SOLDERING – A short "Lock Down How to" in three episodes.

by Andy Hopper

Part 1

I have had a conversation with someone who had some soldering to do but wasn't very confident and wished we could do a refresher course. We can't do it the way we would like, but I thought I'd see what happened if I tried to put something together on here. My idea at the moment is that there will be a number of 'episodes' each with some form of picture and commentary and with a short interval in between to allow comment and query. If it works we can do it with other topics, if not then at least we tried.

A lot of us are layout building so this will concentrate on soldering wire to rails, but the method is applicable to soldering wires to most things.

TOOLS

Soldering iron - I always use my 25watt Antex which is shown in the picture below. It is light, has enough power for what we need and you can get different sized bits that just push on and off. The bit that's on the iron is the one I'll use for this work, on its right are a big one for larger jobs and a fine one for delicate work, but we don't need them for this. The bit must be kept clean at the tip - you can't solder through dirt! On the left is an old filthy bit which needs throwing away.

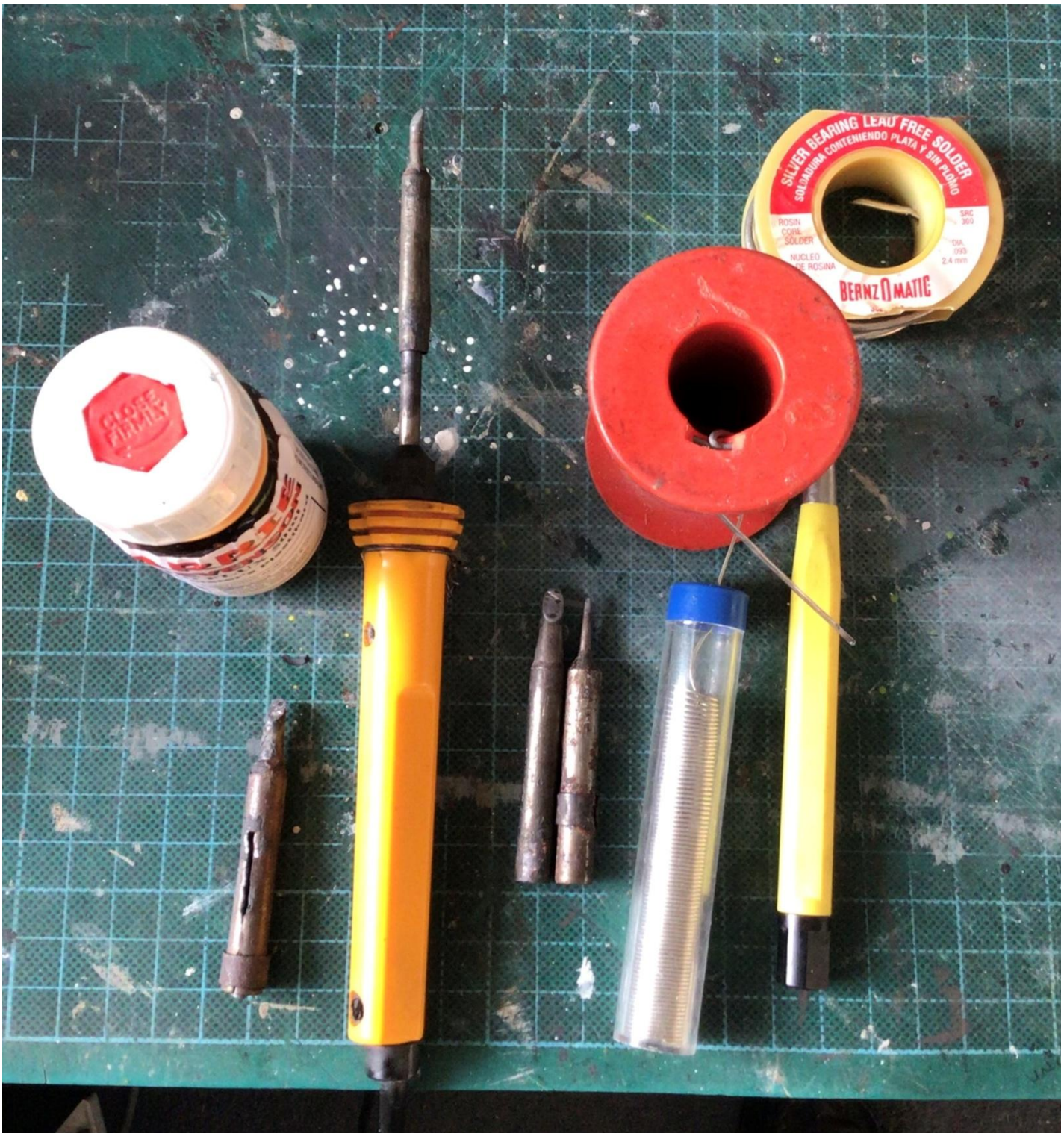
Stand - You will need some sort of cradle or stand for the iron, this one had a plastic hook which was useful but somewhere along the way it's got broken, I've made a new one by twisting a bit of wire round it. You can buy purpose made stands from Antex with a metal coil holder for the iron and a plastic base which holds a cleaning sponge – see photo in Part 2. The metal acts as a heat sink so stops the bit over heating and will help the element of the iron last longer.

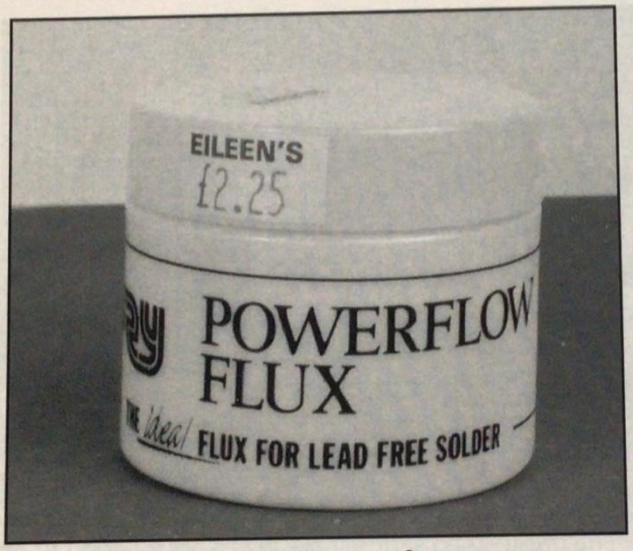
Solder - this comes in different forms. It's most readily available in lead free format, this is not really suitable for our purposes as it's intended for plumbers, it can be done but it's very difficult. Solder for wiring is commonly available in a tube like the one with the blue lid. It has a resin core which acts as flux but which makes a mess and it's difficult to keep the bit clean. For solder without the resin core you'll have to go to a tool specialist or kit maker at an exhibition, someone like Eileens Emporium or Squires. I have a big reel which I bought years ago and I think will see me out.

Flux - this helps the solder to run and cuts through any traces (not thick deposits!) of tarnish or dirt. My top photo shows a bottle of liquid phosphoric acid flux which is all I have here at the moment, but it's not advisable to use it for wiring as it can leave an acid residue which will eat away the joint in time. On a model you can wash it off, you can't wash a layout. Use a paste flux like power flow as in the bottom picture, available from DIY stores as plumbers use it. It is dearer than shown as that picture is from a 25 year old magazine.

Scratch brush - the yellow thing is a fibreglass scratch brush which is used for cleaning up the surfaces to be soldered. They are very effective but have one drawback. They leave small threads of fibreglass all over the workspace and these have a habit of getting into your fingers and are painful. I like to wet the brush before use as that stops the bits flying about, but be sure to clean up afterwards.

Well that's the first instalment - let me know if you think it will work, and of course (constructive!) comments and suggestions please.


SILVER BEARING LEAD FREE SOLDER
SOLDADURA CONTENIENDO PLATA Y SIN PLOMO
ROSIN CORE SOLDER
NUCLEO DE ROSINA
SAC 305
DIA 093
2.4 mm
BERNZOMATIC
CLOSE FIRMLY



Eileen's Emporium - Frys Powerflow Neutral Paste Flux.

Flux to most people is, well - just flux. But not so, as those who may have read my writings on the whole business of flux and solders over the past few years may be aware. Actually, it's pretty vital stuff, as it not only determines the facility with which joints can be made, but also their ultimate strength and life. Life? Well, yes - as those of us engaged in restoring old model locomotives for the Model Railway Heritage Trust are finding, soldered joints can deteriorate quite dramatically over time, due to chemical changes - effectively corrosion - taking place in the

The stuff is formulated for use with lead-free solders, is 'water friendly' in plumbing terms, and calls for no more of a post-joining clean-up than a swift wipe with a damp tissue. It seems to cut through a lot of crud and general detrius, works well with most types of modelling solder and doesn't foul up the bit of your soldering iron. In short, it's an excellent all-round general-purpose material, and at £2.25 for a 50g. bright yellow unbreakable, hard to tip over screw-top plastic pot - about 5 years supply for the average modeller - it won't break the bank, either. Good stuff.

Iain Rice

Frys Powerflow Superflux:
Eileen's Emporium, 55 Reedsdale Gardens, Gildersome, Leeds, West Yorkshire, LS 27 7JD Tel: 01532 537347
JPL, Unit 12, Tyldesley House' Elliott Street, Tyldesley, Manchester M29 8DS
Tel: 01942 896138

High Level/Backwoods Miniatures 4mm. Scale Reduction Gearboxes

Small locos, in 4mm at any rate, usually mean small motors and small motors - certainly when used with conventional gears of the order of 40:1 or so - mean low revs and consequently poor low-speed performance. The problem is exacerbated by extremes of wheel diameter - say, 3ft 6ins or below or 6ft and