An item of character for the pre-grouping layout

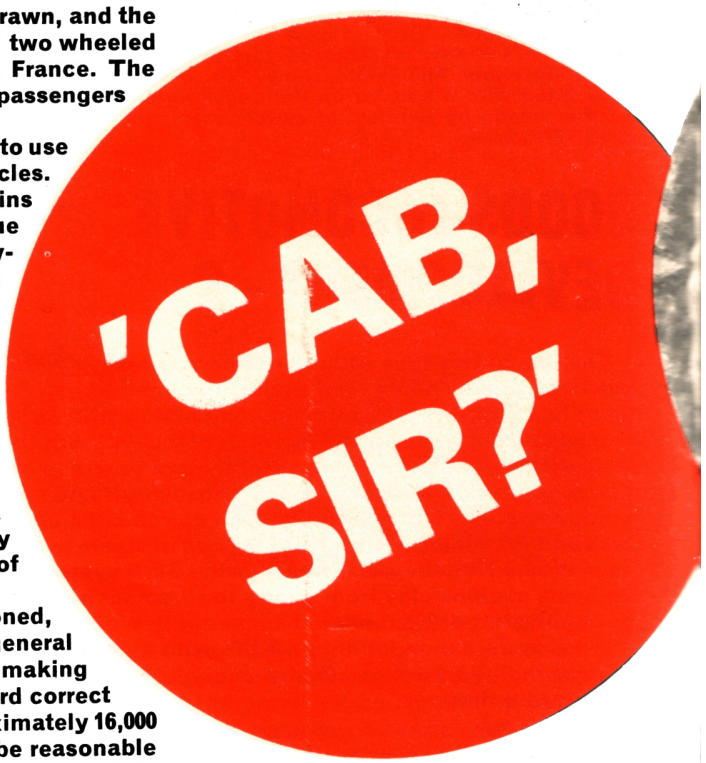
Public transport in the nineteenth century was of course horse drawn, and the popular vehicle used in the early part of the century was a kind of two wheeled hooded gig called a cabriolet, which had been introduced from France. The passenger sat next to the driver, but later designs allowed for two passengers with the driver separated from them by a partition.

Four wheeled vehicles, forerunners of the brougham, also came into use but the familiar term 'cab' was popularly used for both types of vehicles.

In 1834 a two wheeled 'safety' cab was introduced which had 7ft 6ins diameter wheels and cranked axles but was not as yet sprung. The driver sat on top of the cabin at the front. The designer, Joseph Aloysius Hansom (1803-1882) was by profession an architect, having designed Birmingham town hall, although his general work was on churches. Later versions of Hansom's cab had the driver seated at the back and a John Chapman formed a company which produced the cab with the body cut away to allow the use of a straight axle. So came into existence the famous cab as we know it and although minor changes were made by other designers the name of Hansom was still applied.

The conventions of the time were of course very strict and it was considered improper for a young unmarried woman to ride in a Hansom and especially if accompanied by a young man. Any frivolity and the cabman was quick to open the little door in the roof and shout his opinons to the occupants.

Coach builders were very individualistic which, as I have mentioned, resulted in cabs having many minor variations, so that the general arrangement drawing which I have made is intended as a guide for making a representative model, and does not claim to be a historical record correct to the odd half inch or so. About 1910 it was estimated that approximately 16,000 Hansom cabs were running around London, from which it would be reasonable to deduce that a model railway representing the period, would not be complete without one or two of these attractive vehicles.



As my layout will be to 4mm scale, the sizes I have stated against the details apply to this scale, but the general arrangement drawing being marked in full size feet can be applied to other scales.

The Model

The body is made from very thin plywood glued with Durofix to a thicker wooden shaped base. The windows are cut from clear perspex sheet and secured by card window frames. The wood construction allowed the use of pins to hold on the lamps, and also the mountings for the axle springs which require a touch of solder as mentioned later. Plastic sheet could be used by those who prefer this material. The roof of my model was made from card.

Wheels

Probably the biggest problem in obtaining the character of the cab is the making of the delicate wheels with their large diameter and 16 fine spokes (Fig. 1). I do not know of a commercial source of supply for these, so I will describe the method I used to make them as passed to me by a fellow MMRS member, Ian Morgan. It is particularly useful where a few special wheels are required.

Prototype wheels are dished for strength as were most built up cart wheels, but in 4mm scale the amount of dish is very slight and I made my wheels flat and gave a little bend to the axle. Dishing of the spokes can be achieved however, by arranging the slots of the soldering fixture on a cone.

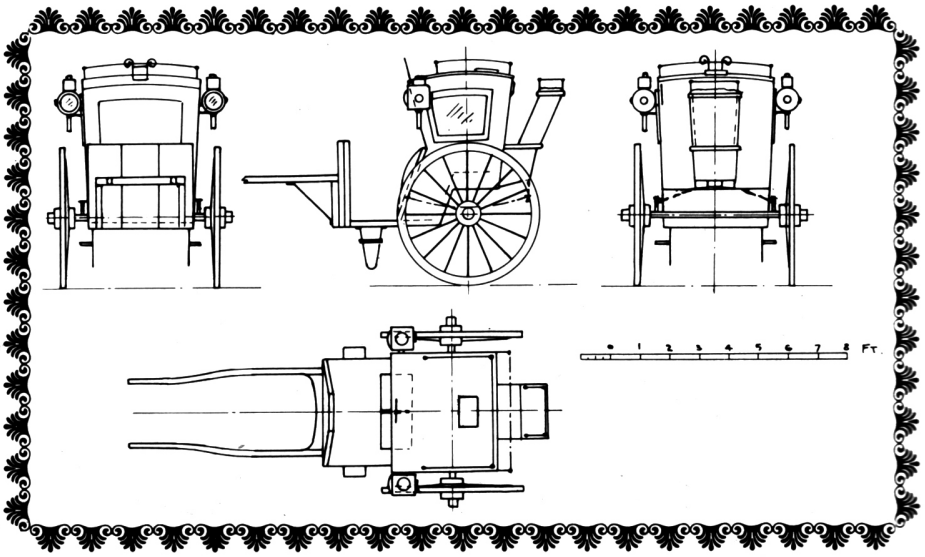
The principle of the wheel construction is to make the wheel rim, spokes and boss separately and then solder together in an aluminium soldering fixture.

For the rims turn a length of brass bar .750ins diameter in the lathe and bore .670ins diameter as in Fig. 2, parting off each rim 1/32ins wide. Rub with carborundum cloth to remove any sharp edges from the rims.

I made the spokes from 21g (.032ins) copper wire. Cut a length about 3 ins long and straighten by rolling between two flat plates of steel. This is then hammered between the plates to flatten the wire evenly to .020ins wide. This makes the wire an oval section as in Fig. 3. It is then sawn to length with a fine toothed piercing saw, using a simple adjustable sawing jig as in Fig. 3. This ensures that all the spokes are the same length; a little calculation is required to obtain the spoke length allowing for the width of the piercing saw blade used.

The centre boss is a simple turning from Fig. 1 with a bore to suit the axle, and for this I used the same 21g wire from which the spokes were made.

The wheel soldering fixture is a little more complicated, and is made from Dural, an aluminium alloy which is easier to machine than aluminium itself. 16 slots are cut across the face of the fixture by traversing a tool, ground to the width of the slot, by means of the lathe cross slide. The main spindle is indexed after each slot is cut to suit the number of spokes required in the wheel. For this purpose I fix a gear wheel and locking



by John Langan

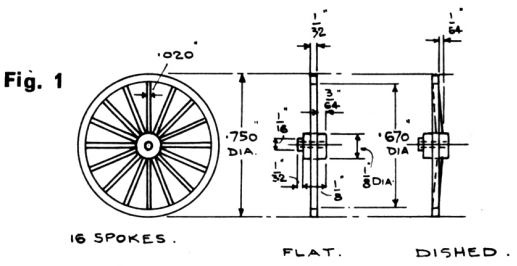


Fig. 1

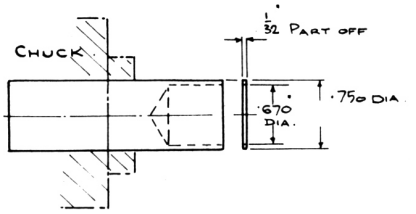


Fig. 2
WHEEL RIMS

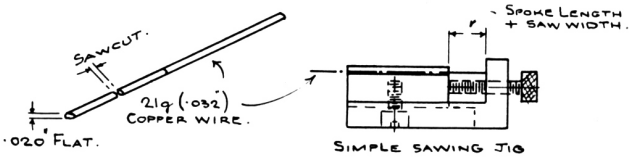


Fig. 3 **SPOKES**

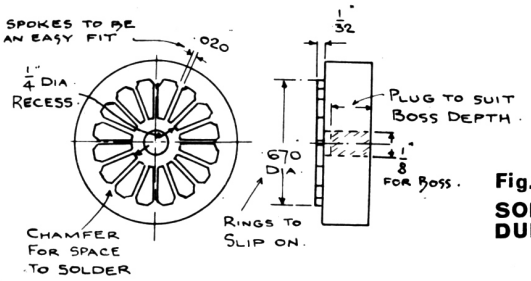


Fig. 4
SOLDERING JIG DURAL ALUMINIUM

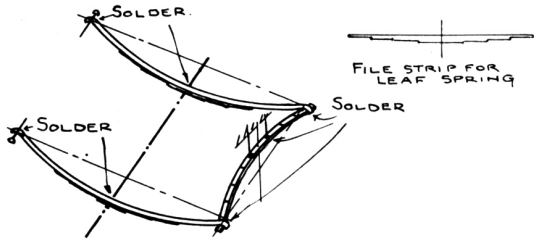


Fig. 5 **AXLE SPRINGS**

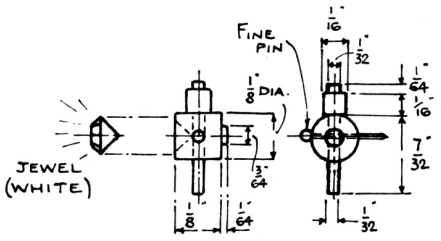


Fig. 6 **LAMPS**

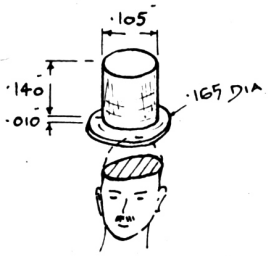


Fig. 7 **TOP HAT FOR THE DRIVER**

plunger, which has a suitable number of teeth, on to the lathe spindle. The bore of the fixture is drilled a sliding fit for the wheel boss, and is fitted with a plug to hold the boss at the correct depth in relation to the wheel rim as shown in Fig. 4.

Assembly of the parts on the fixture can now be made and, with a dab of solder paint at each joint, a flash from the blow torch makes all the joints and completes the wheel with very little trimming to be done. The careful use of a pointed soldering iron is required if solder paint is not used, making sure that only the minimum of solder is on the iron.

Springs

Axle springs are made from strip filed with steps to represent a leaf spring as in Fig. 5, and then bent to shape. Solder the rear spring first to pin heads fixed into the wood base, and then attach the side springs. These are also held at the front end by a fine pin fixed into the wood base.

Lamps

Lamps are built up as in Fig. 6 from small turnings, with a white jewel glued to the front with Durofix to represent the lamp lens. A small pin through the side of the lamp serves to lock the lamp parts together and also fix it to the cab side. Alternatively, a small bracket can be made to support the lamp from underneath as shown in the general arrangement drawing.

Many cabs were finished all black although various companies had their own colours such as a black top with sides of yellow or blue.

Motive Power

A good selection of horses can be obtained from the Airfix kits, the one on my cab being from the American Civil War! This has been suitably trimmed with a sharp knife and fitted with a collar. The reins and driver's whip are .004ins copper wire from an old model motor armature.

The driver and passenger are again from Airfix suitably trimmed. The driver unfortunately lost the top of his head so that he can wear a tall hat. This is turned from plastic bar as shown in Fig. 7 and glued on with Durofix.

Old photographs show these hats to have been quite large – Brunel seems to have been determined to wear the largest available!

Horse drawn vehicles make an interesting study, and although making models of them means 'time off' railway modelling, they are essential items when a pre-grouping period layout is being considered.