This commission is for a J27 based on the Piercey kit. With my well known antipathy toward white metal, it should prove an interesting build. The kit comes in a stout box that might at a push hold the completed engine and tender but it is destined to be used for other things and a stout wooden box substituted.

As is normal with offerings from DJH, there is a multi page A4 booklet with the history of the engines, comprehensive guidance notes and building instructions, lists (long) of parts and six pages of exploded diagrams. The kit comes with provision for dummy inside valve gear, opening smoke door and super heater headers to go inside. There are some nice colour pictures of one built by Tony Wright too. Since it is to be compensated, fitting the dummy valve gear proved 'interesting' and needed some modifications.

I began with the chassis. However, before any real work could begin on that, the wheels had all to be cleaned of the inevitable rust marks and the drivers modified to take 10BA steel bolts and brass bushes thus:

The frames are sturdy but with old fashioned, screw in, spacers, which I did not modify on this occasion. This was further modified from the recommended build method by making it a compensated engine, with roller bearings (so that should prove fun to drive!). The frames were suitably modified to take the horn guides, while a couple of bearings were force fitted into the rear axle holes. It was also fitted with an ABC motor/gearbox to drive on the rear wheels. The weight of the completed engine (all that pewter) suggests that is should be well able to pull more than just the skin off a rice pudding.
The rods will need some considerable modification to allow them to be pivoted, which is essential on a compensated engine. So here is how I did it.

Using a fine piercing saw on a wooden block fixed in the vice, sever the first two layers to the right of the pivot hole and the third to the left of the pivot. Now it is possible to solder the rods together so that the right hand rod has a pair of ears extending for the pivot on the outer sections and the left rod will fit between the pair of ears. On the back of the rod a piece of scrap etch is used to strengthen the ear for tapping 12BA and a washer of the same thickness soldered over the crank-pin hole and filed down to shape. A 12BA bolt then had the slot filed off the head and used to bolt the two halves of the rod together. The finished rods are now ready to use in setting up the jig for the fitting of the horn guides.

Next, the chassis was put together with the compensation beam, the frames levelled and the unit tried out:

Pretty standard stuff using Hobby Holiday's horn guides and roller bearings. Once assembled on the jig and the horn guides were soldered up the time came
to try it out on the rolling road. It ran perfectly first time without even oiling, nice when it happens.

The roller bearings in the horn guides could be dropped out individually by removing the securing bolt in the top until the white metal spring units were fitted. The springs in the bearings were dispensed with, they are not necessary for a compensated chassis.

Next work began on all the fittings that go on, or in, the frames, including the dummy inside valve gear, which proved 'interesting' as expected due to the modifications made so far. But first I sorted out the crankpins by replacing the Slater’s 12BA bolts with 10BA bolts and threaded brass bushes. The kit comes with brass nuts to hold the rods on, which would look terrible so I used CPL nickel silver crankpin nuts instead, suitably reamed out and re-threaded for 10BA. OK, they are GW but look better than brass hex nuts. DJH already produce proper, lost wax cast, crankpin nuts for some of their other kits, I wonder why they don't add them to kits like this, or offer them as an optional extra? Brass nuts seems like a "ha'porth o' tar" for turned out to be a rather nice model.

To continue with the body; It was necessary to keep on dry running things until satisfied with the fit and, even then some parts will not. The smoke box assembly was a nice fit on the footplate, until that is one fitted the wrapper and then it would not fit between the moulded mounting stops on the footplate. It took some fettling but eventually it was persuaded to go in correctly. This picture shews various parts being tried for fit on a dry run.
Few of the parts were fixed at the time aside from the handrail knobs and safety valves. Easier to solder them in early as it needs a fair amount of heat to combat that big heat sink, but it is essential to ensure that all the parts fit before final fitting. The boiler barrel is a substantial piece of brass tube with a cut-out already made for the motor. The cast ends have raised, circular, fixing lugs, which are too large to fit the tube. Filing down the lugs is prone to damage the parts, especially the cab front so I reduced the thickness of the brass tube wall at each end instead. It would have been more elegant to turn down the inner faces of the tube in the lathe but I decided the setting up time was more that that need for a brute force filing job. Since this was to be a version with an extended smoke box, the wider of the two wrappers was put through my Leaky punch and then through the rollers.

Once satisfied that the parts really did fit well, I got on with assembling the boiler. These parts are all fixed in place and only a few
bits remain to be added; the handrail knob above the smoke box, the mud hole doors, whistle, lamp iron and handrails.

A great many parts need to be fettled up and assembled into various forms prior to any thoughts about fitting them to the body. The inside of the cab is quite complex with a wealth of detail in white metal and lost wax. Fitting them after building the cab would be quite difficult. Here are many of the parts assembled ready for fitting having been through the ultra-sonic cleaner. An excellent method for both cleaning the parts and proving they have all been fitted securely. The parts fitted with Loctite 408 seem to have survived well.

Here is the firebox - boiler - smoke box assembly completed and ready to be fitted to the footplate.
Once happy about the fit, it was time to start assembling the boiler and cab sides onto the footplate.

Though the boiler and cab sides are bolted in place I also glued them as, once the fire box was fitted, there is no way to take it apart again so a permanent fixing obviates any problem of threads in white metal stripping.

Having got the cab sides in place, it was a good time to check the fit of the cab fittings. In fact they required a good deal of fettling to get all the parts to fit. Here they are mocked-up; all but the left hand boxes will be left off until after painting.

The steps for the footplate were the next item for attention. The rear steps look nothing like those pictured in the exploded diagram and once folded up, did not seat properly. I modified them by removing the fixing tab, filing the part down a tad and soldering some 1mm square rod in its place.
Then I added some more on the rear side that butts up against the buffer beam so that the steps have a more robust fitting all round as you can see here.

Then I added some more square-rod to the front steps to give them a better area for fixing. However, I had to go over them again as a step or two were out of alignment.

There is a good deal of pipe work to fit, the most complex being from the lubricator on the footplate, which was carefully measured up and produced as a separate sub-assembly before being glued to the footplate.

To continue with the chassis. I fitted the plungers, set up the wheels, rods and motor and tried it out on the rolling road. Worked perfectly first time, unfortunately the picture failed so that will have to wait until I have finished the chassis.
Here are the brake components cleaned up and ready for assembly. The holes in the etched brackets are inconsistent being of two different sizes, neither of which matched the recommended size for the brake hanger pivots. I opened the outer holes to 1.5mm and also the holes in the frames and drilled out the holes at the top of the brake blocks. The bottom holes were drilled out 1.6mm to match the lugs on the stretchers. The flat brass pieces shown in the picture were for strengthening the shoes but I considered them unnecessary and left them out.

The brake cylinder is meant to be held in place by the body fixing screw but I decided that I'd mount it permanently on the frame stretcher it sits on.

Here you can see where the mounting brackets have been fitted and how the inside valve gear has been butchered to allow for a compensated chassis, fortunately not visible from above. Next I dry ran the rest of the gear. Just as well I did as it looked like there was an error here or, I had cocked something up, not impossible!

Here I had gone a little further in the dry run and it was clear that the pull rod that fits into the stretcher on the right will not do so because it fouls part of the cylinder cover. It looked as though the brake shoes were too short. I E-mailed DJH but was assured that the brake hangers were correct so it seems that the
rear push rod needs to be joggled. The rear springs fitted OK once most of the inside detail was cut away. They are all designed to fit over the axles but of course, for a compensated chassis that won't do. I had to determine how to fit the springs to remainder of the frames, as you can see; the new bearings rather got in the way.

Most of the gubbins that goes between the frames has now been fitted, though some parts had severely to be hacked about. However, if some detail cannot be seen from normal viewing distance on the finished model, there is not a lot of point in putting there in the first place.

The under hung springs are all now fitted; they needed considerable amounts cutting away to fit around the brass axle boxes. The cylinder covers are now also fitted and lowered a fraction to make fitting the brake pull rod here easier.

The hole is there so that the fixing bolt that goes through into the footplate can be fitted. It will be a tad difficult to fit as the brake rigging also covers most of it. The brakes were completed, cleaned and chemically blackened. The brake rigging created a few small problems but nothing that could not easily be fixed. Here it is all soldered up using 179º solder cream.
The Tender.
This already has excellent provision for compensation and the whole thing bolts together after the parts are prepared, as these two pictures illustrate.

The outside frames and the tender sides bolt to the footplate so I mocked it up to check. Just as well, a couple of holes were off. There were two bolts to fix the inner chassis to the footplate and one of them was a good half a millimetre out necessitating some modification to get the two to mate correctly.
The buffers at both ends work. Those between the engine and tender needed a little work to get them to operate smoothly but it is not difficult. Only time will tell if they cause problems on tight curves.

Once the parts had been proved to fit - and they did fit very well - work started on fixing all the various bits together. The buffer planks are glued to the footplate, they were a good fit and did not need much fettling. The exploded diagram clearly shows which one goes at which end. This I took great care over but was distracted by the telephone half way through and finished up gluing them the wrong way round, which I discovered when I tried to fit the outside frames.

Fortunately, I had used Araldite so, out with the Nitromoors and a couple of hours later I had them apart again.
Having satisfied myself that all the parts were fettled to fit well, I glued the basics together with 24 hour Araldite. Once that was set I was able to start examining and preparing the next set of parts to fit.

The tender top was easier to do as a separate unit and glue it in as a whole. The tool boxes sit on a plate that is straddled by the upright but there are no slots etched therein. A little judicious work with the piecing saw fixed it.

All the brake components were laid out ready for assembly.

The blocks need brass pivots fitting through them, for which holes needed to be drilled 1mm. It takes a little time and care.
Here the brakes had been assembled and the whole lot was soldered together with 179% solder cream and the RSU. It does take practice, some nerve and a steady hand but is not too difficult. The diagrams in the instructions make putting this lot together relatively easy. A dry run though is essential. I started by fitting the blocks to the rear, with the wheels in situ and the chassis upside down. Once the rear blocks had been soldered in place it set the distance for the remaining rods and blocks.

The tender is close to being complete, the coal rails and rear couplings only remaining to fit. It is not as heavy as I thought it might be.

The various sub assemblies for the engine and tender were sent to Ian Hopkins to be painted.

More to come later.