Chapter 4 BOMBING EQUIPMENT

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DESCRIPTION

Introduction

1. Provision is made to carry a 1,000 lb. bomb with a short tail unit at each of the underwing pylons. The bombs are electrically fuzed and released and may be jettisoned by a mechanical control. The positions of the control switches and units are described in Sect. 1, Chap. 1, and details of the electrical installation are given in Sect. 5, Chap. 1.

Bomb pylons (*fig. 1*)

2. Each pylon is a streamlined-section casting, which is bolted on the undersurface of the wing to a mounting casting built integrally with the main plane structure at rib. No. 6. Within the pylon are the release unit connections and the operating mechanism for the mechanical jettison control. At the base, the inner surface and sole plate are shaped to conform with the contour of the bomb and its attachment fitting, and provide stability for the bomb when mounted. A cover plate is bolted to the sole plate when a bomb is not carried, to protect the pylon mechanism.

Bomb mounting

3. A screw jack (*fig.* 1), which is suspended from a split bearing at the top of the mounting casting, is contained within each pylon for hoisting and mounting the bomb. The jack is operated by a bomb hoist spanner (*Sect.* 2, *Chap.* 4), from the upper surface of the main plane. Attachment for the bomb is provided by a Vickers E.M. No. 1, Mk. 1 release unit, which is secured by a quick release pin to the screw jack fork-end fitting. A full description of the release unit together with servicing instructions, is given in A.P.1664A, Vol. 1, Sect. 4.

Fuzing

4. The nose and tail fuzing units, No. 1, Mk. 1, are both mounted on the outboard side of rib No. 6. A full description and servicing instructions for the units, is given in A.P.1095B or A.P.4343X, Vol. 1.

SERVICING

Mechanical jettison control

5. The run of the control cables for the mechanical jettison control is shown on fig. 1. Where the only dismantling operation of the control system, has been the disconnection of the Teleflex cables from the cockpit transmitting units, e.g., during main plane removal and replacement, there should be no need to disturb that part of the system within the main planes. If, however, the main plane system has been disturbed in any way, the complete control system must be rigged as follows :—

(1) Assemble the cables as shown on fig. 1 with the cockpit jettison lever in the ' secure ' position.

(2) At rib No. 6 on each main plane, dismantle spring unit ' B ' so that cable ' B ' is completely slack, then disconnect cable ' A ' at the fork-end fitting to the bell-crank lever. With the spring link disconnected at the operating lever, adjust spring unit ' A ' so that the spring is 2·1 in. in length.

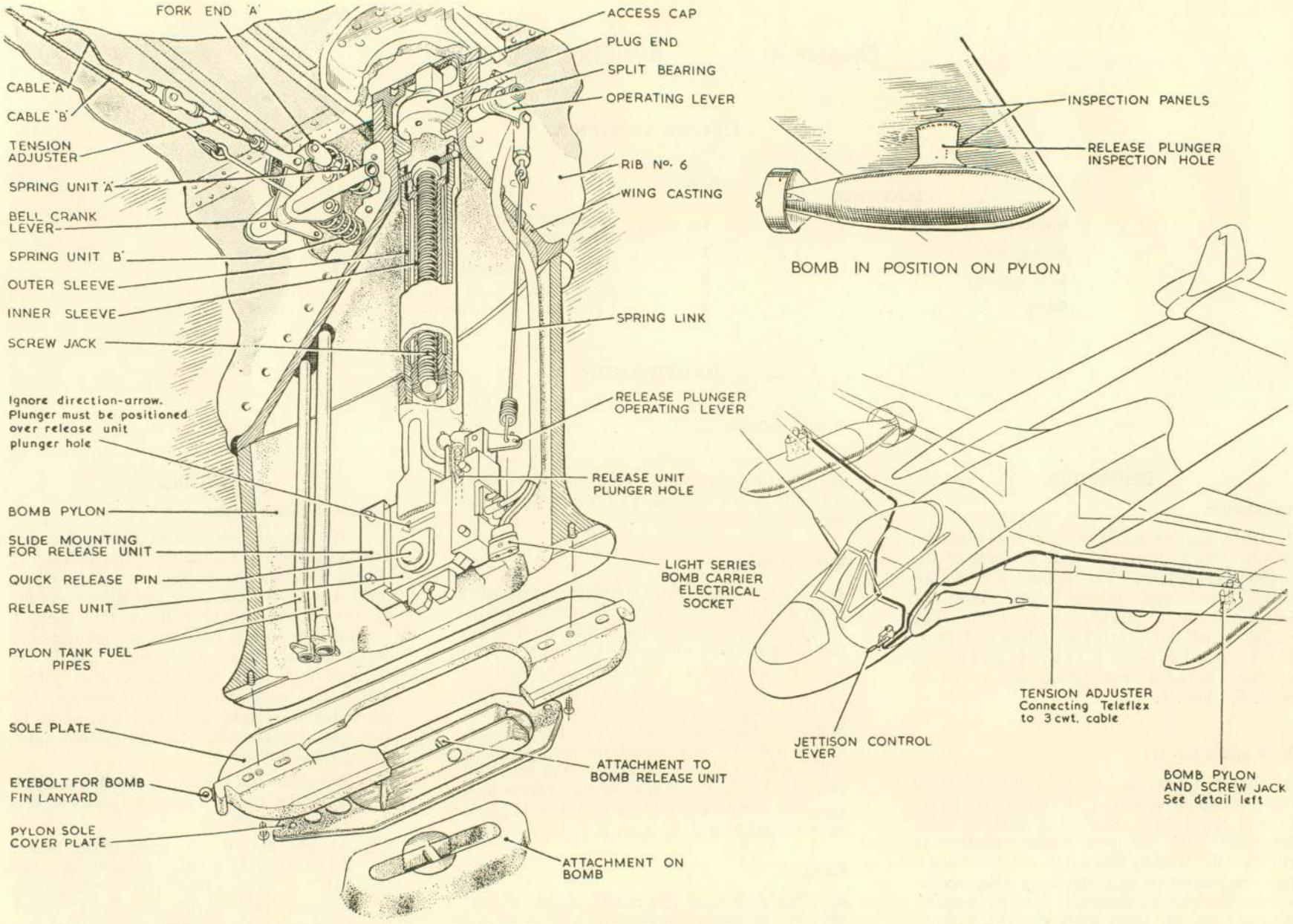

Fig. I. Bomb installation

(3) *Starboard main plane only.* Connect cable 'A' to the bell-crank lever, then tension at the adjuster until the cable is approximately $\frac{1}{4}$ in. slack and the fork-end of spring unit 'A' is still acting as a stop on the rib face.

(4) *Port main plane only.* Connect cable 'A' to the bell-crank lever and adjust as in sub-para. 3.

(5) *At both main planes.* Adjust the spring link through the pylon, until the link upper fork-end can be assembled to the operating lever without tension to the spring link.

(6) *At both main planes.* Assemble cable 'B' and spring unit 'B' and adjust so that the spring is 2·5 in. in length.

(7) Through the inspection hole in each pylon, check that the release unit operating plunger is 0·1 in. above the top of the release unit.

6. Where the only disconnection in the jettison control system, has been the withdrawal and re-assembly of the Teleflex cables to the cockpit lever transmitting units, or where the system has been rigged (*para.* 5) and before loading bombs, the adjustment of the control must be carried out as follows:—

(1) By sighting through the inspection hole in the surface of each pylon, check that the release unit operating plunger is 0·1 in. above the top face of the release unit.

(2) Check the cockpit control lever for full and free movement. This operation will automatically cock the release units.

(3) Engage a test weight in the release unit at each pylon.

(4) With the cockpit lever disengaged from its retaining clip, apply a spring balance at the control lever handle and check that a load of 25 lb. $\pm$ 5 lb. is required to release both weights. The weights should fall reasonably together but, when the lever is operated slowly, a slight time lag is permissible provided that both weights fall well before the control lever reaches its limit of travel. Check that as the lever reaches its limit of travel, a load of 30—50 lb. is indicated on the spring balance.

(5) Should the weights not fall as described in sub-para. 4, adjust the Teleflex cable as necessary at the appropriate transmitting unit.

Lubrication

7. Whenever the mechanical jettison Teleflex control is dismantled, e.g., withdrawal of cables from their conduits during main plane removal the cables should be freely lubricated with low temperature grease (*Sect.* 2, *Chap.* 4), before re-assembly. The screw threads of the pylon screw jack are lapped in with commercial graphite on assembly and should require no further attention during the normal life of the aircraft.

REMOVAL AND ASSEMBLY

Bomb loading

8. The procedure for loading the bombs to the pylon is as follows:—

(1) Remove the cover plate from the sole plate.

(2) Test the functioning of the mechanical jettison control as described in para. 6.

(3) Position the bomb immediately beneath the pylon.

(4) Remove the screwed cap from the upper surface of the main plane over the bomb hoisting point and, using the pylon hoist spanner and adapter (*Sect.* 2, *Chap.* 4), extend the screw jack.

(5) Engage the bomb suspension lug in the release unit (ensuring that the release unit is cocked) and hoist the bomb, using pylon hoist spanner from the upper surface of the main plane. Care must be taken to ensure that the bomb is properly steadied during hoisting and not allowed to swing, and that the release unit slides easily into its housing. Certain aircraft embody single-extension jacks and the bomb may have to be offered up to engage in the suspension unit.

Note...

With certain release units the direction arrow must be ignored (*fig.* 1). *At all times the plunger hole in the release unit must be positioned below the plunger rod on the jettison mechanism in the pylon, otherwise the mechanical jettison mechanism will be inoperative.*

(6) Remove the pylon spanner and adjust the torque wrench (*Sect.* 2, *Chap.* 4) to ◀1200 lb. in.,▶ then fit the wrench into the adapter. Move the handle of the wrench from right to left until a sudden drop in resistance is felt, indicating that the store has been correctly stabilized. Test that the release unit is cocked (*Sect.* 5, *Chap.* 1) and that the release unit operating plunger is correctly positioned (*para.* 5, *sub.-para.* 7).

9. The sequence of operations to be followed for the removal of unexpended stores, is the reverse of that given for loading. At all times the screw jack should be unscrewed at least one complete turn, before releasing the store either mechanically or electrically. Under no circumstances should the store be released with the screw jack fully tightened, otherwise damage may result to the jack mechanism. When the release unit has been lowered out of its housing, the bomb hooks may be released by operating the mechanical release with a suitable prod.

Light series bomb carrier

10. When the light series bomb carrier is fitted, the change-over switches in the wheel wells must be set to PRACTICE BOMBS and the electrical release lead from the carrier plugged into the socket in the pylon base.

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