

IMPROVING A SLATERS P.O. WAGON

CHRIS CROFTS GOES 7mm FOR
'INKERMAN STREET'

While the author of our definitive series on private owner wagons was still learning how to say 'no', we persuaded him to temporarily abandon his 4mm scratch-building discipline and take on a 7mm kit for MRJ's 'Inkerman Street' layout. CHRIS CROFTS shows just what can be done using a value-for-money kit as a starting point:

It was during the dreary summer of 1988 that the invitation came from Bob Barlow – how would I fancy building a 7mm ex-PO seven-planker from a Slater's kit, complete with faded lettering and replacement planks, for Inkerman Street? (Actually, Bob, it would not be 'ex' in 1940; PO wagons were nationalised in 1947 if they belonged to colliery companies, 1948 otherwise). Despite being very heavily involved in another activity, and likely to remain so until early in 1989, I agreed. I'm a bit of a mug in this respect; I really must learn how to say 'no'. Also, I quite fancied the idea, as I have a similar kit of my own waiting to be built. I did stipulate conditions, though – nothing fancy, like lettering on the sweep, just plain and straightforward. This ruled out Manchester Collieries – a decision which proved fortunate when David White brought out his own ready-lettered version last Christmas. So an arrangement was made that Slater's would invoice MRJ, and I trotted off to Matlock Bath to collect my box of bits. I also collected another set of couplings, because I reckoned that the proper thickness of a coupling hook would be close to two of Slater's soldered together.

Arriving home, I began to wonder what I had let myself in for. Where was Inkerman Street, and what period was being modelled? A quick look through some back numbers of MRJ began to produce answers. No. 22 produced photographs of David Jenkinson's coaches, one in full livery. 'Hmm, LMS, c.1935', I thought. Further investigation (MRJ No. 15) revealed the truth – Manchester area, 1940. All I had to do now was choose a wagon to fit. But which?

By 1940, all PO coal wagons were pooled, and could, theoretically, be sent anywhere. However, although the wagons in the pool were effectively shuffled, the process was rather slow, and by 1940 would only just have begun anyway. So I was looking for a Charles Roberts-built wagon which could reasonably have been seen in the Manchester area before the war, and with reasonably simple lettering. It would need to have been built c.1934-6 – anything later would be too new to meet the Editor's specification, and anything earlier would probably have had a re-paint. In addition, I felt I would be happier with a wagon reasonably familiar to me, rather than a complete 'stranger'.

Anyone faced with such a choice would be well advised to turn to Bill Hudson's volumes



Photos: TONY SMITH

of *Private Owner Wagons*, and a quick flip through showed that the Stanton wagon seemed to fit the requirements. The batch 9950-10049 was built in 1934, and photographs show that Stanton wagons travelled to Oldham Werneth, not so very far from the supposed site of Inkerman Street. In addition to 9988 and 9951, both shown in Bill's Vol. 1, I also had a photograph of 9976 taken c.1945. This wagon had received a re-paint – not by Charles Roberts, presumably c.1939. The six-year-old lettering is still in quite good condition. What I needed, to fulfil the Editor's requirements, would be one of the batch that had just failed to get a re-paint before the war. The lettering would be faded and a little worn in places, but not utterly disgusting.

And so it was that 10023 was chosen. I have no photograph of this wagon, so I have had to guess the finer details – tare 7-4-2 and a new plank in the end door. If anyone has a photograph showing my guesses to be wrong I shall be delighted to hear from him – but I feel I shall be underwhelmed with responses!

TO WORK

'It'll take you about two hours to build', David White had said cheerily as I left with the kit. I wasn't quite so sure.

Back home, the first thing to do was scrutinise the parts to find what was wrong – I am expected to find mistakes and, sure enough, I did. Some were due to the technology used in manufacture, others, perhaps, to lack of information, and one rather bad one due to carelessness. The planks on the end door are not the same width as those on the sides. This was not unknown on real wagons, though much less common on 1923 standards. However, since the end door moulding also carries the

ends of the side planks, it means that the ends of the planks don't match the sides. There is not really much you can do about this, but I must admit that you don't really notice it on the finished model.

The plank grooves are not the half-vees they should be (because of the tool used to make the mould) and the corners are rounded where the side door planks finish (see photos). I would have preferred to scribe my own door lines, but David tells me that customers complain if they have to do the smallest bit of work on the kit. In any case, my tarbrush approach to painting tends to hide these small imperfections.

The nuts on the ironwork are hexagonal whereas Charles Roberts used square. I didn't feel my instructions extended to cutting them all off and replacing them. Much, much later I measured the nuts, realised I could find a 4mm use for them, and resolved to replace them on my own kit. I then found that my kit had square nuts! I removed one nut from the end knee washer plate, bottom plank, and fixed it on the second plank, moving the existing nut to suit. At the lettering stage, I found that the diagonal brace had only one nut in the second plank instead of two, but by then it was too late to correct it. Had I noticed in time, I could have used one of the nuts from the door protector. These nuts were discarded, as the protector is held on by countersunk screws.

I carefully cut off the nuts on the side rail and replaced them with washers underneath. The washers were made by punching 0.005in Plastikard (yes, I still have some!) into lead sheet with the broken-off shank of a suitable drill. There was no room for washers behind the nuts under the door hinge knuckles, indicating that the said knuckles must be a little too low. I checked this with a 4mm side that I have

coming through the works, and found that on the scratchbuilt side there was room for the washer. At the same time I noticed that I hadn't been too clever in scribing the plank grooves, so I'd better keep quiet about it!

The end door bar nuts were miserable things, so I replaced them; the real ones are 2in Whitworth, 3 1/8in across the flats. I did what I hope was a small improvement to the door catches and to the diagonal brace where it crosses the corner plate. The latter modification was done by cutting off the nuts, adding a piece of 0.005in plastic to bring the thickness up to that of the rest of the brace, adding a sliver to fill in at the joggle, and then filing to represent a joggled brace when dry. Finally, the nuts were replaced.

The last job on the sides was to simulate side knee washer plates bent round, which was done by cutting and filing plastic to suit. I can't remember the details of how I did it but it doesn't matter any more as the Manchester Collieries wagon has washer plates bent round and I imagine these sides are available unpainted.

By the time I had completed these modifications, I must have used up my two hours and quite a bit more!

There was little work to do on the ends, which form part of the same mouldings as the headstocks. The second nut down on the cornerplates is out of line with the rest, and this was corrected. The two vertical rows of nuts on the cornerplates should be 3.5mm (6in) apart instead of 3.0mm, but I decided to leave this. The faint moulding lines on the washer plates on the end stanchions were removed – it was found best to scrape them gently with a scalpel. The end door fastener bar was noted as being too thin, but short of a fairly major rebuild nothing could be done.

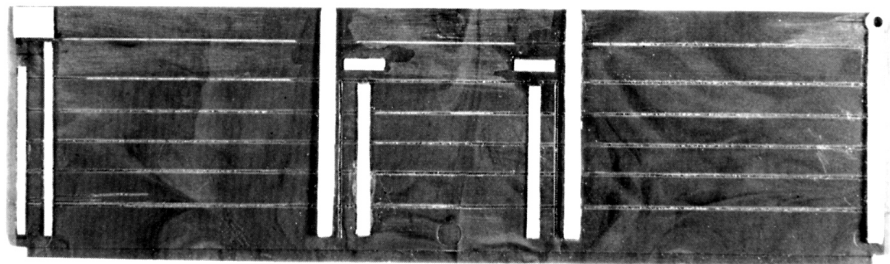
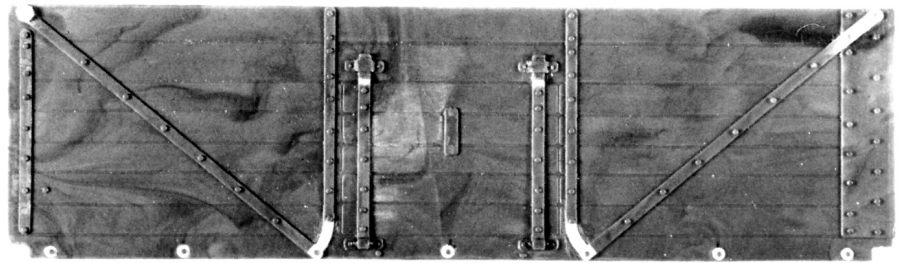
This concluded the work on the outside of the body, and attention could now be turned elsewhere.

THE INSIDE

Detail on the inside is confined to floor planks (with bottom doors), bottom door band washer plates with bolt heads standing proud, and end door bands as separate mouldings with a length of Plastikard rod for the bar. There are also some circular moulding marks which you don't want. After trial and error I found the best way to deal with them was to make circles of 0.005in Plastikard to fit, fix them with solvent, and file/sand flush when quite dry. The bottom door band bolts were countersunk to prevent the annoyance of unloaders catching them with their shovels, so the moulded boltheads were removed (sorry, David!). The bottom door band washer plates were sunk flush too, but I decided to leave these.

Planks were scribed on the sides and ends. You have to decide, of course, whether to scribe the end planks to match the sides or the outside of the ends! I can't remember now what I decided, but it doesn't matter much. The place where the scriber slipped can represent a split in the plank! It's well hidden in the gloom near the bottom of the wagon.

Washer plates and corner plates were now added from 0.010in Plastikard. Knees were of thicker stuff – they are 2in thick at the bottom – and were tapered by filing. Bolt heads were



The wagon sides as modified, inside and out.

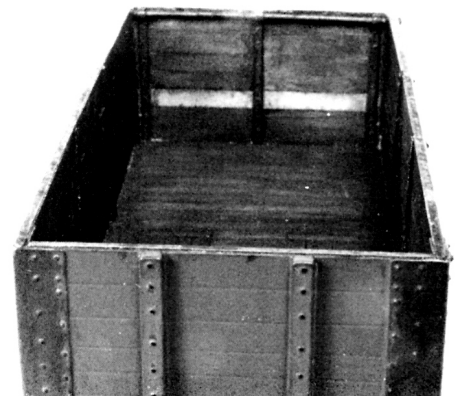
added by cutting them out of rivet-embossed Plastikard and sticking them on individually. After the photograph was taken, the boltheads for the diagonal braces were added as well. The whole of the inside was then painted a colour to match new wood – white with a little buff added.

When the paint was dry the ironwork was picked out with Humbrol track colour. When this was dry the ironwork was gone over using an almost dry brush with a little matt black. The renewed plank in the end door was masked off with tape and the inside weathered with LNER grey well thinned. When this coat was very nearly dry, the parts were laid, painted side uppermost, on a board and coal dust from the bottom of the coal bunker shovelled over them. Some of it stuck, especially in the grooves, and the rest was shaken off.

ASSEMBLY

The body was now assembled, after a little cleaning up at the corners and where the side rails meet the headstocks. As expected, there was a vertical line on the corner of the cornerplates where the sides and ends didn't quite fit perfectly (see *MRJ* No. 21, page 90!). This gap could not be tolerated, so small slivers of Plastikard were fixed in with solvent until the corners stood proud of the surface. The corners, when dry, were filed to what I hoped was a scale 1in radius curve.

Plywood spacers were cut a little more than the inside width of the wagon and wedged in the region of the side knees, causing the sides to bow out slightly. The body was then left for at least a week for the solvent to dry, with the spacers still in place. I don't know whether this



The slight outward bowing of the sides is just apparent here.

is really necessary with O gauge wagons but I wasn't taking any chances of having the sides bowed in. Now that the wagon is finished eight months later, the sides are still slightly bowed out, just like the real ones used to. It isn't obvious at a casual glance, but a steel rule placed along the top proves the point.

The solebars were added next, and I fancy there was a gap between solebar and headstock that needed filling with a piece of thin Plastikard. One of Charles Roberts' customers complained that he could push a penny between a solebar and headstock. I had no wish to turn out such a wagon from my works!



The end of the headstock/siderail area is always a difficult one and this kit was no exception. In an attempt to improve matters I cut pieces of Plastikard to the cross-section of the headstock and chamfered all edges at 45° with a scalpel. These pieces were then stuck on the ends of the headstocks. I can't remember the thickness but I think 0.020in would be about right. I hope this simple modification improved matters, but readers can judge for themselves by comparing the photograph with an unmodified kit.

PAINTING

I had now reached the stage where the outside could be painted. I thought I would use Humbrol LMS crimson as an undercoat, followed by matt varnish and then another coat with some bauxite in it. However, when I got to the matt varnish stage I found I had achieved the colour I wanted, a really subtle shade that looked red in some lights, tending to brown in others, and at times with a pinkish tinge as if it was starting to fade. What a bit of luck! Serendipity. I believe it's called. Before I get carried away, I should mention that Bob Essery took one look at it and said it was far too clean!

The ironwork was picked out in track colour, which, when dry, was gone over with LNER grey and matt black, applied with an almost dry brush – most of the paint wiped off on to a tissue. This, I hope, gives the effect of rust bubbling through peeling black paint.

At about this stage the axleguard units (W-irons) were bent up and the corners strengthened with fillets of solder. The bearings were pushed in and the wheels were fitted. There was far too much sideplay (unlike what I'm used to in 4mm) so I pushed the bearings in to give acceptable float on the axles and soldered them in place! The instructions tell you to use adhesive for this but I hadn't read them! The running would have been improved if I had allowed even less float on the axles. You need to push the bearings in till they stop the axles turning, then back off the tiniest fraction. Ah well, you learn this way! The

axleguard units were then painted track colour and the outsides treated in the same way as the body ironwork. Incidentally, the instructions (I have read them now!) tell you to punch out the rivets holding the axleguard bridles. These in fact were held by bolts with square nuts, so I drilled out the holes, stuck in pieces of Plastikard rod, cut them off flush, and added square nuts made from bits of Plastikard. However, as an Irishman once observed to me at a P4 Society convention, I don't think a man on a horse would notice!

Prior to fitting, the wheels had the rims and backs painted track colour and the disc fronts matt black to simulate the oily dirt with which they always seem to be covered.

At this stage, work ceased for over four months as other matters intruded, leaving no time for modelling.

LETTERING

When I was able to resume work, I first turned my attention to the lettering. I always begin with the side that was photographed – I will call this the No. 1 side. I know of very few instances where both sides of a wagon were photographed.

In the 1930s, Charles Roberts was using stencils to letter large batches of wagons, so I had to try to get the two sides identical. The No. 1 side was fairly easy; all I had to do was space the letters as in the photograph, using the ironwork as a guide. It was while doing the 'S' – always a tricky letter – that I found that the nuts on the diagonal brace were wrong. The top curve of the 'S' goes through the top nut in the second plank, and it wasn't there! One of my landmarks was missing!

When I lettered the No. 2 side, I had to decide (as one always does) how to modify the lettering. The simplest way seemed to be to leave 'TANTON' in exactly the same position, and close up the rather excessive gap between the 'S' and the 'T' so that the 'S' would be clear of the cornerplate. As I have never seen a photograph of the No. 2 side I just cannot say for sure if I have arrived at the right answer. However, doing it this way meant that life was

much easier when trying to get the two sides identical, except, of course, for that wretched 'S' which caused me no end of trouble – it had bits added and taken away, and curves altered before I was satisfied.

The lettering was actually applied using my usual method – thinned process white applied with a mapping pen, filling in with Humbrol matt white – not too thick so that the body colour would show through (remember the editor's specification?). The smallest lettering is done with process white only and the mapping pen. The 'Cc' plate and star are done with signal yellow with some white mixed in; I decided this was more suitable than the yellow on its own which I had used previously. The paint was applied with a fine brush, and, when dry, both the rectangle and the star were trimmed to shape as necessary with a scalpel. So were many of the letters for that matter. I find I am not good enough to do the job straight off, and I do no end of fiddling, scraping, and re-touching with body colour before I am satisfied. Fortunately, all this bodging is hidden under the final coat of matt varnish. The shading calls for little comment, except to note that the diagonal edges of the shading (e.g. at the right-hand end of the 'T') are actually curved, not straight, and I attempted to reproduce this. The shading is done with Indian ink and the mapping pen. I have not tried to make it look worn, as the black shading seemed to survive better than the white letters.

A little weathering was applied at this stage. I went over the large letters with very thin LNWR grey, taken from the lid of the tin after shaking, rather than stirring properly. The 'empty to', load, and tare were rubbed with a finger and cotton bud, thus accelerating the wear they would have seen in service.

UNDERFRAME COMPONENTS

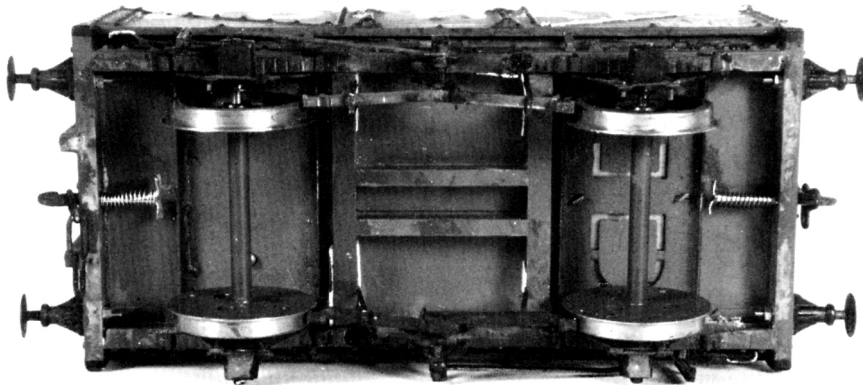
While the paint was drying, I got to work on some of the underframe components. Springs were painted with a mixture of track colour and a little black. Axleboxes on standard wagons tended to be two-tone – oily black at the bottom and something akin to track colour

at the top. Buffer bases were painted black – these seem to have retained their paint quite well – and buffer rams a patchwork of rust, track colour, grey and black. After I had finished the wagon, I finally got hold of a copy of *MRJ* No. 23 and noted Mr. Lloyd-Lee's comments about the buffers. A further small deficiency that I spotted was that the upward rib extension of the buffers at the door end hardly came high enough to perform its function of keeping the door sill in. Coupling hooks were soldered together in pairs, thinned down a little, and the points tapered. Links were fitted, soldered at the joints, and painted. Real coupling links do not have gaps at the side (the gaps on the Slater's links are quite small), nor can I recall seeing many photographs of wagons in service with couplings and buffer rams in highly polished steel! Before leaving the subject of couplings, I ought to say that anyone trying my method of soldering two hooks together will find that the spring will not go over the increased thickness, and some filing has to be done to make the springs fit. This should be done before painting.

With the paint on the body now dry, the axleguard units could be fitted. The only small problem here was that the locating pips stopped the rocking unit rocking. It was simple to shorten them to obtain clearance.

The springs went on next. These are quite reasonable though not absolutely spot-on. It should be the second plate, not the top one, that goes over the bolts in the spring shoes. The axleboxes were then added, after a little filing of the surface where the springs bed to give clearance for the rocking axle.

There now remained the last major item of the kit proper, the brakes. As Mr. Lloyd-Lee has indicated, these bear only a casual resemblance to the real thing. On the plus side, though, the kit provides properly jogged vee-irons, the first I can recall in any kit.



The completed wagon viewed from below.

The brake blocks, push rods, hangers, and tumbler are all in one moulding, and all in one plane when viewed from above. If fitted without modification, either the blocks would be nowhere near the wheels or the tumbler would be nowhere near the vee-iron, because in the full-size wagon the push rods formed a very shallow 'V'. I decided to try to improve things by separating the push rods from the tumbler. Some filing of the hangers was necessary to compensate for the angled push rods, together with some packing to bring the blocks nearer the wheels. This was the only modification I did on the No. 1 side. I wasn't totally happy with the result, but decided to call it a day.

On the No. 2 side I thickened the push rods by 0.005in (I thought they looked far too thin, but a micrometer showed that that was all that was necessary) and modified the blocks more or less along the lines described by Mr. Lloyd-Lee, although I had not, at that time, seen his letter.

I also managed to get the blocks much closer to the wheels. When I come to make up my own kit, I shall probably make up new push rods and hangers, and do more extensive modifications of the blocks. I didn't feel that my instructions called for such drastic modifications, though. Incidentally, by redesigning the etched fret in the kit, it would probably be possible to include push rods and hangers for those who wanted them.

Outer and inner safety loops were made from 0.008in nickel silver and 0.012in copper wire respectively. Not having assembled any wagon brakes for some time, I forgot (with the No. 1 side) to fit the inner safety loop before fixing the push rod.

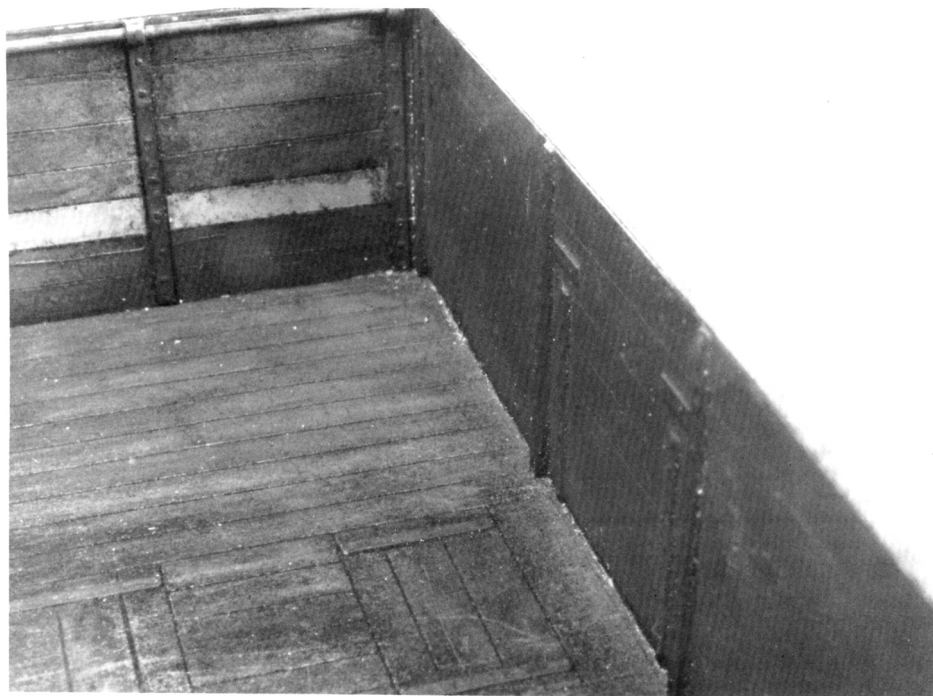
The brake lever guards were bent up, using the etched guide lines, and soldered. As with much of the brakework, they are pretty dreadful. I suspect they were taken from an earlier kit so as to get this kit out by Christmas 1986. Total replacement would be the only satisfactory answer.

I made discs the diameter of the inner ends of the brake levers and soldered them on to represent the thicker boss. These, too, could have been provided in the fret. I had previously thought ahead and applied etch primer to the levers, but I then found that the bending guides for the handles were not for the type of handle I required, and they would have to be filled with solder, so I pinched the handles from my other kit, which will be built into a wagon with the handles that Slater's envisaged.

A brass dowel (made from the wire in the kit) was soldered into a hole in each brake guard and pushed into a hole drilled in the solebar – I no longer trust adhesive alone to hold these items. Levers and guards were now fitted, and the brackets, brake guard to axle guard, made from the strip provided in the fret (a good idea, this) and glued on. I'm afraid I didn't think ahead sufficiently to pin them.

The door springs were bent to shape and fixed, using plastic dowels this time for extra strength. Square 'nuts' were fixed with solvent to the flush-cut ends of the dowels.

This completed the kit as provided, but I felt a few extras were necessary. Makers' plates and repair plates were cut from 0.010in Plastikard, guessing the sizes from known dimensions on the wagon. I actually have a Charles Roberts plate but it has been borrowed and lost; I won't embarrass the borrower by



Washer plates and tapered knees complete an uncannily convincing inside.

revealing his identity! The plates were painted matt black and lettered, putting the process white on fairly thickly to give raised letters. Some of the letters are too small to attempt properly, even in 7mm. When dry, the plates were weathered with dark grey applied very thinly, so that the white lettering and edging all but disappeared.

Register plates are multi-level affairs, and representations were concocted from discs (cut with a leather punch) strips, and tiny slivers of 0.005in plastic. Label clips were bent up from 0.006in brass wire annealed over a gas flame, together with a tiny length of 0.020in plastic rod and a sliver of 0.005in Plastikard.

Horse hooks were bent up from the 0.020in wire in the kit, and pushed into holes drilled just inside those provided on the solebar. These latter holes had short lengths of 0.020in rod pushed in to represent the fixing nuts.

Capping irons are essential, firstly because the real wagons had them and, secondly, to hide the diagonal joints at the corners. They were fashioned from 0.010in strip, with a 45° chamfer at each end – not cut off square.

Bottom door handles and brackets were made as described in *MRJ* No. 15. The pins were of 0.012in copper wire and the chains (9 links each plus a larger ring on Charles Roberts wagons) of annealed 0.006in brass wire.

Rings and chains were also made for the end door cotters. Fixing these was the very last job because they are so fragile and vulnerable. All these tiny brass parts were blackened with Carr's products. It was the first time I had tried them, and found them excellent.

SETTING THE PERIOD

I felt there ought to be something to show that the wagon represented the 1940 period. Changes which were effected during the war include:

- White stripe indicating end door
- V markings to indicate bottom doors
- Capping clips used to secure capping irons instead of deepwise bolts
- Uprated load, usually given as 13T
- Tare (usually lower than the original) often given as T7-4-2 or T7-4
- New planks painted bauxite – red discontinued in 1940. Later, new planks were left unpainted.

These changes need not all have happened to a wagon at the same time, of course.

In the end I selected just two of these changes – a new plank in the end door and the diagonal brace painted white. The latter definitely establishes the period as post 1939; the lack of the others indicates, I hope, early wartime.

CONCLUSION

How did I find the kit? Well, basically, and despite the many little niggles I have mentioned, it is excellent. From the bottom of the solebar upwards the main limitations are imposed by the technology employed in production. The brakes certainly need re-thinking, as do the buffers to a lesser extent. Slater's are manufacturers who are prepared to listen, and, as such, they deserve support.