Chapter 4 BOMBING EQUIPMENT

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LIST OF ILLUSTRATIONS

Introduction

1. The bombing equipment of this aircraft is carried on the inboard universal pylons and, when fitted, leaves no provision for the carrying of the inboard drop fuel tanks. The following alternative bombing equipment may be carried on each universal pylon:—

(1) One 1,000 lb. bomb

(2) One fire bomb

(3) One practice bomb carrier which will accommodate up to two 25 lb. practice bombs.

In the normal bomb installation, the two bombs are released simultaneously, but the practice bomb carriers are provided with their own release mechanisms and auto selectors which permit the bombs to be released

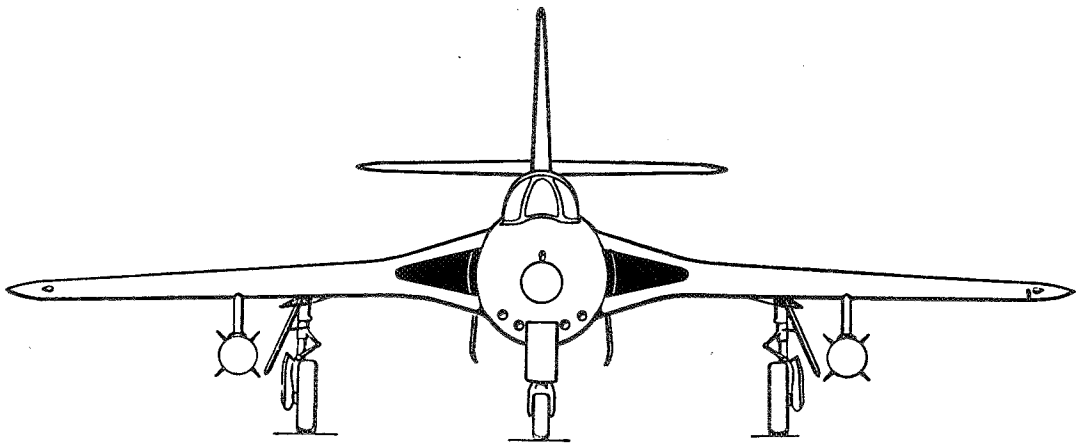

Fig. 1. Bomb installation (1) and (2)

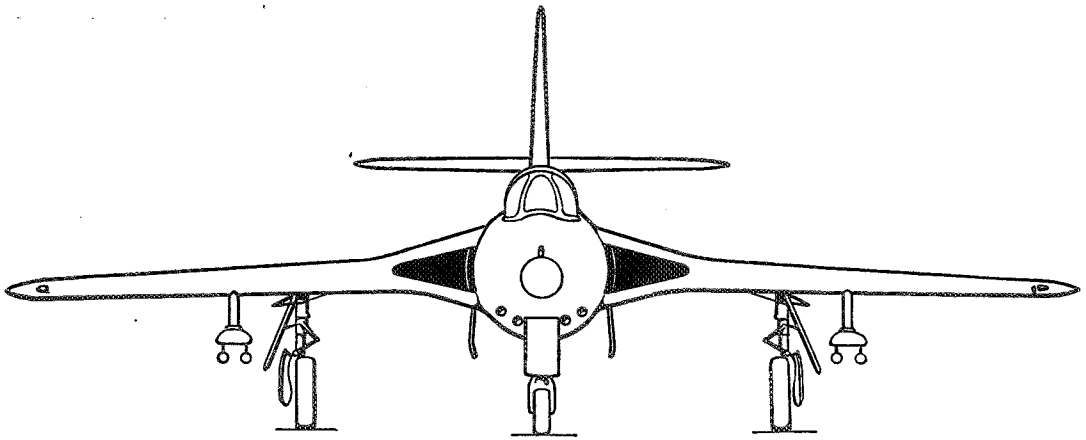

Fig. 2. Bomb installation (3)

individually. A description of the electrical installation and the operation of the release and fuzing mechanisms is contained in Sect. 5, Chap. 1, Group G.1 of this volume. Bomb installations generally are described in A.P.1664C, Vol. 1.

DESCRIPTION

Controls

2. The bombs are released by depressing the BOMB/R.P. push switch on the top of the control column handgrip, after they have been selected and fuzed by operation of the BOMB/R.P selector switch and fuzing selector switch located on the BOMB/R.P. control panel on the cabin port shelf. A switch, marked NORMAL/PRACTICE, which is located inside the pylon and is accessible through a hinged access panel, is used to select the electrical supply to either the normal release unit, or to the practice bomb carrier via a butt connection (Sect. 5, Chap. 1, Group G.1). When practice bombs are carried, this switch must be placed in the PRACTICE position. For all other installations, it must be left in the NORMAL position. The practice bombs are released unfuzed, but fuzing selection must be made, or the electro-magnetic release mechanism will fail to operate.

3. The external stores carried on the pylons under the wings may be jettisoned as follows:—

(1) On aircraft in which Mod. 228 and 229 have *not* been incorporated (*no outboard pylons and no R.P. installation*) jettisoning of stores from the universal pylons is effected by the use of a switch on the port instrument panel.

(2) On aircraft in which Mod. 228 and 229 *have* been incorporated (*inboard and outboard pylons and provision for the installation of R.P.*), jettisoning of the external stores from the outboard pylons is effected by the use of the switch on the port instrument panel. A CLEAR AIRCRAFT switch, located on the BOMB/R.P. selector panel beside the gun sight, is used to effect simultaneous jettisoning of stores from all four pylons.

Note . . .

The DE-FUSING *switch, located on the* BOMB/R.P. *control panel on the cabin port shelf, must be operated to de-fuze before the bombs can be jettisoned. When the* JETTISON *switch is used, the practice bombs, if fitted, are jettisoned complete with their carriers.*

Pylon and bomb attachment

4. The inboard pylon, which is of light alloy construction, is described and illustrated in Sect. 3, Chap. 2, and a cut-away depicted in Sect. 2, Chap. 2, Fig. 3, shows the release mechanism, together with other items that concern the installation of external stores. The pylons are bolted to the wings and are, therefore, not capable of being jettisoned. They can, however, be removed and cover plates are provided to seal the holes in the wings which are left exposed when removal is effected.

5. Each inboard pylon contains two No. 3, Mk. 1 fuzing units for tail and/or tail and nose fuzing of the stores, and a No. 1, Mk. 1 E.M. release unit, by which the store is attached to the pylon. The release unit is provided with a crutching nut which the store is finally tightened up against the sole plate of the pylon during loading. The release unit is electrically operated for normal release and for jettisoning of stores during flight, but a mechanical jettison and re-set mechanism is provided for operation of the release unit during servicing. The mechanical jettison and re-set mechanism is operated by a pair of press buttons, one of which is fitted flush with the skin on either side of the pylon, the port button being for jettison and the starboard for re-set. The jettison and re-set mechanism is illustrated in Sect. 2, Chap. 2, Fig. 3 and 4. For details of the electrical fuzing and release units, reference should be made to A.P.4343X, Vol. 1, Sect. 5.

SERVICING

Armament safety break

6. An armament safety plug, located in the port stub wing (on aircraft post Mod. 229), or in radio bay (on aircraft pre Mod. 229), *must* be removed from its socket during the loading of stores and servicing of the equipment, except when carrying out functional checks. The plug, which is fitted with a red warning pennant, is accessible (post Mod. 229) through a small hinged door which is fitted in a panel under the wing just forward of the main spar pin joint. The door is provided with a toggle fastener to facilitate access. On aircraft pre Mod. 229, the plug is accessible through the radio access door below the fuselage. In addition, ensure that all necessary armament safety precautions are *strictly* observed.

Note . . .

The pennant must not be removed from the safety plug.

Loading of stores

7. The procedure for the loading of external stores and a description of the equipment to

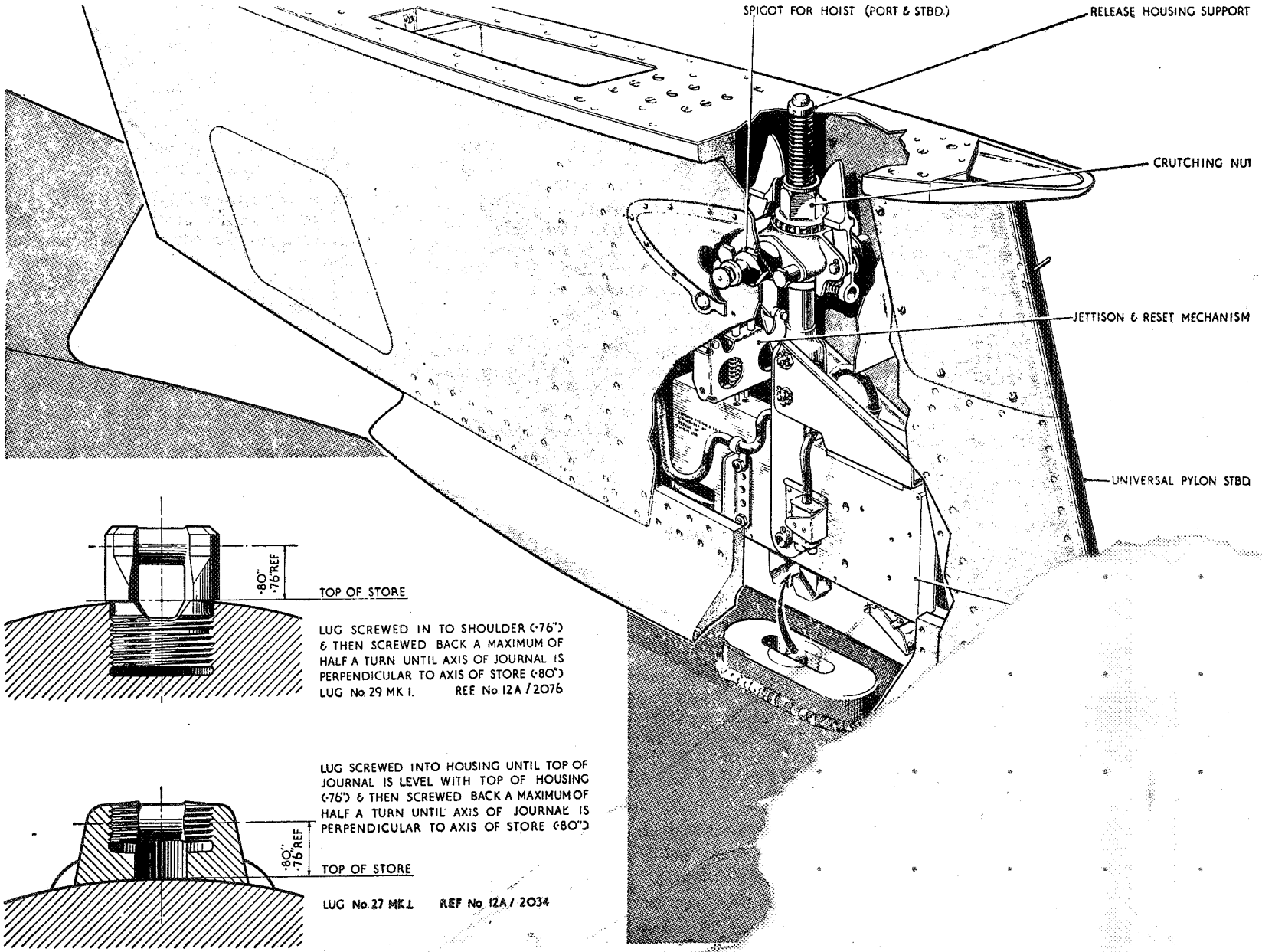
SPIGOT FOR HOIST (PORT & STBD.)
RELEASE HOUSING SUPPORT
CRUTCHING NUT
JETTISON & RESET MECHANISM
UNIVERSAL PYLON STBD
·80"
·76" REF
TOP OF STORE
LUG SCREWED IN TO SHOULDER (·76")
& THEN SCREWED BACK A MAXIMUM OF
HALF A TURN UNTIL AXIS OF JOURNAL IS
PERPENDICULAR TO AXIS OF STORE (·80")
LUG No 29 MK I. REF No 12A / 2076
LUG SCREWED INTO HOUSING UNTIL TOP OF
JOURNAL IS LEVEL WITH TOP OF HOUSING
(·76") & THEN SCREWED BACK A MAXIMUM OF
HALF A TURN UNTIL AXIS OF JOURNAL IS
PERPENDICULAR TO AXIS OF STORE (·80")
·80"
·76" REF
TOP OF STORE
LUG No 27 MK I. REF No 12A / 2034

Fig. 3. Bomb at

be used will be found in A.P.1664C, Vol. 1; the Air Armament Transporter which is used for transporting the store to the aircraft is described in A.P.1664D, Vol. 1, Part 1, Sect. 1, Chap. 8. The procedure for loading a typical store is as follows:—

(1) Remove armament safety plug (*para.* 6) and ensure that the usual armament safety precautions are *strictly* observed.

(2) Position the transporter so that the suspension lug of the store is under the release unit in the pylon.

(3) Ensure that the suspension lug (No. 27, Mk. 1, Stores Ref. 12A/2034 for bombs, and No. 29, Mk. 1, Stores Ref. 12A/2076 for all other stores) is fitted in accordance with the instructions given in fig. 3. *This is important.*

(4) Remove the access panels concerning the release unit crutching nut on top of the wing and open the panel giving access to the NORMAL/PRACTICE switch in the pylon (Sect. 2, Chap. 4, *fig.* 2).

Note . . .
With the NORMAL/PRACTICE *switch placed in the* PRACTICE *position, the release units in the pylon are electrically inoperative, the electrical supply being directed to release units in the practice*

se unit is assembled
engraved arrow

echanism is
ting the
push
s a

(10) Raise the store until the suspension lug of the store engages with the release hooks and trips them into the closed position, thus securing the store. Continue slowly the raising of the store until it comes up against the sole plate at the bottom of the pylon, at the same time tightening the crutching nut by use of the spanner (Part No. B.204233).

(11) Check that the release unit is correctly cocked by carrying out the electrical cocking test described in Sect. 5, Chap. 1, Group G.1 of this volume.

(12) Remove the rubber sealing plugs from the sighting holes in each side of the pylon in the region of the jettison and re-set mechanism, and by viewing through these holes, check that a clearance has been maintained between the top of the release unit housing and the bottom of the plungers of the jettison and re-set mechanism. This gap must not exceed 0·10 in. *The release unit must be in this position before the buttons will operate the mechanism.*

(13) Remove the hoists (A.P.1664C, Vol. 1).

(14) Tighten the crutching nut, this time with an Acratork Mk. 6—Model B.3 torque spanner, set to 80 lb. ft. $^{+2}_{-0}$ for the 1,000 lb. bomb or fire bomb and to 20 lb. ft. $^{-0}_{+2}$ for the practice bomb carrier.

Note . . .
The torque spanner must be adjusted to the setting by applying the wrench to the setting rig (Stores Ref. 11A/4075). The spanner and the method of setting it, is described in A.P.1464B, Vol. 1, Part 2, Sect. 3, Chap. 4.

Repeat the checks carried out in sub-para. 11 and 12.

Connect fuzing unit cables to store as applicable.

Re-fit access panels, after ensuring that the NORMAL/PRACTICE switch is set to NORMAL for normal stores, or to PRACTICE if practice bomb carriers are fitted. Re-fit rubber plugs in sighting holes.

Fuzing units

8. The fuzing units are operated by the fuzing selector switch located on the BOMB/R.P. selector panel on the cabin port shelf. They must be checked for correct functioning as described in A.P.4343X, Vol. 1, which also gives instructions on how to insert the fuzing cables. When testing, an external electrical supply should be connected, to avoid running down the aircraft's batteries.

Checking release units

9. With bombs removed, the release units are checked for correct functioning as follows:—

(1) Connect an external electrical supply.

(2) Open the panel giving access to the NORMAL/PRACTICE switch in the pylon and ensure that it is set at NORMAL.

(3) Make the appropriate selection for bomb release (*para.* 2), operate the push switch on the control column handgrip and ensure that the release hooks open. Switch off the selector switches.

(4) Operate the re-set button of the jettison and re-set mechanism (starboard button) to close the release unit hooks. Operate the DE-FUZING switch and then the BOMB JETTISON or CLEAR AIRCRAFT switch (*para.* 3). The hooks should open.

Note . . .
The differences in the switching for bomb jettisoning for aircraft prior to and after the incorporation of Mod. 228 and 229 are described in para. 3 of this chapter. It should be noted that, when the CLEAR AIRCRAFT *switch is used (post Mod. 228 and 229), the release hooks in all four pylons will open. Care should be taken, therefore, to ensure that no stores are attached to the outboard pylons when the bomb release units on the inboard universal pylons are being checked by means of the* CLEAR AIRCRAFT *switch.*

(5) Return the switches to normal and disconnect the external supply. Replace the access panels.