Chemical Blackening As A Solder Mask

The following is a tip that comes from locomotive building tutor Tony Gee and is based on the soldering demonstration given by Tony at the Missenden weekends.

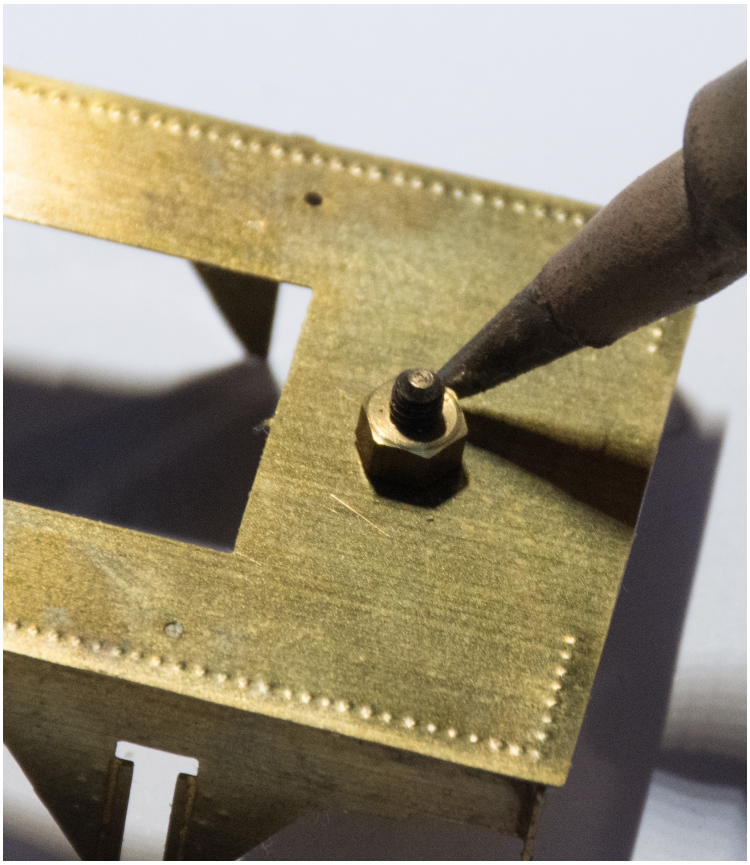
The basis of this is that chemically blackened metal will not take solder, we can use this to our advantage to prevent solder flowing onto parts we do not wish to be soldered. This is particularly useful when soldering valve gear and other components that require some items not be soldered solid.

Another use of chemical blackening is to solder nuts onto footplates and the like. Traditionally, this is done using a cocktail stick or similar, although this does run the risk of getting solder into the thread of the nut and then you will need to re-tap the thread of the nut. The method using chemical blackening is outlined now:

- Firstly blacken a screw or bolt that fits the nut you are going to solder.
- Insert the screw through the hole in your footplate and screw on the nut.
- Tighten the screw such that the nut is flush to the footplate, or use pliers to pull the nut down onto the footplate.
- It is important that the screw should be blackened where it goes through the nut.
- Apply flux, ideally a paste flux like Templars Telux should be used. Using acid flux attacks the coating created by the blackening fluid and can result in it being eaten away, in which case the effect is lost.
- Solder the nut in place.
- You should now be able to unscrew the screw and have a nut with a clean thread attached to your footplate.

The principle is the same when applied to valve gear. If you need to connect together a number of components with a pin then simply

- Blacken the components, or parts of the components, that should be left free to move. It is important to ensure that the faces which rub are smooth and free of cusps.
- Insert the pin through the components.
- Add the final layer which will be soldered to the pin.
- Apply flux and solder the final layer to the pin.
- Cut the pin off and file smooth.



- You should now find the blackened components are free to move, but are firmly held between the head of the pin and the final layer that is soldered to the pin.

These are just a few uses for the technique. It may also be employed as a way to stop solder flowing along faces, or to prevent the components being soldered to an improvised jig. The coating can be scraped off if required, such as for painting.