

Fig. 1 Offside 3/4 view of the fine Pump-Escape model by Adrian Ashford. Note use of Contact Studs for side lights and radiator filler cap.

A.E.C. MERRYWEATHER PUMP-ESCAPE

THIS is a model of the Merryweather dual-purpose pumping appliances supplied to the London Fire Brigade in the early 1950's. They were based on the A.E.C. Regent Mark III chassis, powered by an A.E.C. A218 9.6 litre 6-cylinder diesel engine, developing 125 b.h.p. at 1800 r.p.m. Transmission was via a clutch and 4-speed and reverse crash gear-box. A power take-off drove a centrifugal pump capable of delivering up to 1000 gallons of water per minute.

A dual-purpose pumping appliance is one which is self-propelled and carries a built-in pump, water supply and hose-reel equipment. It can carry a 30 ft. or 35 ft. extension ladder as the main ladder, in which case it is called a pump, or it can carry a 50 ft. wheeled escape as the main ladder, as is the case with this model, in which case it is called a pump-escape.

The Meccano model is constructed to a scale of 1 1/4 inches to 1 foot, this being dictated by the diameter of the road wheels, and the Circular Strips used for the carriage wheels on the wheeled escape. Using photographs obtained from London Fire Brigade, every effort has been made to reproduce the features of the real appliance as accurately as possible.

All locker and cab doors open, the latter being fitted with vertical sliding windows. The cab incorporates seats for the driver and officer in front, and four crew-members behind. There is an open locker compartment above and behind the crew's seat at the back of the cab, and a large locker behind the cab goes right through the model from one side to the other. Various brass parts and 3/4" Washers are used to represent the pump inlets, deliveries and controls, these being duplicated on each side. The new Road Wheel Centres are used as headlamps, both of these fitting precisely into the circle formed by bolting four 1" Corner Brackets together to form a square. The Centres are

attached to the front of the model via Fishplates bolted to the holes normally used to hold the complete wheel assembly together. 12 V. 'Grain of Wheat' bulbs, (obtainable from any good model railway shop), fit in the centre holes of the Wheel Centres, making working headlamps. A 'lens' is provided in each case by

suitably-sized discs of celluloid. Working rear lights are also fitted, using red 'Grain of Wheat' bulbs.

The flashing blue lights are readily-available 6 V. 0.25 A. bulbs painted blue with poster paint prior to varnishing, which prevents the paint rubbing off and also gives the bulbs a

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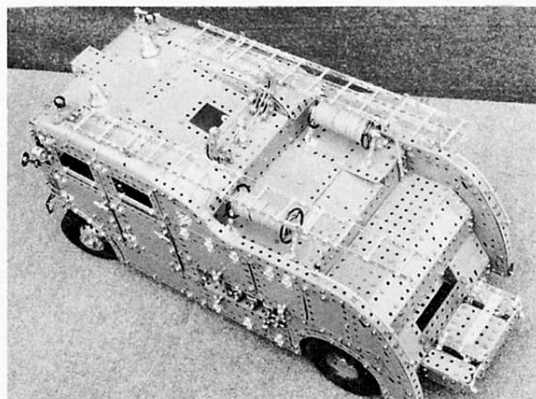


Fig 2. View looking down on model with escape removed, showing roof detail. Head rest and head securing gear are situated immediately behind small window in cab roof.

shiny, transparent appearance. The bulbs are screwed into the now-obsolete part 610 Bulb Holders, bolted to the cab roof. These, together with four Plugs, part 612, have been painted red for the sake of colour uniformity with the rest of the model. A simple electronic flasher unit flashes the lights to produce a realistic effect. The dummy bells on the cab roof are silvered-plastic Christmas tree decorations which were found to be just the correct size. The small spot lamp immediately in front of the cab door is formed from a Chimney Adaptor, on a swivelling mounting made from an Angle Bracket lock-nutted to both it and the window frame. On the prototype this was used for looking for house numbers in the dark. The small window just above the front nearside wheel arch was to assist the driver to see the kerb. Both these features are carried on present-day appliances though the spot lamp is hand-held inside the cab and shone through the windscreen.

The distinctive slight upward slope to the top and bottom of the windscreen is obtained by placing four $2\frac{1}{2}$ " square Flexible Plates overlapped with their slotted holes vertical to form a compound $8\frac{1}{2}$ " x $2\frac{1}{2}$ " flexible plate across the front of the model. The centre pair of plates, the $4\frac{1}{2}$ " Strips forming the bottom of the windscreen and the $3\frac{1}{2}$ " Strip centre division are pulled up in the centre of the top row of slotted holes thus producing the desired effect.

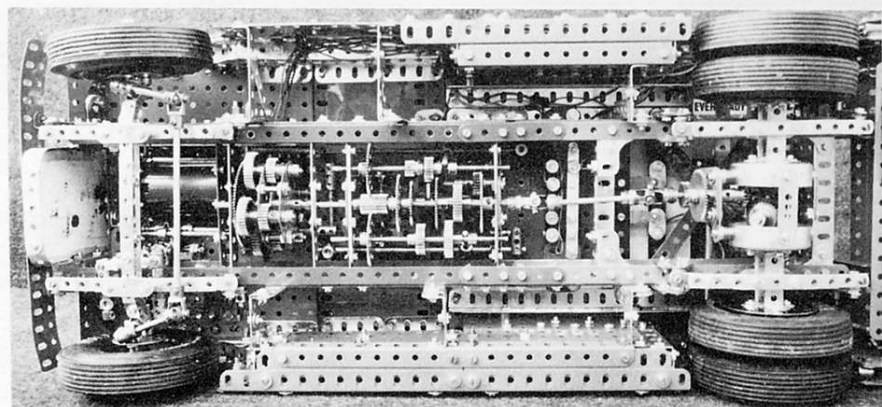
The chassis is fitted with working steering and leaf-spring suspension. Narrow Strips are employed in the construction of the springs, as even on a model of this size they are more in scale than standard Strips. Due to the sheer weight of the model, a very powerful non-Meccano 12 V. DC motor has been incorporated which drives the model at a good speed through a centrifugal clutch and a four speed and reverse gearbox of my own design, and an all-bevel differential on the rear axle. The gear lever works in an H-gate in the cab floor, the section around the gear lever being bolted to the chassis, the remainder of the cab floor forming an integral part of the cab. The fifth position, (reverse), is obtained by lifting the gear lever and pulling it back over the second gear position. The gear lever has to be put in a neutral position before this can be done, and matters are so arranged that reverse and a forward gear cannot be selected simultaneously.

Large WRI tyres on Boiler Ends are used for the road wheels. 2" diameter Sprocket Wheels, which just fit inside a Boiler End with a bit of persuasion, are used for the front wheel bearings because of their large bosses.

The model draws its power from thirteen HP 11 size rechargeable nickel-cadmium batteries, nine fitted in a Meccano Battery Box located inside the body, and the other four under the full-width rear seat. The batteries deliver ample power for the lights and motor and an advantage is that the model is able to run free of a trailing lead.

The wheeled escape is a completely separate model in itself and was in fact built before the appliance on which it is carried. As with the real thing, it can be slipped and pitched easily and quickly, and when fully extended attains a height of approx. 62½ inches, a scale height of 50 feet. The ladder is in three sections, a main ladder and two extensions. The method used to make the sections slide inside one another is a complete break-away from the method normally used by Meccano modellers. The ladders slide between the groove of a $\frac{1}{2}$ " Pulley and the short lug of a $1\frac{1}{2}$ " x $\frac{1}{2}$ " Angle Bracket. As can be seen from the accompanying illustrations, the sections go completely down inside one another when the ladder is fully retracted (or 'housed' to use the correct term).

The Strings (sides) of each ladder section are made from a double thickness of $12\frac{1}{2}$ " Perforated Strips butt-joined to form 25" compound Strips. Screwed Rods are employed for the Rounds (rungs) of each section. The complete ladder is mounted on a sliding carriage which enables the angle of elevation to be adjusted as required. The winch handles for operating the carriage and extending the ladders are mounted on the levers, the framework composed of Narrow Strips and Screwed Rods



Underside of model showing chassis detail. Note built-up front axle of correct shape and section.

attached to the Heel, (bottom) of the main ladder at a very slight acute angle. The large 16-spoke carriage wheels are built-up using Circular Strips for the rims, 8-hole Bush Wheels and Wheel-Discs for the hubs, and $2\frac{1}{2}$ " Axle Rods with Rod & Strip Connectors for the spokes.

The escape is mounted on the appliance by means of a special mounting at the rear. To reproduce this correctly I had to cut two special quadrants from sheet metal which are bolted vertically to the underside of the escape carriage. The head of the ladder rests on the head-rest on the rear of the cab roof and is held in place by a pair of movable jaws called the Head Securing Gear, (see fig. 2) which is operated by a lever mounted inside the cab roof above the open locker compartment already mentioned.

Readers may be interested to know that wheeled escapes are still extensively used by the London Fire Brigade. At the time of writing there was one pump-escape at each of the Brigade's 114 stations; though gradual replacements of wheeled escapes with 45 ft. extension ladders commenced recently.

The short ladder carried on ganties on the nearside of the model represents the first floor ladder and the pair of ladders similarly supported on the off-side represent the two hook ladders. The sides of these ladders are made up from Narrow Strips.

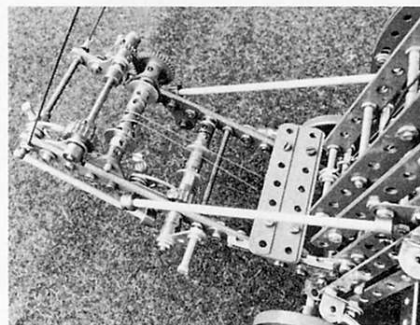
Where only two parts are joined together, extensive use has been made of a method of fixing using a long Grub Screw with a Nut on each end. This arrangement looks very neat as there is only the thickness of the Nut protruding on each side.

Sharp-eyed readers will have noticed a few red Strips and 1" Corner Brackets in the model. Wherever I felt that green parts looked a little obtrusive in a large area of red, as for example around the headlamps, I took the liberty of spraying some zinc-plated parts a matching red, and used these instead of the green parts. No special preparation was used prior to spraying, so the parts can be easily restored to their original finish.

A few non-Meccano and non-standard parts have been used in the model and these include odds and ends for the radiator, the WRI tyres, the previously-mentioned motor, steel fishing twine for the carriage and extension cables on the escape, and two special quadrants with three notches, cut from sheet duralium to correctly reproduce the type of escape mounting at the rear of the appliance. Long Screwed Rods have been cut in half, into non-standard lengths, to make rungs for the first floor ladder and the middle extension of the escape.

For the statistically-minded the model is approx. $9\frac{1}{2}$ " wide, 12" high, 32" long including the escape, and weighs 37lb complete with all ladders and batteries.

In conclusion I would like to express my thanks to several members of the London Fire Brigade, in particular Assistant Divisional Officer George Lulham, for information which was not discernible from the prototype photographs in my possession, and which has enabled me to incorporate authentic extra detail into the model. Additionally I would like to thank Peter Osbourne, Station Officer of Green Watch at Plumstead Fire Station, for taking the photographs used to illustrate this article.



Close-up view of the levers, with winding drums for the extension and carriage cables. A 'Crane' winding drum is employed for the carriage cable, and the extension cable shaft is driven by means of standard Meccano pinions cut down to $\frac{1}{8}$ " face for improved realism.

View of escape in its almost fully extended position.

