

## Chapter 5

## CHANGE OF ROLE - TARGET TOWING

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**Introduction**

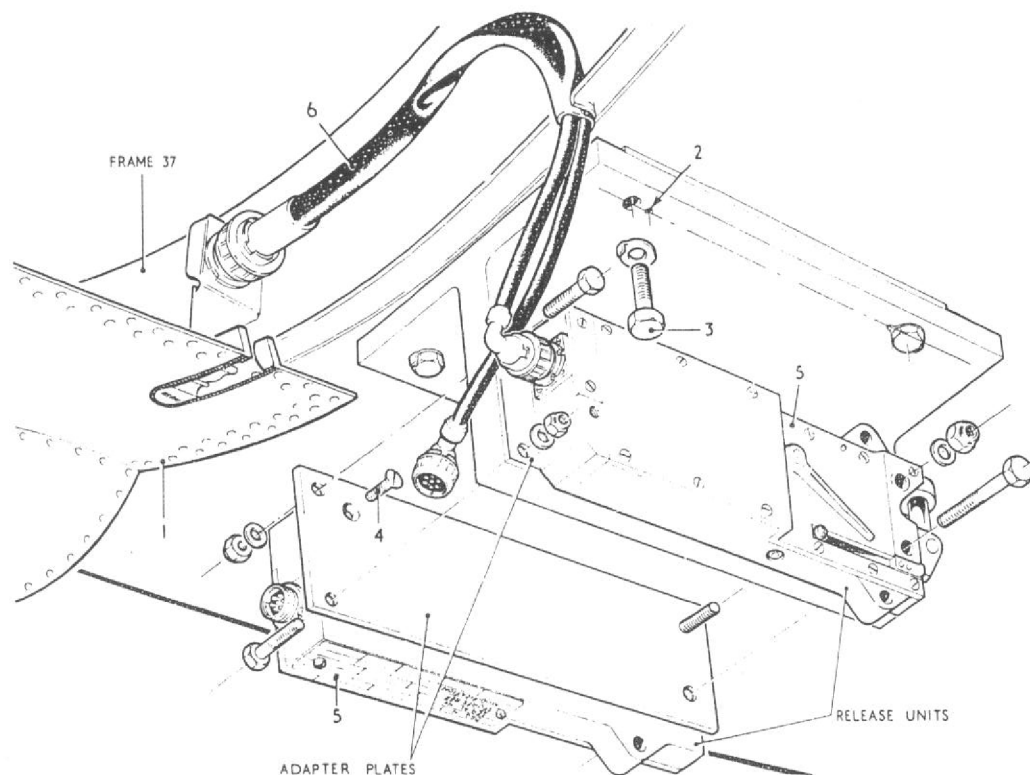
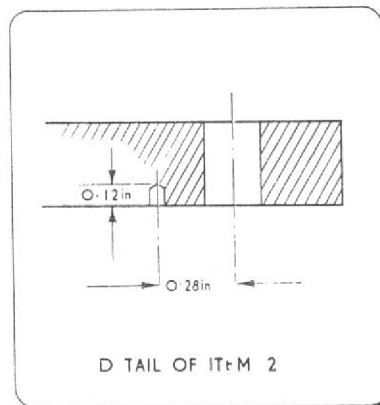
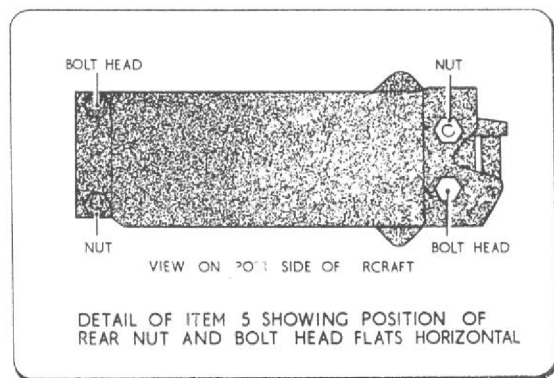
1. This chapter contains information and instructions for changing the role of aircraft (embodying the fixed parts of the target towing modifications) to the target towing role.

**Removable equipment**

2. The removable equipment for the target towing role is listed in Table 1.

**General**

3. Before fitting any of the removable equipment ensure that the aircraft has been rendered electrically safe. A description of the target towing installation is given in Sect. 5, Chap. 1, Group G2. Information on the air launch containers, targets and target release units is given in A.P.1492A, Vol. 1.



**Note . .**

*Before commencing operations ensure that the aircraft has been rendered electrically safe (Sect. 5, Chap 1)*

- (1) Open engine access door
- (2) Ensure that 4 holes 3.25 mm. dia.  $\times$  0.12 in. deep are drilled in the mounting bracket to accommodate the tab washers.
- (3) Fit mounting bracket to the centre fuselage aft of the engine access door using bolts Part No. STD.1639/9 EX) and after tightening lock with tab washers (Part No SP 42.E.)
- (4) Fit the adapter plates to the release units with bolt (Part No. AS 1242 2E), ensure that the bolt head does not project above the adapter plate. If necessary increase the depth of the countersink. Lock by peening the adapter plate into the screw driver slot on the bolt head.
- (5) Fit the release unit and adapter plate assemblies to the mounting bracket using bolts (Part No. A.25 9E) at the front, bolts (Part No. A.25. 30E) at the rear and stiff nuts (Part No. AGS.2001. E.1) (GKN or NYLOC TYPE only). Ensure that the bolt heads are positioned as shown and that the bolt head or nut flats are horizontal at the rear end.
- (6) Connect the cable (Part No. PV1689-137C to the release units ensuring that the lead from the starboard release unit is assembled aft of the lead from the port release unit. Connect the other end of the cable to the connector on the bracket on the bottom forward face of frame 37 and ensure that the cable lies in the cut-out on the engine door landing on frame 37.

**Fig. 1** Installation of target towing release units

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## Installation of air launch containers

## WARNING

- Personnel handling explosive release and ejector units, as fitted to the inboard pylons on this aircraft, should be conversant with the safety precautions, detailed in A.P. 1664E, Vol.1, Part 1, Chap.1. During loading/unloading the radio installations are not to be operated.
4. The procedure for the fitting of the air launch containers to the inboard pylons is as follows:—
- (1) Disconnect the armament safety break from its socket in the cabin and place in adjacent stowage. Remove the pylon rear door (Sect. 2, Chap. 2, Fig. 4, item 3) and disconnect the pylon safety break (Sect. 2, Chap. 2, Fig. 4, item 4). Place the NORMAL/PRACTICE switch in the PRACTICE position.
  - (2) Wheel the air launch container into position under the pylon and lubricate the front and rear locating dowels with anti-seize compound ZX-28G. For fitment to the port pylon the container 'target gone' switch must be on the starboard side of the container and for fitment to the starboard pylon the 'target gone' switch must be on the port side of the container.
  - (3) Remove the access panel (26FX/10085) in the wing top skin. Attach a crutching tool shaft (M.L. Aviation Ltd., D.L. 617-41B or D.L. 617-113B) complete with handle (M.L. Aviation Ltd., D.L. 617-348C) into the socket of the crutching mechanism (Sect. 2, Chap. 2, Fig. 4,

item 12) of the ejector release unit and turn in an anti-clockwise direction to lower the unit sufficiently to enable the jaw pins (Sect. 2, Chap. 2, Fig. 4, item 14) in the bottom of the housing to be removed.

## Note . . .

*The threads of the ejector release unit must be regreased with ZX-28G before each loading.*

- (4) With the ejector release unit lowered, a firm pressure on the end of the jaw pins will release the spring lock in the jaws and allow the pins to be withdrawn and the jaws (Sect. 2, Chap. 2, Fig. 4, item 16) to be removed. The adapter (Sect. 2, Chap. 2, Fig. 4, item 17) is required.

## Note . . .

*The adapter is not required when E.R.U. to Post Mod. ML94 standard is fitted.*

## Note . . .

*It is important that the top of the suspension lug should not be forced up against the adapter, as the use of undue force imparts a shear load to the rivet securing the plunger wedge to the piston tube assembly. If this rivet is sheared any store subsequently carried with the ejector release unit in this condition will be inadvertently released.*

*When loading a store on E.R.U's Post Mod. M.L.94 a check must be made with a  $\frac{1}{8}$  in. dia. rod through the inspection hole in the housing to ensure that the piston is fully home and the split pin undamaged.*

- (5) Carefully raise the air launch container using hoists and a sling so that one jaw, hooked in the suspension lug, can be secured to the jaw housing with a jaw pin, without exerting any force on the end of the adapter at the bottom of the ejector release unit piston tube assembly extension rod. Then hook the other jaw in the suspension lug and secure to the jaw housing with the remaining jaw pin. Ensure that the flat on the head of each jaw pin is engaged with the shoulder on the jaw housing.

- (6) Connect the container stream solenoid cable to the flat 2 pin type R plug in the pylon and the container stream indicator microswitch cable to the drop tank high level switch connector in the pylon.

- (7) By means of the crutching tool raise the container until the fore and aft locating dowels are engaged in the holes provided in the pylon sole plate. Check that the electrical cables are not trapped between the container and the sole plate.

- (8) Apply the final crutching load by using a torque wrench (Ref. 1L/171) set to  $40 \pm 2$  lb. ft., attached to the adapter on the crutching tool.

- (9) Remove the torque wrench and crutching tool, connect the socket to the breech cap and replace the access panel in the wing.

- (10) Re-connect the pylon safety break and replace the rear door on the pylon.

## Note . . .

*The armament safety break is re-connected immediately prior to flight.*

## Installation of target towing release units

5. The target towing release units are to be installed as shown in fig. 1.

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Installation of target towing stream switch and indicator panel

6. The target towing stream switch and indicator panel should be fitted to the mounting for the gyro gunsight camera recorder after removing and stowing the camera recorder in its stowage in the cabin. The electrical connections should be made in accordance with the instructions in Sect. 5, Chap. 1, Group G.2.

Completing the target towing electrical circuit

7. Instructions for completing and testing the aircraft electrical circuit are contained in Sect. 5, Chap. 1, Group G.2.

Removal of target towing removable parts

8. The removal of the target towing removable parts is the reverse of the operations detailed in para. 4, 5, 6 and 7.

Note . . .

To prevent swinging of the release unit when the pylon is installed with no stores fitted, Cover Plate (Part No. B.235438) with suspension lug (Ref. 12A/2230,) must be fitted on the underside of the pylon and crutched up with the torque wrench set to  $20 \pm 2$  lb. feet. The adapter (Sect. 2, Chap. 2, Fig. 4, item 17) must be removed from the housing when no stores are fitted.

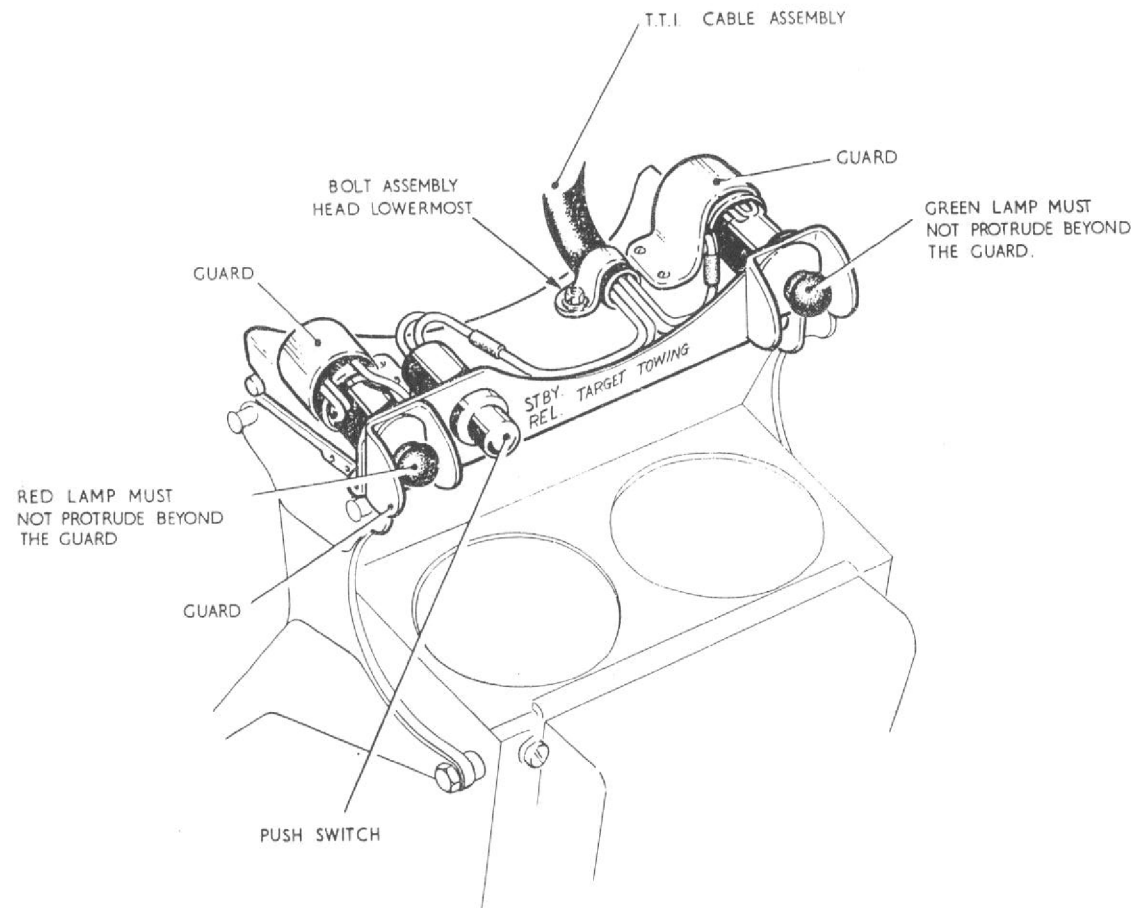


Fig. 2 Installation of target towing switch and indicator panel

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TABLE 1

## Target Towing Removable Parts

| Sect./Ref.            | Part No.       | Description  | Qty. |
|-----------------------|----------------|--|------|
| 26FX/10760<br>9A/2286 | PV.1689-139B   | Bracket, mounting  | 1    |
|                       | PV.1689-137C   | Cable  | 1    |
|                       |                | Container, air launch Mk. 4 (not required for drag launching)              | 2    |
|                       | PV.1689-138C   | Plate, adapter release unit  | 2    |
| ◀ 26FX/               | B.273851       | Panel, stream switch and indicator assembly                                | 1 ▶  |
| ▶ ◀                   |                |  |      |
| 9A/2138               |                | Unit, release, target 3000 lb.   | 2    |
|                       |                | Attaching parts for bracket, mounting, release units and adapter plates :- |      |
| 28D/1011244           | A.25.9.E       | Bolt $\frac{1}{4}$ in. B.S.F.  | 2    |
| 28D/12551             | A.25.30.E      | Bolt $\frac{1}{4}$ in. B.S.F.  | 2    |
| 28D/1013177           | AS.1242.2.E    | Bolt $\frac{1}{4}$ in. B.S.F.  | 2    |
| 26FX/                 | STD.1639/9 EX  | Bolt   | 4    |
| 28M/10290             | A.G.S.2001.E.1 | Nut, stiff (GKN or NYLOC TYPE only)  | 4    |
| 28W/9418921           | SP.13.E        | Washer   | 4    |
| 28W/9419136           | SP.42.E        | Washer, tab  | 4    |



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