

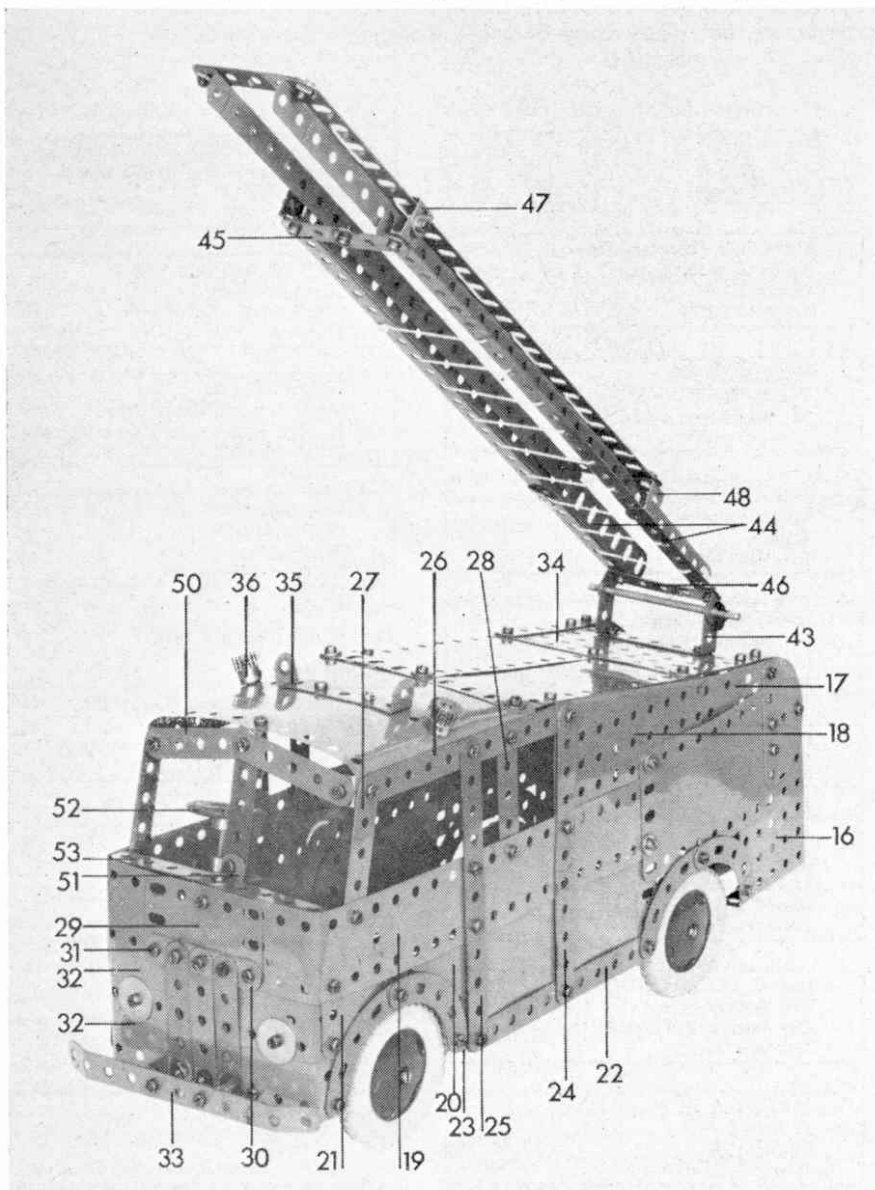
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# FIRE ENGINE IN MECCANO

by Spanner

*Meccano Outfit No. 7 contains all the parts necessary to build this Fire Engine*



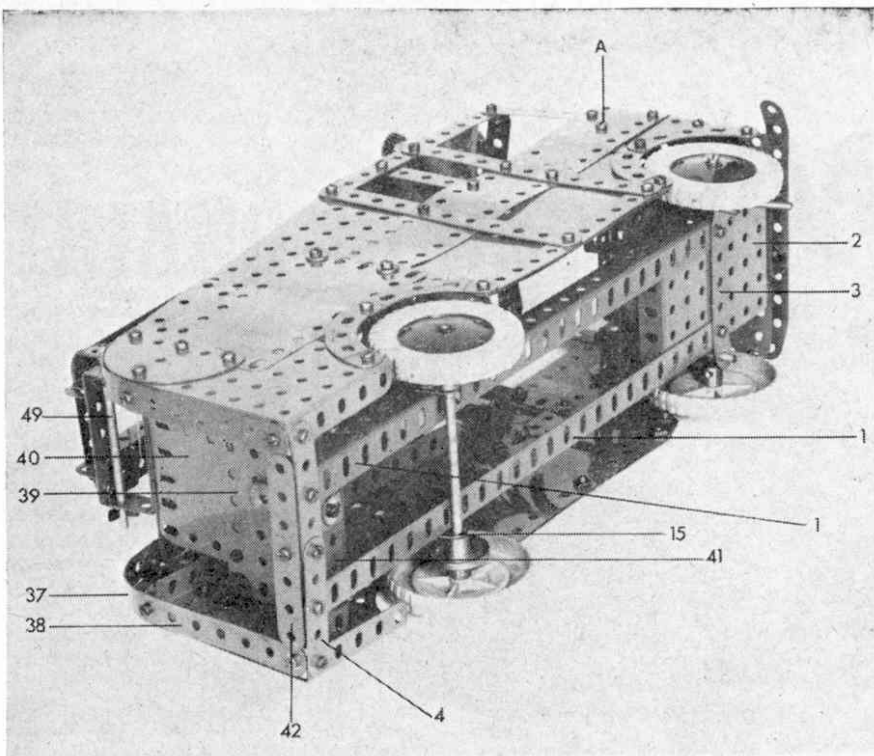
SEVERAL readers have written to me recently pointing out that we have not featured an intermediate Outfit model for some time and I have also received a number of letters asking for a model Fire Engine. Therefore, in order to please all of these readers, below I describe how to build a Fire Engine with Outfit No. 7.

A glance at the accompanying illustrations will show that the model has been based on an actual fire appliance used by many Fire Brigades throughout the country. Dinky Toys collectors will also be well acquainted with the machine, as Meccano Limited produce a Dinky Toys version under sales No. 955. Split into appropriate sections, building instructions for the Meccano-built version are as follows:

## Chassis and Steering

Two 12½ in. Angle Girders 1 are connected at the front by a 3½ in. by 2½ in. Flanged Plate 2, at the same time bolting a 3½ in. Strip 3 in position. At the rear they are joined by a compound 4½ in. strip 4, made up from two 2½ in. Strips. Fixed to the top of Flanged Plate 2 by the bolts securing the Girders to the Plate are a 2½ in. by ½ in. Double Angle Strip 5 and two ½ in. by ½ in. Reversed Angle Brackets 6, one at each side. A 1½ in. Rod, carrying a Crank 7, six Washers and a Collar 8, is mounted in the free lug of each Reversed Angle Bracket and one end of Strip 3. A ¾ in. Bolt, carrying a 2½ in. Road Wheel is then screwed into the transverse tapped bore of Collar 8. The Road Wheel must be free to turn on the shank of the Bolt.

Lock-nutted between the arms of Cranks 7 is a 3½ in. Strip 9, the left-hand bolt also holding another 3½ in. Strip 10. At its other end, Strip 10 is lock-nutted to an Obtuse Angle Bracket bolted to an eight-hole Bush Wheel 11, which is secured on a 5 in. Rod forming the steering column. Also mounted on the Rod



An underside view of the model also showing the back of the body

are a 1 in. fixed Pulley with Rubber Ring 12, a Collar, a  $2\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Double Angle Strip 13, to which a Double Bent Strip is bolted and a  $1\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Double Angle Strip 14. The two Double Angle Strips will later be fixed to the body.

A Fishplate 15 is bolted to each Angle Girder 1, eight holes from the end. Journalled in these is a  $4\frac{1}{2}$  in. Rod, held in place by 1 in. fixed Pulleys, on which two  $2\frac{1}{2}$  in. Road Wheels are mounted to serve as the rear wheels.

## Body Construction

Both sides of the body are similarly built from a  $3\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flanged Plate 16, a Semi-Circular Plate, a  $4\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flexible Plate, a  $2\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Triangular Flexible Plate 17, a Flanged Sector Plate 18, a  $5\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Plastic Plate, a  $5\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flexible Plate, a  $5\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Flexible Plate 19, a  $2\frac{1}{2}$  in. by 2 in. Triangular Flexible Plate 20 and another  $2\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Triangular Flexible Plate 21. Each wheel arch is edged by two  $2\frac{1}{2}$  in. Stepped Curved Strips and the arches are connected by a  $5\frac{1}{2}$  in. Strip 22, extended by a Fishplate 23. The window and door frames are represented by three  $5\frac{1}{2}$  in. Strips 24, 25 and 26, a  $2\frac{1}{2}$  in. Strip 27 and a  $2\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Double Angle Strip 28.

To enclose the front, the  $5\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Flexible Plates 19, one each side, are bent round and joined by a  $2\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Flexible Plate 29, overlapped by a  $2\frac{1}{2}$  in. Strip 30 along its lower edge. Bolt 31 fixing this Strip also secures Double Angle Strip 13 and Bolt A holds Double Angle Strip 14. Another two  $5\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Flexible Plates 32 are then bolted between the sides, as shown.

Two  $\frac{3}{4}$  in. Washers act as headlamps, while the radiator-grille is represented by

three  $2\frac{1}{2}$  in. Strips, bolted to Strip 30 and the lower Plate 32, at the same time fixing two Double Brackets in place. A  $5\frac{1}{2}$  in. Strip 33, forming the front bumper, is bolted to the free lugs of these Double Brackets. Lower Plate 32 is connected to the flange of Plate 2 by two  $\frac{3}{4}$  in. Bolts, a Collar on the shank of each Bolt being used as a spacer.

## Roof and Back

The roof simply consists of four  $5\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flexible Plates and a  $4\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flat Plate 34, fixed between the sides as shown. A  $2\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Double Angle Strip 35 and two  $\frac{1}{2}$  in. Pinions 36 are then added, the Pinions being mounted on  $\frac{1}{2}$  in. Bolts.

At the rear, the side edges of Plate 34 are each overlaid by a 3 in. Strip, extended by a Formed Slotted Strip 37. This in turn, is extended by a  $3\frac{1}{2}$  in. Strip 38, secured to the lower flange of Plate 16 by an Angle Bracket. Fixed by Angle Brackets between Flanged Plates 16, is a  $4\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flat Plate 39, to which two  $2\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Flexible Plates 40 are bolted. A little 'floor' 41 is provided by two  $2\frac{1}{2}$  in. by  $1\frac{1}{2}$  in. Flexible Plates, secured to Plate 39 by three Angle Brackets, then a  $3\frac{1}{2}$  in. Strip 42 is attached to compound strip 4, also by an Angle Bracket. A  $\frac{1}{2}$  in. Pulley with boss, is mounted on a  $\frac{3}{8}$  in. Bolt, passed through the centre hole of Plate 39 and, lastly, a  $2\frac{1}{2}$  in. by 1 in. Double Angle Strip 43 is bolted to Flat Plate 34.

## Escape ladder

This, the final part of the model, is in two sections, one attached to the roof by a hinge arrangement and the other a sliding section that can be extended. The former is built up from two  $12\frac{1}{2}$  in. Angle Girders 44, joined at the top by a com-

pound  $2\frac{1}{2}$  in. Strip 45, obtained from two  $1\frac{1}{2}$  in. Strips, and at the bottom by a  $2\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Double Angle Strip 46. A compound double-bracket 47, made from two Angle Brackets, is held by the bolts fixing strip 45 to the Angle Girders. Cord threaded between the Girders represents ladder rungs.

The extending section of the ladder, too, is built up from two  $12\frac{1}{2}$  in. Angle Girders, connected at each end by a  $2\frac{1}{2}$  in. Strip, the bolts holding the lower Strip also holding two Double Brackets 48. Again, cord threaded between the Girders serves as ladder rungs. Incidentally, the knot where the upper end of the cord is tied to Girders 44 acts as a stop to prevent the extending section of the ladder being raised too far.

Finally, the completed ladder is attached to the body by a  $3\frac{1}{2}$  in. Rod 49, journalled in the lugs of Double Angle Strip 43 and 46, and held in place by Spring Clips.

All that now remains to be fitted is the windscreen which consists of two  $2\frac{1}{2}$  in. by  $2\frac{1}{2}$  in. Transparent Plastic Plates, overlaid along the top by two  $2\frac{1}{2}$  in. Strips 50, and connected to the sides by Angle Brackets. A  $\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Reversed Angle Bracket 51 is fixed to Plate 29. Bolted to this are a  $2\frac{1}{2}$  in. by  $\frac{1}{2}$  in. Double Angle Strip 52, behind the Transparent Plates, and a compound  $4\frac{1}{2}$  in. strip 53, made up from two  $2\frac{1}{2}$  in. Strips.

## Parts Required:

9 of No. 2	2 of No. 26	2 of No. 111a
6 of No. 3	2 of No. 35	5 of No. 111c
2 of No. 4	130 of No. 37a	3 of No. 125
14 of No. 5	120 of No. 37b	1 of No. 155
2 of No. 6a	25 of No. 38	4 of No. 187
6 of No. 8	2 of No. 38d	3 of No. 188
4 of No. 10	1 of No. 40	4 of No. 189
4 of No. 11	1 of No. 45	2 of No. 190
16 of No. 12	1 of No. 48	2 of No. 191
1 of No. 12c	8 of No. 48a	6 of No. 192
1 of No. 15	3 of No. 53	2 of No. 193a
1 of No. 15a	2 of No. 53a	2 of No. 194d
1 of No. 16	2 of No. 54	2 of No. 214
2 of No. 18a	5 of No. 59	2 of No. 215
3 of No. 22	2 of No. 62	4 of No. 221
1 of No. 23a	8 of No. 90a	2 of No. 222
1 of No. 24	2 of No. 111	

The complete steering arrangement

