

Chapter 2

EJECTION GUNS AND DROGUE FIRING GUN

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EJECTION GUN, TYPE 2A

Function

1. The Type 2A ejection gun (*fig. 1*), which provides the power for ejecting the seat and pilot from the aircraft, consists of a pair of telescopic tubes with a stroke of 39 in. and an ejection velocity of 50 ft. per sec. The outer or cylinder tube is attached at lower end to the bottom mounting block and the assembly includes two guide rails. The inner or piston tube is attached at its upper end to the seat structure by means of a screwed pin. The explosive is contained in a cartridge (Stores Ref. 12D/1170) which is percussion fired by the action of pulling out the face screen, and is housed in the breech at the upper end of the piston tube.

2. When the face screen has been withdrawn approximately 12 in., the firing cable which is attached to the face screen pulls the wedge-shaped sear out of the firing body. The movement of the sear first compresses the firing spring and then releases the firing pin to strike the percussion cap of the cartridge.

3. The gas pressure developed by the cartridge propels the piston tube upwards until, after 39 in. of travel, the cylinder and piston tubes separate; the cylinder tube remains attached to the aircraft and the piston tube remains attached to the ejected seat.

Cylinder tube

4. This is a thin-walled steel tube with an accurately lapped bore and if removed from the aircraft it must be handled carefully. The cylinder tube embodies integral brackets to which the guide

rails are attached also brackets at the rear for mounting the assembly in the aircraft.

Piston tube

5. This is of similar construction to the cylinder tube, but its lower end is provided with three gas rings and its upper end houses the breech into which is screwed the firing body. The breech is permanently screwed into the piston tube; it is locked by peening and should not be removed. The breech houses the cartridge and spring which are held in position by the firing body. When unscrewed, the firing body gives access to the cartridge which is pushed upwards by its spring to facilitate removal.

Firing body

6. The firing body houses the firing pin and spring. A slot machined at the upper end of the firing pin is provided with a roller which converts the horizontal movement of the sear to a vertical movement of the firing pin. The shaped bottom end of the firing pin protrudes normally $\frac{3}{8}$ in., but is clear of the percussion cap; the firing of the cartridge is unaffected by the speed of movement of the sear.

EJECTION GUN, TYPE 2B

General

7. The Type 2B ejection gun (*fig. 2*) is used with the observer's seat and is practically identical to the Type 2A. It differs only in the size and shape of the bottom mounting and the disposition of the upper mounting brackets.

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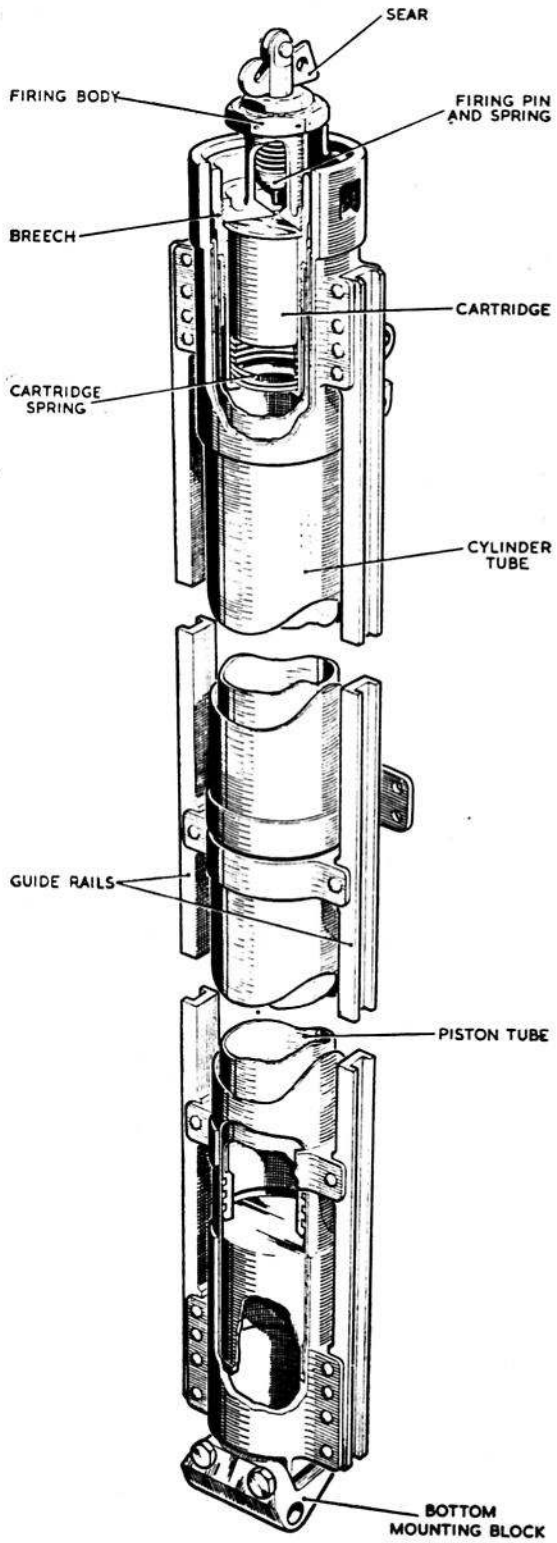


Fig. 1. Type 2A ejection gun and guide rail assembly.

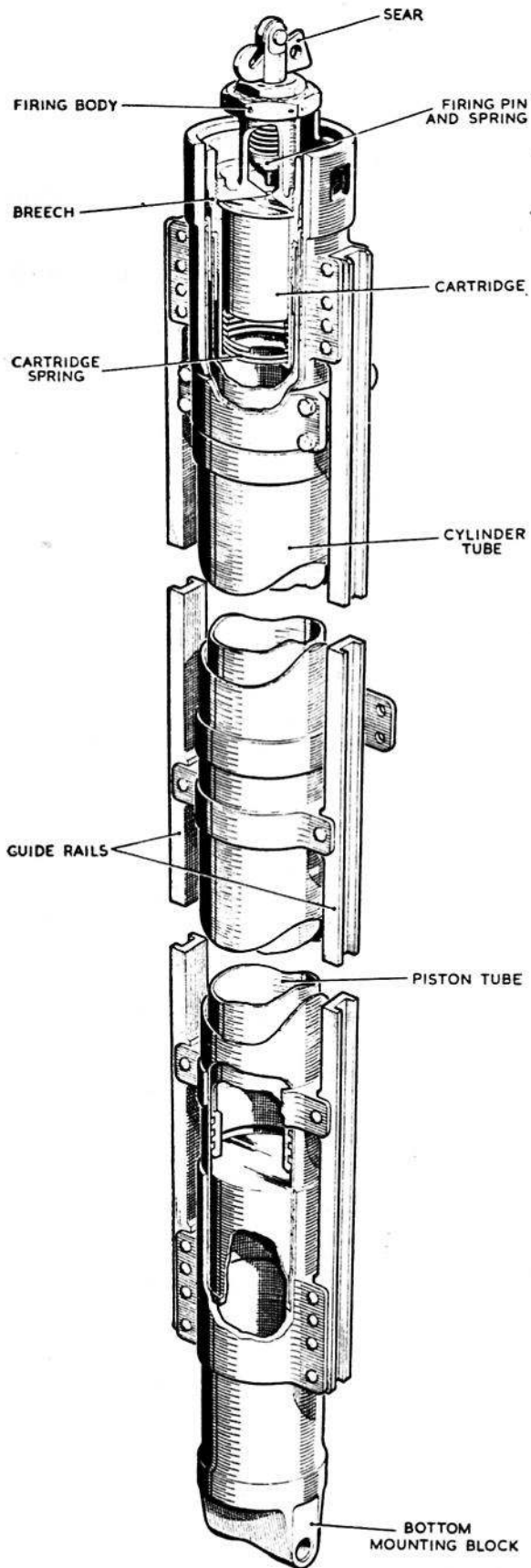


Fig. 2. Type 2B ejection gun and guide rail assembly

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DROGUE GUN**Function**

8. The drogue gun (*fig. 3*) is bolted to the port side beam of the seat structure and, when the time-delay mechanism is operated by the static rod, after 0.5 sec. delay, the gun is fired and ejects the piston; this draws the duplex drogue out of its container and enables the two drogues to develop freely without becoming entangled with the seat. The ejection of the piston is effected by a small cartridge which is fired by the striker pin at the end of the firing pin.

Firing mechanism

9. As the seat ascends the guide rail, the static rod withdraws the sear from the locking plunger which allows the gear train to operate under pressure from the spring. After 0.5 sec. delay, a rack is disengaged from the rack pinion, thus freeing the firing pin which detonates the cartridge. The wedge-shaped end of the sear is maintained in a vertical position by a safety plug, and the static rod is pinned to the lower end of the sear.

Barrel and piston

10. The barrel contains the cartridge (Stores Ref. 12D/1171) which is lightly held in place for convenience by a retaining clip. The barrel, complete with cartridge, screws into the gun body and is secured by 20 S.W.G. non-corrodible steel locking wire and a seal. The upper end of the piston is drilled to accommodate a quick-release pin which retains the drogue withdrawal line.

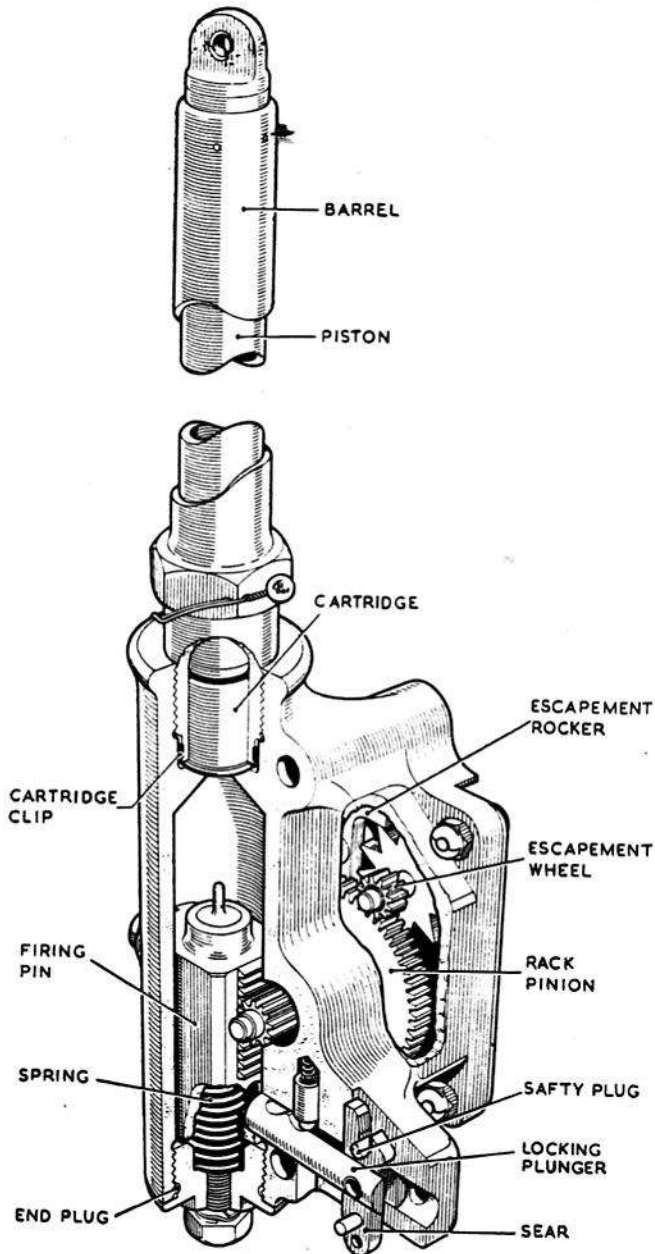
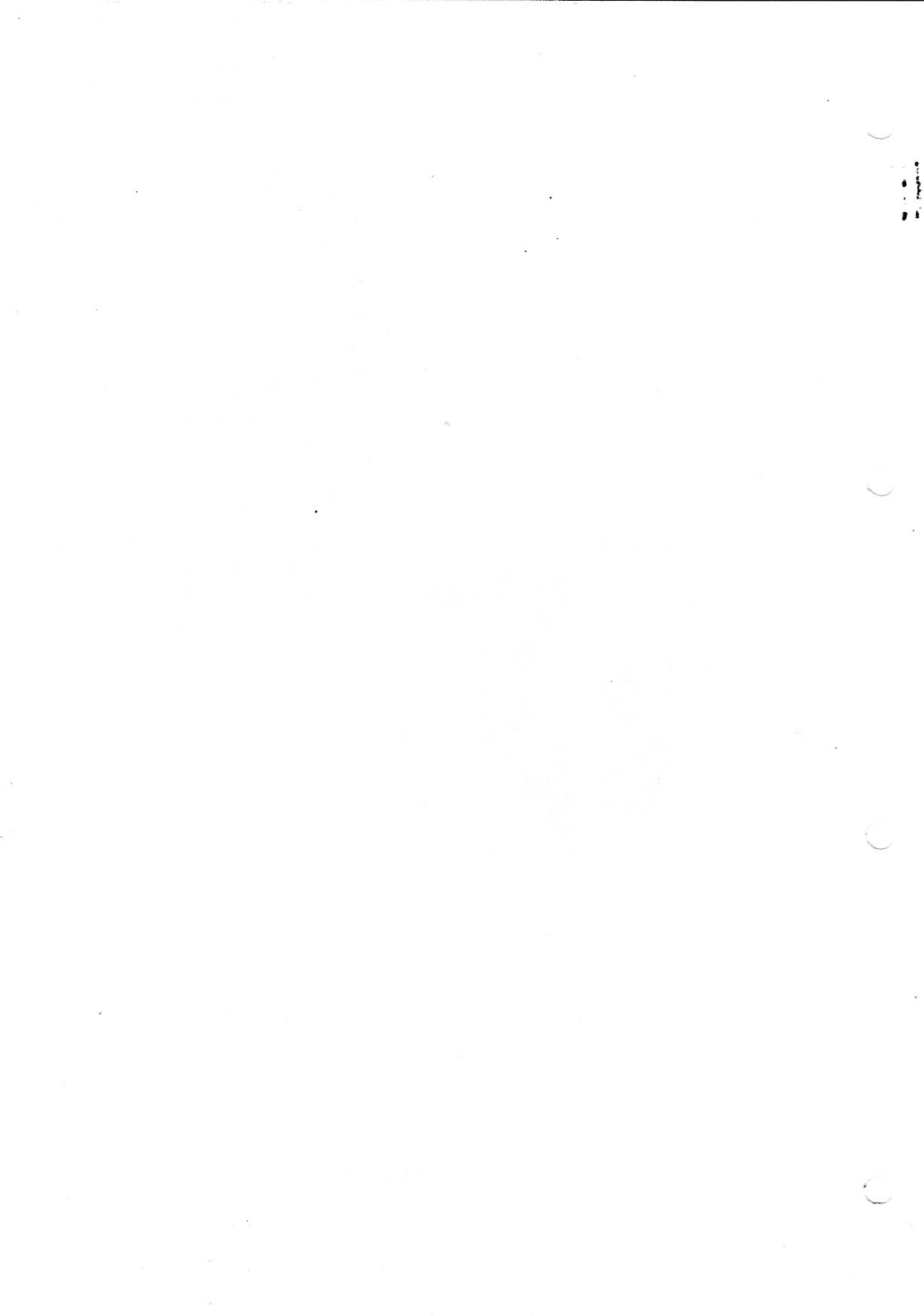


Fig. 3. Drogue gun assembly

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