



See this at the  
Christmas Show

# PRESSON

The story of John Langan's EM gauge portable layout



Sid Stubbs's Terrier crosses the viaduct.

THE limitations of space which the size of the average modern house creates determine to some extent the type of layout which may safely be attempted without causing some conflict of opinion with other members of one's family. In such circumstances most modellers who wish to have even a small layout generally adopt some form of the portable type of layout. However considerate the household authorities may be to our hobby, they very often also require that the layout should be put away after each operating session. This of course is reasonable, but it does mean that the layout must be capable of being broken down to sizes of baseboard which can be easily handled and stored.

Accordingly, when Presson station was first contemplated I knew that 12ft. x 2ft. was as much space as could be allowed, and even this size of layout would stretch across the room and prevent any other activity from taking place. Obviously a station-to-station service was out, and many hours of armchair planning took place before arriving at a satisfactory solution. Eventually I became reconciled to the fact that a simple layout to supplement my interest in loco and rolling stock building was the obvious answer, rather than the layout coming first and building the stock for it. I determined therefore to have a simple terminus with emphasis on the goods yard facilities. Even

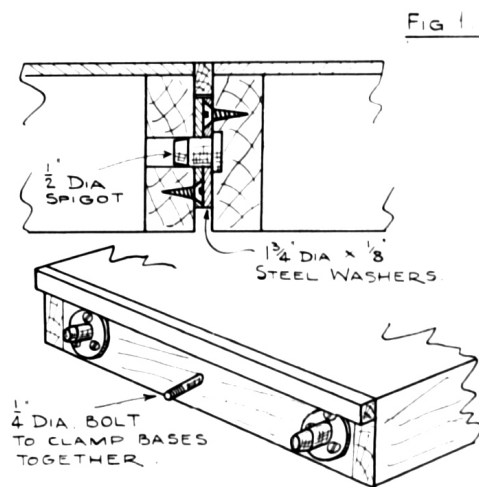
though my trains would not go anywhere there did seem some novelty in being able to do some realistic shunting. This of course was made possible by the use of the "Alex Jackson" coupling, which even ten years ago in the Manchester M.R.S. was the proved coupling to use for this purpose.

The scheme of the layout at this time will be seen from the track diagram, excluding the viaduct and return sector plate. It will be seen that the track design is simply a composition of basic principles. The track has not been altered since it was first laid and has now given many happy hours of operating both at home and at exhibitions. This old part of the layout must have been put together and dismantled many dozens of times, yet we still expect to arrive at an exhibition, put the bases together and start running—and we generally do.

With such a layout as stated there is no room for much scenic work such as mountains or rows of houses. My baseboards have a railway on them with just a few carefully chosen scenic additions, and while I would be the first to admit that it does not portray any particular character, or the charm of some small layouts, I do believe that it looks like—a railway. This has fulfilled my present purpose, although one day I may have a go at a small railway layout with character.

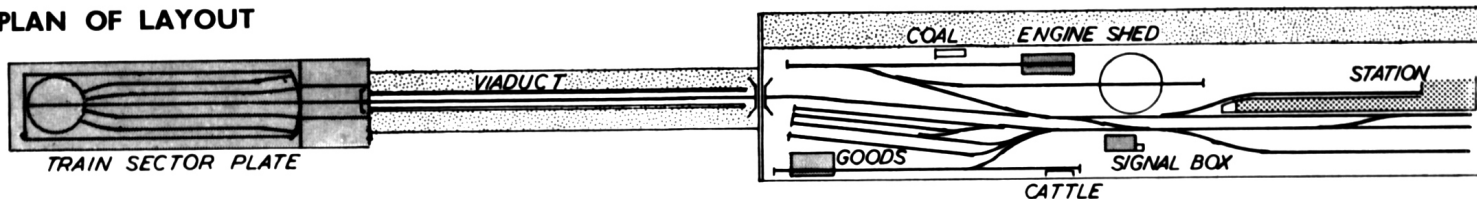
### The baseboards

For ease of handling, my 12ft x 2ft. layout is made up of three baseboards each 4ft. x 2ft., and this enabled me to use stan-



dard sheets of 1/16 in. hardboard. The frames of the baseboard are of 2 1/2 in. x 1/2 in. planed timber, and bracing supports the hardboard into approximately 12 in. squares. If I had known that the layout was to travel around

### PLAN OF LAYOUT



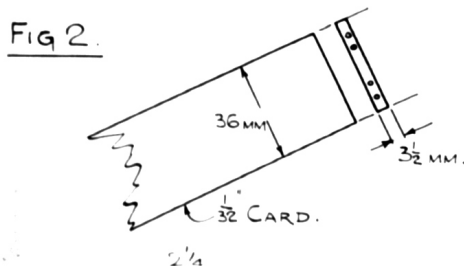


Presson, looking towards the buffers. Note the excellent trackwork.

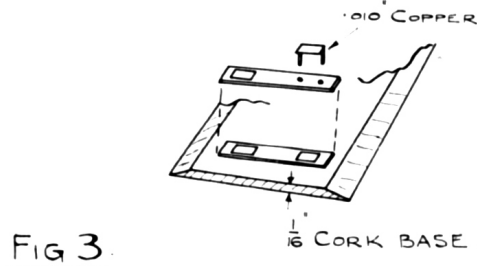
so much I would have made the main frame from 3in. x 1in. timber. In view of the frequent assembling which the layout had to stand in its earlier days, the index lugs for holding the baseboards in line are really strong, as shown in Fig. 1. It is advisable to *line up the bases in this manner* before laying the track. The extension strip across the end of the baseboards is quite a useful feature, and ensures that the bases come together snugly at track level, apart from its real function of spanning the spacer washers of the indexing lugs. This avoids the tricky job of recessing the baseboard ends to receive the washers. When I made the baseboards I also made four collapsible trestles to put them on. These bring the top surface of the bases to 38in. Having my own stands has proved a boon when exhibiting the railway, and avoids the uncertainty of finding suitable tables on which to rest the baseboards.

#### The trackwork

All track and pointwork is home made and Peco bullhead type rail has been used throughout. The sleepers are made from  $\frac{3}{32}$  in. card cut first in strips 36mm. wide, and put into a tray and really soaked in shellac. After saturating they are dried off and finally baked in the oven so that they become crisp like a biscuit. They are then ready to be put into a simple press tool and punched and sheared off as shown in Fig. 2. Such a tool



made by the late Alex Jackson must have made thousands of sleepers for members of the M.M.R.S. Similarly the special, and beautifully made, blanking and bending tool made by Sidney Stubbs must have made many thousands of small clips (or chairs) to fit into the above sleepers as shown in Fig. 3. After cleaning the chair surface, for soldering purposes, the sleepers are placed into a spacing fixture and the rail is soldered to the chairs. The first rail is soldered against a wooden straight-edge clamped in position. The second rail is held in correct relationship to the first by means of carefully made gauges which clip to the rail as shown in Fig. 4. This type of gauge holds the rail vertical, which is very helpful when soldering the second rail in position. When making pointwork three or four of these gauges are indispensable when lining everything up. All my pointwork is based on 4ft. 9in. radius, giving a realistic appearance and reliable running. For ballasting I have used  $\frac{1}{16}$  in. cork sheet. This is glued to the hardboard with "Casco" water glue, and the track is then glued to the cork. All the top surface of the sleepers, cork and hardboard can now receive a coat of paint. The hardboard should not be painted before gluing the cork base. Much has been written about hardboard as a baseboard surface material, but I have had no trouble so far with my  $\frac{3}{16}$  in. sheets, and the layout has now been for two years in my outside workshop. This is prob-



ably due to the fact that I paint the underneath side of the hardboard as well as the top. The hardboard is then sealed against damp.

No renewals have been made to the track as originally laid, and adjustments have been mainly concerned with slight knocks received during assembly, storage and transport to exhibitions.

This rather confirms the belief that for a portable layout subject to all kinds of handling and changes of temperature the track should be fixed solid to the baseboards. This may tend to make the baseboards noisy, but I consider this secondary to having the confidence to take your railway anywhere and run it.

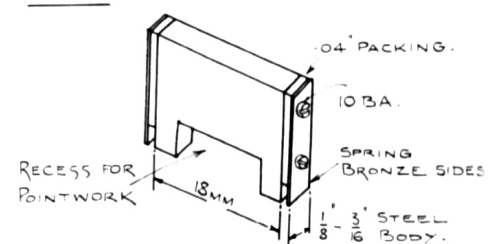
#### The "Alex Jackson" coupling

Mention has been made of the Alex Jackson coupling with which my rolling stock has always been fitted, and the fact that the shunting yard facilities are probably rather more than would be found on such a small terminus station. But these two features of the original layout have provided a great deal of enjoyment to operators and to the spectators at exhibitions. The fact that when being pushed by the loco any selected wagon may be uncoupled as it enters a rake of sidings, and then be left in any position on the required siding, makes the shunting of wagons very realistic. The original uncoupling mechanism was by a ramp situated at the entrance to the sidings. The ramp was lifted by the action of a relay, but tended to be noisy and to lift light wagons.

As the result of an idea by a M.M.R.S. colleague, Ted Withnell, operating the uncoupling by means of electro-magnets offered definite advantages. Suitable sizes were developed for 4mm. scale, and it is in this form that the coupling is now generally operated. Briefly the operation of the coupling is as follows.

The special hook bent from 32 gauge spring steel wire is fitted to the underneath of the wagon at a point farthest away from the hook. A piece of paper clip wire (soft iron) is soldered to the spring wire. By bringing two vehicles together, the spring steel hooks clip over each other and the vehicles are coupled. To uncouple, the wagons are pushed, making the couplings slack, and as a chosen wagon is passing over the electro-magnet—energized by a push button—this pulls down the soft iron and also one of the hooks. The wagons proceed to move forward, whereupon the hook springs back to its original position but is now on the "wrong" side of the mating hook. When the wagon is in the required position to be left the loco is withdrawn. Full details of the coupling, its design and how to make it are published in the sixth edition *Model Railways Handbook*.

FIG 4



### Pointwork and turntable operation

All pointwork is operated from the control panel. Using ex-telephone 3,000-type relays, an extension arm is fitted to the armature and this is connected to a lever which moves the points over. A simple spring is used to hold the track in the "normal" position.

The turntable is power driven by an ex-R.A.F. 24-volt camera motor through two worm gears, and makes one turn in one and a half minutes. The motor is controlled by rheostat and the tracks are lined up by eye. No locking device has been found necessary to hold the table setting.

### Scenic work

At the ends of my baseboards some sort of screening was required to give indication of the type of country beyond. At the station end therefore a commercial print of the village square was used. This was glued to hardboard and the main outline cut out. About 1in. behind this comes the sky background. Even such a small relief improves the appearance.

At the opposite end the main line runs through a tunnel. Here the hillside and tunnel mouth stand clear of the sky background. Where the contour of a hill has to be modelled I use  $\frac{1}{2}$ in. wire mesh as a foundation. This is nailed down and the required contour formed. Former supports are not necessary. Pieces of flannelette bedsheet torn into strips roughly 10in. x 2in. are soaked in creamy "Polyfilla" and placed on the netting. The surplus "Polyfilla" grips the wire, and of course the strips should overlap each other. The surface of the strips should now be smoothed over by hand to give a continuous surface over the wire netting.

When thoroughly dry, paint with undercoat oil colours to give the type of ground you require. I find that grey, brown and deep green meet most requirements. These are applied, using one brush and allowing one colour to run into another. While the paint is wet puff on some of the commercial grass flock, etc.

### Trees

I was fortunate in that the few trees that appear on the layout have very little foliage, due to the mountainous country in which they are supposed to exist. To make these I cut small pieces from a sheet of plastic foam with a sharp razor blade. The pieces have to be very thin and lacelike. These are then painted with watercolour and when dry they are stuck to lengths of .012in. diameter cotton-covered wire. This wire represents the main branches, and the plastic foam the leaf-covered smaller branches. Twist a number of these branches together to form the trunk in the usual way. The plastic foam should have a jagged edge to give the correct impression. The trunk can now be "painted" with creamy "Polyfilla" to cover the wire. When dry paint with oil paint made by mixing a little brown with the grey undercoat paint.

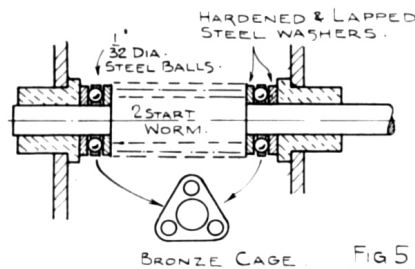
### Locomotives

On my layout no engine is allowed to run faster than looks natural, and to maintain good slow running we make our own mechanisms for our engines. I say "we" because at public exhibitions I have been fortunate to have the addition of locomotives made by Ross Pochin, Sidney Stubbs



Presson yard. The Kirtley 0-6-0 on the table is another gem.

and the late Alex Jackson to add to my small stud. We all work on 24 volts D.C. supply, and control is by simple rheostat of 350 ohms resistance. Our motors are generally of 5 poles, but we do have engines running with 3-pole motors which work just as well. Gear ratios are generally about 25 to 1. There are, however, some points to which we pay particular attention. For a slow-running motor ample wire, as fine as possible, should be wound on to the armature. For our 5-pole motors we use 300 turns of 42 gauge Lewmex wire, i.e. 1,500 turns of wire in all. The armature must run true between the pole pieces, and plain bronze bearings have proved to be satisfactory, with a long and quiet life. Gear-boxes should be fitted where possible to hold the worm and worm wheel at correct centres. For increased efficiency we use two start worms and fit tiny ball thrust bearings at each side of the worm as shown in Fig. 5. The worms are, of course, hardened and polished.



### The new extension

After some years of operating simply as trackwork on the bare baseboards for testing locos and the coupling mechanism, a request was made by the M.M.R.S. for an EM layout to be shown at the 1960 exhibition. Enough scenic work was therefore added to bring Presson station to life, and in this form it also appeared at the 1961 exhibition of our society.

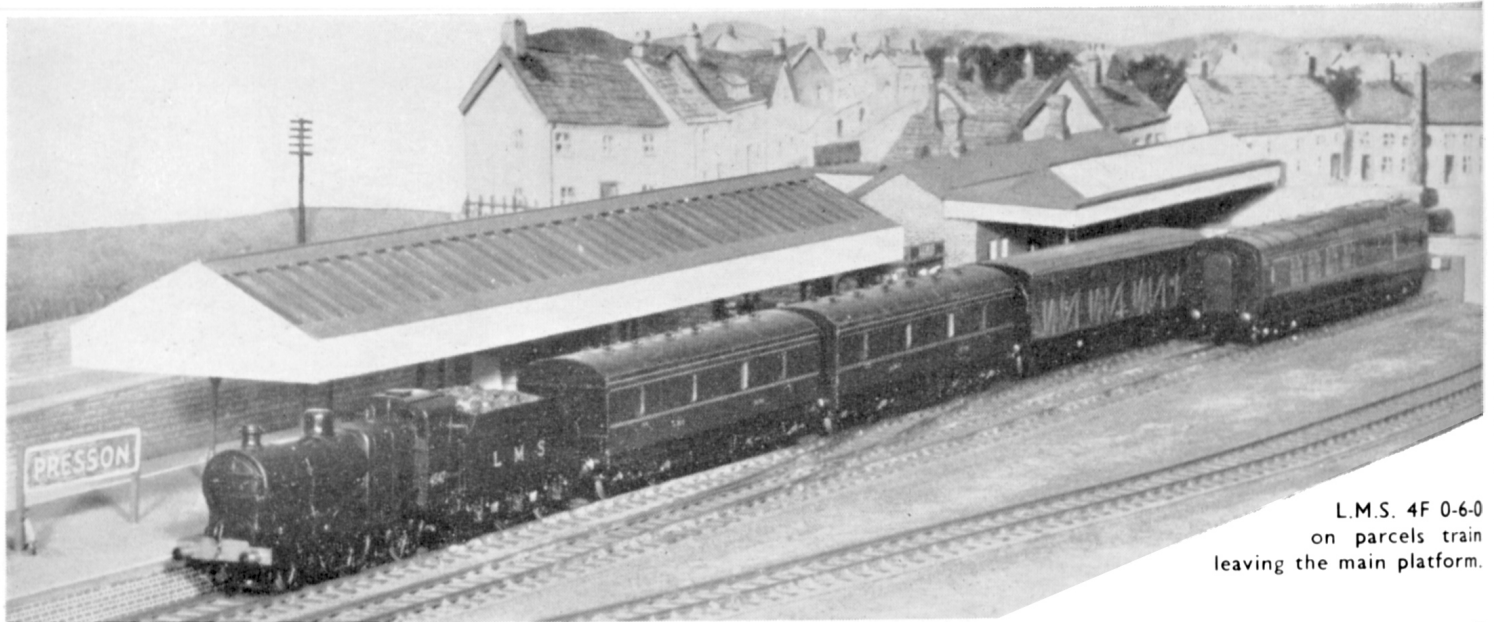
When I was honoured by an invitation to exhibit the layout at the M.R.C. 1962 show, I thought it would be an advantage if a train service could be run in addition to our usual shunting feature. So in the past fourteen months I have been very busy first designing and then making the viaduct and the hillside, with special sector plate train return mechanism, especially for the show last Easter.

A main-line train can now leave Presson station and cross the viaduct into the hillside. Here it is received on to the sector plate on any of the five tracks and the engine is removed and run by means of the turntable to the opposite end ready to take a train back. For releasing the engine the tracks on the sector plate are fitted with permanent magnets to uncouple the loco every time. The turntable on the sector plate is hand driven. Only when this turntable, the sector plate and the tunnel mouth are lined up will the train be able to run. Selection of any of the five tracks on the sector plate is from a dial on the side of the track. When selected, a motor drives the sector plate until the track is in line and then a relay stops the motor and operates a locking bolt. When the bolt is home a feeler wire makes contact and puts on the appropriate light on the control panel.

The sector plate is partly hidden by a hillside on top of which is laid a demonstration siding to show the operation of the Alex Jackson coupling in detail.

For maintenance, the public side of the hill can be removed. It was found at the exhibition that such is the interest of the public as to what is going on that the hillside was left open for the whole week.

So as to prevent trains arriving on the viaduct from each direction, bells are installed at each end of the layout and worked from the consoles. A restricted bell code is worked to suit the rolling stock available. The bells are home-made, using old cycle bell tops, and our old friend the telephone relay does the striking.



L.M.S. 4F 0-6-0  
on parcels train  
leaving the main platform.

#### Exhibition running

Running for the public is different from running your own little schedule at home. At the M.R.C. exhibition at Easter the layout was in operation without a break for the whole of the show. The public expect to see something moving somewhere on the layout at any one time. I believe we practically achieved this by means of doing some shunting at each end of the layout when the traffic arrangements across the viaduct were temporarily being rearranged. We were very pleased that our slow running was appreciated by the general public, and our experience is

that as long as something moves it does not necessarily have to chase its tail at 100 miles per hour, so why not run at a natural-looking speed?

To keep a number of trains parading across the viaduct for the purposes of the exhibition did, however, turn out to require concentrated effort on the part of the operators.

It was found, for instance, that when a train arrived at the station main platform running the loco around the train held up the shunting, not only because of track occupation but also because of changing

over controllers. This would not worry at home, but for exhibition work a separate shunt arm will be added and the signal box moved to the opposite side of the track. This will involve making a double-slip point, which offers a nice little challenge for the immediate modelling programme.

Transport of the models and the railway from outside Manchester to the London show, some 220 miles, proved to be a happy social trip for our EM team. Four went by car with the models and three went by a hired van with the railway.

"Three men in a van—not forgetting the railway" would surely have provided Jerome K. Jerome with more material for his theme.

## THE CHRISTMAS FESTIVAL

# DECEMBER 14<sup>th</sup> 15<sup>th</sup> 16<sup>th</sup>

Corn Exchange, Hanging Ditch, Manchester



**I**N Presson we have given one reason why you should visit the Manchester Model Railway Society's exhibition; you will see some excellent models there. Moreover, there is modelling at all levels, from elementary kit-bashing to craftsmanship of the highest order. But to the regulars who visit the Corn Exchange each year this is only half the reason for the visit.

In the past twelve years the show has grown into a national exhibition. More than that, it is now one of the great social events of the modeller's calendar. The club extends a special invitation to every RAILWAY MODELLER reader attending the show to make himself known to a steward, or at the information desk. At the same time we should like to meet you on our own stand, to hear your views on the magazine and your suggestions for future articles. If you have any problems bring them along; there are experts on every subject around, and an answer can usually be obtained in a matter of minutes.

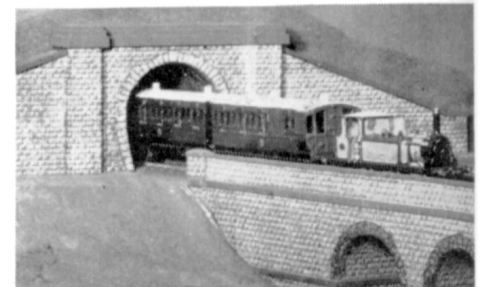
Because the show is open all weekend it makes an overnight stay worth while,

and enables the majority of northern enthusiasts to take their families for a Sunday outing.

We do not propose to give any details of the exhibits. We know that the show will be fully up to its usual standard—and that is very high indeed. But, most important of all, this is very much a show of surprises. We never can be sure just what will turn up, what new gimmicks exhibitors will dream up, but we can be certain that there will be something out of the ordinary on view.

There are people who use the term provincial to mean second rank, dowdy, behind the times. Manchester has long given this the lie. The *Guardian*, the Hallé Orchestra and Granada Television are typical examples of north-country enterprise, and we do not feel that it is at all presumptuous to put the Manchester Model Railway Exhibition in their company. It is an important show, an exciting show, and above all a friendly show. It is more than just another exhibition—it is the Christmas festival of railway modelling.

Go!



Footnote: this photograph inspired our cover.

## CONTROLS AND COUPLINGS

Continued from page 280.

A portable controller on a long flexible lead is also in use on the North Devonshire Railway so that a train can be controlled from any position in the room. This is useful for track maintenance as well as for uncoupling in remote corners. It enables a loco or train to be run to and fro over a faulty bit of track a long way from the permanent control panel. The operator can then watch closely and make the necessary adjustments to the track without passing between the panel and trouble spot every time a trial run is required.