

# Meccano Fire Engine with Real Pumps

## Escape Nearly Eight Feet Long

A FIRE engine offers excellent scope for the ingenuity of the model-builder, and many interesting models of this kind have been described in the model-building pages of the "M.M." and in the Meccano Manuals. The splendid miniature fire engine illustrated on this page undoubtedly is the best of its type yet built. It was constructed by Mr. R. Lawford, Watford, and is an almost perfect scale reproduction of the "Silver Jubilee," a Scammell fire engine that has been acquired by the Borough of Watford Fire Brigade.

The model is not merely a shell without motive power, suitable only for demonstration purposes, but is built up in a similar manner to its prototype. The chassis resembles in many respects the standard Meccano Chassis described in Instruction Leaflet No. 1a, and is fitted at the front and the rear with semi-elliptic springs built up from Strips of varying lengths. The steering mechanism is a slightly modified Ackermann gear, and the front axle is very strongly built from Angle Girders and Curved Strips.

The differential is of orthodox design, but the method of securing the brake discs is improved. A very interesting set of brakes is fitted. These are operated by compressed air and controlled by means of a hand lever and a foot pedal. The front wheels are provided with a similar braking arrangement. It will be noticed that twin tyres are used on the rear wheels.

From a constructional point of view, the outswep sides and top of the inner end of the bonnet constitute the most difficult part of the bodywork. In the model Strips of varying lengths have been used. These have been very carefully bent to the required shape and then bolted at their rear ends to a curved set of Strips representing the front frame of the dash board.

The top of the bonnet is built up from 4" Strips, each of which is formed from two 2½" Strips overlapping two holes, and its sides are provided with two Meccano Hinges. It forms a cover for the 250-volt electric motor by means of which the model is driven. The radiator is similar to that of the Motor Chassis described in Leaflet No. 1a, but a small sheet of perforated zinc has been used to represent the radiator tubes, and has been slightly corrugated in order to give a more realistic appearance. A fan, driven from the electric motor, rotates behind the zinc, the bearing for the fan shaft being secured to the inside of the bonnet.

The gear-box casing is integral with the electric motor supports, and the gears available are three forward and one reverse. The gear ratios of the three forward speeds are 3:1, 2:1 and 1:1, and that of the reverse gear is 3:1. A clutch also is incorporated, and this is similar to that fitted to most Meccano motor chassis models.

The bodywork of the model reproduces admirably the impression of bulk and power typical of all modern fire engines.

Strips are used to a large extent in its construction, and Angle Girders of various sizes are used to represent the recessed portion at the top. In actual practice this forms a seat for the firemen. The building of the pump housing at the rear of the model is carried out with 5½" × 3½" and 2½" × 2½" Flat Plates. Three hinged flaps are fitted to each side of the bodywork and behind these on the real engine are stowed lengths of hose, rope, respirators and other less bulky but equally necessary items of the fire-fighters' equipment.

Undoubtedly the most remarkable feature of this model is the real working pumping equipment incorporated in it. This pump is driven separately from the main electric motor, and the hoses, when coupled up, can be

made to deliver water exactly as in actual practice. A complete set of dummy controls are fitted to the pump housing, and a narrow platform is provided on which the pump operator stands.

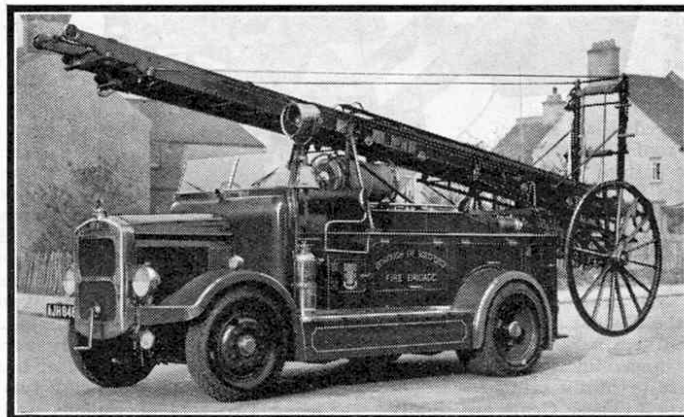
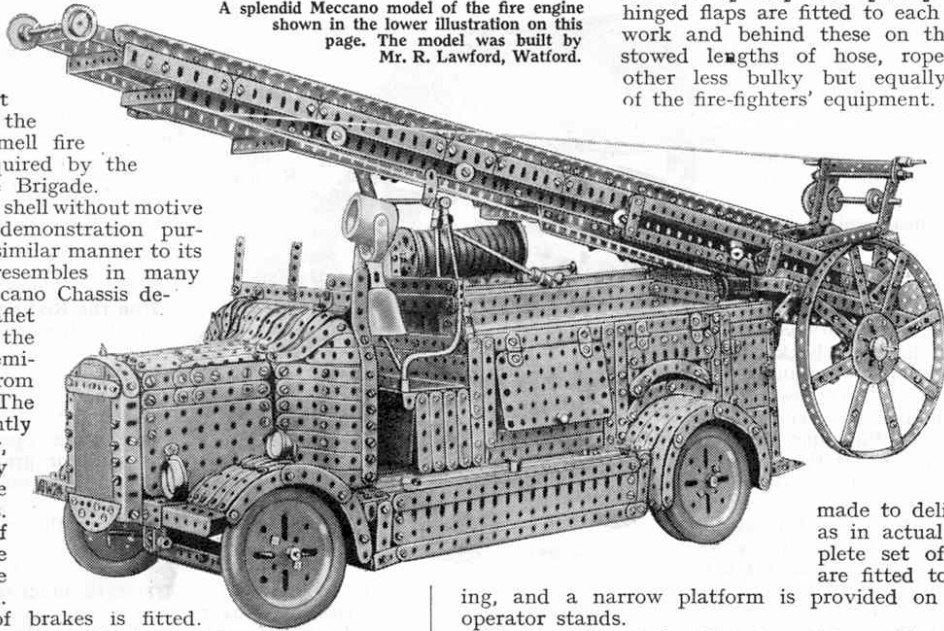
The lengths of flexible pipe of large diameter that connect the pumps and hydrant are carried on top of the body, and a hose reel of large capacity also is mounted, and carries narrow rubber tubing wound on it to represent the hose itself.

The fire escape is a perfect miniature reproduction of one of the most modern units of this type, and when fully extended it reaches to a height of nearly eight feet. It is constructed throughout of Angle Girders, and each sliding section is built up from two 2½" Angle Girders joined together

by Strips. The rungs consist of Rods of suitable size. The frame on which the complete escape is mounted is built up from four 7½" Angle Girders braced by large Corner Brackets and fitted with the axle on which the two large wheels are mounted. These wheels consist of a number of Strips bent into a circle and surrounded by a thin strip of tin-plate. The method of mounting the escape for transport purposes is shown in our illustration of the model.

The Scammell fire engine that is the subject of Mr. Lawford's model is shown in the lower illustration on this page. The powerful turbine pump is mounted at the rear, and its output ranges from 200 gall. of water per min. at a maximum pressure of 200 lb. per sq. in., to 830 gall. per min. at 50 lb. per sq. in. The bodywork is of wood, and there are seats along each side for the firemen. Suction hose is carried on the top centre of the body and lockers provide storage space for a further 2,000 ft. of hose and for other necessary equipment. At the rear is a control panel arranged so that if necessary one man can take complete control of the vehicle during pumping operations.

A splendid Meccano model of the fire engine shown in the lower illustration on this page. The model was built by Mr. R. Lawford, Watford.



The Scammell fire engine of the Borough of Watford Fire Brigade. The model shown above is a faithful reproduction of this engine.