LNER Class N9 0-6-2 Tank

Manufactured by: Four Track Models (1992) 22 Grange Road, HARROW, HA1 2PP. Tel: 020 8863 7338. E-mail: info@fourtrack.co.uk http://fourtrack.co.uk/acatalog/

The kit arrived in a substantial box (well it must have been in times past but this box was somewhat battered) containing various sheets of etch, one of them 0.9mm thick nickel silver, various castings, nuts, bolts, wire and top hat bearings. There are many pages of instructions, diagrams, parts list, historical notes and etch maps. Clearly this kit has a long history and has passed through a number of trader's hands. One George Norton, whom I am told, was one of the pioneers of etched kits, originally drew it. It was probably state of the art in its day but of course, looks a little crude beside the best of current efforts. There are a few tab and slots but much of it requires edge soldering.

Also in the box were a set of suitable Slater's wheels, numerous extra third party castings, a set of Four Track horn guides and a pack of Slater's etched steel connecting rods to suite the wheelbase. My client had picked up the whole lot as bargain at a show. All it needed was a motor/gearbox, which was duly ordered from ABC.

The original intention had been to use the Slater's etched rods in lieu of the rather heavy set in the kit. Those in the kit are designed to pivot on the centre axle with a dummy pivot in front of the centre driver. The Slater's set is designed to pivot in the correct place but proved to be very poorly etched and were returned. Slater's rapidly replaced them without question, though they must have been originally bought some years ago. Unfortunately that set proved also to be totally unusable as this picture illustrates, so I modified the original set to pivot correctly instead.

After laminating the original rods and cleaning them up I joined them using cocktail sticks and drilled right through the pivot boss in both laminates. Then the rear part containing the crankpin hole was cut off and soldered to the back of top overlay. Further careful cleaning and polishing before riveting each half together resulted in a set of rods that were acceptable. The only part I used from the Slater's etch were the rivets! This picture, shews all the parts required for the chassis cleaned up and ready for assembly, including the finished rods.

The frames were drilled out between the forward pair of horn guides to take some 2mm rod for the compensation beam. The wheels had their backs carefully rubbed down on a sheet of 240 grit wet & dry fixed to a sheet of plate glass until the centre brass boss and
rim were level. This is important to ensure that the wheels run as true as possible and is necessary because of the limits of manufacturing tolerances in the way they are made.

Both sets of rods were then set up in the Master Chassis jig to prove they were accurate and to set the dummy axles at the correct spacing. Once this is done the dummy axles can be locked down and the frames offered up. It is a simple matter then to assemble the frames and bearings square.

This picture shews the frames assembled with the bearings and horn guides all fitted. The compensation beam is a piece of 1x6mm brass stock suitably bent to shape after annealing, it needs to be relatively soft so that adjustments can be made to ride height after fitting. The beam is simply soldered to a piece of brass tube that pivots around some 2mm brass rod soldered between the frames. I chemically blackened the ends of the tube before fitting it and the rod to prevent them locking up solid. Simple and effective.

The next job was to set up the wheels and rods and test the rolling chassis. It worked first time and runs sweetly. The 12BA nuts holding the rods in place will be replaced by cast nickel silver crank pin nuts from CPL. Yes, I know they are Great Western but they will look
immeasurably better than those awful nuts. The ABC motor/gearbox duly arrived so running in could begin. I set up the shims to prevent excessive side play in the wheels and continued to add further parts.

Setting up the pony truck is relatively simple but the guard irons are, I think, much too thin. Unfortunately the axle for the pony truck had a defective shoulder so one wheel was seriously out of true. I sent it back to Slater's expecting it to be replaced however, they declined on the grounds that the set must be at least ten years old. I had never considered there was a statute of limitations on poor quality control. Granted I did not send the packing, it had been dumped some days previously but it was I think obvious that the set had never been used. Big black mark to Slater's.

Brakes. The brake blocks should really have a good deal more thickness than the two layers provided both to look better and to fit the brackets they hang from properly. The instructions mention brakes with inside rods but give no guidance about them at all. My client's engine (No: 1618) had inside rods plus, I wanted the brakes to be removable for ease of maintenance and painting.

Most of the fixing holes are far too big for the 0.9mm wire intended to fit them so I opened out the holes in the frame to take 1.5mm OD brass tube. 7mm lengths were cut and one end de-burred
inside and out and then soldered into the frames, leaving about a 1mm standing proud. The brake shoes and hanger brackets were fixed to short lengths of 1.1mm rod to fit in the tube. These two pictures illustrate the parts well.

Next the brake rigging was set up using 1.3mm rod as shewn here ready for soldering. Ensure that the brake rods are the right way round with the long ones in the centre. The ends are then supposed to be soldered to the bracket visible in the next picture under the plate that holds the pony truck. It is designed for outside rods so needed cutting down and soldering in two halves as shewn here.

The rear rods can be cut in unequal halves with one segment soldered to the spring and the other securely soldered to the cross bar in front so that it is horizontal. Once completed, it is invisible from normal viewing angles.

So here is the chassis with the brakes completed awaiting a replacement wheel set for the pony truck and the motor/gearbox. As usual, I made it up as I went along. One of these days I shall get caught out.
The footplate needs careful cleaning up and I found that the section at the rear that fits between frames required considerable filing down to get it to fit in. The instructions suggest edge soldering the valances and buffer planks into position but I decided to beef up the joints. It was then much easier to get them straight and vertical and also helped stiffen up the footplate too.

A line was scribed on the underside of the footplate; the sides at 1.8mm - 1.3 clearance plus 0.5mm for the thickness of the valance - and 2.6mm at the ends. Inside this line I soldered four lengths of 1x2mm flat brass bar.

The valances come in two parts and it is important carefully to measure and cut off some of the half etched length from both parts so that the parts fit properly. The buffer planks were soldered in place first and the valances fitted between them. Once cleaned up and a couple of 8BA nuts were soldered over the body fixing holes it was time to try it for fit on the chassis.

This close-up shows how the supporting structure was put in place. The front of the frames needed notching to fit over the extra metal. Now that I had a square footplate that fitted properly on a square chassis, work began on the body proper. However, before starting that I took time out to fit the buffers. These are nice brass turnings with integral sprung, steel heads. The instructions say to mount them with part 24 and shows this part as fitting between the buffer body and the buffer beam. In fact part 24 is a nice circular etching with four bolt heads and is clearly supposed to fit over the base of the buffer. It has a hole that is too small to fit over the buffer body shank. Opening the hole out to fit over the buffer housing is a real trial of patience and careful handling since the metal is about 0.25mm thick! Once the hole is made large enough the burr was carefully filed of before the etch was soldered to the buffer base and the edges filed down.
Each buffer was glued on the beam using Loctite 480 carefully lining up the bolt heads to be the same.

The Body. I fitted the beading to the cab while it was in the flat, much easier and it can be soldered from the inside. I also fitted the handrail stanchion to the tank front. It was necessary to file the tank front so that the stanchion was rebated into it to be level with the top edge. The tanks can be reduced in size to produce different versions and there are half-etched lines to work to but I am building the large tank version. The spectacle rings were also fitted at this stage.

Here then are most of the parts required to build the body ready for work to start.

The tank tops are supposed to be edge soldered 0.9mm below the top edge of the tank side. However I decided to solder it the other way round for strength and to fill in later with a full sidepiece instead. To get the end to fit neatly I filed the tank top to fit the base of the handrail stanchion. I could have soldered the stanchion to the tank top instead but so long as the end result is neat it does not matter much. The tank fronts were then soldered in place as shown here. This made fixing the tank and cab side to the footplate easier. I used the cab front - but not soldered in yet - to help locate this part as well as the front of the coalf bunker. It was tack soldered first, checked for square and then seamed up. You can see also that I have fitted the front splasher. They are not difficult, if one is used to edge soldering.
The other side tank and cab was next fixed followed by the cab front. This is too short to be soldered to the footplate using the tabs and slots provided. I assume to cater for the small tank version. It requires some care to get fitted square. The bunker back was fitted last after having checked that all was square.

The handrails for the cab are a good fit but the holes in the footplate for those at the front of the tanks are out of alignment so I filled them with solder and simply soldered the base of the wire to footplate. I will see if they prove to be strong enough, if not it will require measuring up and new holes drilling in the footplate.

The brass tube supplied for the boiler needs a section removing for the motor space. I used the mini-drill with a heavy duty cutting disk, the job wore-out 2 disks! Once completed the cut edges were cleaned up and rounded off to avoid damaging wires.

The holes have now been drilled for the major fittings and handrail knobs. The dome, chimney and safety valve have been cleaned up for later mounting. Still to do are various holes for pipes and valves. In fact I replaced the chimney with another that had a hole all the way through.
Marking up was a pain, I ought to have done it with the tube set up in the lathe, before fitting the smoke box and cutting the motor space.

The handrail knobs were then soldered in using some straight wire to line them up. Some care is needed because one needs enough heat to combat the huge sink of the boiler but not melt the knobs.

Plenty of flux also helped too.

All holes are drilled now for the various fittings on the side and top of the boiler. The brass ring that goes behind the smokebox was particularly difficult due to the huge heat sink the boiler makes. After three attempts at soldering I glued it with Loctite 480. Lastly, a millimetre or so needed to be cut off the cab end to allow the backhead to fit.

John at Fourtrack tells me that this kit now comes with an etched boiler so it ought to be far easier but the sequence may be different.

The roof is made up from two parts, the open square being larger than the roof proper. They are almost square so it is important to get them aligned properly. The other two pieces shewn were fashioned out of some thick nickel silver sheet and will serve to hold the roof in place.
This view of the underside of the roof shews the holding lugs soldered in - they just fitted nicely inside the square - and the wire used to hold the vent open. The other picture shews the top with the vent fitted and the whistles fitted too. Bending this part might have been a problem due to the etched in rainwater strips so rollers were avoided. I annealed the part and bent it in my fingers, soldered in the square part, checked the curve and soldered in the lugs. It is a snug fit on the cab.

The body is now close to being completed, only the sand pipes, sanding rods and lamp irons remain before fitting the boiler.

Here is the completed engine waiting for a trip to the paint shop. When my client has painted it I will get some more pictures of it. It weighs in at 1lb 9ozs but there is room for lots of ballast if required in the tanks and the front of the boiler. The upper, rear, lamp iron is difficult
being made up from three parts that need soldering in a slot in the bunker back. In the end I soldered part of the bracket to the bunker back and used Loctite 480 to fit the rest.

An attractive little engine, it proved to be an interesting build but I would not recommend it for beginner. The next job for this client will be an N8 using an original George Norton kit we found recently at the Langley show.

Raymond Walley
Epsom December 2006