

As in the case of Meccano Limited the patternmaker at the Austin factory (top) prepares a model before production starts. The model in this case is to one-quarter scale. Below: The static road test. The new car does its first few miles on rollers. Here, the gearbox, steering and brakes get their primary test. Any faults which come to light are rectified and the vehicle is re-tested on the road.



The four photographs on this page and that at the foot of page 170 appear by courtesy of the Austin Motor Company.

The first of the pictures below (right) shows car bodies passing through the paint plant at the Austin Motor Company's works at Longbridge, Birmingham. The spraying plant is fully automatic.

## AT THE AUSTIN FACTORY



Finishing touches: As in the case of the Dinky Toys model (see picture on opposite page) the actual Countryman gets a final touch-up with a paint brush.





that when the pattern has been made it is taken to the car manufacturer for a last-minute, final check up on even the most minute details to ensure that the body casting which is to follow shall be as near perfect as is possible.

Once the patternmaker's work has been approved, plaster casts are made to establish the form of the mould. Related to this is the production of the die-casting tool which will eventually produce the hundreds of thousands of castings of the new model.

The actual body of the Austin Seven Countryman—and, of course, all Dinky Toys models—is cast in zinc alloy. This is of immense strength to withstand the knocking about which children can give to toys, and to cope with such situations as dropping a toy or knocking it off a table by accident. The bodies are formed within the mould by a die-casting machine when molten metal is forced at great pressure into the cavity formed by the die-casting mould. The metal solidifies almost instantly and is cool enough to be ejected from the tool without fear of distortion taking place.

Once the car body leaves the die-casting section, it proceeds to the Roto-Finishing machine which consists of a very large hexagonal barrel, revolving horizontally. There is a line of these huge steel barrels which are filled and emptied from a mobile hopper running along their front. Each barrel is loaded with castings and a measured quantity of stones which to all outward appearances are rather like the small pebbles you find on the sea shore

The striking realism of the Dinky Toys model of the Austin Seven Countryman—and the Morris Mini-Traveller, which is referred to on the next page—is seen in the photograph above, where the models have been used to represent a scene outside a distribution centre.

during the summer holidays. Each barrel, too, holds a quantity of water but, although it is fairly well packed, there is always room for movement inside as the barrel revolves. The stones, being of mildly abrasive character, come into contact with the zinc bodies and remove the sharp edges, giving them a very fine, smooth finish.

After barrelling, the trimmed castings and stones are discharged into the hopper which moves them along to a separator specially designed to free the castings from the stones of the Roto-Finishing plant. Castings and stones are dropped on to a separator tray which has a wire

mesh deck. This is rapidly vibrated by hydraulic power and the mesh is so adjusted that the stones fall through to a lower deck, leaving the castings on top. Both stones and castings are shaken along on their respective levels to receiving hoppers, where the castings are collected for the next process and the stones are returned to one or other of the Roto-Finish barrels.

The next process for the castings is the giant phosphating plant where they are dipped in a chemical solution to ensure maximum adhesion when the enamel is applied. During all the processes mentioned and, indeed, until the end of their

Real Austins this time—pictured outside the Austin Factory in Birmingham.





trip through the assembly plant, the Dinky Toys castings are constantly inspected to ensure that only the highest class of product is sent out to buyers.

After it has left the phosphating plant the casting of the Countryman is approaching the final stages of its journey. The next immediate stage is painting or enamelling, which is processed on semi-automatic spraying machines. Here the models are mounted on spigots and rotated while spray guns, directed on the side, top and bottom of the casting give a fine, even coat of enamel. Then the castings move on to the stoving ovens where they stay for a given period to emerge with that gleaming finish which is the pride of Dinky Toys owners.

As many modern cars have two-tone finish, there is consequently a demand for Dinky Toys of similar style. In the case of the Countryman, of course, the half-timbered outline of the body has to be simulated, and this calls for the use of masking devices by use of which only a given portion of the vehicle can be sprayed. In the case of the Countryman the colour of the "woodwork" is superimposed on the existing paintwork by this means.

While the car body is being prepared, other parts of the vehicle have also been put into production. The base, for instance, which carries the wheels has been produced in the Press Department from a special black enamel coated steel strip, the windows have been created by injection moulding from clear polystyrene, and the seats have been produced from sheet polystyrene by a vacuum-forming process. In addition, the steering wheels have been moulded in plastic and the road wheels have been turned on special automatic machines.

Thus it is that many millions of parts have had to be inspected ready for the final assembly of this one model and the important thing is, of course, that the production of all these items has to be so planned that they arrive at the focal point together. This meticulous timing of the sequence of events is one of the major jobs. The whole production must be planned just as it is in the huge factory where the actual Countryman itself is produced.

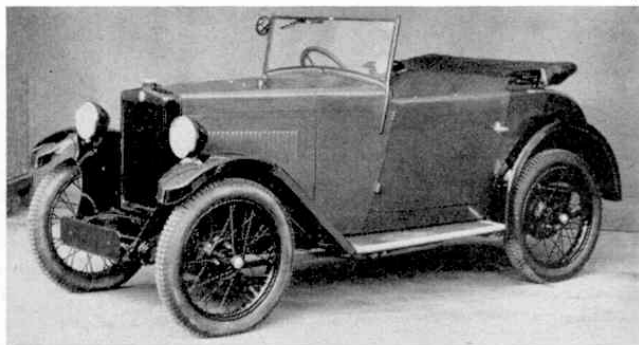
The final stage in the creation of the Dinky Toys model is reached in a huge airy room where assembly conveyors are continuously in action. Starting with bodies, wheels and bases all separate, the models reach the end of the conveyor as complete entities.

A last inspection is carried out here. Each finished model is put on an inclined chute down which it must travel quite freely of its own volition. At the other end it is lifted from the chute and put in its carton, that world-famous red and yellow packet about which we spoke earlier.

From there, through the Stock Room, it goes to the Despatch Department for distribution throughout the British Isles and to the far corners of the world.

## THEY WERE DIFFERENT THEN

### No. 3. The Morris "Babies"



The £100 Morris Minor of 1932.

**M**ANY people imagine that the ubiquitous Morris Minor is a post-war car. Not so; there were Morris Minors as far back as 1929. The first had a remarkably good performance for its size, being powered by a 4-cylinder, 847 c.c. overhead-valve engine developing 20.5 b.h.p. at 4,000 r.p.m. Two body styles were offered, a fabric-covered saloon and an open four-seater, at £135 and £125 respectively.

By PATRIC BAKER

These peppy little cars proved universally popular, and in 1930 a metal-panelled saloon was introduced, to be followed shortly afterwards by a semi-sports two-seater. In 1932, metal replaced fabric on all models and a new engine was adopted. This was a side-valve unit of the same capacity, developing 19.25 b.h.p. at 4,200 r.p.m. In the same year came Lord Nuffield's first £100 car, a two-seater Minor. Other models of the period included an open four-seater and two saloons, one with a sliding roof. This range continued into 1933, when a long wheelbase saloon and coupé were added. These had a 4-speed gearbox—a refinement which, together with hydraulic brakes, was standardised on all models in the following year.

The second main milestone in the life of

the Minor occurred in 1935, when an entirely new range, known as the Morris 8, Series I, was produced. These attractive, roomy little cars were fitted with a more powerful side-valve engine of 918 c.c. developing 23.5 b.h.p. at 3,900 r.p.m., and four body styles were offered—two saloons, an open tourer and a two-seater. The Series II range of 1938 brought slight styling changes, but the model remained virtually the same until the third phase of Minor development—the introduction, in 1939, of another entirely new car, the Morris 8, Series E. Conforming to fashion, the body work of the Series E was semi-streamlined with headlamps enclosed in the wing cowlings. Saloon and tourer models were offered and the 918 c.c. engine of the Series I and II was tuned to produce 27.5 b.h.p. at 4,400 r.p.m.

The present gaggle of Morris Minors stems from 1948, when Alec Issigonis introduced the classic design which has continued structurally unchanged until today. This model was the first Morris Minor to be built on the mono-construction principle, with body shell and chassis in one unit. It was also the first baby Morris to have independent front suspension and rack and pinion steering.

The early cars had the (Cont. on p. 189)



Wizardry on wheels — the Morris Mini-Traveller. This picture and the photograph above are by courtesy of the Nuffield Organization, Cowley Oxford.