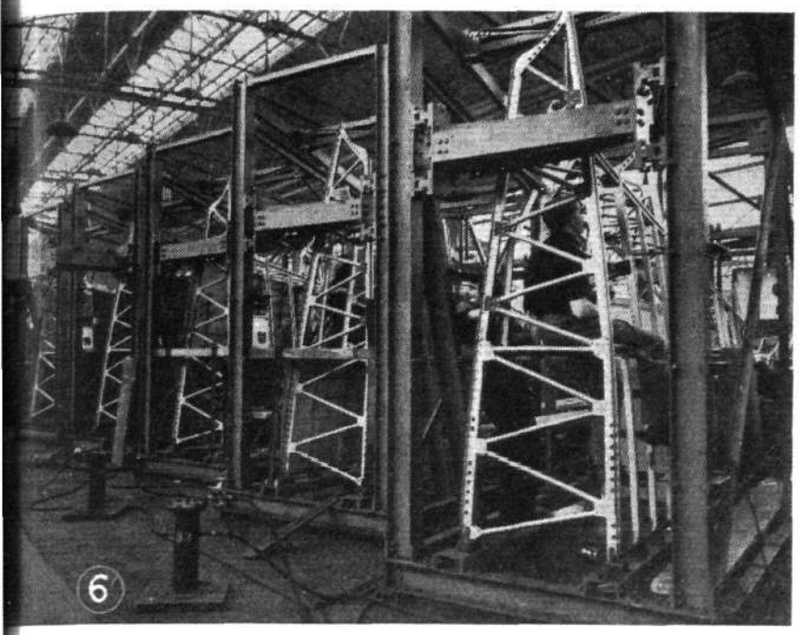
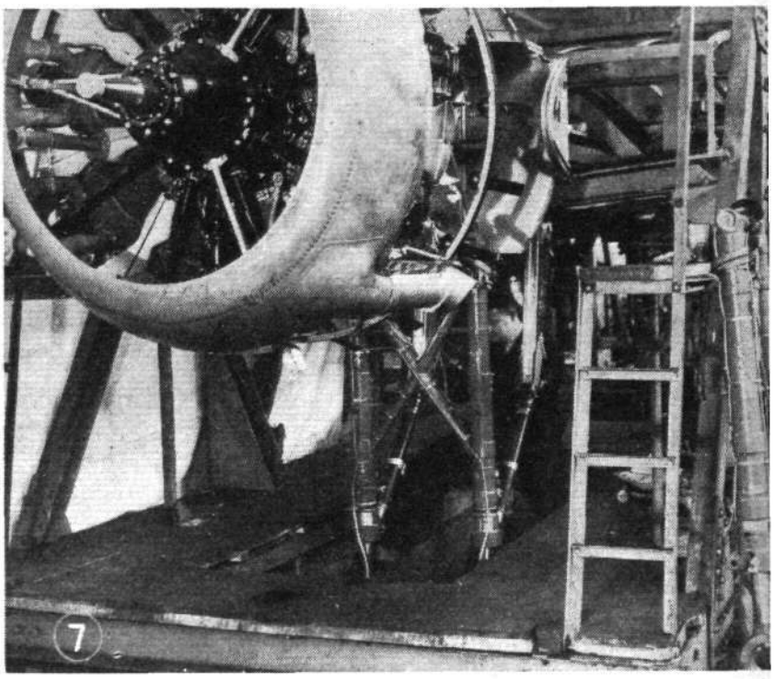




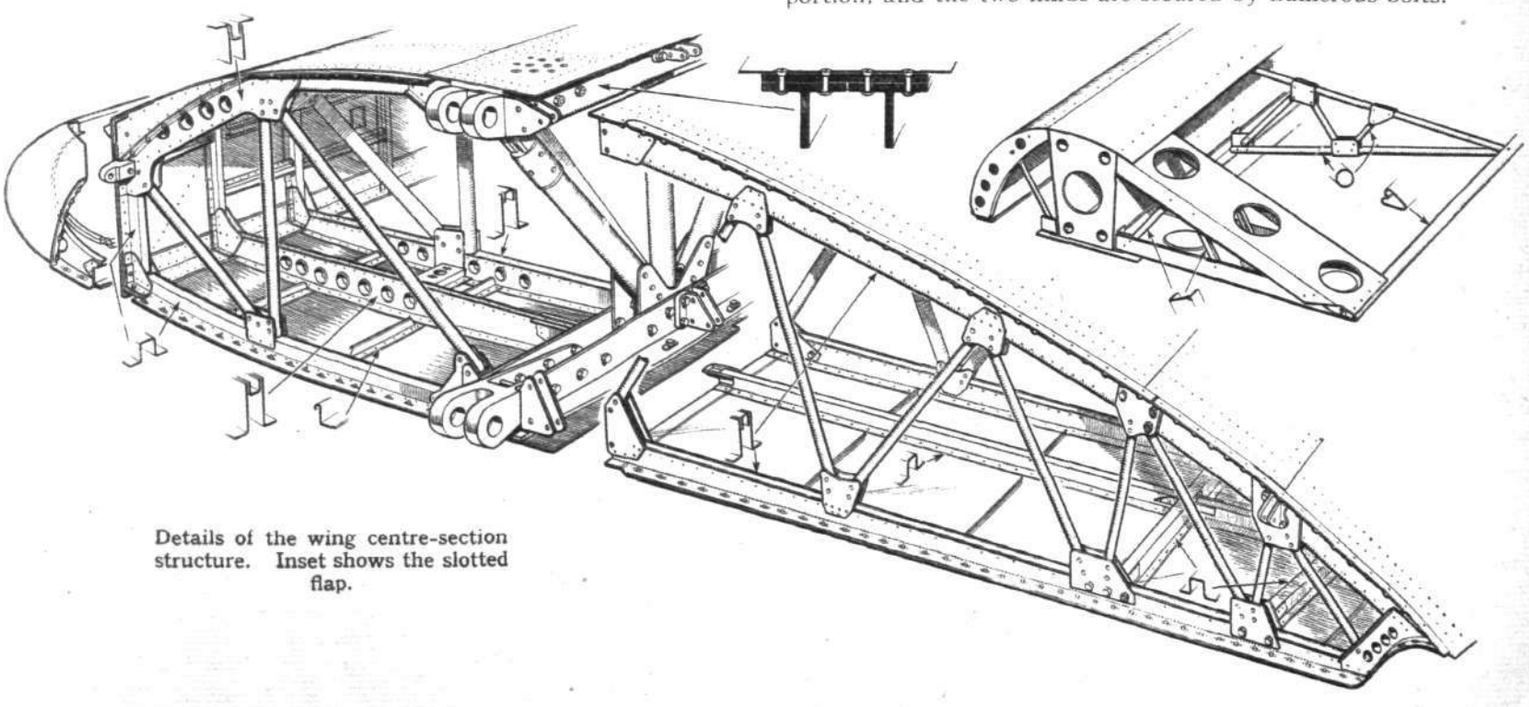
Fairly elaborate jigs built of structure steel are used for assembling the port and starboard portions of the fuselage. But only a small number of them is required, as the operation of joining the two halves together is not a lengthy one. In these jigs the cross-members are put in, and the butt joints of frames and formers are secured by fish-plates. The top of the fuselage is still open, and is covered, also in this jig, by a "lid" formed by the cambered top decking. In these jigs also the bomb "bay" is built on to the bottom of the fuselage, and the hinged doors attached, as well as the necessary wiring for the bomb-operating gear.

The Tail-carrying Boom

Elsewhere in the works the two halves of the fuselage rear portion have been manufactured. This portion of the fuselage is a very simple tapering tube with flat sides and rounded corners. It is "split" vertically like the middle portion of the fuselage, and has formers of simple Z-section and rather elaborate stringers, which can, perhaps, be described as being built up of two "Fig. 2" sections, of which the curl of one goes over the outside of the curl of the other (see sketch). The stringers, by the way, are joggled into the frames in order to provide smooth lines for the application of the skin.

The port and starboard halves of the tail portion of the fuselage have their frameworks assembled and skins attached on horizontal jigs. They are then transferred to an assembly jig, in which they are rigidly held by their ends while the joint between the two halves is being made. For the frames this joint takes the form of fish-plates, but for the skin a somewhat unusual system has been adopted. The "plank" nearest the joint is left slightly wide, and an L-section strip is riveted on the outside. The free edge of the skin plank is then turned up to lie along the vertical limb of the L-section. When the two halves are brought together in the jig, a strip of U-section is placed over the free edges and the whole riveted together. The process is extremely simple from the manufacturing point of view, and the only projections are the two U-section strips which run fore and aft and so probably add nothing appreciable to the air drag.

On their way down the shop the different fuselage portions gradually assume a more and more finished form until they finally meet at the far end, where the nose, middle and tail portions are brought together and joined. The joint between tail and middle portions is particularly simple. This is due to the fact that it occurs so far aft that there is no equipment to interfere, and a very straightforward joint can be made. The front end of the fuselage tail portion and the rear end of the middle portion have end frames of extruded L-section. One limb of each L is riveted to the fuselage skin. The other lies flat against the corresponding limb of the frame of the other fuselage portion, and the two limbs are secured by numerous bolts.



Details of the wing centre-section structure. Inset shows the slotted flap.