



INSTALLATION KITS

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RCS # BIK-ANNIE. DIY INSTALLATION KIT FOR ONBOARD USE.

BATTERY R/C INSTALLATION KIT FOR THE BACHMANN BIG HAULER 4-6-0 ANNIE TENDER LOCO

It can be used with any brand of R/C equipment.
Naturally it refers mostly to RCS products.

These instructions refer specifically to the
Bachmann 4-6-0 "Connie".

The basic principles remain the same so they
can easily be adapted to suit other tender locos.

CONTENTS

The RCS # BIK-ANNIE kit contains the following components:

1 x PCB mounted DPDT switch with screw terminals.

1 x pre-wired 2.5/5mm DC Co-ax jack for
CHARGER/AUX-BAT.

1 x Red/Black 2 x way connector assembly for
Tender-Loco connection.

NOT SUPPLIED BUT RECOMMENDED.

1 x # Y-CABLE 2 way connector for putting twin
stick Ni-Cad batteries in series.



COMPONENTS NOT SUPPLIED THAT YOU WILL NEED.

A BASIC installation does not require lighting outputs.

The RCS # **PRO-3v3** ESC is ideal. Use 7.2 volts - 18 volts nominal - 24 volts maximum.

If installing Sierra® sound you will need our **SSI-12v5**

If you choose to use regular SubC NiCd batteries, the # **Y-CABLE** is useful for putting 2 x 7.2 volt twin stick Ni-Cad batteries with TAMIYA connectors in series to get 14.4 volts.

TOOLS REQUIRED.

Medium, small and very small size Phillips head screwdrivers, side cutters and small pliers.

A drill with an assortment of drill sizes for mounting the various switches etc.

A fine tipped soldering iron, resin core solder plus some heat shrink tubing for insulation.

Silicone adhesive for securing components where necessary.

SUITABLE BATTERIES.

Although "AA" size NiMh batteries are very popular they do have some disadvantages.

We suggest you only use them if the current draw is going to be well BELOW 1 amp continuous.

Other sizes of NiMh batteries such as sub "C" will permit very high current draw.

In ideal situations expect up to 500 re-charges. You must use a NiMh specific charger.

Over charging and too much current draw will shorten that life span drastically.

Our Number # 1 choice is for NiCd batteries. 2 x 7.2 volt twin stick sub "C" packs are ideal.

They will last twice as long. Up to 1,000 charges. "AA" NiCd cells also have limited current draw.

NiCd cells are very tolerant when being charged. They charge best overnight at the standard rate.

Suitable Li-Ion batteries can be used as long as they have over voltage and load protection fitted.

As yet we cannot recommend Li-Poly chemistry.

INSTRUCTIONS.

Although the Bachmann 4-6-0 "ANNIE" is a particularly smooth running loco. It is both the easiest to convert to battery R/C as well as the most difficult, depending on which version of the ANNIE you have and what you want to do to it.

These instructions offer a straightforward way of installing RCS without needing to remove the boiler from the chassis. They do not cater for an installation that requires constant brightness directional lighting.

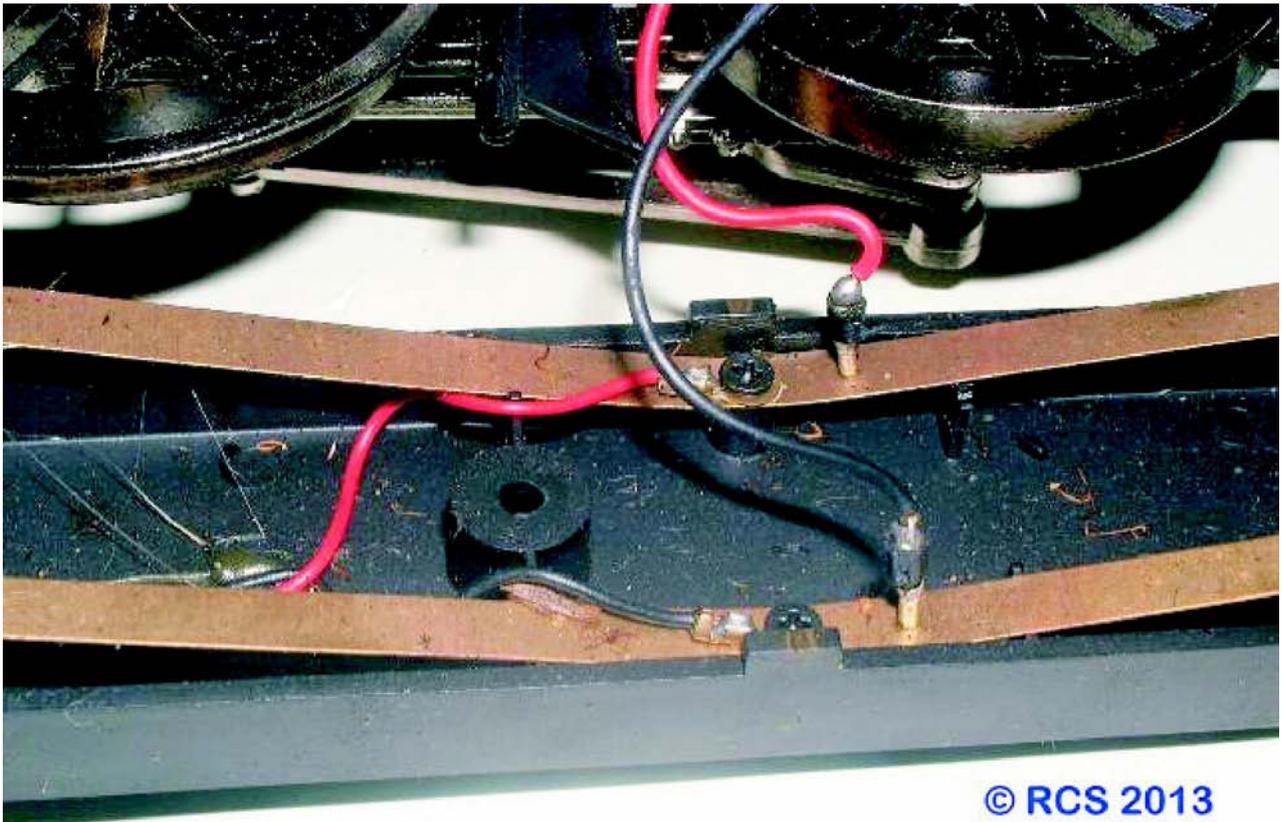
There are two ways to install battery R/C in the ANNIE depending on whether or not the version of the ANNIE you are working has a tender back up light.

1. The ANNIE has a tender back up light. If you are happy with a basic installation, i.e the loco behaves as though it were track powered, whereby the lights brighten/dim according to voltage and direction, you will not have to work on the loco at all, other than to remove the track pick ups from the bottom of the loco.

2. If there is no back up light you will have to work on the loco as well as also removing the track pick ups.

GETTING STARTED

No matter which version or method you choose, the first thing to do is remove the track pick ups inside the loco. All you need to do is remove the loco chassis baseplate and locate where the wires to the loco are plugged in. Unlike earlier versions of the 4-6-0 the ANNIE series has the front truck pick ups also connected to the wipers on the base plate. So simply removing the plugs disconnects everything.



REMOVING THE TRACK PICK UPS.

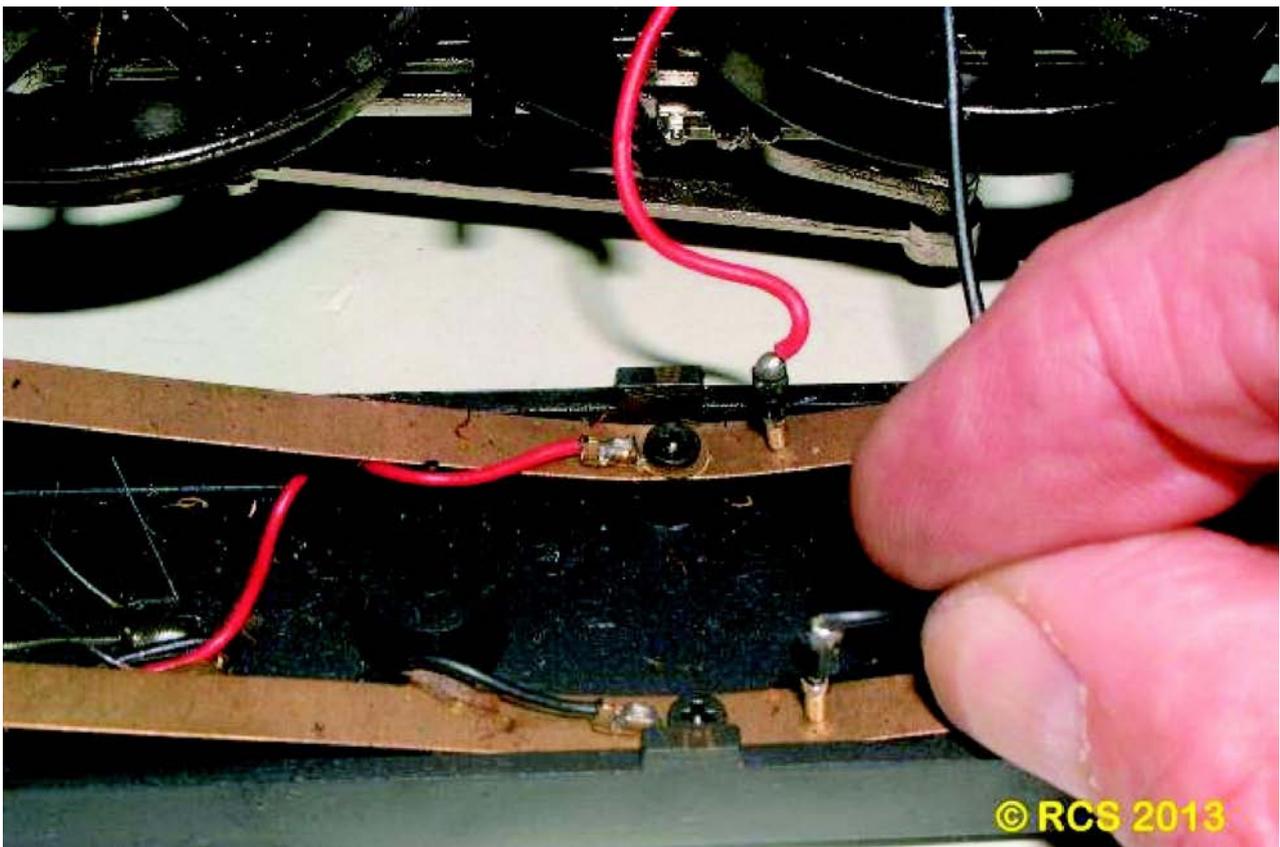
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Grasp the little plugs and gently pull upwards to remove.

If you are using the rear light to connect the motor driver output, cover the terminal plugs with some heat shrink tubing as insulation, then tuck them up into the body out of the way of any gears. Then replace the bottom chassis plate and the loco mods are done.

It is not really necessary, but we also usually remove the wiper contacts and pilot truck wiring.

If you do not have a rear light to carry the variable motor voltage from the ESC, then the 2 way connector cable will need to be fed through the loco and connected to the two terminal plugs. See the top pic on page # 7. That shows where to feed the two wire cable through a hole drilled in the bodywork just below the cab. Connect these two wires to the connectors removed from the track pick ups be sure and insulate them when tucking back into the chassis..

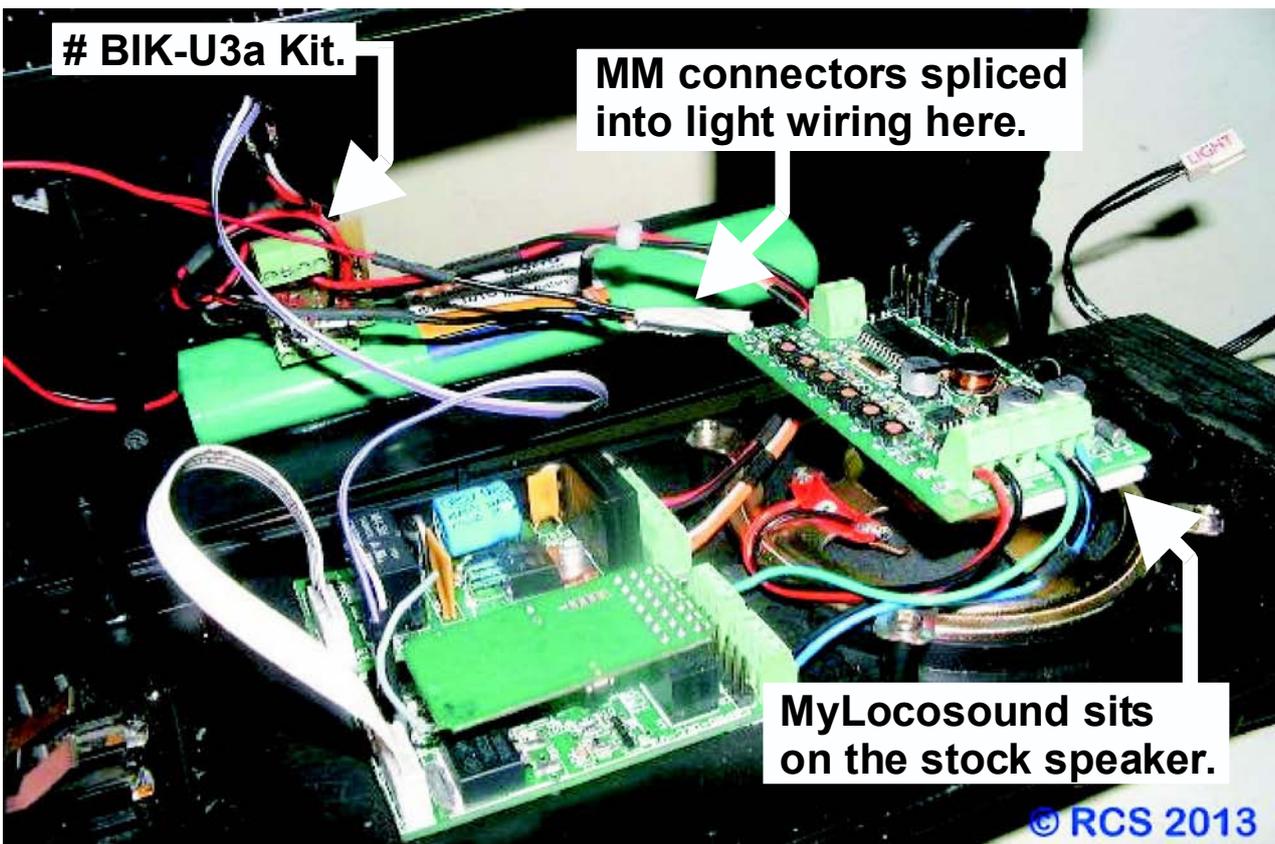
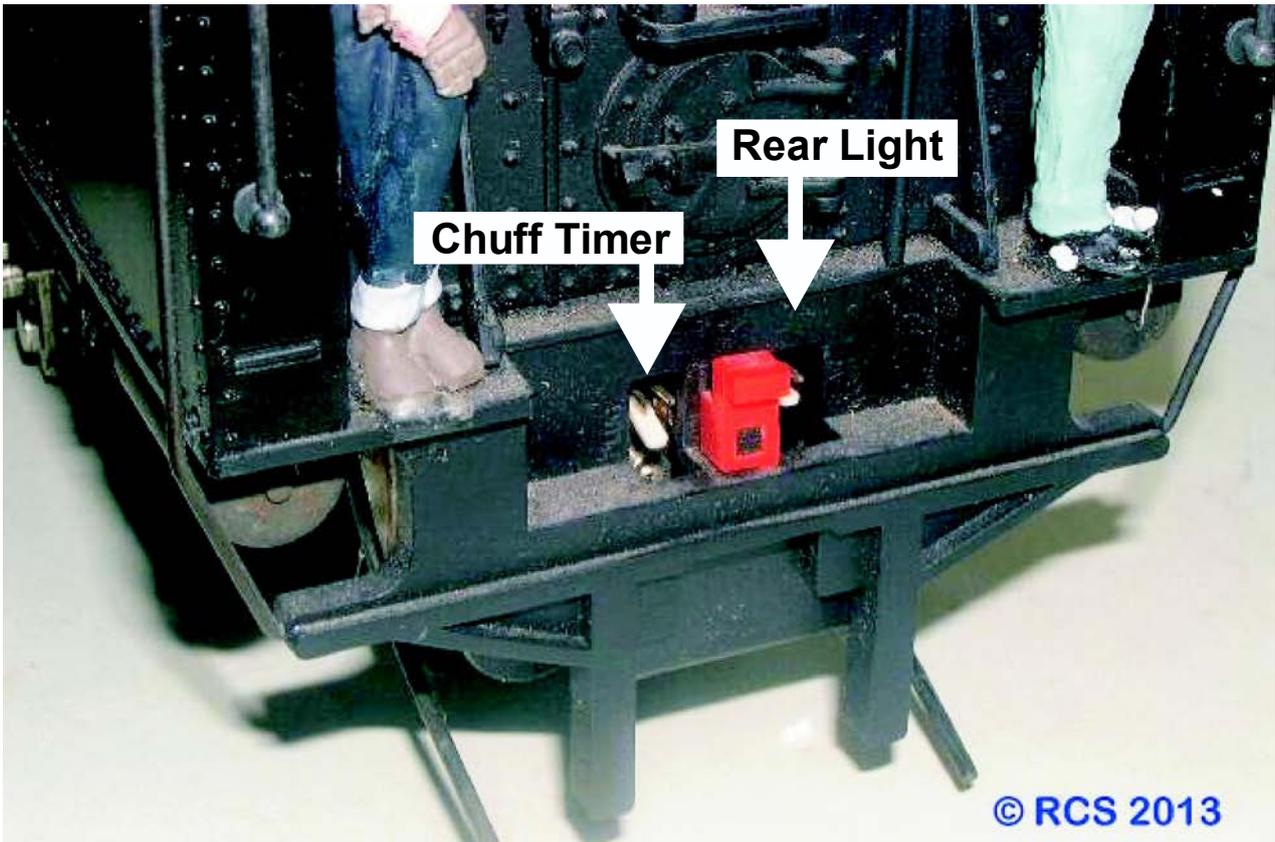


EASY PEASY TENDER INSTALL

Underneath the rear of the cab are 2 x two pin sockets..

On the left is a connection for the chuff timer.

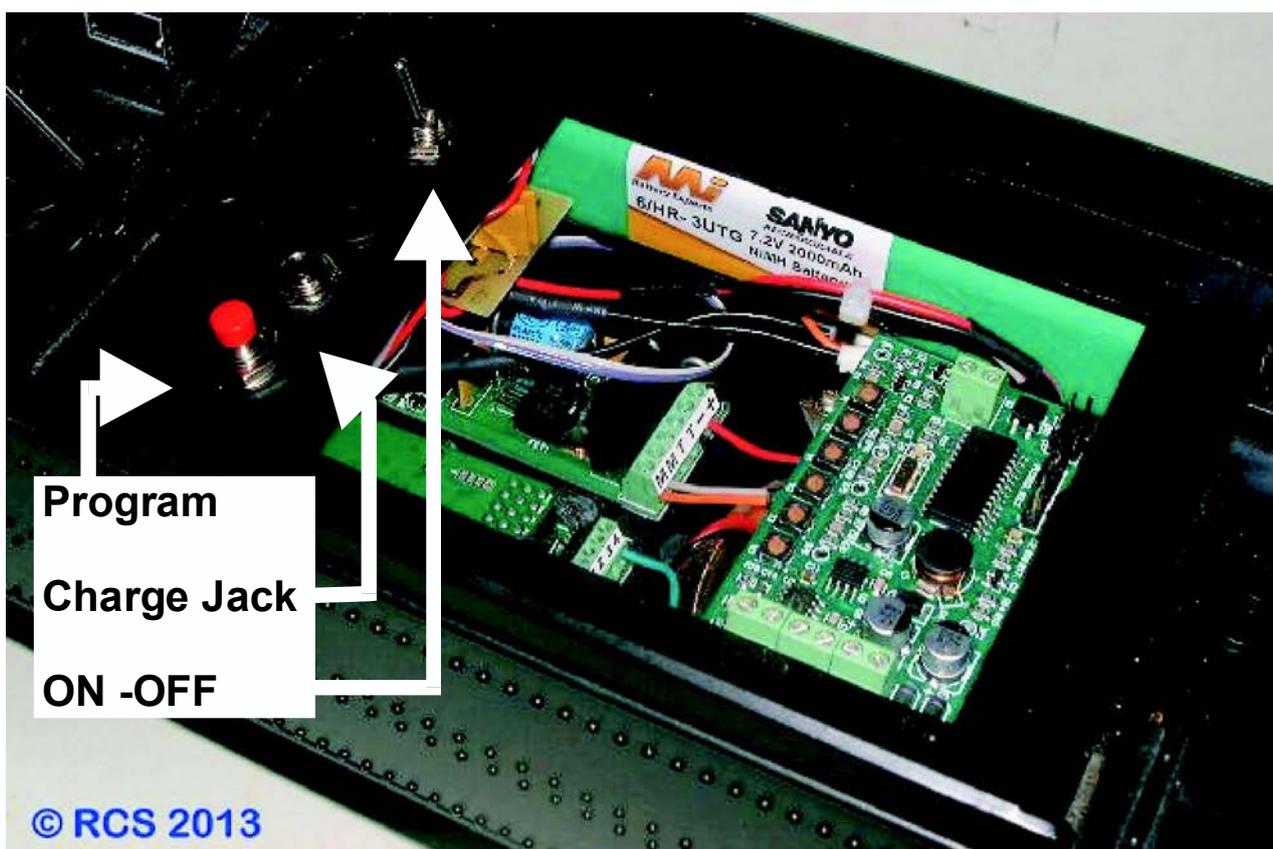
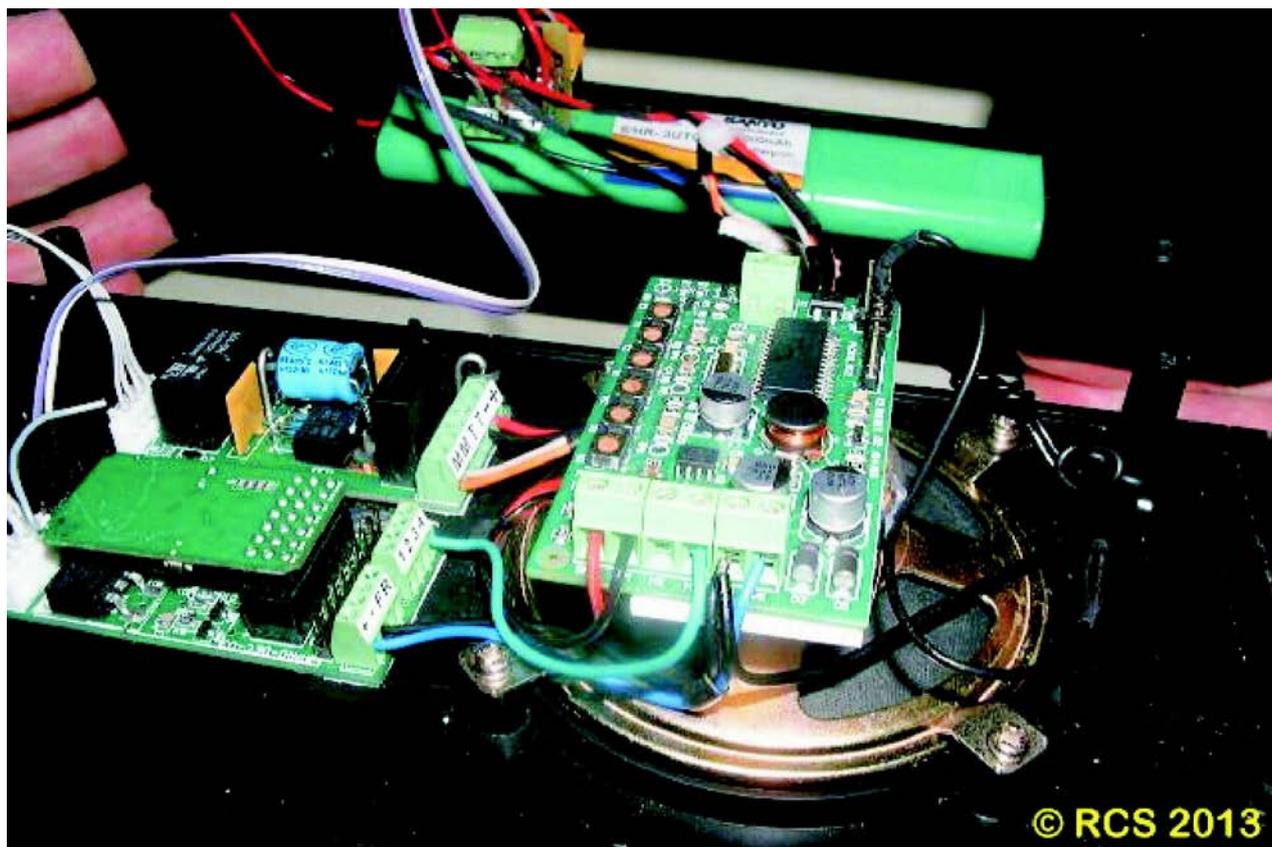
The one on the right is for the rear light. It will not be connected internally if there is no rear light. The switch in the middle is for the sound and must be pushed up for the chuff to work.



INSTALLING BATTERIES

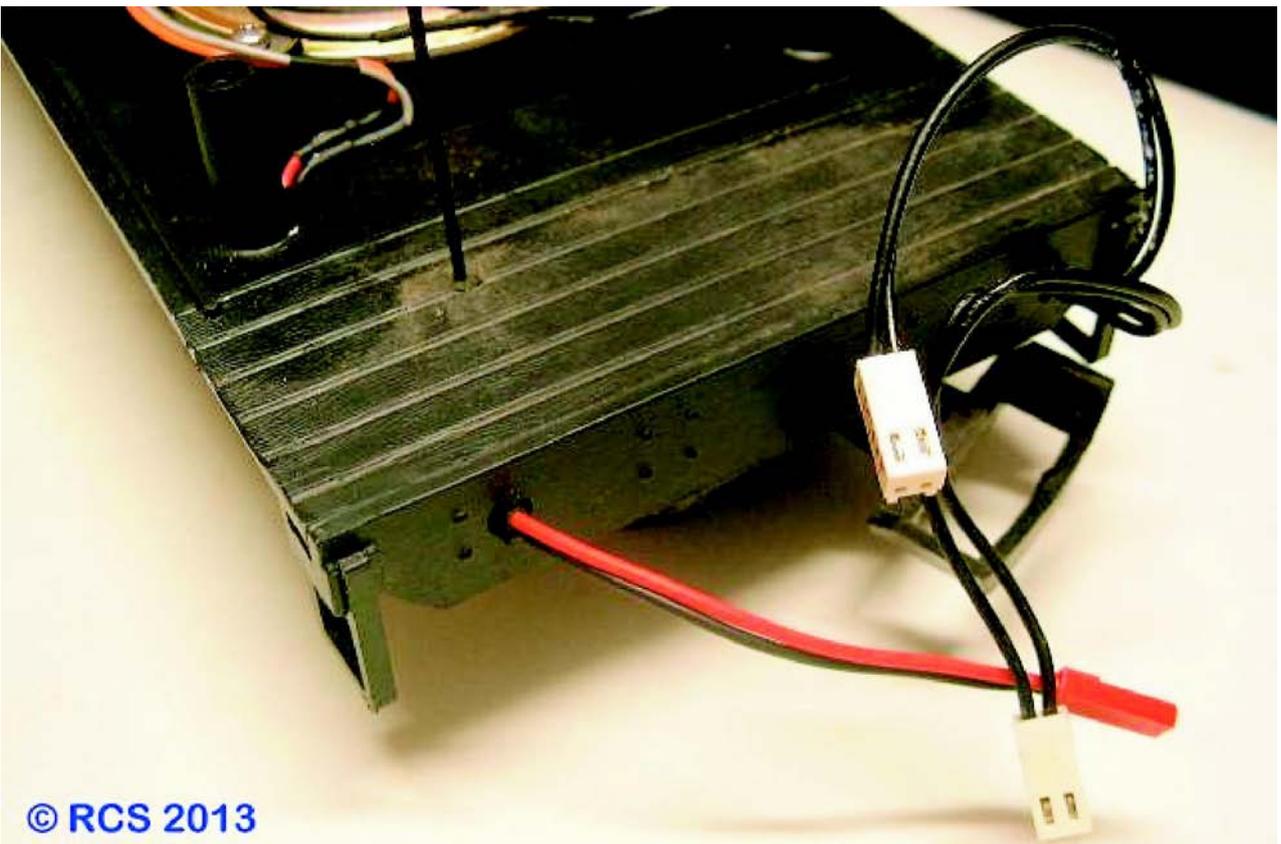
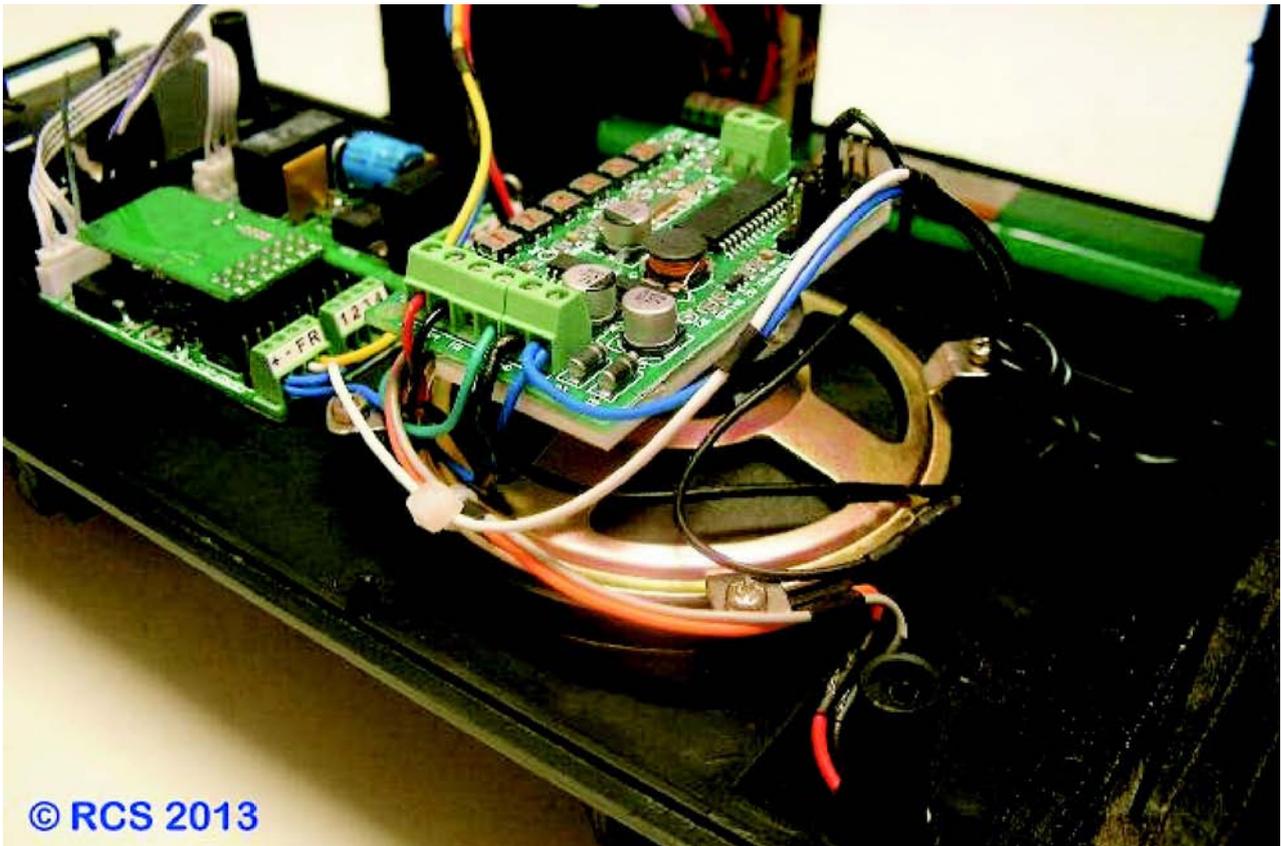
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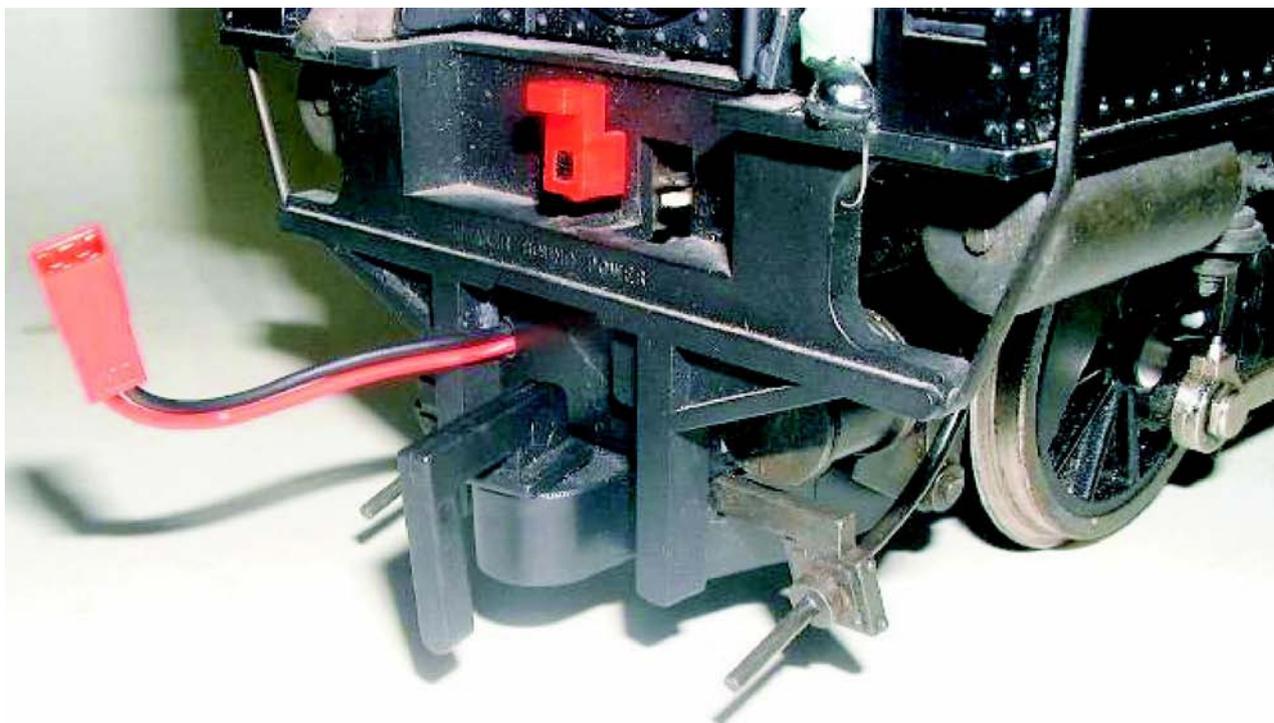
The bigger batteries you can fit in the better. This particular install used 2 x 7.2 volt AA sized 2000 mah ENELOOP hybrid batteries. We are now using 3 x 4.8 volt packs of the same batteries as they are less expensive than having special packs made up.



6 WIRING THE TENDER TO LOCO CONNECTOR.

One end of the 2 x wire connector cable is fed through holes drilled in the beam on the front of the tender frame and up into the body shell. Then they are connected to MM on the ESC.

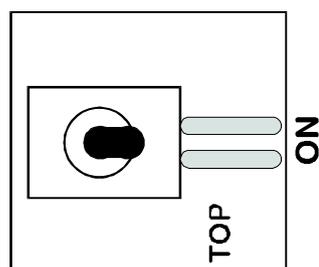




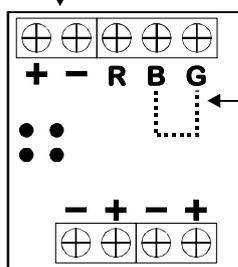
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THE BIK-U3a SWITCH & WIRING.

BATTERY CONNECTION



INSERT JUMPER ONLY IF
NOT USING AUX JACK CABLE.



CAUTION.
DO NOT mount jack on a metal
chassis or body.
Call RCS for advice.

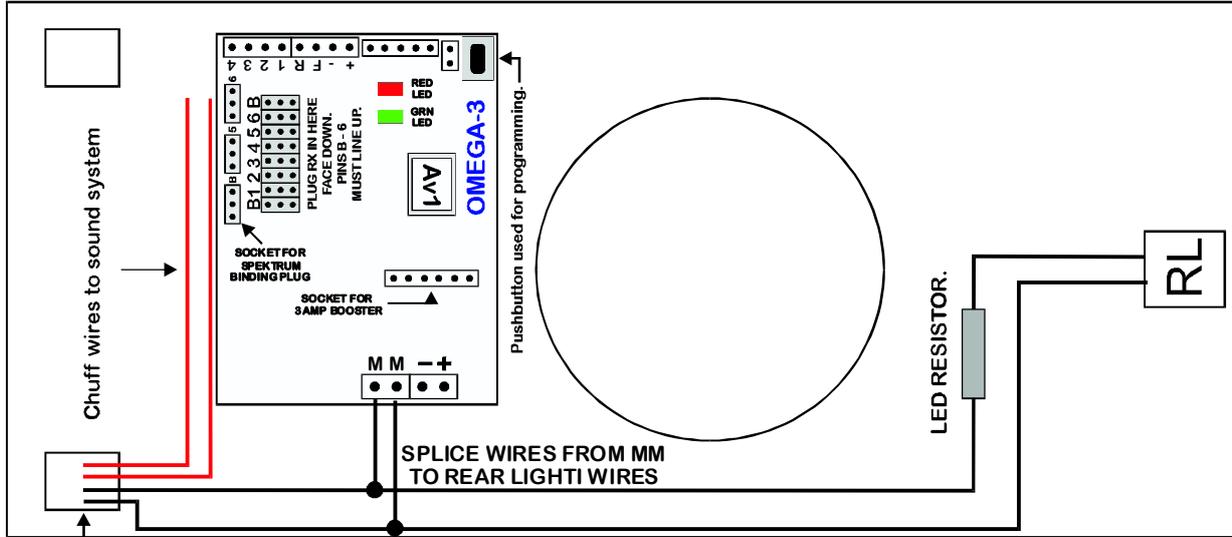
POWER OUTLETS
TO THROTTLE & ACCESSORIES.

RCS WIRING COLOUR CODE.

COMMON (- Ground)	=	BLACK
BATTERY VOLTAGE	=	RED
MOTOR +	=	ORANGE
MOTOR -	=	GREY
POLARISED VOLTAGE	=	BLUE
REGULATED 12 V	=	LT BLUE
REGULATED 5 V	=	CREAM
FRONT LIGHT	=	WHITE
REAR LIGHT	=	YELLOW
F1 (WHISTLE/HORN)	=	GREEN
F2 (BELL)	=	VIOLET
F3 (SPARE)	=	BROWN
F4 (SPARE)	=	GREY

#1 EASY TENDER WIRING

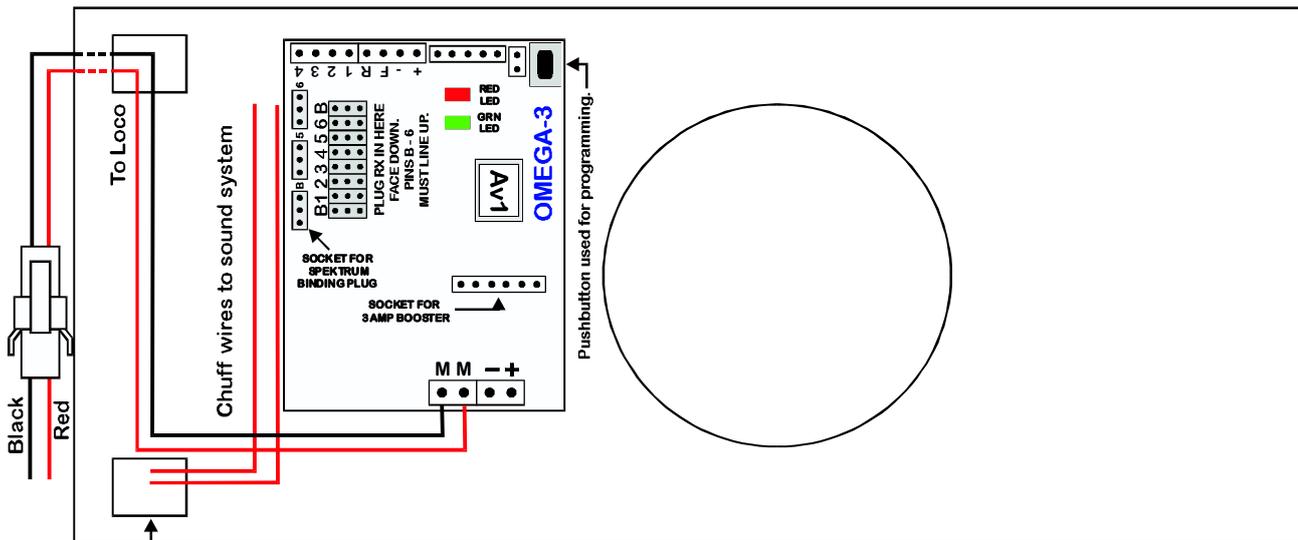
This level of complexity requires no changes to the loco wiring at all. The lights will be OFF when loco is stationary and will come on in the correct direction when loco is moving. Just like it does on track power.



Chuff timer and rear light wires.

#2 ALTERNATE TENDER WIRING.

This method is required where there is no rear light in the tender. A two wire cable will connect MM on the ESC to what were the two track pick ups under the loco chassis.



Chuff timer

#3 TOP LEVEL WIRING.

This method is where the loco is rewired so that it has constant brightness directional lighting etc. Such an installation is beyond the scope of these instructions. Contact RCS for advice.