Timpdon Electronics

Using a Dallee Diesel Sound Unit with the *UltraRad* Controller Model URC2

Introduction

Many railway modellers wish to add sound to their radio controlled diesel locomotives to simulate the actual sound of the diesel engine.

Of the available diesel sound units on the market, the one used by many UK modellers is that manufactured by **Dallee Electronics Inc.** of the USA.

A wide range of diesel engine/horn sound combinations is available, all using the same basic electronic circuit board.

Any standard Dallee diesel sound unit can be simply controlled by the *Timpdon Electronics* ***UltraRad*** controller model ***URC2*** to give speed controlled diesel engine sound and optional horn and bell.

Wiring

Figure 1 shows how to connect a Dallee diesel sound unit to a radio controlled vehicle using the *Timpdon Electronics* ***UltraRad*** controller model ***URC2***.

As shown, both the horn and bell functions are incorporated, operated by the **Aux 1** and **Aux 2** outputs of the ***URC2***. As, for UK railways, locomotives are not normally fitted with bells, we recommended that this function is not connected, leaving the ***Aux 2*** output of the ***URC2*** available for the control of another auxiliary function such as locomotive lights.

Take great care when wiring up your installation, as the Dallee unit will be destroyed if the supply voltage polarity on Connector **J2** is reversed. Damage caused in this way will not be covered by the Dallee warranty.

Power Supply Voltage

The Dallee specification quotes a minimum operating voltage for the diesel sound unit of 7V. However, we have tested it with perfectly satisfactory results with a ***URC2*** controller operating on 6V batteries.

The maximum permitted operating voltage, limited by the ***URC2***, is 12 V.

Locomotive Speed setting

The Dallee diesel sound unit incorporates a speed setting control to adjust the range of motor voltage over which the available range of eight diesel speed notch levels is selected.

We have found, however, that on higher battery voltages, even with the speed control set fully anti-clockwise, notch eight sound is reached at too low a motor voltage. This can be easily increased by adding a series resistor in one of the leads from the motor to connector **J3** on the Dallee unit, as shown in Figure 1.

For a battery voltage of 12 V, a resistor value 1.0 kilohm gave satisfactory results. For lower battery voltages a lower resistance will be required. You may need to experiment, however, with different resistor values to get the optimum results for your loco as the required value is dependent both on the supply voltage and also on the actual motor being used.

It is unlikely that this additional resistor will be required on supply voltages of 7.2 V or less.

Acknowledgements

Dallee is a trademark of Dallee Electronics Inc.

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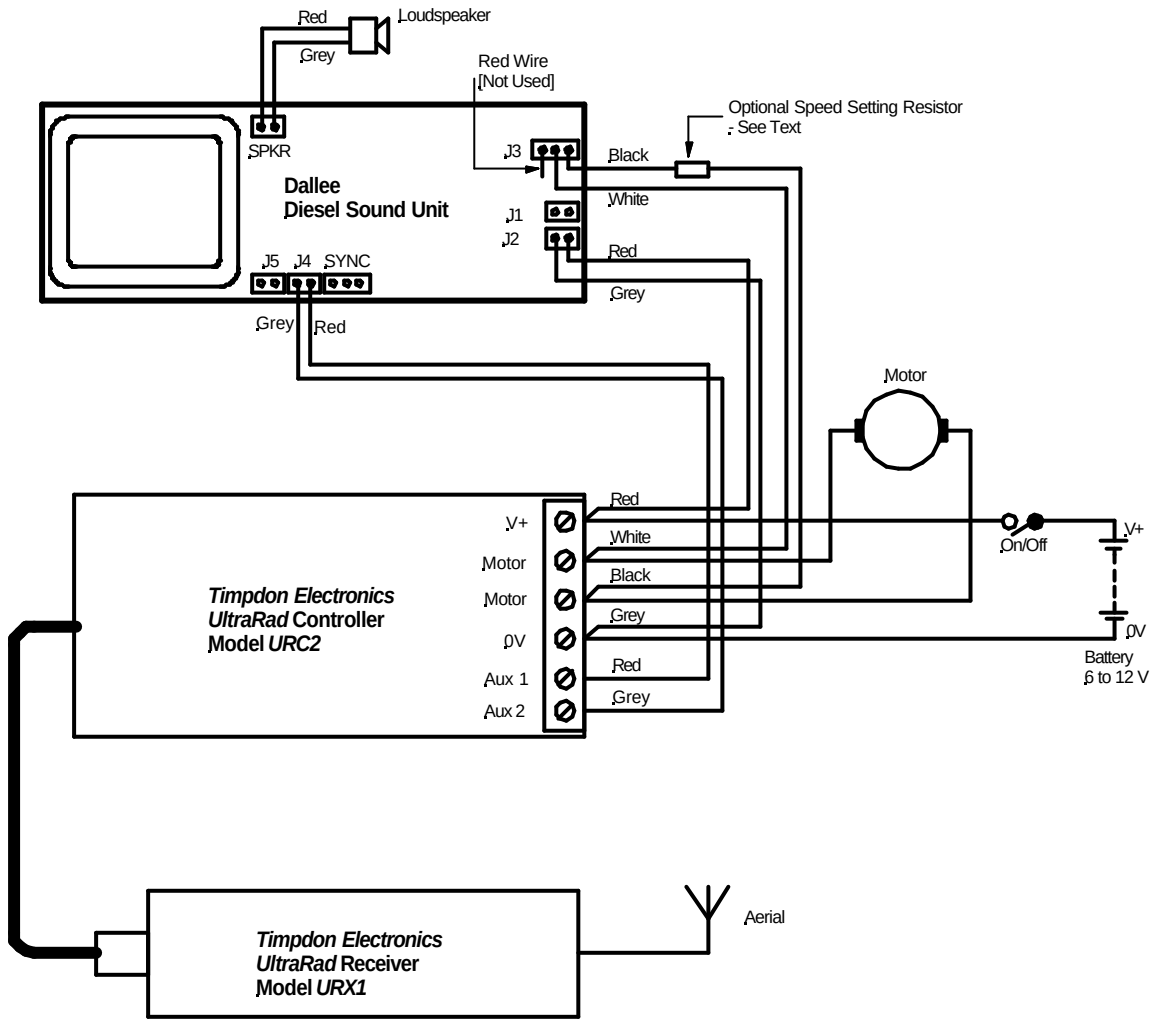

Figure 1
Wiring Diagram

As shown:
The **horn** is controlled by **Aux 1** output of ***URC2***.
The **bell** is controlled by **Aux 2** output of ***URC2***.

If bell is not required, omit **Grey** wire to connector **J4** of Sound Unit.
Aux 2 can then be used for control of lights.