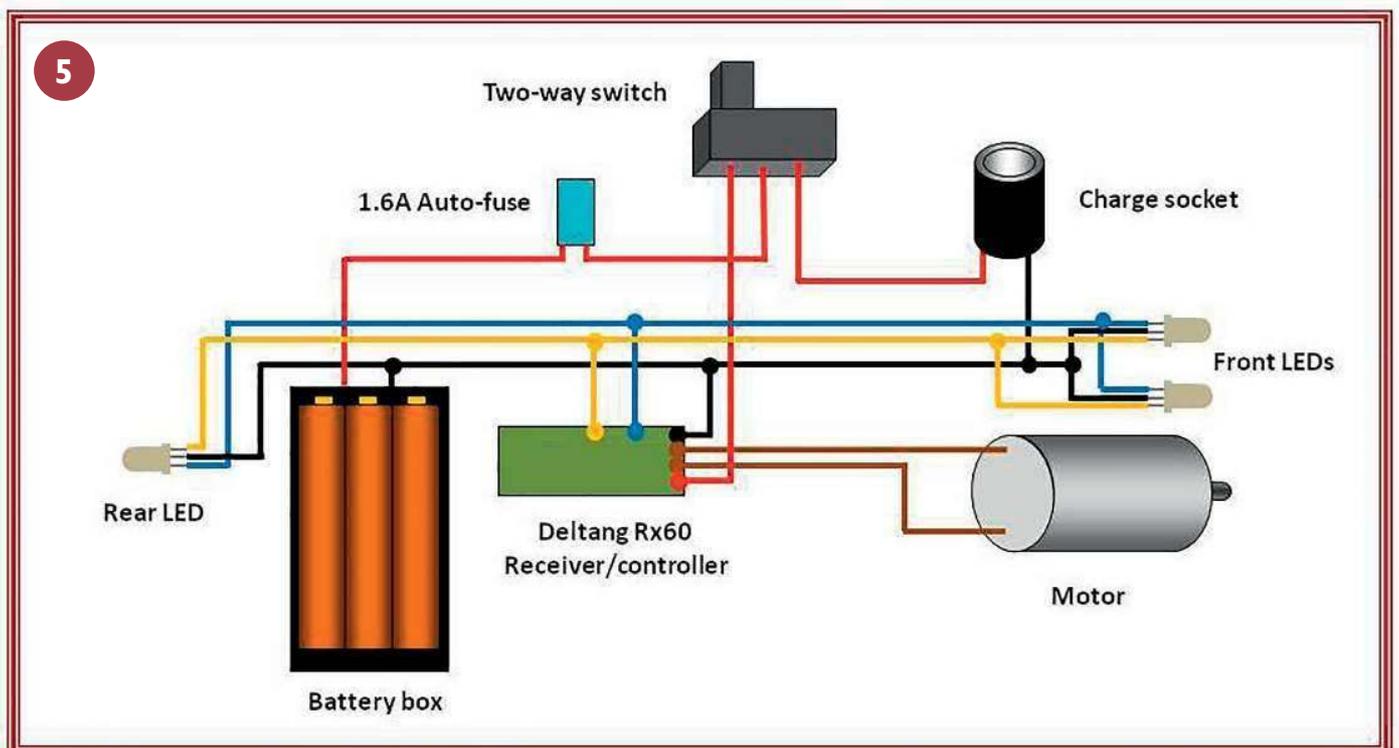
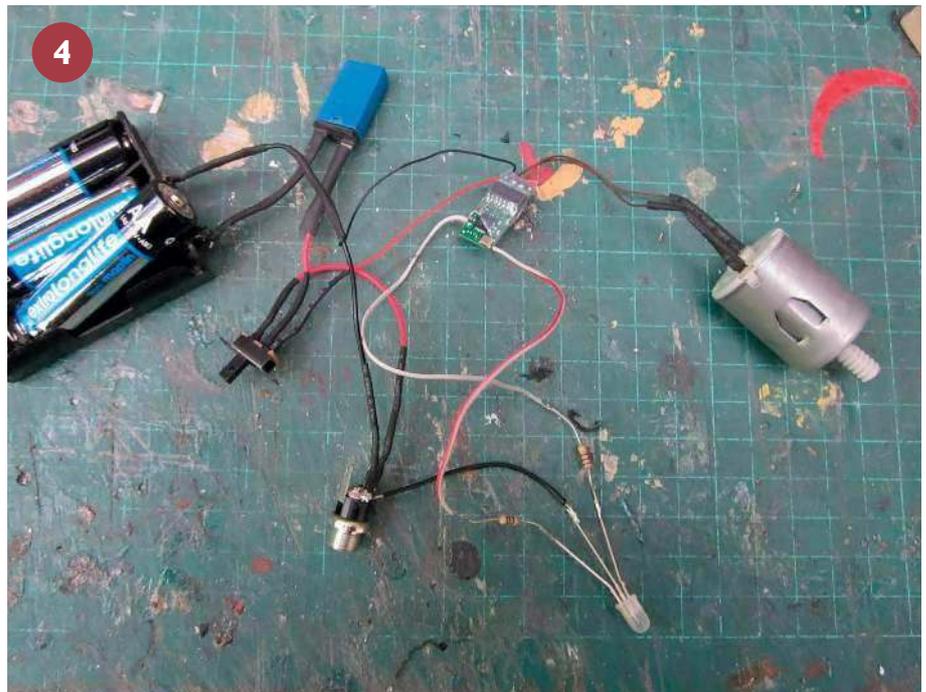
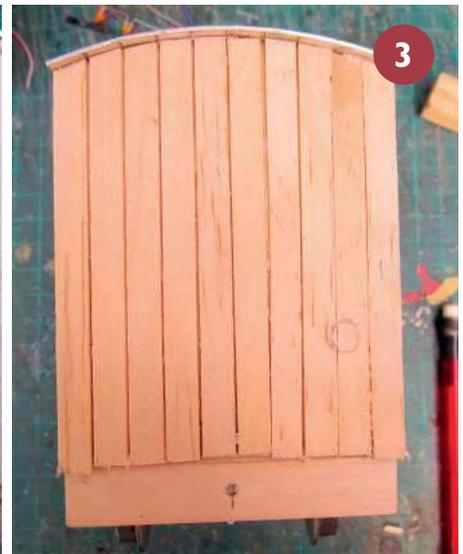
A 1.6amp auto-reset fuse (Maplin part no. AK08J) protects the batteries from short circuit and overload by being connected as close to the battery as possible. Some prefer to put the fuse in the negative lead – it's a case of convenience or personal preference.

Small size of components

One of the most impressive features of the Deltang equipment is the diminutive size of its components, particularly when one considers the range of features which is packed into them. The RX60 receiver/controller measures only 11mm x 22.5mm, which makes it ideal for equipping small locos with full featured radio control. The most recent Rx65b ▶

Photos on this page and facing page:

- 1 – The finished locomotive in service towing the tool trolley.
- 2 – Side with coffee stirrer vertical planking and external bracing.
- 3 – End with vertical planking before fitting external framework.
- 4 – Initial experiments with Deltang Rx60 receiver/controller, motor and one bi-colour LED.
- 5 – Final circuit diagram.





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Photos on this page:

6 – The finished model three-quarter front view.

7 – The finished model, three-quarter rear view.

8 – Side view.

9 – The PW trolley with Bachmann tools ready for deployment.

receiver/controller, can handle up to 3 amps, has twelve outputs and includes auto-shuttle, auto-station stop and auto-buffer stop as programmable options (and all for around £30).

PW Department

Rather than being used for general goods traffic, my railcar has been commandeered by the Permanent Way Department and so trundles back and forth along the line at intervals during operating sessions providing essential supplies to maintenance gangs. I felt it needed a small trailer for heavier and more bulky pieces of equipment and so a Hudson wagon chassis was purchased from Ivan at IP Engineering and given a low sided wooden deck made from ubiquitous coffee stirrers. A set of plastic Bachmann platelaying tools were painted, weathered and added to the wagon.

I like keeping things simple when it comes to my rolling stock liveries. Goods stock is generally finished in Halfords' rattle can grey primer, and with the introduction of this vehicle, the default livery for PW stock is now Halfords' rattle can red oxide primer.

At present, the railcar is unnamed and has not been weathered - and so looks far better cared-for than virtually any other vehicle on the railway. But, in time, this will no doubt change. ■



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