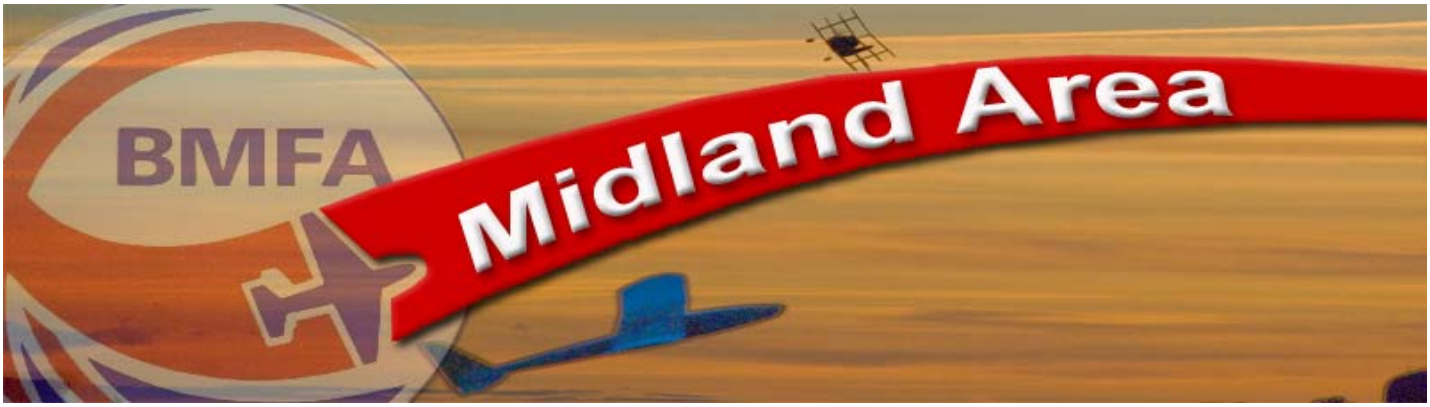
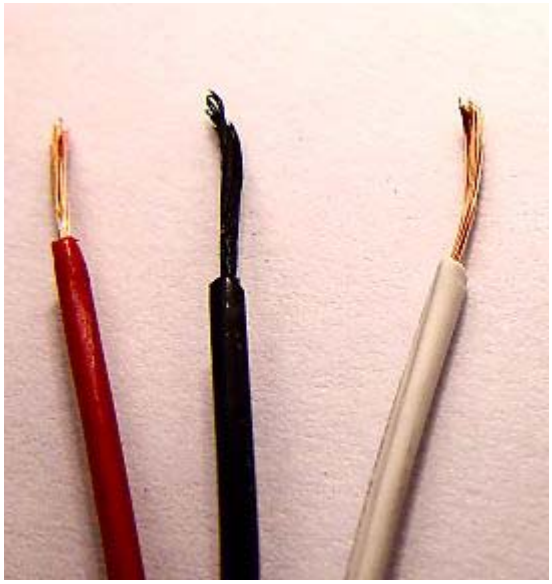


Black Wire Corrosion



A typical example of black wire corrosion

Systems fitted with rechargeable batteries can suffer from black wire corrosion. When this happens the surface of the copper strands in the core of the negative (black) wire in a circuit receive a coating of black material which works inwards until all of the copper in the wire has corroded. This black corrosion has a high electrical resistance so as it gets deeper into the wire it lets less current through until eventually your radio stops working.

The wires which are most affected by this corrosion are the negative wires from the battery to the switch in both transmitter and receiver wiring but in severe cases the corrosion can go much further than this and in extreme cases has even been seen in servo leads.

The causes of the corrosion are too complex to go into here but it seems worse on batteries in storage or which have been allowed to go flat or, possibly, have been kept in a damp atmosphere. Well used and maintained batteries certainly suffer much less but they are not immune to the problem.

Unfortunately, there is only one practical way to find out if your wiring is suffering from black wire corrosion and that is a visual inspection of the core of the wire. If you are competent to do this, inspect the wire leading from the negative terminal of the battery. Stripping back a very short length of outer will show if you have the problem. Be aware that the corrosion is highly resistant to solder so if you have unsoldered the wire and it looks clear but you can’t solder it back on to the battery easily then the wire has almost certainly started to corrode.

There is no cure for black wire corrosion other than removing the affected wire and replacing it with new.

If you find the black coating on the battery lead but the wire still looks sound then you should be able to clear the problem simply by replacing that lead. If you find bad corrosion, however, it will almost certainly have gone further into the wiring harness and you must investigate and eliminate all traces even if this means discarding an entire switch harness for instance.

If you are unsure of any of this advice, it will be well worth sending your rechargeable batteries and switch harness back with your radio equipment when you have it serviced with a specific request for black wire corrosion checking. Several companies specialise in supplying batteries and they might also be able to help. Another source of advice could be your local model shop but failing all this you should ask an experienced modeller for assistance.

Advice

- Remove batteries from models when the models are not going to be used for a while
- Periodically charge the batteries
- Keep the batteries in a warm dry place
- Thoroughly check the batteries before using them again for both black wire corrosion and capacity