

To 'L and back (a spouse speaks out)

New Zealand Finescale's **Jill Boul** succumbs to temptation

WHEN YOU LIVE IN A HOUSE where interesting sheets of metal arrive in the mail, the temptation to start fiddling with them can become intense. I figured that if, as part of my real job, I could build furniture, all I had to do was swap an electric screwdriver for an electric soldering iron and an L-wagon was as good as made. Well, not quite...

First, Lawrence made me practice soldering with the resistant [sic] and standard soldering irons, insisting that there were only three little tricks to a good solder job:

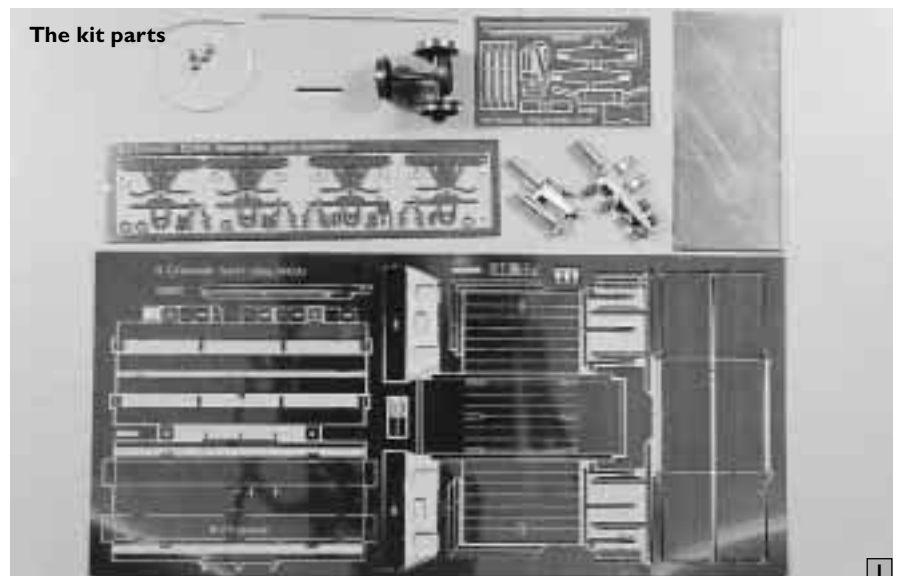
1. Clean the area that you want to 'stick' (he got vocal on this point so I gathered it was quite important);
2. Use the soldering iron at the right temperature; and
3. Use flux – and remember to clean the residue off afterwards.

So, lulled into a false sense of security and iron in hand, I opened the kit. Within seconds I asked my first question (not being all that familiar with the bits under a wagon). From the look on Lawrence's face he knew his patience was in for a trial. Having kicked him off his modelling bench, he couldn't do much but roll his eyes, though...

Instructions

The kit consists of etched brass frets with a couple of lost wax castings and the usual hardware, as shown in photo 1 below. I was a bit disconcerted that the 'general comments' implied the model was above my skill level, but I was determined to do the project anyway. A feature of etched kits is the making of folds along half etched lines. This was a major problem for me, as I had

difficulty getting my head around which way to make the folds. 180° folds are one way and 90° folds the other. I was forever getting them the wrong way, but Figure 1 (opposite) clarified this for me. Otherwise, I found the instructions clear and, with only the odd word to dig out of the dictionary, easy enough to follow. When all else failed I looked at the exploded diagrams. For a novice, there were heaps of



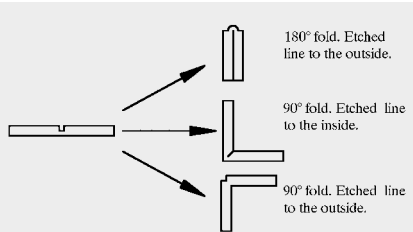


Figure 1. Fold types for etched brass. The sketches show sections through the etch before and after folding. The 90° fold with the etched line to the outside is not normally used, but is useful for the L as the body corners of the prototype were not flush.

new things, though. Lawrence was able to make these easier with some tips and tricks, which I am passing on here.

Rivets

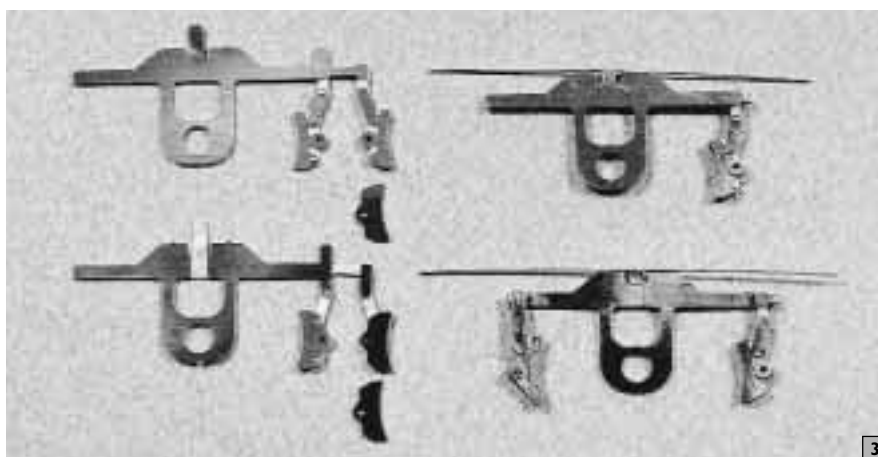
To rivet or not to rivet? Although some of the rivets on the wagon are formed in the etching process, many need to be punched. I recommend that you take the time and put them in. Lawrence has made the job somewhat easier by putting the rivet guides in the back so they all line up straight and true. I prefer to do all the rivets in one go, and then they are out of the way. I used a simple tool described by John Hayes in *MRJ* 73. It's made from threaded rod with a nut at each end and a drop weight as shown in Photo 2, right. The pointy bit makes the rivet. I filed the little attachment tags off the etched parts to clean them up at the same time.

Spring suspension system

The kit features guitar string based spring suspension, the instructions for which come on a separate sheet. This simple system allows your wagon to move freely over the most irregular of track. The spring, bearing, axlebox and brakes are fixed to a slider that moves behind the hornguides. This should be clear from the photos. When attaching the guitar wire to the slider, two things are important. I learnt the hard way not to overheat the wire or it will soften or break. The other tip is to make sure the spring wire is flush with the top of the slider or it will interfere with the bounciness of the whole system.

The brakes are a three-layer lamination that is easily soldered up to give realistic brake shoes (photo 3, right). The brakes need to be aligned with the wheels by bending the arms of the slider. Lawrence turned me a jig for this (photo 4, right), but gluing a spare wheel to a block with a stub of axle protruding could make something similar.

The bearings and axleboxes need to be fixed to the sliders allowing sufficient clearance for a sliding fit in the horn-



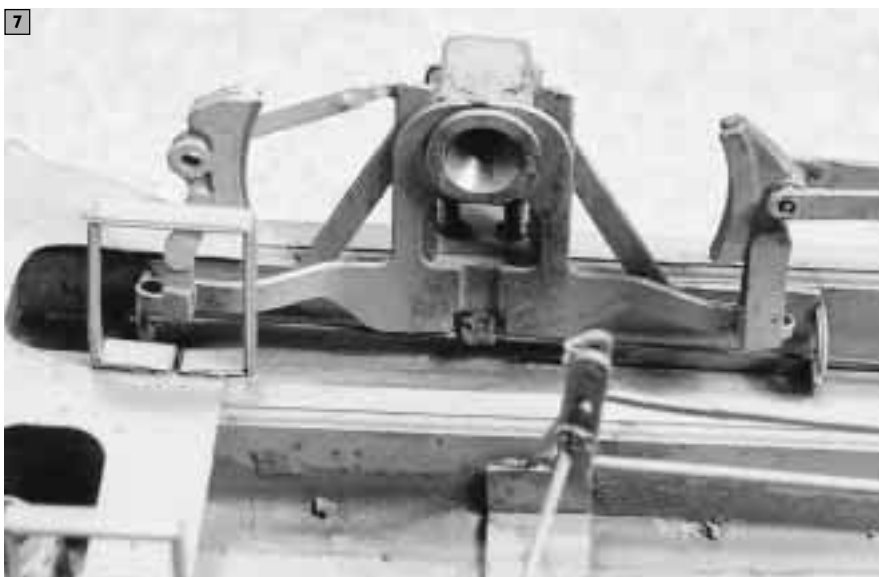
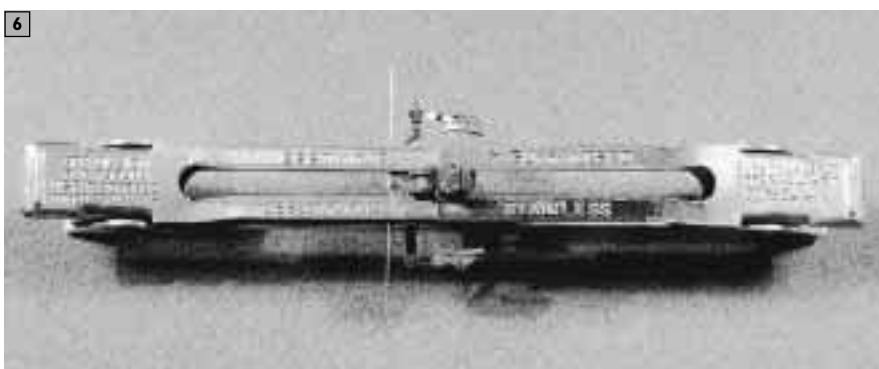
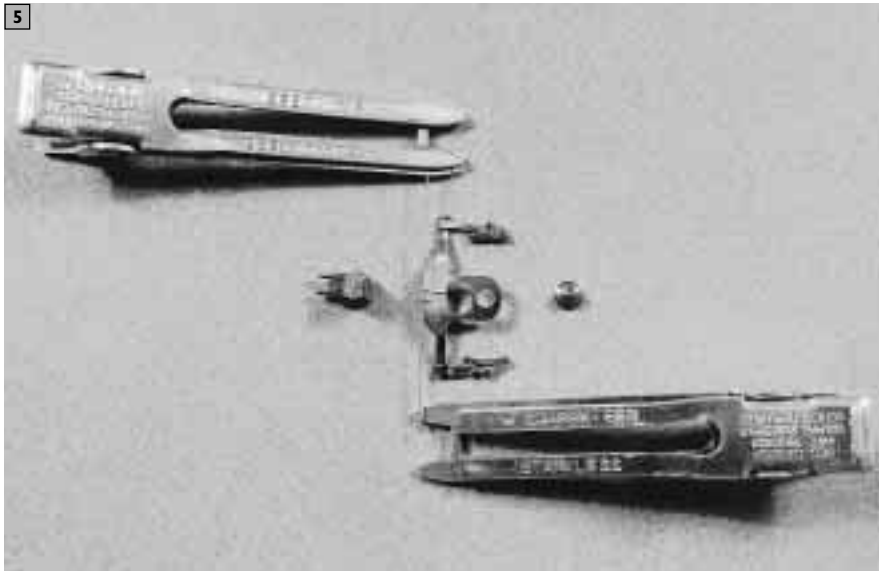
Top: Using a simple tool to emboss the rivets.

Centre: Sliders, from front and back, before and after assembly of the brakes.

Bottom: The turned jig for setting the brake shoe spacing.

guides. This is a bit (very, very) fiddly. To stop me muttering under my breath about kit designers, Lawrence developed another jig using two aluminium hair clips. One was modified by bending the free arms in a little so they were still parallel but 2.5mm apart, and also shortened by 5mm. The





Top: The latest in high tech jigs are prepared ready for holding all the bits together.

Centre: The jigs in operation. The clip on the left holds the bearing to the slider and also acts to ensure adequate clearance in the horn guides. The shortened clip on the right holds the axlebox casting in place.

Bottom: Close up of a suspension slider in place on the wagon.

gap between the arms of the other was also narrowed to 2.5 mm and in this case they were smoothed with a file, as they are the spacers that ensure sufficient slop.

Photo 5 (above) shows the components exploded and photo 6 (above) has them ready for soldering. It is not obvious in the photos, but the cross bar of the hair clip is retaining the pinpoint bearing. This simple jig is invaluable in getting the spacing correct between the axlebox and the slider and holding all the bits so you can solder.

Another advantage is that the solder will not stick to the aluminium so they don't pose a risk to a good job. The whole set up soaks up a lot of heat so I used a flame or the resistance solderer for this job. A hot-plate would be another option.

Underframe

The underframe is made from a subfloor part on which the solebars and headstocks are assembled. The door hinges also fold up from the subfloor and are rather fragile. I made my own jig here to protect them. This is a small piece of MDF the size of my wagon floor that keeps the little hinge tabs from getting knocked off. It also made the piece much easier to handle (photo 8, opposite).

The solebars folded up as described in the instructions. The spring castings were prepared following the instructions and soldered in place, taking care that they lined up with the holes in the solebar part and that they were hard against the lower face. If not, the solebars will not fit properly. The solebars were clipped into place in the slots provided. These slots are of different lengths so they can only fit one way. Sometimes the slots were a tiny bit tight, but it was easy to ease them with the back of my scalpel blade.

The solebars were held with another two bent hairclips while soldering (photo 9, opposite). I tack soldered all four solebars, being very careful to keep solder off the face where the horn guides sit to allow them to be fitted without the need to clean up solder first. Soldering the horn guides into their slots also needs to be tidy, keeping the slider area free from solder. The prongs (spigots) on the axle boxes need to be a free fit in the holes in the spring castings so that the suspension will work. I opened the holes up with a dentist's burr in the minidrill to make sure. At this point it was time to do a trial fit of the springing. It worked surprisingly well but it did need a bit more fine-tuning when the model was finished.

The headstocks are nifty – a single piece folds up to form the headstock channel and the brace plate. This would be difficult if you had to solder such fine strips together. The chain eyes need a little care as they can ping from your tweezers, never to be seen again. They are a nice firm fit though and are easily soldered in place.

A hefty packing piece needs to be fixed between the underframe and the floor. This is supplied to add weight and needs to be sanded or filed as flat as possible. I found squashing it in the vice works well too. In the end the packer is completely encased, so it only needs to be tacked in place. I tack soldered it through the central hole in the subfloor where the coupler

spring retainer folds out. The packer soaks up a lot of heat so the resistance solderer was turned to 'medium-well done'.

The body

This is made up of three main parts; The door/floor, and two side/end pieces. The doors fold up from the floor, and the side ends are bent to a U-shape complete with the top strengthening angle.

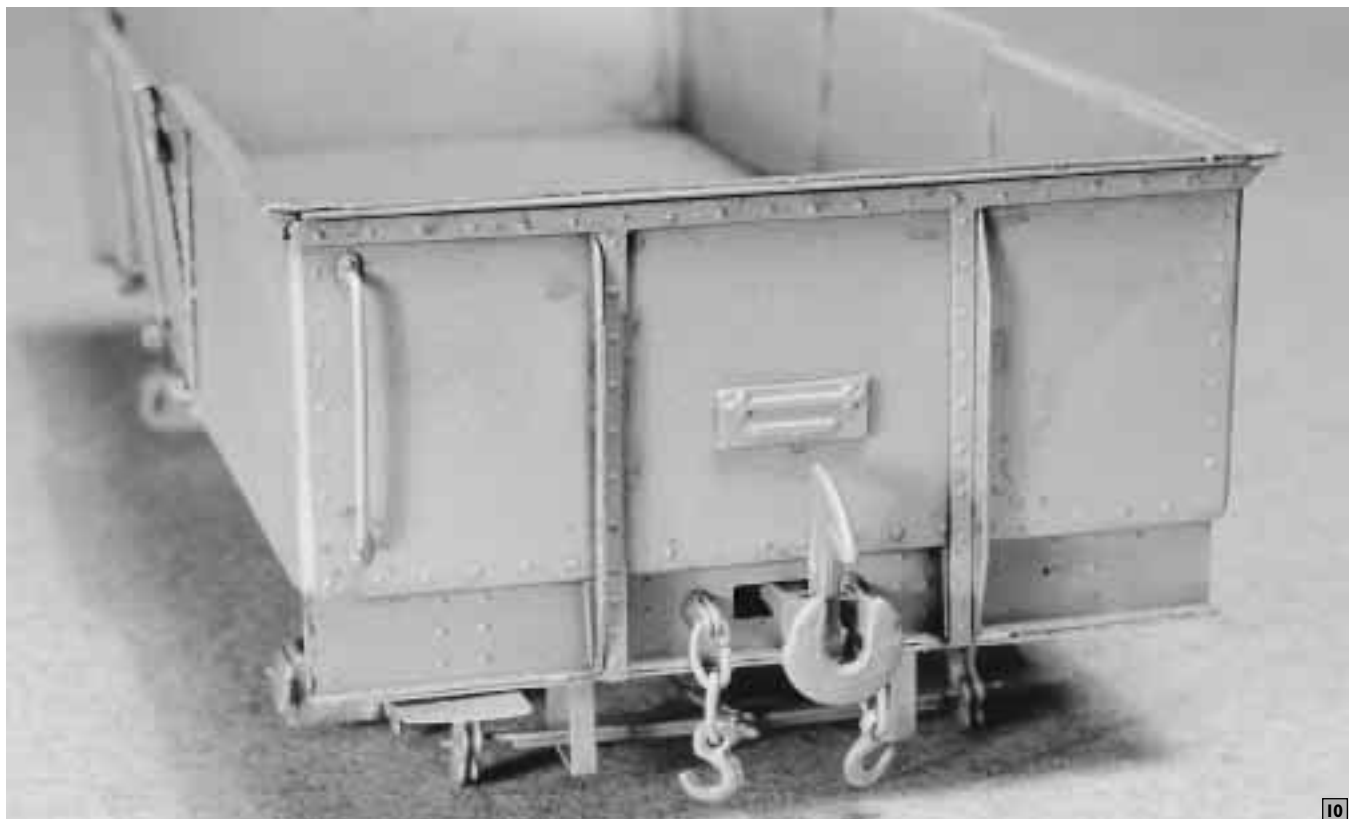
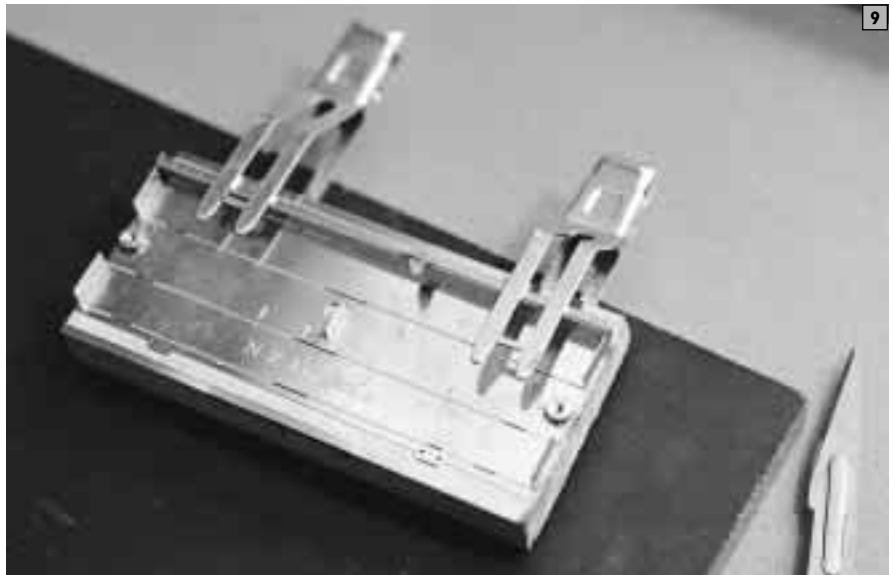
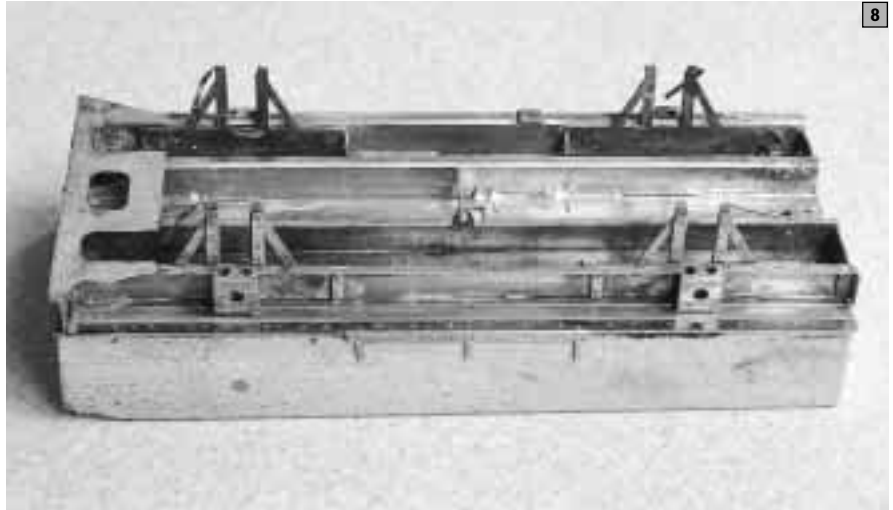
The door/floor etch has rivet guide dimples on both sides, and once riveting is complete they can cause confusion as to which way to fold the door top angle iron. I found that if I folded up the doors first I was able to fold the top angle iron the correct way. Following the instructions will give you the same result!

The handgrab tails are tiny. I wondered if they would be noticed if I left them off, but I reasoned that I couldn't skimp at this stage, so on they went (photo 10, below). Vertical handgrabs are a feature of early wagons only, so the holes need to be drilled using the etched guide dimple. Extreme care is needed using a fine 0.3 mm drill. They can break very easily. I was able to make a quick trip to Trade Tools for a replacement before Lawrence noticed!

Top: The MDF block for protecting the work and making it easier to handle.

Centre: More hairclips clamping the solebars to the subfloor.

Bottom: The end of the wagon showing the tiny, but effective, handgrab tails. The unique two link sidechains were replaced after the photo was taken!



Folding the top angle iron (photo 11, right) takes but a moment and a quick zap with the iron secures the top plate.

The floor/door only needs to be tacked to the underframe as it will be securely fixed when the side/ends are added. Attaching the side/ends to the underframe requires patience, asbestos fingers and a hot iron. Aligning the bodywork is quite easy as the fit is good, but there is no easy way of ensuring the vertical alignment. The bottom of the sides needs to be flush with the subfloor. I tacked at the corners, adjusting until I was happy, and then soldered along the lower edge of the sides on the outside.

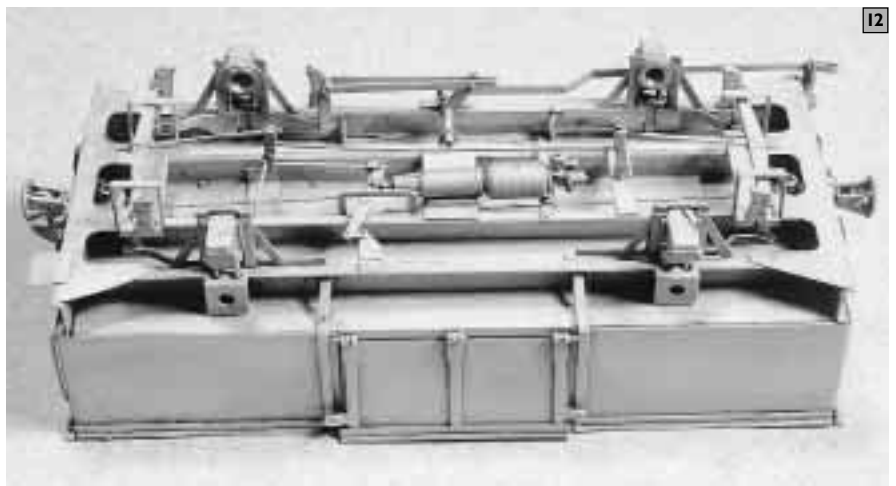
When riveting the strapping some caution is needed as these are fine pieces that, if pressed too hard, can go out of shape. The end strapping needs to be folded to represent the angle irons and care is needed here to keep them square. The angles overlap the headstock and packing pieces are needed to sit in the headstock channel. Bits of code 70 rail are perfect for this. As with the rest of the kit, the strapping fits neatly with no overhang that needs filing off.

The strapping overlays for the sides and doors have extensions that form the body-underframe braces and door hinges respectively. As mentioned earlier, I had problems with the wee tabs on the subfloor piece that form part of the hinges and I broke three of them off. I cut small pieces of 0.85mm tube to fabricate replacements and it is hard to tell the difference. The four overhanging pieces of strapping that make up the brace to the underframe tuck into the solebars. Care is required not to break them off and to keep them square.

Brake gear

The brake gear is surprisingly visible, gives the wagon a finished look, and significantly contributes to the realism of the model, especially when looking through moving wheels. Taking my time, using the exploded diagram, and following the instructions, I achieved a result that looks more complicated than it is. The lever mountings, brake stretchers, brake spreader and safety loops (as the instructions call them) all fold up and are easy to solder into place. The Westinghouse set sits on its own etched mounting, but I needed to use a thin piece of scrap etch to act as a mount for the little [triple valve] end that is not provided.

The push rod that attaches to the hand-brake crank and the brake shoe on the slider needs to be free to move – like locomotive valve gear. I used gun blue to act as a solder barrier and protect parts I didn't want gummed up. The attachment to the brake shoe is a clip fit so that the parts remain free and can be taken apart for



Top: Using the bending bars to form the top angle on a side/end piece. Note that if the smaller part (in this case the angle) is held in the bars, the job is much easier.

Bottom: The underside of the wagon. Finished, but for air hoses and paint. The brake spreaders unclip to allow the wheels to be fitted.

sandblasting and painting. Putting the brake ratchet casting on square proved a challenge, but I finally achieved it after a couple of goes.

I panicked a bit when I found there were bits still on the etch after I thought I'd finished. These turned out to be extra bits to allow for different eras and wheelbases. This was a bit confusing. Photo 12, above, shows all the brake parts in place.

Conclusion

I built this kit a year ago and as I look over it again to finish this article I remember

the fun of building it and the satisfaction and surprise that I had done it at all. Yes, it was fiddly, and at times I wished I had an extra hand which could absorb heat and catch those bits that I kept pinging off the bench. My most valuable tool had to be the bending bars made up from two flat pieces of brass as described in the instructions. I have nearly finished my second 'L' – just to make sure the first one wasn't a fluke – and it's going together easier than the first. After this I might give a signal a go.

The 1:64 Iron L, code k5002, is available from New Zealand Finescale, 11 Glenelg Spur, Christchurch 2, or via the web at www.nzfinescale.inet.net.nz. Prototype notes on the wagon can be found in the April 2000 *NZMRJ*.