

Aeroplane Construction in Meccano

A Fine Model of the Bristol "Blenheim" Bomber

MOST Meccano model-builders are interested in Aircraft, and the rapid developments that are taking place in the design of machines and their equipment provide even the most enthusiastic model-builders with plenty of material to keep them fully occupied.

Many good models of this kind have been illustrated in the "M.M." from time to time, and a further example is the fine reproduction of a Bristol "Blenheim" Bomber illustrated on this page. The model was constructed in the Meccano model-building department and possesses most of the outstanding external features

of the actual machine, which is a twin-engined medium bomber and one of the fastest of its type in the world. The model has a wing-span of 5 ft. 8 in. and an overall length of just over 4 ft., and a point of particular interest is that it is built almost entirely from Strip Plates and Flexible Plates.

The wings are modelled to the same shape as those of the actual machine and consist mainly of Strip Plates, the leading edges being formed by Flexible Plates. In order to give the wings and tail unit a clean outline, the edges of the Plates are clamped between Strips. Curved Strips of suitable radius are used to form the wing tips and fin. The wings are quite rigid, a feature that was obtained by the use of two built-up spars in each of them. The spars pass right through the fuselage so that actually the wings form one long cantilever structure.

There is no difficulty in building up wings of this kind provided that the job is tackled in the proper manner. In building the model illustrated the leading edge of each wing was first assembled on the front spar, which consists of $24\frac{1}{2}$ " Angle Girders and tapers from $2\frac{1}{2}$ " to $\frac{1}{2}$ " in depth. The rear spar comprises two $18\frac{1}{2}$ " Angle Girders, which are spaced 2 in. apart at the fuselage end and bolted together at the wing tip. The bolt holding the Girders together at the tip was not inserted until the plates forming the upper and lower wing surfaces had been bolted to the spars. It was then an easy matter to bring the plates together at the trailing edge and to clamp them between Strips.

The fuselage also is strongly constructed and consists essentially of a framework of Angle Girders, to which Strip and Flexible Plates are bolted. The fin is an essential part of the fuselage. As will be seen in the upper illustration, the Plates of which it is constructed are bolted to

the fuselage and are tapered into the framework of Strips, that form its outline.

The engines are close reproductions of the Bristol "Mercury" engines fitted to the actual machine and are interesting from a constructional point of view as they include several novel features in their make-up. The crankcase of each

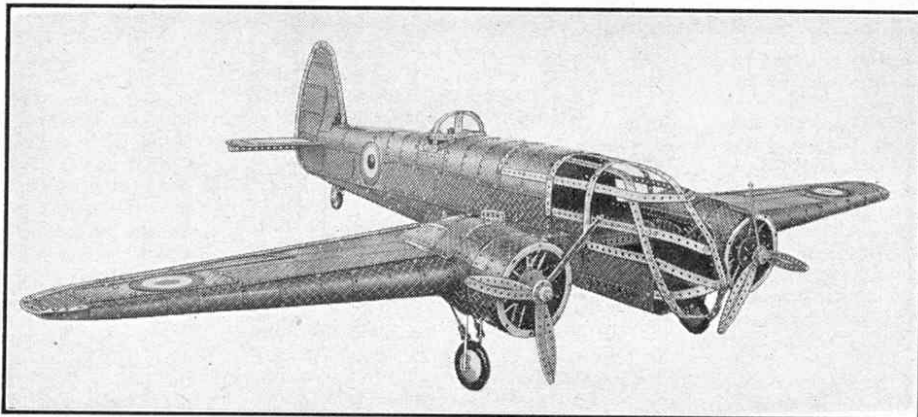
engine is formed by two Wheel Flanges and a Boiler End, the Wheel Flanges being held together by two 1" Screwed Rods so that their rims grip nine 2" Screwed Rods. The latter are spaced evenly around the rims of the Wheel Flanges and each is fitted with two nuts and a washer. When the nuts are tightened up they grip the rims of the Wheel Flanges. Each Screwed Rod carries $13\frac{3}{4}$ " Discs spaced apart by 12 Washers. The Discs form excellent representations of the cooling fins of the actual engine. Each of the cylinder heads is formed by a Double Bracket and an Angle Bracket.

The push rods that actuate the inlet and exhaust valves of each cylinder of the actual engine are enclosed in a single sleeve, and in the model this is represented by a $1\frac{1}{2}$ " Rod gripped in a Collar. The reduction gear housing is a Chimney Adaptor held on the Rod that forms the airscrew shaft.

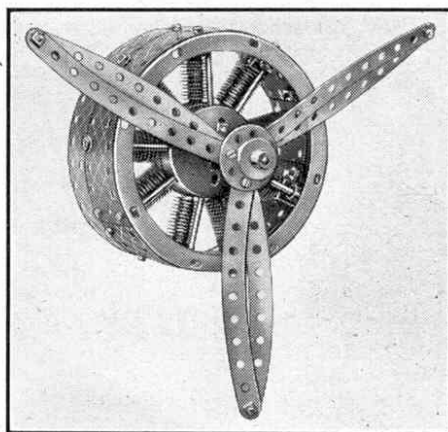
The complete engine fits snugly into a cowl formed by bolting $5\frac{1}{2}$ " \times $1\frac{1}{2}$ " and $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates around a Circular Girder. At the rear of the cowl is a Hub Disc, which is attached to a 3" Pulley by Double Angle Strips, the Pulley being bolted to

the front spar of the wing.

Another point of interest is the formation of the engine nacelles. These are built around Circular Girders bolted to the front spars of the wings. The front of the nacelle is made entirely from $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates bolted side by side around the Circular Girder, the corners of the Plates being bolted together at their free ends. The rear of the nacelle is streamlined into the wing.



This fine model of the Bristol "Blenheim" Bomber has a wing span of nearly 6 ft., and was constructed in the Meccano model-building department at Liverpool.



One of the two engines fitted to the model Bristol "Blenheim" Bomber.