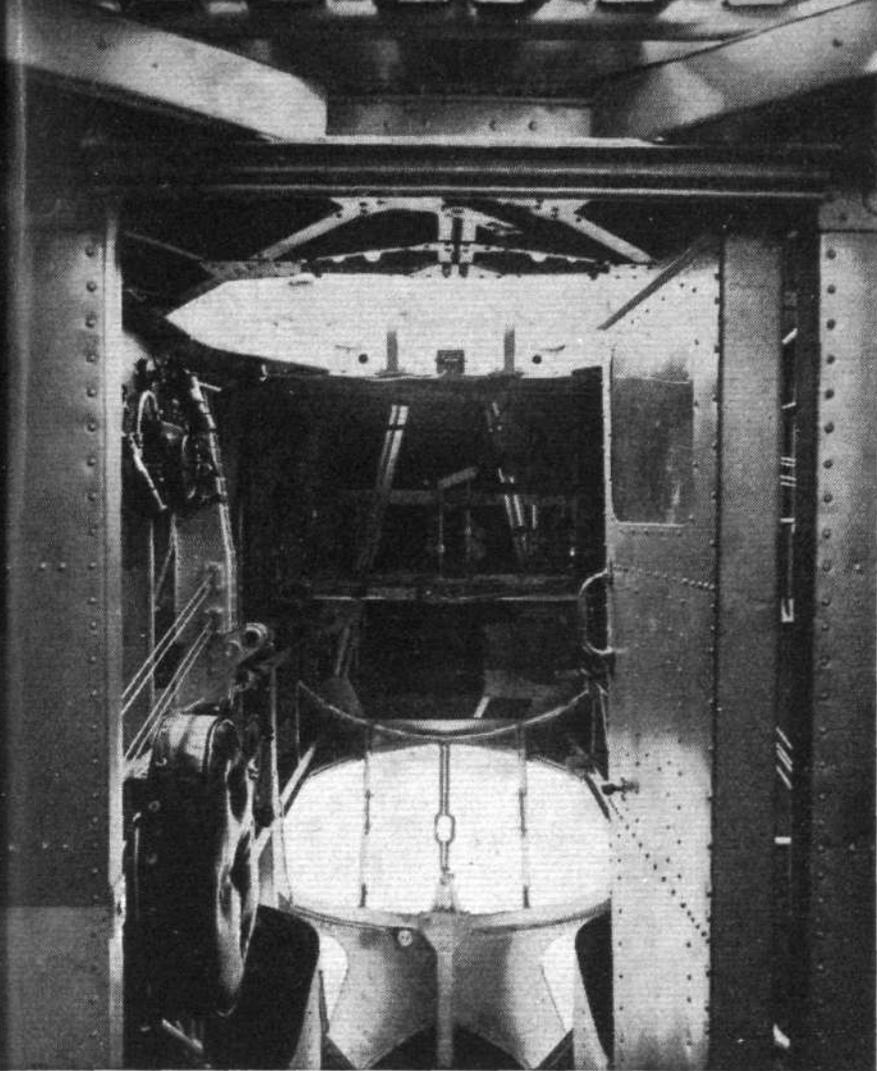


up such leads, wires or controls as pass from one unit to the other.

In discussing the Handley Page Hampden type of construction, we have frequently met with the objection that, although the "split" type of construction may be very fine from a production point of view, it must of necessity entail extra structure weight. An examination of the Handley Page Hampden construction does not show any signs of such added weight, and actual figures disclose the interesting fact that the structural weight of the machine—that is to say, the airframe without engines—is only 32 per cent. of the normal gross weight. This figure actually includes a certain amount of structure which carries fixed equipment but which is not actually a part of the aircraft structure. There are probably few comparable machines which show such a good figure of airframe weight.

In its general structural design the Handley Page Hampden is of the usual stressed-skin type. That is to say, the external sheet metal covering carries part of the stresses and is reinforced by local stringers, frames, etc. Considerable use is made throughout the structure of extruded sections. In fact, these are



There are two rear gun positions in the Hampden, an upper and a lower. How unhindered are the fields of view and fire obtained from them is shown in the pictures on the right. Major Cordes gives a good illustration of the Hampden as a fighter bomber.

Briefly explained, it may be stated that the "theme" of the Hampden production is to adopt a "split" form of construction. This can best be illustrated by taking the fuselage as an example. Instead of building this in one piece, or in two at the most, the fuselage of the Hampden is divided first into three main parts, the front portion, the centre portion and the tail portion. The last two of these are again divided into two halves, with a vertical "split" down the centre.

Three advantages result from this scheme. Actual assembly of the structure is facilitated, because by splitting the fuselage into two halves, a port side and a starboard side, riveting becomes an easy operation, as there are no inaccessible corners where holding up is difficult. A second advantage is that when equipment is being installed and electrical or hydraulic leads have to be run along, the men can stand up to the work in convenient positions, and there is never at any time any need for crawling about on hands and knees or lying down in order to get at some out-of-the-way piece of equipment or inaccessible pipe union. The third advantage is that complete interchangeability is ensured.

A somewhat similar scheme is followed in the construction of the wings. This consists of three main units: the centre section, the port outer wing and the starboard outer wing; but each of these is again sub-divided into smaller units, so that during assembly almost any desired number of men can be put to work by duplicating the number of units. Before the smaller units are assembled into larger units, some of the equipment and installation which goes in the wing is secured in place, so that when, finally, the larger wing units go together it is only a question of connecting

