

Chapter I PYROTECHNICS

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DESCRIPTION AND OPERATION

Introduction

1. This chapter contains information on the cartridges used for engine starting and installation of the canopy hatch jettison gun control.

Engine-starting cartridges

2. Stowage is provided, two in each flap recess, for four spare cartridges for the Rotax turbo-starter (*Leading Particulars*). The cartridges are described in A.P.1661F, Vol. 1, Sect. 1, Chap. 2, and the loading procedure is given in A.P.1181, Vol. 1, and 6, Part 1, Sect. 4, Chap. 2.

Canopy hatch jettison gun

3. The jettison gun (*fig. 1*) is mounted centrally on the top of the fuselage decking, directly beneath the rear canopy. The

cordite cartridge is housed in a cartridge breech screwed into the breech chamber of the gun, diametrically opposite to the firing head and firing trigger. An exhaust pipe is provided to allow the expanding gases to escape after the gun has been fired, the exhaust port being sealed by a light diaphragm which bursts on firing. A second safety port communicates with the breech chamber and is sealed by a diaphragm which bursts only at a high pressure. This is provided to allow the gases to disperse harmlessly, in the event of the gun being fired when the canopy is held down by an abnormal force, such as may occur if the aircraft is deeply submerged.

4. One end of an internal piston tube terminates in a sealing cap open to the breech chamber. Screwed into the other end of the piston tube, is a cylindrical member

integral with an external thrust plate, within which slides a plunger terminating in a fork which makes contact with a toggle lever (*Sect. 3. Chap. 1*). The cylindrical member is closed at the other end, forming a wall and between this wall and the fork plunger, a compression spring enables the initial movement of the piston tube to be transmitted direct to the thrust plate. The thrust plate is thus delayed by the short travel necessary to compress the spring. For further details of the gun, reference should be made to A.P. (N) 1023(7).

Canopy hatch jettison control

5. *Fig. 1* shows the run of the jettison control cable. The operating handle is mounted on a support column from the cockpit floor (*Sect. 1, Chap. 3*) and the cable routed beneath the cockpit floor and up behind No. 2 bulkhead. From the top of the

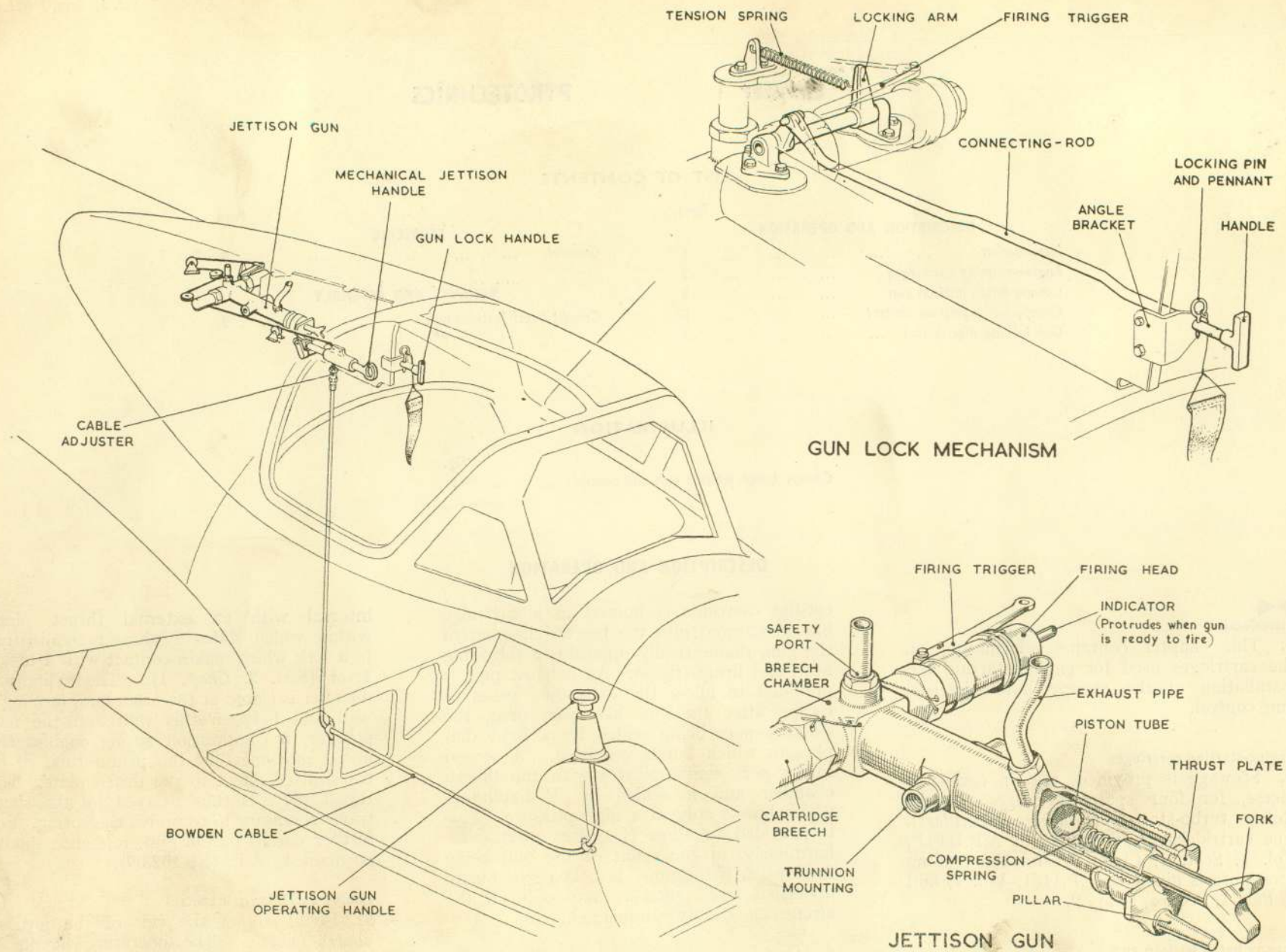


Fig. 1. Canopy hatch jettison gun and control

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bulkhead, the cable run is continued around five pulley wheels, and, finally, attached to the gun firing trigger.

6. The hatch may be jettisoned, mechanically, in the event of failure of the normal system, by pulling out the mechanical jettison handle on the top of No. 2 bulkhead (*fig. 1*). After this operation is performed, the hatch must be unlatched in the normal way, as the mechanical release does not operate these latches. The canopy hatch

jettison mechanism is described in Sect. 3, Chap. 1.

Gun locking mechanism

7. The mechanism is mounted on the top of No. 2 bulkhead, inboard of the hydraulic reservoir and when operated, locks the gun firing trigger by restricting its movement. This is effected by a spring-loaded locking arm on one end of a torque shaft, movement of which is controlled by a connecting-rod, which has its rear end attached to a lever

on the opposite end of the torque shaft. The front end of the connecting-rod terminates in a handle which, when pulled forward, draws the spring-loaded arm against the gun firing trigger. The handle is locked in its forward position by the insertion of a locking pin through a hole suitably drilled through the connecting-rod and handle stem immediately forward of an angle bracket, mounted on the front of a structure diaphragm. A red pennant is attached to the locking pin (*item G.12, Sect. 2, Chap. 4*).

SERVICING

General

8. For information on the servicing of the canopy hatch jettison gun, together with arming and re-arming details, reference should be made to A.P.(N) 1023(7)

REMOVAL AND ASSEMBLY

Canopy hatch jettison gun

9. The procedure for removing the gun is as follows:—

- (1) Ensure that the safety lock is correctly fitted (*fig 1*)
- (2) Remove the large panel at the rear of the canopy
- (3) Remove the cartridge unit, firing head and exhaust pipes from the gun
- (4) Disconnect and remove the canopy de-misting pipes behind No 2 bulkhead
- (5) Remove the cable pulley positioned at the rear of the gun
- (6) Withdraw the bolts, securing the gun to the structure, and remove the gun assembly

10. Reverse the above operations for re-fitting the gun in the aircraft

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