Electric Matters (Stud Contact)

A letter from Graham Bell

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In response to David Deacons questions printed in the September 2003 Newsletter No.54; I can supply the following answers: The motors fitted in my locomotives are of three different types, all now sadly unavailable. They are Bassett-Lowke 24V DC 3-pole, Bonds 24V DC 8-pole and Pittman 24V DC 7-pole. In recent years I tried to ascertain the viability of obtaining a new motor similar to the Bonds motors I already have, after re4ading an advertisement from a gentleman who made electric motors to order. I found that he had worked at Bonds in Euston Road and he contacted the firm in Rumbolds Hill (*Editor – Midhurst?)* West Sussex to see if they had retained the patterns used in the manufacture of this type of motor. He contacted me with the information that the patterns had not survived and without them no motor could be supplied.

An article written by Alan Curtis (December 1994, Newsletter No.19) advised a Gauge 3 Member who asked a similar question about the availability of the Pittman motors mentioned above. Alan suggested a Buhler motor as used in the LGB Rack Locos (and sold as a spare part by Garden Railway Specialists) as an alternative. This might be an option, but Alan suggested that the motor would be happier with 18V rather than 24V. He also refers to the gears and batteries he used for his models.

The stud contact system adopted for my line has been in situ now for some 19 years and consists of round head brass screws (¾" x 6 for plain line and ¾" x 4 & ½" x 4 for point work) continuously wired with 1mm single core cable. The screws are drilled into alternate sleepers giving 2 inch centres to the screws. Smaller headed screws are required for the section of point work where the skate fitted beneath the locomotive needs to be raided sufficiently to clear the running rail over which it must cross. Here limited space prevents the use of the larger screws since careful positioning of the screws at much shorter distances is necessary, some being offset to keep the skate level. The power source comes directly from the house using a partially concealed cable from a 13A socket in our outside loo to my railway. The power supply to my track is from a standard Gaugemaster US2 controller as supplied (Output 12V DC) to the OO gauge market but up-rated by the manufacturer to my specification to give an output of 24V DC at 2.5A. This controller works in conjunction with a transformer also supplied by Gaugemaster. This is an RS (Radio Spares) PLC 30V DC 50 VA Unit, RS part number 207267. The transformer has two 15V outputs wired together to give 30 volts to the controller. The controller accepts to 30V via a long length of wiring. I was advised by Gaugemaster to never to reduce the length of this wiring, which I guess must reduce the voltage.

This company were also a little bemused at what I was trying to achieve as they had no sight of the motors fitted to my engines. They took a great interest in achieving a successful outcome to my request. It took them four attempts by their Electricians to get the unit powerful enough to successfully work my trains. On the first three units they forwarded to me to try, parts would blow as the trains gathered momentum and each time I

returned the unit to their works for medication. Gaugemaster would not accept any payment for their additional work or parts. The only cost incurred by me was the postage of the unit back to their factory. Thanks to them I have now got two similar units which have given me years of trouble-free running. The control unit is protected by a 4A quick-blow fuse situated between the track circuit and the unit.

The reason I used the stud contact system is because I already owned two locomotives and I did not wish to modify the wheels already fitted to them, which would have been necessary to use the 2-rail system. The 3-rail system was not an option, leaving the very well tried and successful stud contact system as the obvious choice. I hope the above information is interesting to David and other Members of the Society, but maybe not particularly useful, considering the length of time that has elapsed since my railway was just a few lines on a drawing board.