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Battery R/C & Sierra in Bachmann Shay

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Topic:

Topic author: TonyWalsham

Subject: Battery R/C & Sierra in Bachmann Shay

Posted on: 14 Apr 2006 00:06:25

Message:

It has been sometime since I had the opportunity to install an RCS battery R/C system in a Bachmann Shay along with Sierra sound.

I did not have a digital camera when I did the last one.

Recently a customer asked me to update his older version Shay with the new metal trucks. At the same time I was asked to add RCS battery R/C and Sierra sound.

The following is not meant to be an exact "how to do it", rather it is how I went about it with very few wiring changes to the loco and only one small modification to the dummy coal load.

I wanted to make the job as simple as possible for the average LS modeler.

To start with I placed the loco upside down in the original packing material. This reduces greatly any possible damage to the details when handling the loco.

After I removed the old trucks I drilled an extra wiring access hole in the floor for the Black/Red/Yellow RX-8 cable which as it turns out was not necessary as the RX-8 cable could also fit through the original floor hole. I also drilled a small hole for the antenna wire.

I then mounted the RX-8, RF-CHK pcb and the RELAY-U under the floor as shown.



The RF-CHK pcb is the method of suppression I used for the rear truck. The rear truck wiring was

removed from the tender and is now fed directly into the RF-CHK under the floor.

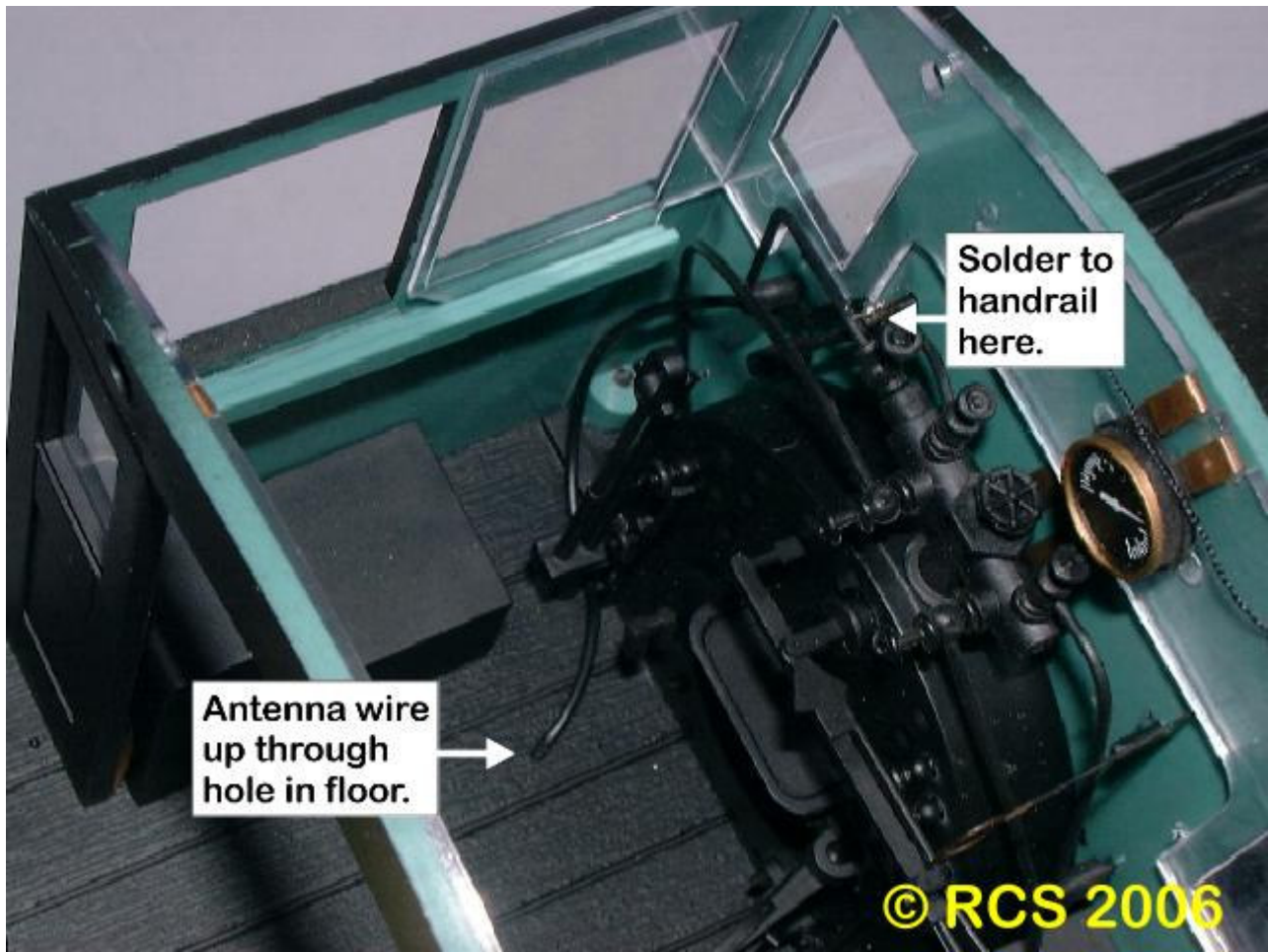
I slightly modified the under floor cover so that I could get the three motor control wires from the RCS ELITE-3 out near the rail.

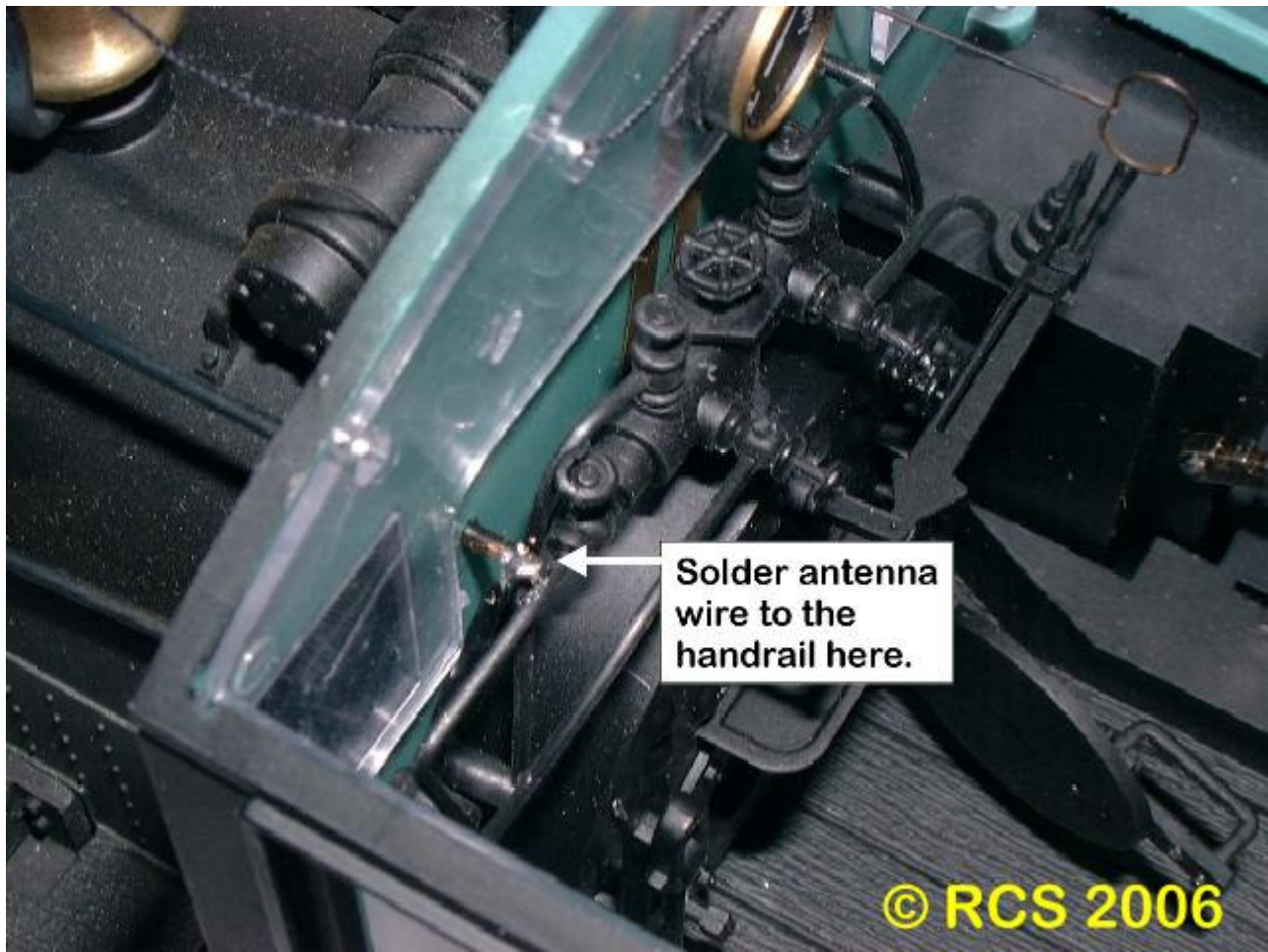
The RELAY-U provides a constant voltage for the Bachmann electronics that reverses polarity (including the lights) with the direction change of the RCS ELITE-3 Motor Driver. This saves a lot loco of rewiring. I re-routed the original pair of wires from the firebox to tender and lengthened them to reach the RELAY-U at the rear of the floor. I drilled an elongated hole near the RELAY-U for the control wires coming from the ELITE-3 in the tender.



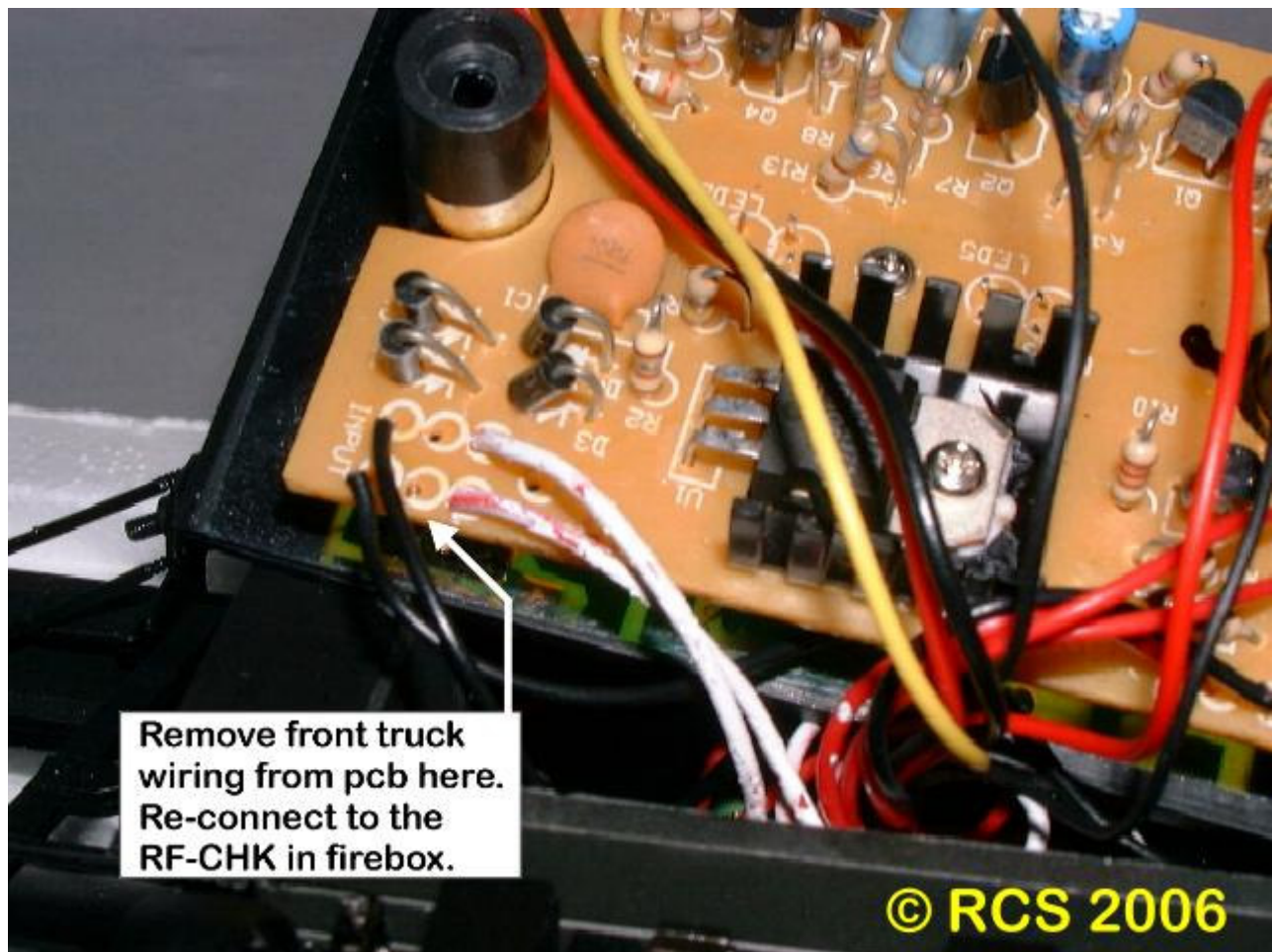
The antenna wires was threaded up through the floor into the cab and connected to the LH handrail inside the cab.

I haven't checked the range yet but past experience indicates well over 100'.

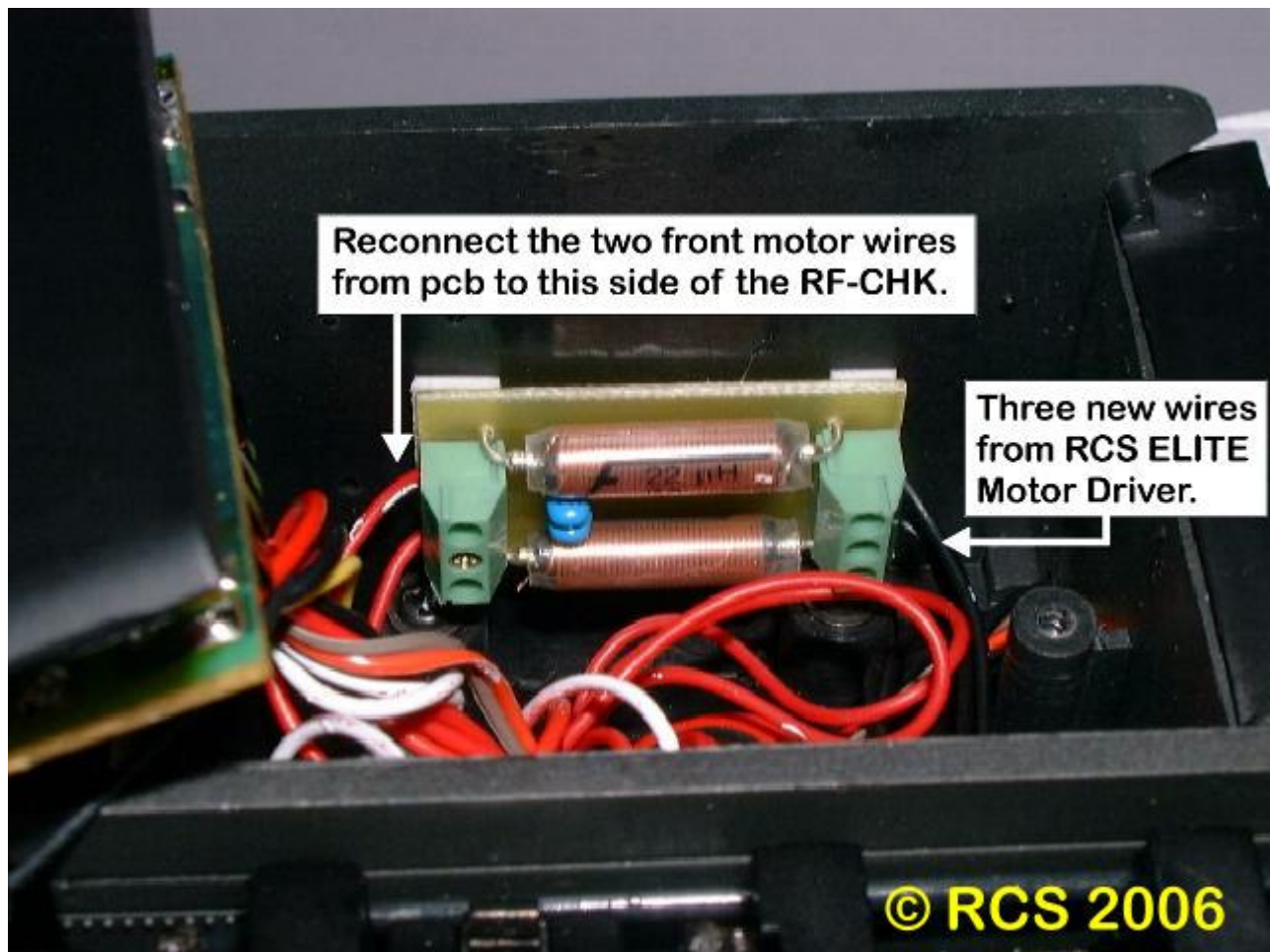




The only wiring change in the firebox was to remove the two front truck wires and connect them to another RF-CHK in the firebox.



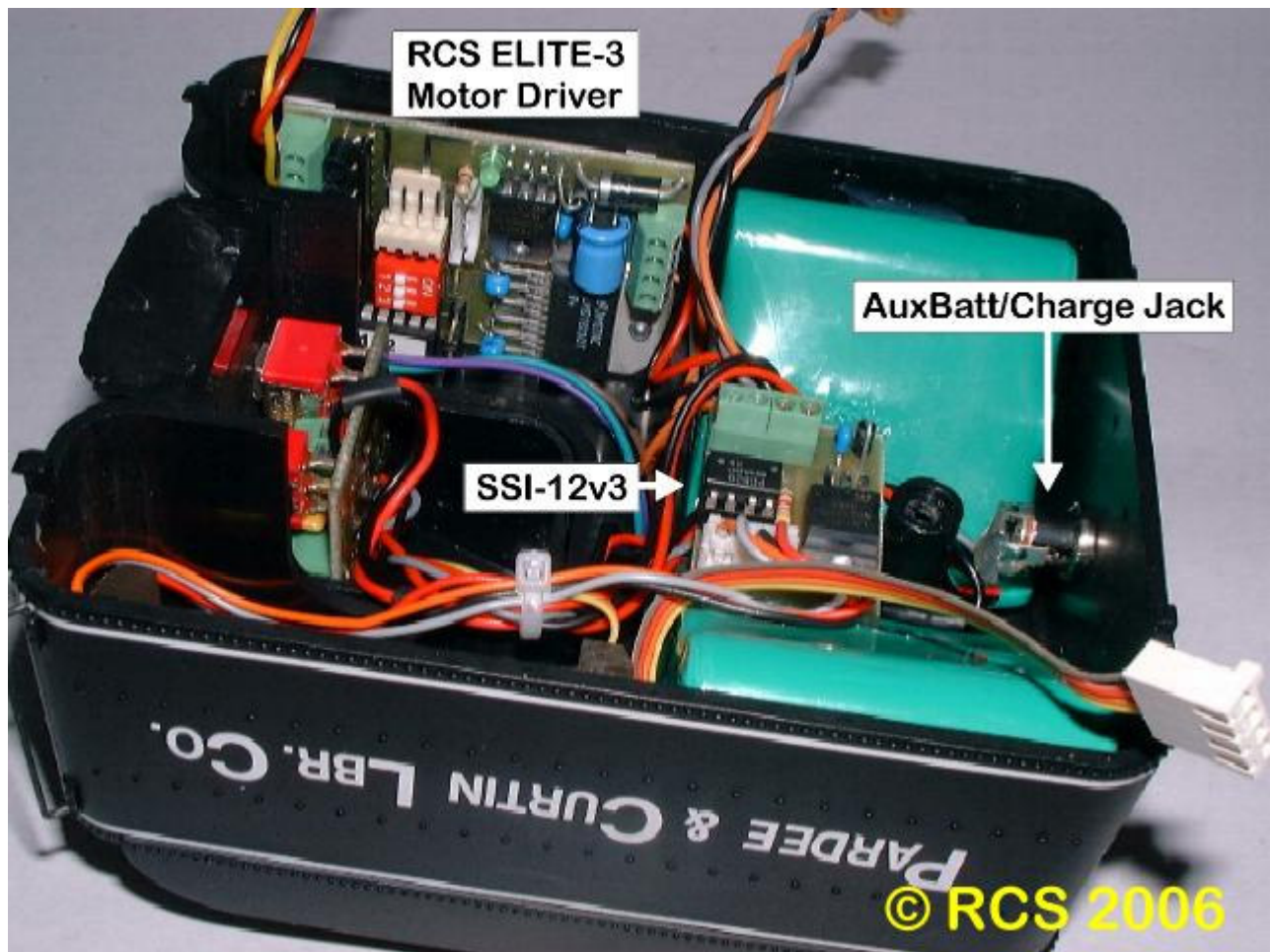
The RF-CHK pcb for the front truck was glued to the inside of the firebox. Three new wires were added from the RCS ELITE-3 in the tender.



Although not entirely necessary I removed the speaker mounting lugs and the cut out the little spurs in the speaker holde rim so that the speaker would sit down flat on the floor. I added plugs and sockets to the wiring to enable me to remove and re-install the render as I took these pics.

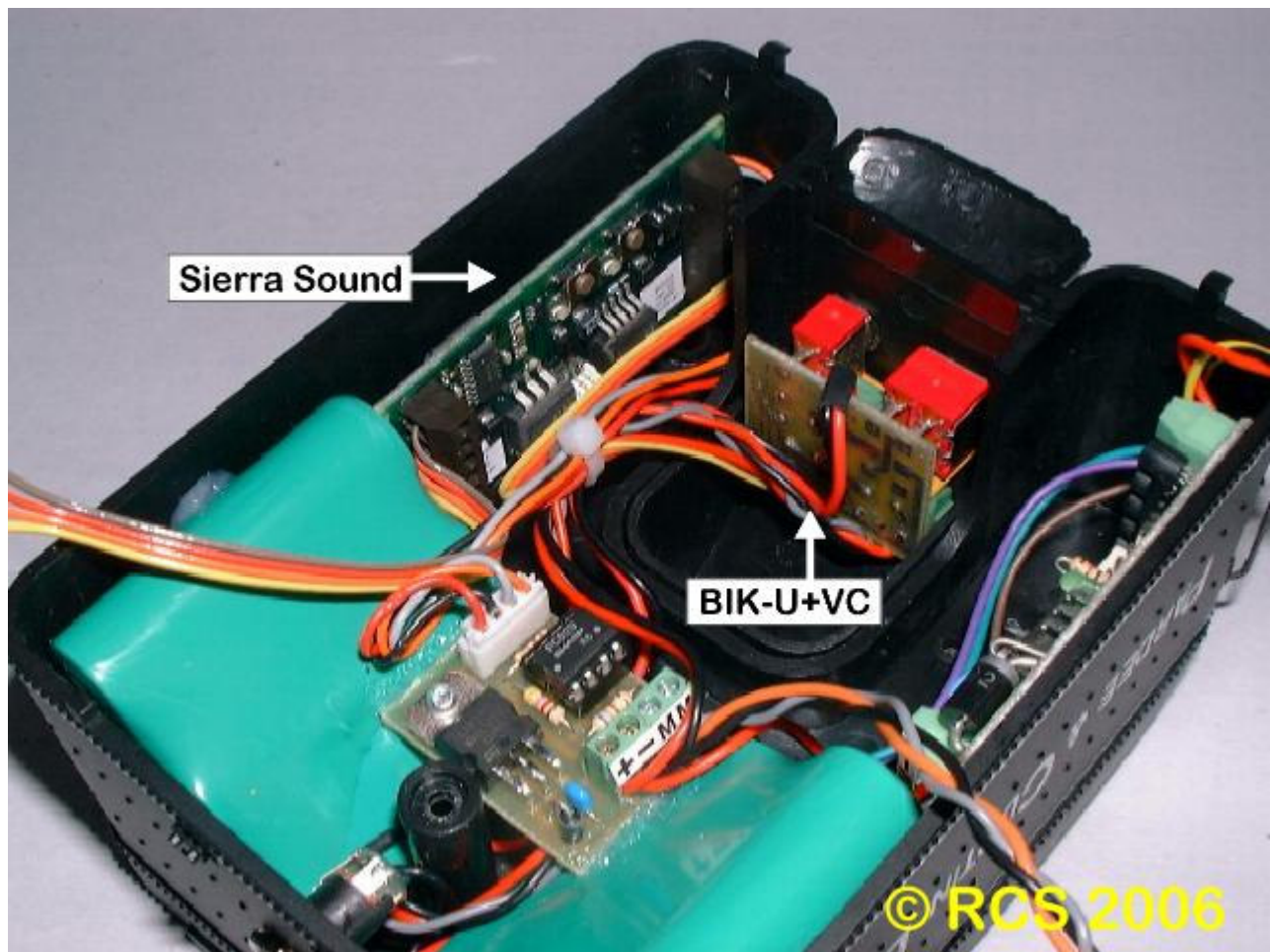


The tender shell contains the two triangular 7.2 volt 2500mah NiMh battery packs, the RCS ELITE-3 Motor Driver, the SSI-12v3 opto interface pcb, the BIK-U+VC installation kit with body mounted AUX BATT/Charge jack and the Sierra sound. I did remove the various bits of excess plastic inside the tender shell.



It surely is a tight fit but it all does fit in.

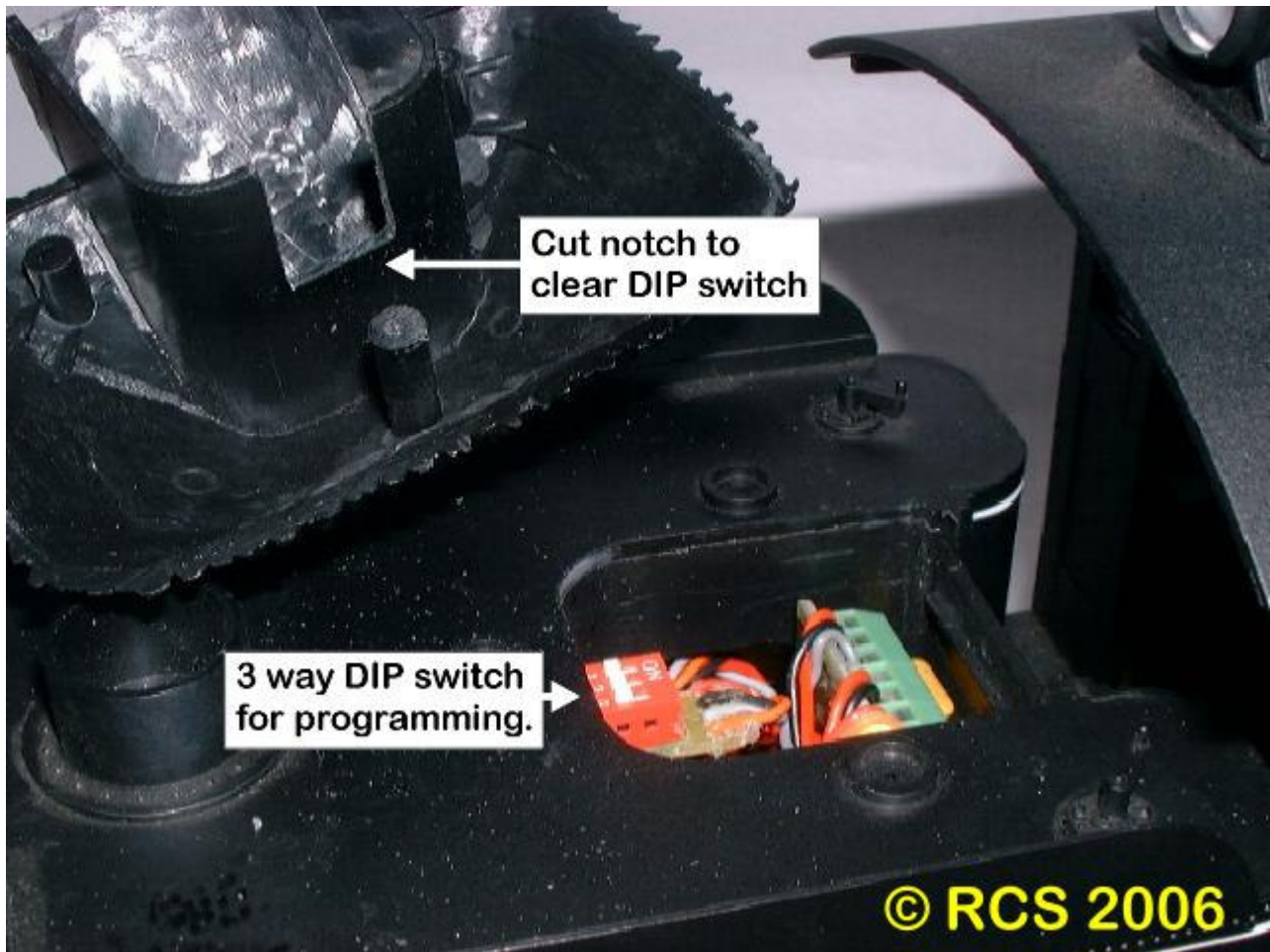
The wiring is pretty straightforward when the instructions for the specialist Shay kit are followed.



The BIK-U+VC provides an OFF switch, Polyswitch fuses and a volume control on one small pcb. The two switch toggles are accessible from the front of the coal load and are barely visible. They can be further disguised by using black plastic toggle covers.



Once the tender shell was refitted I glued the three way programming DIP switch to the well hole and cut a notch in the "coal" load to fit.



From past experience I expect a run time of at least two hours. Although I used the speaker that came with the Sierra sound I find they provide quite good quality sound that is certainly loud enough.

If anyone has specific queries to the above please feel free to contact me off line. So far I have not had the opportunity to do an install in the later version Shay. Maybe soon.

Replies:

Reply author: Del Tapparo
Replied on: 14 Apr 2006 08:43:28
Message:

Tony - Nice job of documentation and very impressive use of the available space. But, personally, 7 circuit boards (including sound), batteries, and all the associated wiring and wire routing scares me.

Reply author: TonyWalsham
Replied on: 14 Apr 2006 16:33:59
Message:

Hi Del.

Nothing to be scared of.

RCS is renowned for having documentation that is easy to follow.

The space inside a Shay is really limited. I don't think there are too many systems that permit you to get everything in the Shay without a fair bit of "creative" plastic engineering or dismantling of the boiler. Not necessary with RCS.

The **RELAY-U** is not really necessary but saves an awful lot of rewiring to get directional constant brightness lighting.

The **RF-CHK** pcb's could also be eliminated and RF chokes + caps hard wired into the motor circuits. Something necessary with most brands of on board R/C. The RF-CHK's simply require insertion into the two wires of each motor circuit.

The **BIK-U+VC** also saves a lot soldering switches and fuses. All done for you. All the installer has to do is insert the wires into screw terminals to simplify a necessary chore for all systems.

The **SSI-12v3** is a self contained 12 volt power supply and opto coupler circuit. Something that is required by all R/C systems if you wish to use Sierra sound with pwm and eliminate the Sierra battery. Again no soldering. Just screw terminals and a plug and socket for the Sierra.

The above items will work with any brand of R/C. They are designed to make life simple and save wiring.

The metal cased **RX-8** is a plug and socket deal into the ELITE-3 so that doesn't really count as wiring. No need to cut a pcb to get a system to fit.

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