CHAPTER

# 2

# MAIN PLANE

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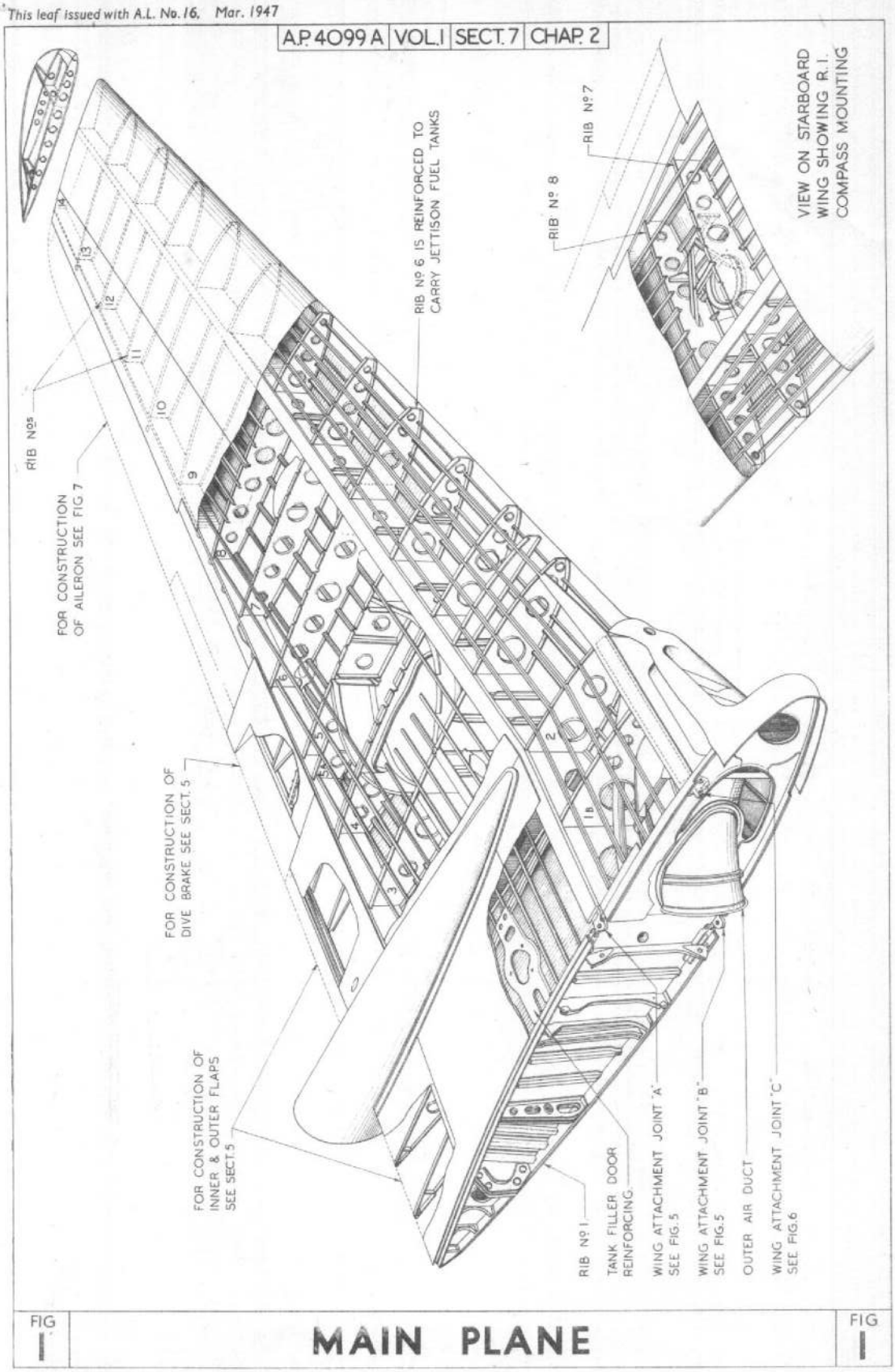



FIG 1

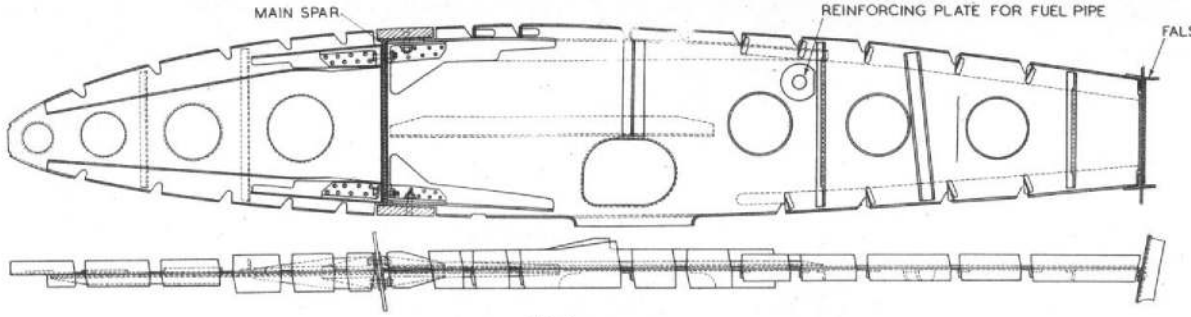
# MAIN PLANE

FIG 1

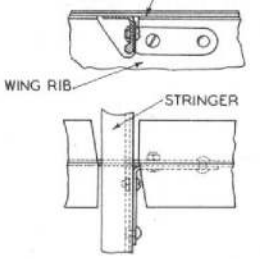
G112 M30820 4/47 770 C.B.& S. LTD. GP56.

FIG. 2

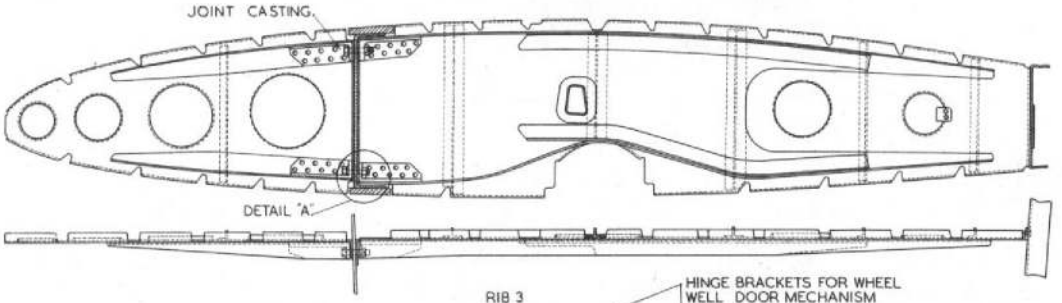
# DETAILS OF HEAVY RIBS



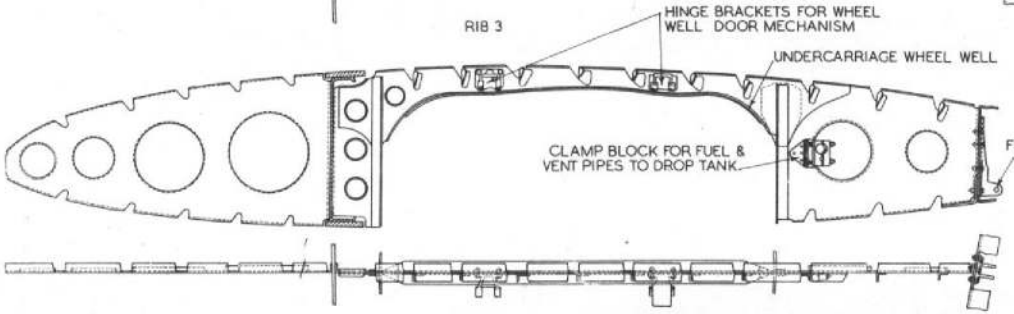

RIB 2



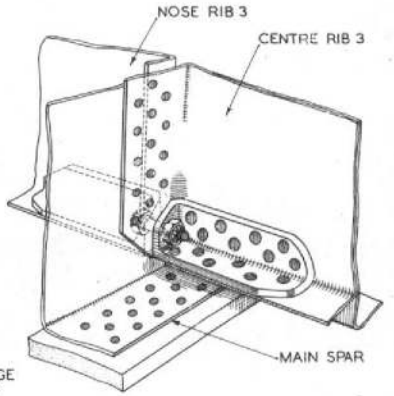

TYPICAL STRINGER ATTACHMENT




RIB 3




RIB 4




DETAIL "A"
BOLTING OF NOSE RIB TO CENTRE RIB 3 THROUGH MAIN SPAR



FIG. 2

CHAPTER 2

# MAIN PLANE

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## LIST OF ILLUSTRATIONS



## General

1. The main plane is a cantilever structure tapering in plan and elevation. It comprises a channel-section main spar running the whole length of the wing, with a false spar at the trailing edge to which the dive brake, flaps and aileron hinges are attached. The structure forward of the main spar is constructed as a unit and the whole assembly is riveted to the spar. The skins are aluminium alloy sheets riveted to spars, ribs and stringers ; the main stringers are located parallel to the front spar (*see fig.* 1, 2, 3, and 4).

2. Provision is made to house a fuel tank at the inboard end of each wing ; access is obtained through a detachable panel in the underside of the wing. An undercarriage diaphragm which is fabricated as a separate structure is assembled to the wing outboard of the fuel tank bay. An air intake duct is located in each wing leading edge at the root end, and runs diagonally through the wing protruding at the root end rib. Also incorporated in each wing and located in a similar position are air intake tubes which supply air for generator and compressor cooling. Navigation lights are housed in the all-metal wing tips, which are attached to the wing end rib by means of countersunk screws into anchor nuts. A retractable landing light and R.I. compass are mounted in the port and starboard wings respectively.

## Attachment points

3. There are three wing-to-fuselage attachment points, one at the top and bottom of the front spar, and the other, which is a drag member, is bolted to a channel section member forward of the front spar (*see fig.* 5 *and* 6).

4. The wing-to-boom attachment point is provided by an L-section casting riveted to the end of a stub boom which is built into the wing.

## Spars

5. The main spar is a channel-section light-alloy pressing comprised of three lengths which are butt-jointed, strapped and riveted together at the web. Top and bottom light-alloy booms diminishing in depth toward the wing tip are riveted to the spar flange. At the spar root end the top and bottom booms are " stepped " to receive the shanks of the wing attachment fittings which are shaped correspondingly. The spars are further strengthened by numerous extrusions riveted to the web. The false spar at the rear is built in a similar manner indicated above, with the exception that the top and bottom booms are omitted.

## Drag member

6. The drag member is a light-alloy fitting, comprising a fork end for attachment to bulkhead 3, and a square-section shank which is received by a channel-section member forward of the front spar.

## Ribs

7. The ribs are light-alloy pressings with flanged edges and lightening holes. Rib 1B is shaped and strengthened for accommodation of the fuel tank, while rib 2, which bears the stub boom, is also reinforced.

## Ailerons

8. The ailerons are constructed of light alloy with a single spar to which the main ribs and nose ribs are attached (*see fig.* 7). The component is covered with alclad sheet. There are three hinge attachments to the main plane rear false spar.

## Flaps

9. The inner and outer flaps interconnected by a torque tube are all-metal in construction with reinforced ribs to which the hinge attachment fittings are located.

## Dive brakes

10. The dive brakes are of all-metal construction with a single light-alloy spar and pressed ribs. The two hinges are located on reinforced ribs, while the jack ram is attached to a casting bolted to the skin.

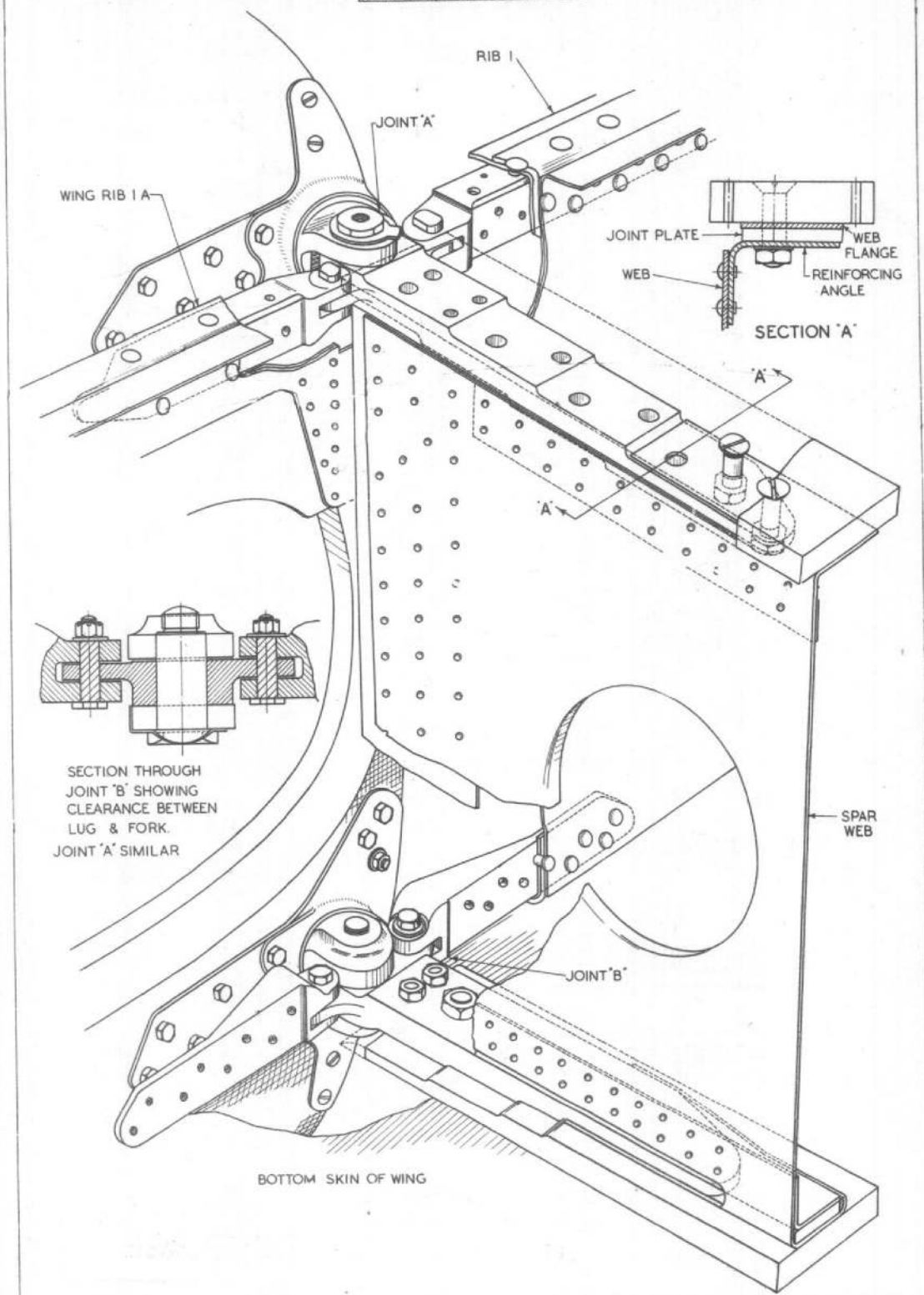


FIG. 5 **ATTACHMENT JOINTS WING TO FUSELAGE** FIG. 5

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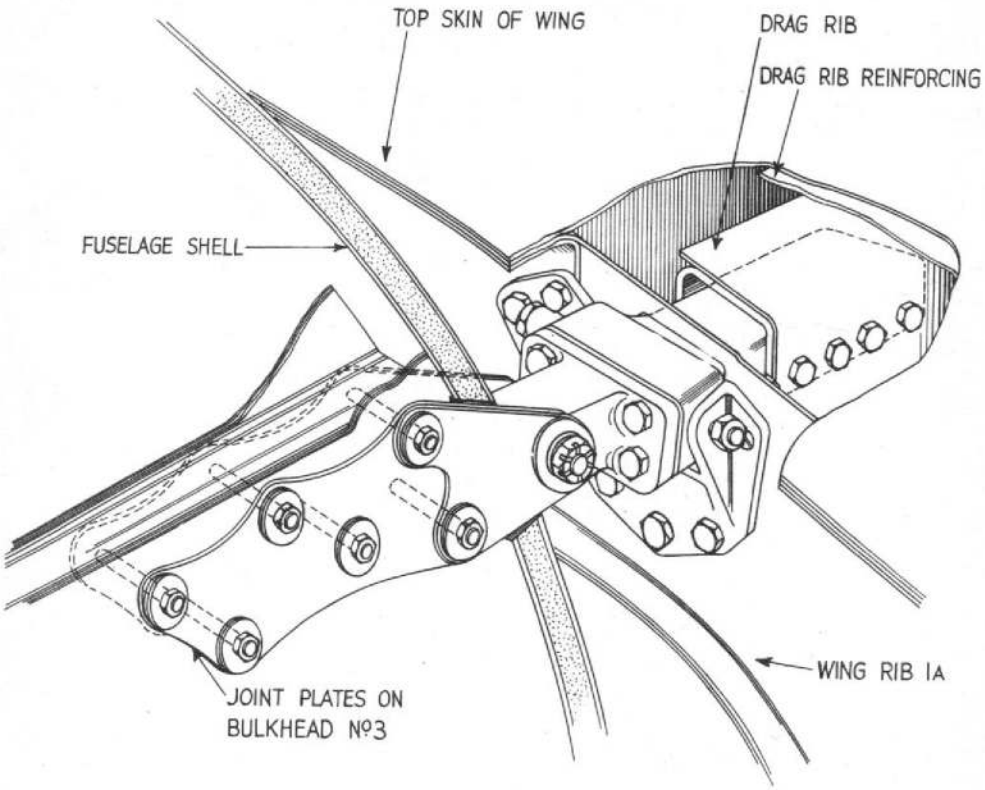
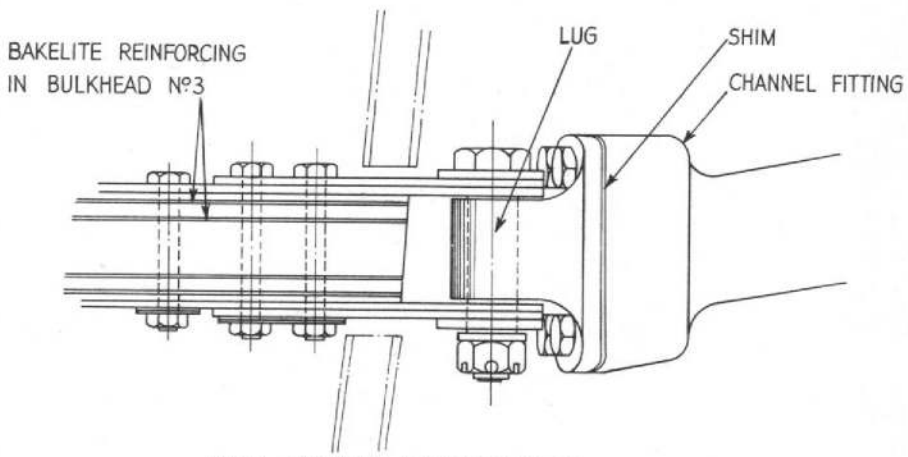



VIEW ON PORT SIDE
STARBOARD JOINT SIMILAR




PLAN SHOWING ATTACHMENT OF
LUG TO JOINT PLATES

FIG. 6 **ATTACHMENT WING TO FUSELAGE** FIG. 6