

Building Refining and Detailing Loco Kits

Part 1

Introduction

What are your aspirations?

Be realistic don't expect to play guitar like Eric Clapton or football like David Beckham or in our case build locos like Tony Reynolds, just be inspired by them.

Research

Decide on a prototype and look for photographs, hunt for information in books and search for drawings. However too much detail can be off putting as it makes you realize just how much detail could be add or altered. So be realistic in your expectations.

Buying a kit

Some manufacturers produce better kits than others. Don't buy a kit just because it was cheap, a better quality kit may cost more. An expensive motor with a 3-stage gearbox will cost much more than a simple worm drive, but you may find it easier to use.



Making a start

I am using my latest model as an example; a J15 number 65442, as it would have been in 1951. It is built from a Connoisseur Kit which is accurate, has a good reputation, and as Jim McGowan says in the instructions, can be upgraded should you wish. I have chosen an ABC 3 stage motor with gearbox and Slaters wheels.

Soldering

This model was built with an 80w temperature controlled iron. I have used a 50w iron in the past but it will struggle sometimes. Brass takes more heat than nickel silver, and therefore needs a more powerful iron. Choose an iron with a neoprene cable which is very flexible, otherwise you will be continually fighting against the cable.

I use 145c solder, and 70c for whitemetal. Resin cored solder which has a higher melting point, requires much more heat and is thus more difficult to use. It may produce a stronger joint but 145c is quite strong enough. I use a Phosphoric acid flux for everything, and would suggest you do too. This is relatively mild, a stronger flux like Carrs Green label or Bakers fluid if splashed, will rust tools and wheels if not washed off immediately.



When soldering

Always clean the metal using a glassfibre brush, the purpose of the flux is not to clean the metal. When the metal is heated the flux boils and this prevents the metal oxidizing from the heat, keeping it nice and clean for the solder to run.

Always wash off the flux. I do this regularly, and do not wait until the end of the day. Be clean and organised.

Use the smallest amount of solder, which will still be too much, and clean any excess off as you go along. It may be our aim to make a nice clean joint but this rarely happens so expect to remove any excess solder. Use a glassfibre brush or make a chisel out of brass to pare it off. Do NOT use knives or anything sharp, as this will mark the brass etchings.



What could be done?

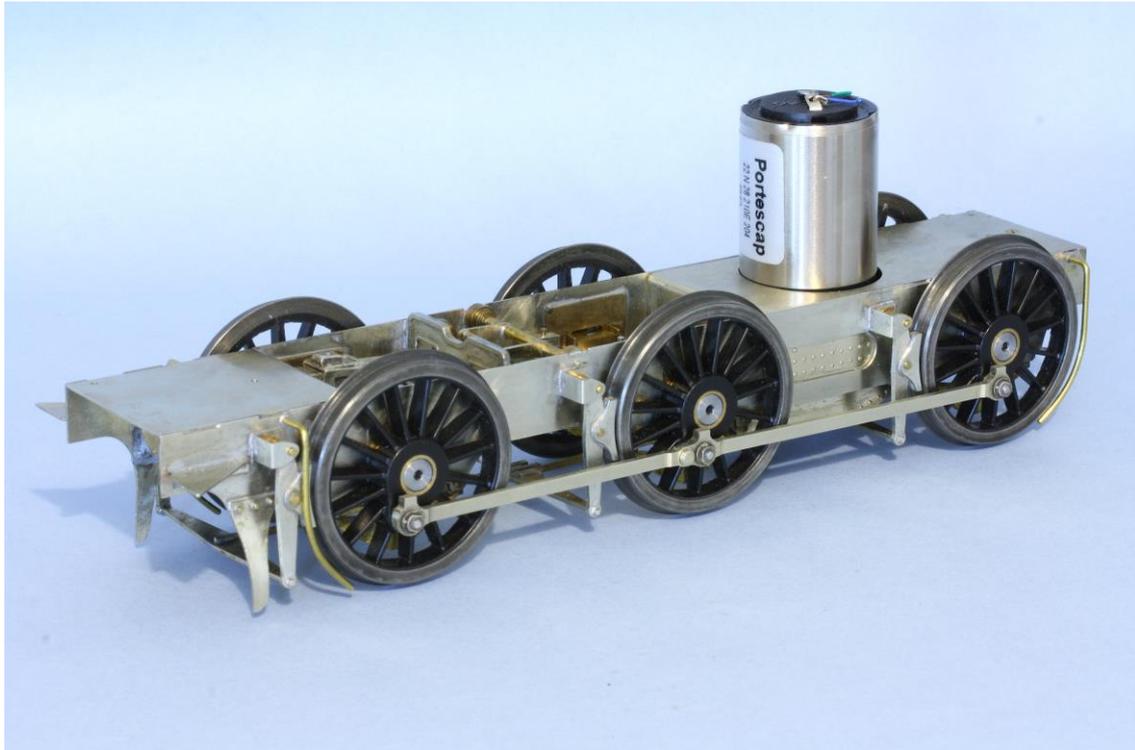
The loco Chassis

A rigid chassis or compensated chassis?

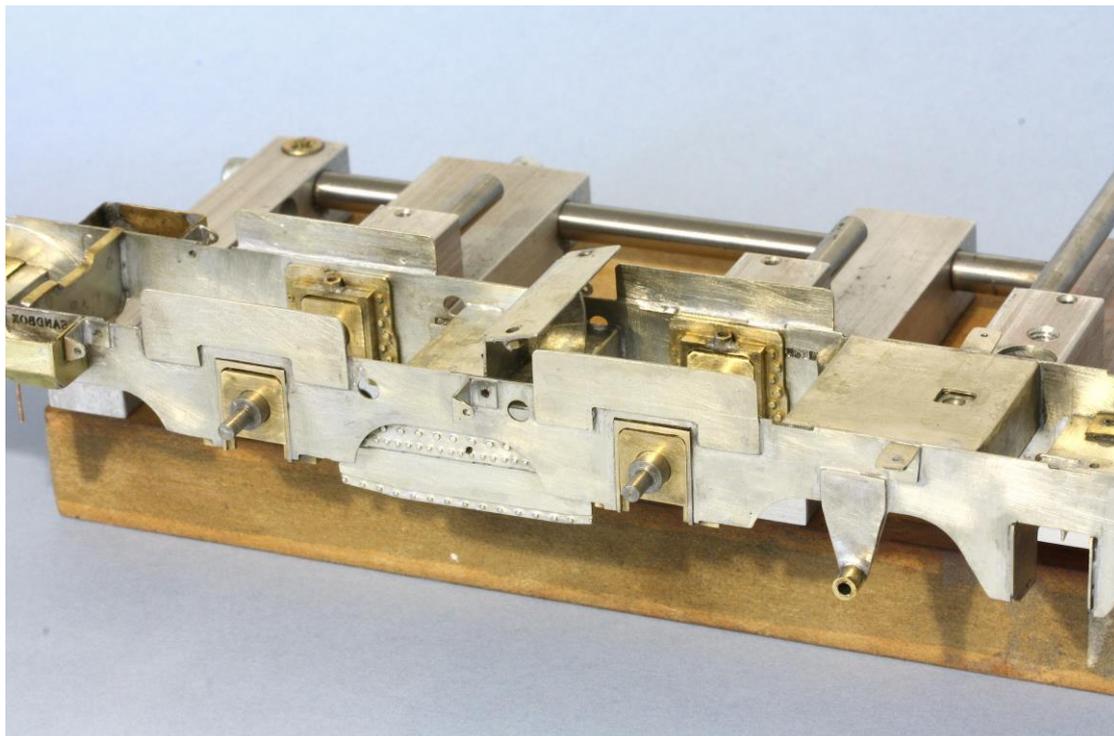
A rigid chassis is easier and quicker to build and will not derail if built square. But wheels are made within tolerances, and will not stay in absolute contact with the rail all of the time as they rotate, and this can be a problem with picking up current from the track unless slop is introduced into the bearings. A compensated chassis will solve this inaccuracy, and run smoother over imperfections in the track.

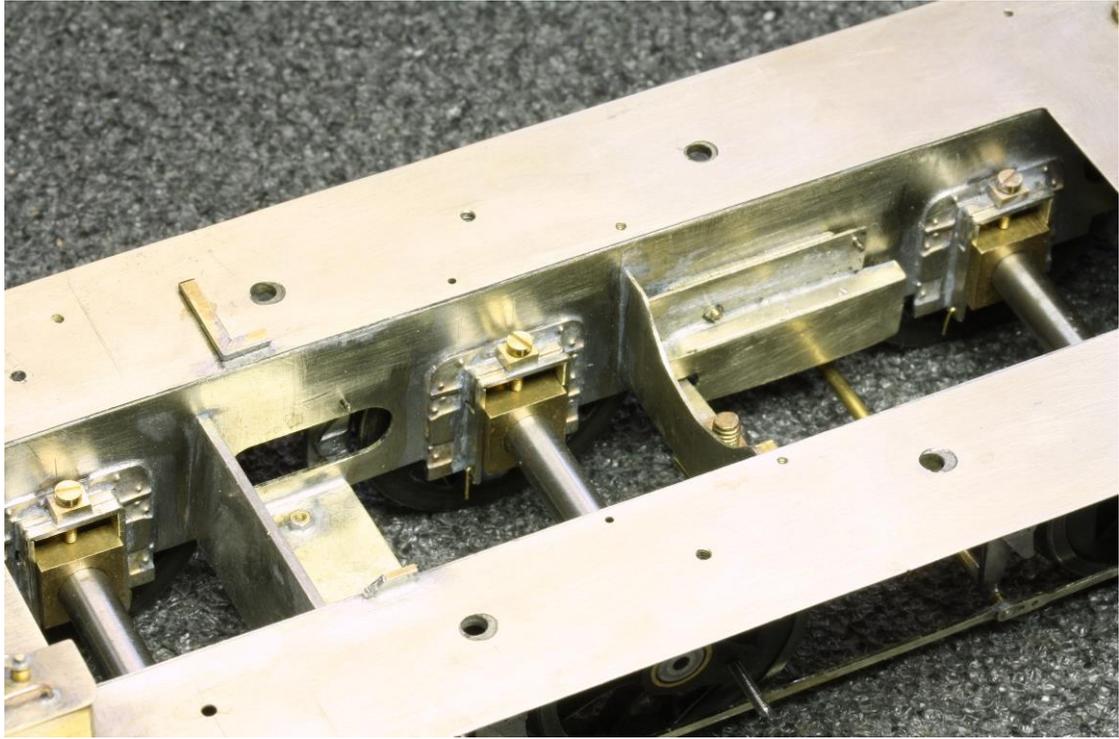
The compensated chassis.

My J15 has the motor driving a fixed axle, the front axle pivots over a pin fitted to the centre of the cylinder front, and the middle wheels are sprung.



Use a jig like that made by Hobby Holidays.
Make the coupling rods with holes that fit tightly over the ends of the jig axles.
Set up the jig carefully using the holes in the coupling rod to space the jig axles.
Make the hornblocks tight.
Solder in the hornblocks, one by one, into the cut outs in the frames.
When the chassis is built, loosen the hornblocks by rubbing them on very fine wet and dry paper to a sliding fit.
Ease the holes in coupling rods with a broach or use a larger drill for a more sloppy fit.

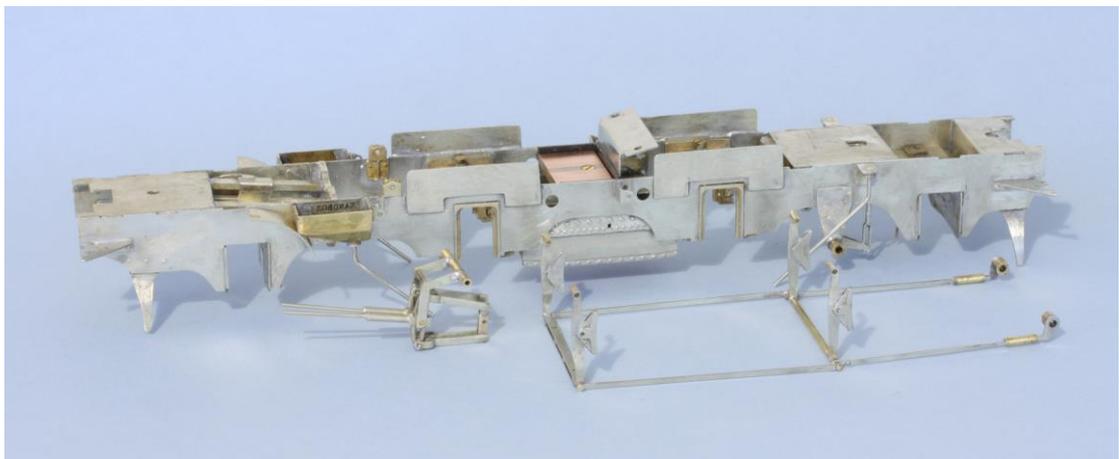




The brakes.

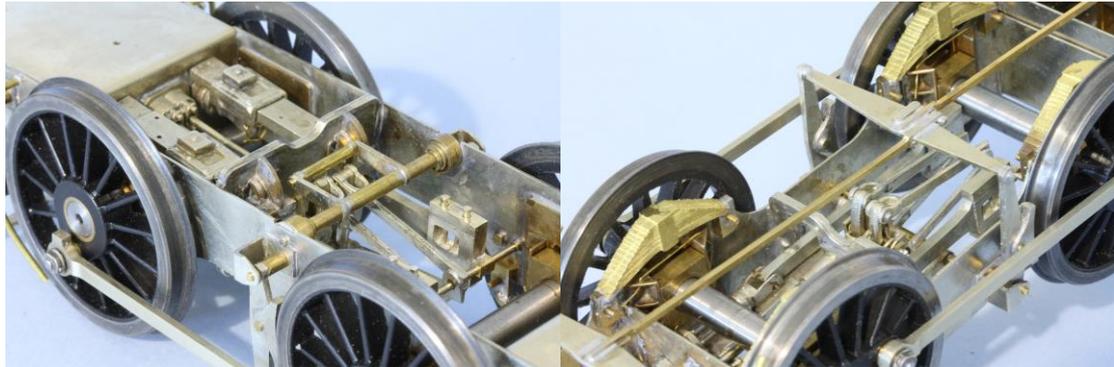
As etchings, the brake rods and shoes are too thin, so their thickness will need to be increased by soldering together layers of spare brass until they are of a prototypical thickness.

I prefer to make the brakes as a removable unit. Each brake is solder to a tube with a 1mm hole running through it, and this is pinned to the chassis with 1mm wire. Once the brakes and pull rods have been soldered together, the pins can be pulled out and the unit removed. It makes working on the chassis easier and more practical, and the wheels can be dropped out.



Between the frames.

Clearly in this model the gap between the frames is quite noticeable, and needs detailing. I chose to make a cosmetic non-working representation of the valve gear using parts from Shedmaster. As a layout loco, I wanted to make this model quite robust, and opted for this approach rather than making it work. Although highly detailed, without movement there is less complication and a greater degree of reliability.



The Tender

The chassis.

As with the loco chassis I decided to compensate it, partly so that it would run more smoothly, but largely because I was to put pick-ups on all of the wheels as there was more room for them than on the loco chassis. However creating movement to the wheels does not necessarily mean fitting hornblocks, as it is easier to simply elongate the axle holes in the frames to allow the bearings to slide slightly up and down. A beam rests on the centre of two of the axles and the third is fixed which gives the required three-point compensation. The brakes are also removable and a representation of the base of the water tank was added.