

## VI.—By Frank Hornby

THE early history of Hornby Trains is as fascinating as that of Meccano. To begin at the beginning I must take you back to the time of the Great War, a bygone age to most of you but a vivid memory to those of us who survived that stormy period. Among the new parts added to the Meccano System somewhere about this time was Part No. 108, Architrave, and when samples of this part were being examined someone drew attention to its resemblance to the side of a locomotive cab. It was evident that it would be a useful part in the construction of Meccano locomotives, as we had not previously been able to satisfactorily model an engine-cab.

To see exactly how the part would build up we had a model constructed, using another special part for the boiler. The model looked very realistic and, as someone pointed out, its only drawback was the fact that it would not run under its own power. From the construction of this little model was but a step to the idea of marketing a constructional locomotive having a specially-designed clockwork motor, but the idea had to be shelved until such time as our machines were released from the War work on which they were engaged.

The idea, as originated in this little Meccano locomotive, which is illustrated on this page, was one that was to bear abundant fruit in the later years. More particularly so because during the later years of the War there was a scarcity of mechanical toys of all kinds. Prior to 1914 most toys of this nature had been imported from the Continent, and of course when hostilities commenced this source of supply had come to an end. The greatest grievance of the youngsters of that period was the impossibility of obtaining toy trains.

For some time after the Armistice we were fully occupied in making up for lost time in the production of Meccano. We did not lose sight of the possibility of clockwork trains, however, and carried out numerous experiments to develop the earlier ideas on sound practical lines. In 1920 we decided to commence the manufacture of clockwork trains, and in that year the first "Hornby Train" was placed on the market.

These trains were unique in that they applied the Meccano constructional idea. Engines, tenders and trucks were built up from standard units, and could be taken to pieces and rebuilt in a similar manner to Meccano models.

In addition, new parts could be purchased at any time to replace any that might be damaged or lost. The clockwork mechanism was of first-class quality, and we paid particular attention to the accurate cutting of the gears in order to ensure the smooth running that is so desirable in miniature trains. We decided to

build our trains to the standard miniature Gauge "0," in which the distance from inside to inside of the heads of the rails is  $1\frac{1}{4}$  in. We also decided upon two standard curves, forming respectively circles of 2 ft. and 4 ft. diameter. The success of these first Hornby Trains was immediate, and indeed it surpassed all expectations. The reason for this was that the army of Meccano boys had complete faith in anything turned out by the Meccano factory, and consequently Hornby Trains were purchased without hesitation.

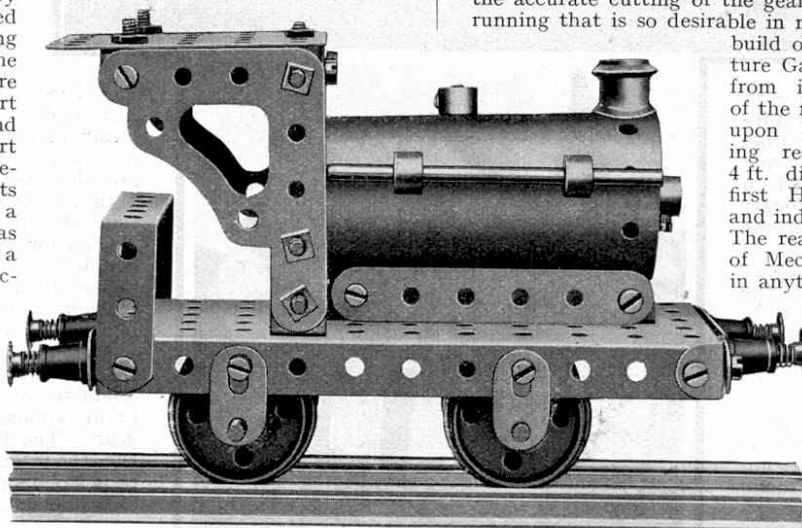
From the outset we determined that the Hornby miniature railway system should be just as perfect in its way as Meccano, and the ideal that we kept in mind was that of a gradually growing and developing system that ultimately would be capable of reproducing in miniature practically all the everyday

operations of actual railways. Before long we found that the building of locomotives and rolling stock on the Meccano constructional plan was proving a handicap to the development of more realistic and true-to-type models. After careful consideration, therefore, we decided to abandon the constructional plan, and since 1925 all Hornby locomotives and rolling stock have been built from specially-made components, assembled into a complete unit.

In order to provide as great a variety as possible the first Hornby Trains were made available in five colours to represent the London and North Western, Midland, Great Northern, Caledonian, and London, Brighton and South Coast railway systems.

Our first locomotives were well designed and constructed, and we received an astonishing number of letters expressing the keenest enthusiasm in regard to their smooth running and excellent hauling powers. We were not satisfied, however, and a section of our technical staff was set to work to study further the problems involved in the construction of clockwork engines, and to introduce every possible improvement that would make for greater efficiency. This development work has gone on ever since, and as a result Hornby locomotives have been improved steadily year by year until we can fairly claim that they are superior to all rivals.

Along with the development of



The little Meccano locomotive from which a great industry grew—the production of Hornby Trains. The earliest Hornby locomotives, tenders and trucks were built up from standard units and could be taken to pieces and re-built in a similar manner to Meccano models.



The first Hornby Train Set. The engine, tender and truck were built up from standard parts.

locomotives there has proceeded a steady increase in the number of types of rolling stock and of accessories of all kinds. Many of these items were introduced as the direct result of requests from boys. The suggestions put forward in the letters arriving day by day in large numbers from all parts of the world are carefully tabulated, and when it is seen that there is a widespread demand for a particular item, the production of this is carefully considered. If the idea proves practicable, designs are got out, and before long the new accessory or piece of rolling stock is being turned out by the thousand, to the great joy of the boys who suggested it.

Soon after the introduction of the Hornby System we began to receive requests for electrically-propelled locomotives. We postponed development in this direction until our clockwork trains were thoroughly established, and then in 1925 introduced an electric train set modelled on the lines of the London Metropolitan Railway. The locomotives of these first Metropolitan sets were operated by high-voltage motors, but before long we abandoned these motors in favour of low-voltage motors, first of four volts and afterwards of six volts. These motors had the great advantage that they could be used either with an alternating current mains supply through a transformer, or from an accumulator. They were thus available for every boy, whether his home had electric light installed or not.

The starting and stopping of these locomotives, and their running speed, are controlled by a special resistance controller situated outside the track, but reversing has to be done by the movement of a lever in the locomotive cab. In response to many requests we introduced some time ago a tank locomotive to be run from a six-volt accumulator, not from the mains, which can be reversed as well as started, stopped and controlled for speed from a controller outside the track. This fast and powerful little locomotive can thus be made to do anything without the necessity of touching it, and it has become a great favourite with Hornby railway enthusiasts.

Electric locomotives have the advantage that they do not require to be wound up. They keep on running as long as the current remains switched on, and the un-railway-like spectacle of a train stopping half-way between stations, owing to the clockwork having run down, is avoided. Long continuous runs are possible—one Hornby Train ran continuously for over 800 miles—and at the same time stops may be made as required. In addition there is sufficient power available to enable gradients to be incorporated in a layout, so that an actual descent to and ascent from an underground section of line is possible.

In 1926 the Hornby Control System was introduced, and this has enabled miniature railways to be operated on lines closely following actual practice. By means of a special lever frame and connecting wires, the points and signals of a layout can be controlled from a signal cabin just as is done on a real railway. The application of the Control System to a model railway thus increases its realism and interest to an enormous extent. Another introduction that has tended towards greater realism, especially in shunting operations, is that of automatic couplings. These are now fitted to all Hornby locomotives and rolling stock. They couple on impact, so that an engine may be backed on to its train in the correct manner—a piece of model railway working that is always interesting to watch—and the couplings will engage of their own accord. All that then remains to be done is to reverse the engine, and the train is ready to depart. The speed of operations, particularly in a busy terminal station, is thus considerably

increased as compared with the ordinary method of coupling.

The latest additions to the Hornby Railway System have been introduced for the special purpose of giving "life" to a model railway, and providing it with suitable surroundings. The bare and desolate appearance that characterises the station platforms of so many model railways has always seemed to us to be a serious defect, and we determined to do what we could to improve matters in this respect. We therefore introduced first of all a series of miniature platform accessories, including luggage and a porter's barrow, milk cans with a suitable truck, and such items as seats, a letter-box, and automatic machines. To these accessories we have recently added a series of miniature figures—stationmaster, guard, porters, ticket collector, engine driver, hotel porters, etc.—and a station platform provided with a selection of these miniatures immediately takes on an appearance of life and realism that is quite remarkable. The trains must have a reason for running, and a series of miniature passengers is to be added to the existing operating staff. To increase still more the lifelike appearance of the station, miniature posters are available. These are small-scale reproductions in the original colours of the most famous posters that cover the hoardings of our towns and cities. They are gummed on the back, so that they may be readily attached to the miniature station hoarding. As an alternative the posters may be mounted on special poster boards fitted with two lugs that can be attached easily to fencing and to bridges.

The Hornby System is particularly well equipped with accessories in the shape of lineside structures of various kinds. There is the signal cabin, which can be arranged to accommodate the lever frame, or in the case of electric layouts, the controller; there are stations and goods platforms, where heavy traffic can be dealt with; and there are the imposing Engine Sheds for the housing of the locomotives. Among the smaller accessories, the watchman's hut and the platelayer's hut are particularly effective, and have proved extremely popular on account of their realistic appearance.

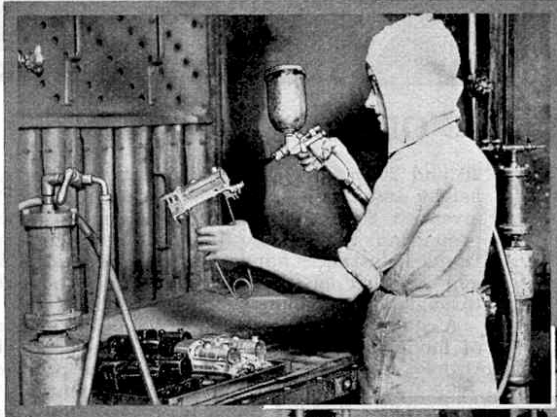
Another notable introduction is a series of train name boards and destination boards. By means of these boards the various expresses of the Hornby Series may be appropriately named, the most famous trains of the four groups being represented. The improvement

in the appearance of miniature trains brought about by the use of these boards is quite remarkable.

Many of the Hornby accessories, such as the engine sheds, goods platform, signal cabins, signals and buffer stops, have recently been suitably wired and fitted for electric lighting. It thus becomes possible to illuminate a miniature layout on realistic lines, the signals in particular having a most fascinating appearance.

As the result of widespread requests we have recently extended our range of tunnels, with the special object of assisting the owners of railways that have to be taken up and stowed away each time after use. These tunnels are made in various lengths, and special features are the curved tunnels in the form of a small hill through which the track runs obliquely. These may be obtained either with a right-hand or a left-hand curve, so that they are suitable for any layout.

Still another innovation that will add enormously to the appearance of any model railway is a series of cuttings. These also are made in a variety of sections. There are end sections, sloping down realistically to ground level, and centre sections to be inserted between these end sections, thus enabling a cutting to be extended to any desired length. The centre sections are also made in curved form.



Hornby Trains in the making. (Top) Enamelling a locomotive by means of a compressed air spray. (Centre) Hand finishing locomotives. (Right) Testing locomotives for hauling power and length of run.

