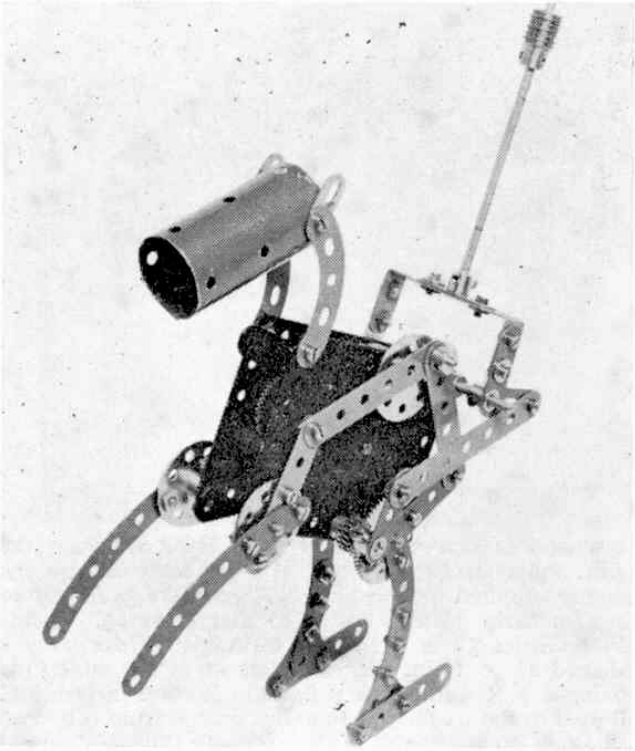
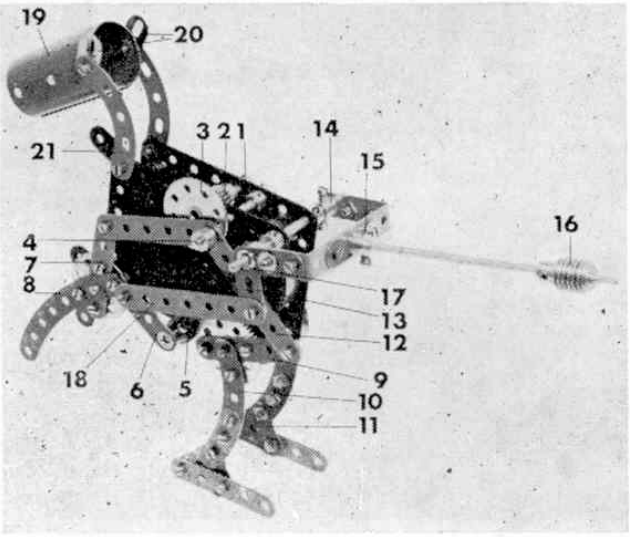


# COME STEEPLECHASING

**. . . with this fun-packed Meccano Model described as a "Steeplechaser" by its builder, D. J. Turnham of Old Marston, Oxford**

Above, laughs galore can be had with this Meccano "Steeplechaser" designed and built by D. J. Turnham of Old Marston, Oxford ! Below, another view of the "Steeplechaser" showing almost its entire construction. This is an outstanding model considering its performance in relation to its simplicity.




GENERALLY SPEAKING Meccano is regarded as a fully-fledged miniature engineering system. This is as it should be, but it does not mean that Meccano must *only* be used for the reproduction of genuine engineering structures. On the contrary, the system can be, and often is, used to make more light-hearted models such as the steeplechaser featured in this article. (You will see from the accompanying photographs that the model does look something like a horse and, as it performs two movements—a "prance" followed by a "step"—the title "Steeplechaser" seemed particularly appropriate to me!—Spanner.)

So as to keep the quantity of parts used in the model as low as possible, the horse was built round a No. 1 Clockwork Motor, the Motor thus not only providing the power for the movements, but also serving as the major part of the horse's body. Before actual construction is begun, however, the drive pinion is removed from the Motor which is then wound. A 1½ in. Rod 1 is mounted in the Motor sideplates, six holes from the brake lever, where it is held in place by Collars positioned one each side of one of the plates. The inner Collar acts as a retainer to limit the expansion of the Motor mainspring thus preventing it from fouling a ½ in. Pinion 2 mounted on a 1½ in. Rod, held in the sideplates by a Collar and an 8-hole Bush Wheel 3. A Threaded Pin 4 is fixed to this Bush Wheel as shown, while the Pinion engages with the main drive gear wheel of the Motor. Held by a Collar in the opposite edges of the sideplates, in line with the above 1½ in. Rod, is a 2 in. Rod on which a ½ in. Pinion 5 and a Crank 6 are securely fixed.

Turning to the left foreleg, a 2½ in. Strip 7 is bolted across an 8-hole Bush Wheel, a spacing Washer being mounted on each securing Bolt. Fixed by ⅜ in. Bolts to this assembly, as illustrated, is a 4 in. Stepped Curved Strip 8, a Nut on each Bolt being used as a spacer, in this case. The right foreleg is similarly built, except that Strip 7 is omitted, then both legs are mounted tight on a 2 in. Rod journalled in the corner holes in the Motor sideplates. The Rod, of course, is passed through the bosses of the Bush Wheels. One end of a 3 in. Strip is lock-nutted to Strip 7, the other end being slipped onto Threaded Pin 4.

In the case of the left hindleg, a 2½ in. Strip 9 is bolted across a 57-teeth Gear as also is a 2½ in. Curved Strip 10, the latter, at right-angles to the former, running only to the centre of the Gear and being spaced from it by a Washer. Curved Strip 10 is extended three holes by a similar Curved Strip to which a 2½ in. Strip 11 is bolted, the joint being strengthened by a 1 in. Corner Bracket. In the right hindleg, Strip 8 is omitted and an 8-hole Bush Wheel is substituted for the 57-teeth Gear, but otherwise construction is similar. Both legs are mounted on a 2 in. Rod, journalled in the Motor sideplates, with the 57-teeth Gear engaging Pinion 5. A 3 in. Strip 12 is lock-nutted, at one end, to Strip 9, the other end being slipped onto Threaded Pin 4 where it is held in place by a Collar.

The tail unit acts as a counterbalance and is built up from a Bell Crank 13 connected to an ordinary Crank 14 by a 2½ × 1 in. Double Angle Strip. Bolted

**PARTS REQUIRED**

| | | | |
|---|---|---|---|
| 1—3 | 2—18a | 5—38 | 4—90 |
| 2—4 | 1—19a | 1—46 | 2—90a |
| 4—5 | 4—24 | 7—59 | 2—111c |
| 2—10 | 2—26 | 2—62 | 1—115 |
| 1—16 | 1—27a | 1—62b | 1—128 |
| 3—17 | 1—32 | 2—89b | 2—133a |
| | No. 1 Clockwork Motor | | 1—216 |

to this Double Angle Strip is a Double Arm Crank 15, in the boss of which a 5 in. Rod is fixed. A Worm 16 is mounted on this Rod. Cranks 13 and 14 are now secured on a 3½ in. Rod 17 held by Collars in the upper rear corner holes of the Motor sideplates. To obtain balance, it is important that an equal length of surplus Rod should project through the bosses of the Cranks at each side. A 3½ in. Strip 18 is lock-nutted between Bell Crank 13 and Crank 6, as shown, the end of Rod 17 serving as a stop for the Strip.

Finally, the head is very easily built from a Cylinder 19 to which two Fishplates 20 and two 2½ in. Stepped Curved Strips 21 are bolted, the former to represent the ears and the latter, the neck, being fixed tight to the upper front corners of the Motor sideplates.

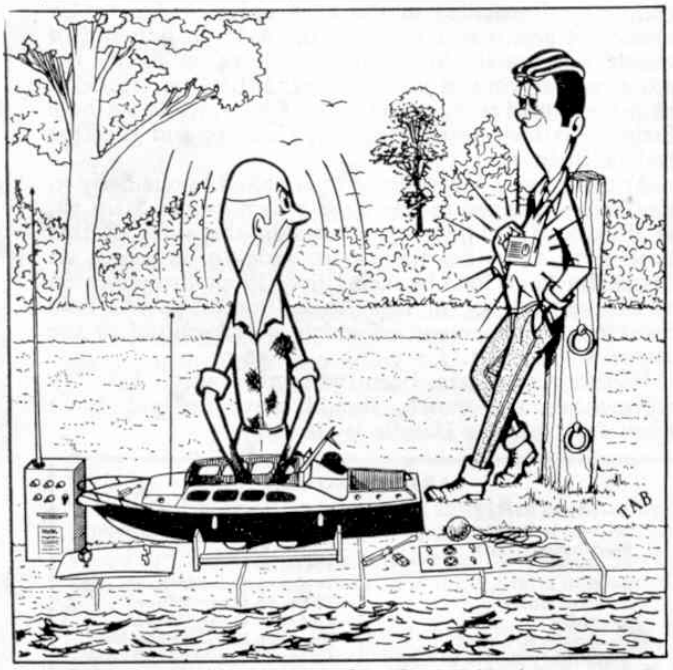
With the model completed it is "trimmed" by first ensuring that the forelegs are in alignment and that it stands firmly on its balancing feet in the "prance" position. Crank 6, the angle of the neck and the position of Worm 16 on its Rod are then adjusted until the model performs a "prance" successfully without falling over backwards. It is advisable to fit two Grub Screws in the boss of the Gear and each Bush Wheel used in the legs.

The movements of the horse are mainly dependent on the action of the tail counterbalance on Pinion 5. When the tail is horizontal, the Pinion climbs around the 57-teeth Gear simulating a prance, but when it is vertical, a step is made.

**PARTS REQUIRED—A WORKSHOP IN ONE**

| | | | |
|---|---|---|---|
| 2—2a | 3—16 | 103—37b | 1—111c |
| 2—3 | 2—16a | 36—38 | 1—115a |
| 7—5 | 1—17 | 1—45 | 1—125 |
| 1—6 | 4—20b | 3—53a | 1—130a |
| 2—8a | 1—21 | 9—59 | 2—133a |
| 5—8b | 1—22 | 1—70 | 1—166 |
| 4—9a | 3—23a | 4—72 | 2—186 |
| 4—9b | 1—26 | 2—89a | 2—186a |
| 2—9d | 1—26c | 1—94 | 5—188 |
| 2—10 | 1—27 | 1—96 | 1—190a |
| 2—12a | 1—27a | 1—96a | 1—191 |
| 1—15 | 1—27d | 2—103f | 2—195 |
| 1—15b | 107—37a | 1—109 | 2—235f |

1 E15R Motor




**"Good afternoon gentlemen, here is the shipping forecast for today Saturday the . . ."**

# Mechanical Engineer Training in the Fleet Air Arm

*Continued from page 425*

Mechanical Engineering. The fourth year is spent on Front Line service at Naval Air Stations for field experience and the fifth back again at H.M.S. Condor. The fifth year being devoted almost entirely to technical training, and at the end of this course, Aircraft Artificers —as they then are—have a thorough training behind them in both the practical and theoretical skills needed, which is recognised by the T.U.C. as being equivalent to civilian apprenticeships. During the fourth and fifth years, entrants can sit for their Higher National Certificate, studying in their own time, but most Artificers prefer to leave this until they have reached the rank of Petty Officer.

The training given to Artificer Apprentices is to say the least, very expensive and because of this the Navy have to ensure that they do get a minimum of return on their investment. The minimum signing-on period is 12 years, man's time, running from the age of 18. At the age of 30, which is the first available time for leaving the service, a further 10 years can be signed on for to give release at the age of 40—after 22 years service—which is then pensionable.

When one considers the rate of pay, at first it would seem a little low, but on subsequent inspection bearing in mind that one is paid 7 days a week and accommodation and food, etc., are provided, they are comparable to civilian pay. First year Artificer Apprentices earn 9/- a day, fourth year Artificer Apprentices earn 22/3d. a day, Leading Hands earn 37/9d. a day, whilst Petty Officers earn 48/9d. a day.

Whilst at H.M.S. Condor the Editor was very impressed by the accent placed on leadership training. In addition to the parade ground work and leadership lectures, extensive facilities are conveniently available in the local area for venture training which includes camping, canoeing, hill walking and sailing. During an air trip in the Sea Prince aircraft, piloted by Lt. Cdr. S. C. Farquhar, which is held on the station for practical aerodynamic instruction and for giving trainees air experience, we spotted several groups on venture training in the snow covered Scottish hills. This flight really was something to be remembered, as your Ed. sat in the Navigator's seat at the side of the pilot, flying low over the snow covered Scottish hills, in brilliant sunlight, with the red Naval tents standing out vividly against the white background.

A real surprise was in store on landing, as Lt. Cdr. Farquhar decided to test the station's alertness. He landed short on the main runway, and called the tower up to say the aircraft had crashed, to test reactions of the fire, ambulance and rescue crews. Within seconds your Ed. was being dragged from his seat by an asbestos-clad, hatchet wielding, rescue crew member. Quite an experience, and reassuring to know that these chaps are on the ball, all the time.

Modellers in Scotland will be pleased to note that *H.M.S. Condor* has an Open Day on July 20th, which will feature both flying and static aircraft displays.

We would like to thank Captain J. W. Mott M.V.O., Commanding Officer of *H.M.S. Condor* and his fellow officers for their kind hospitality and co-operation which enabled this feature to be produced.