

SECTION XI

CHAPTER 14

OXYGEN MASK, TYPE G

General

1. The oxygen mask, type G, is similar in many respects to the mask, type E*, and comprises the following items:—

- (i) facepiece
- (ii) corrugated flexible oxygen tubing Mk. IV and bayonet plug, Mk. ~~IV~~ ^{IV}
- (iii) inlet connector
- (iv) inspiratory valve
- (v) expiratory valve
- (vi) strap assembly
- (vii) ~~cap, type C.~~ ^{transit cap.}

Description

2. *The facepiece.*—The main components of the mask, type G, are shown in fig. 1. The facepiece (1) is of pliable rubber, moulded symmetrically and coloured blue or grey. It is lined around the edge with soft suede leather of neutral colour which extends a little beyond the rubber. A length of malleable wire (2) and (1) of fig. 2 is cleated to the outer surface at a point where the mask will make contact with the bridge of the nose of the wearer.

3. It is manufactured in three sizes, large, medium and small, each of which may be identified by the initial letter, appropriate to the size, moulded on the mask.

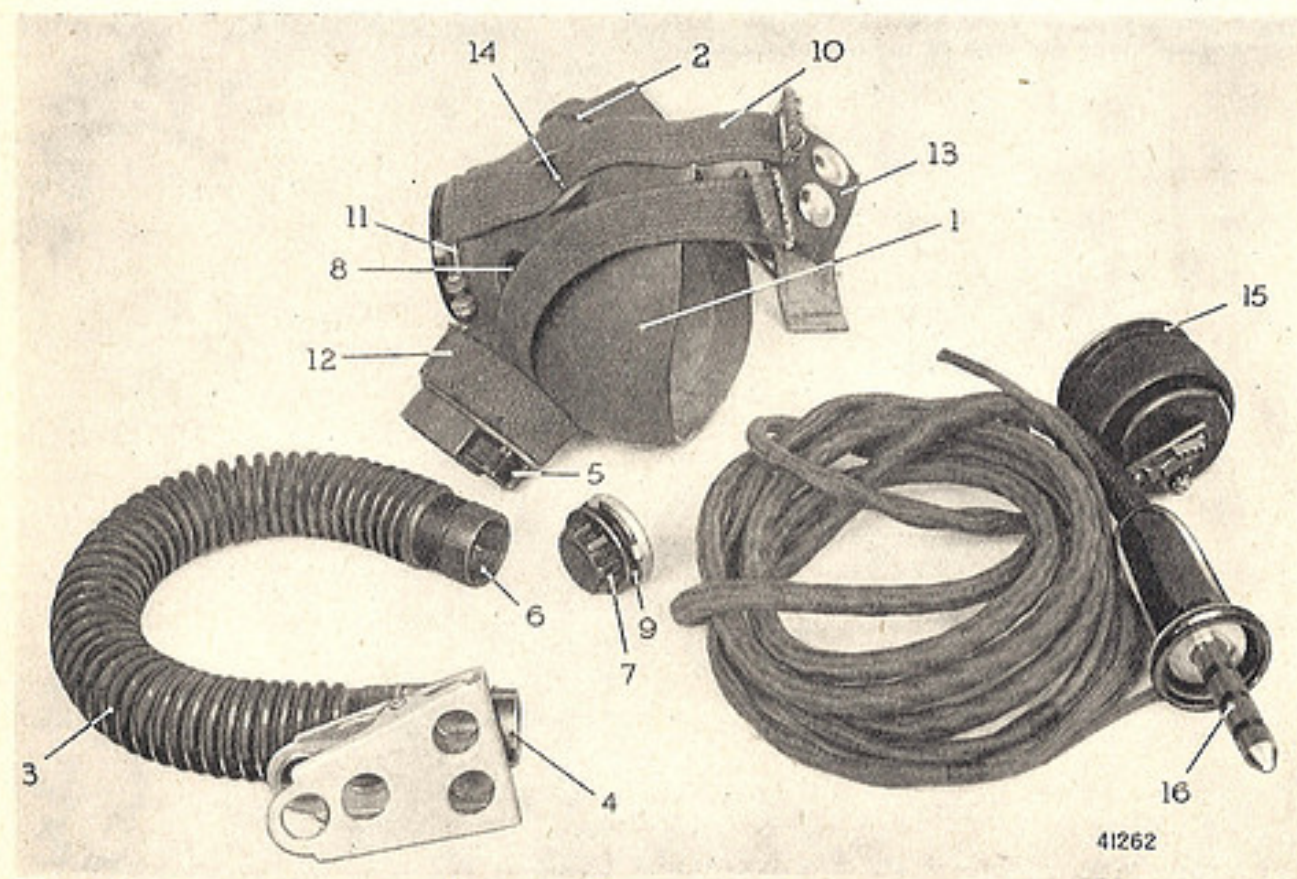


FIG. 1.—OXYGEN MASK, TYPE G—COMPONENTS

4. *The corrugated flexible oxygen tubing Mk. IV.*—Oxygen is conveyed from the economiser tubing to the mask by means of a short length of corrugated flexible oxygen tubing Mk. IV (3, of fig. 1). One end of the tubing is sleeved on to the inlet connector of the oxygen mask, and is bound in position with twine, ~~afterwards being covered with adhesive tape.~~ The other end is connected

in a similar manner to the bayonet plug Mk. IV (4 and 2 of fig. 2). A crocodile pattern clothing clip is fitted to the bayonet plug in such a manner that it is free to rotate around it.

5. *The inlet connector.*—The inlet connector consists of a screwed tubular coupling of bakelite, the externally threaded part (5, fig. 1) of which is pressed into the rubber housing at the base of the mask. The other part (6) is threaded internally, and is screwed to the small threaded portion, an increased external diameter being knurled to facilitate tightening. In some models of this mask, the connector is a tube moulded in one piece and pressed into the rubber housing.

6. Communicating with the connector is a tubular channel (1, fig. 3) moulded in the facepiece, which diverges and opens into the mask at points above and on either side of the nose of the wearer.

7. *Inspiratory valve.*—At low altitudes, it is necessary to supplement the oxygen delivered by the economiser with a supply of atmospheric air. To achieve this, the inspiratory valve (7, fig. 1) is incorporated in the mask. This consists of a spring-loaded circular disc of mica, ^{or bakelite paper.} in a cylindrical moulded housing and is fitted as a unit in the left-hand side of the wall of the facepiece. A hole (8) is cut in the mask and the unit pressed into position, the rubber of the mask locating in a groove (9) in the valve housing to secure it in the facepiece.

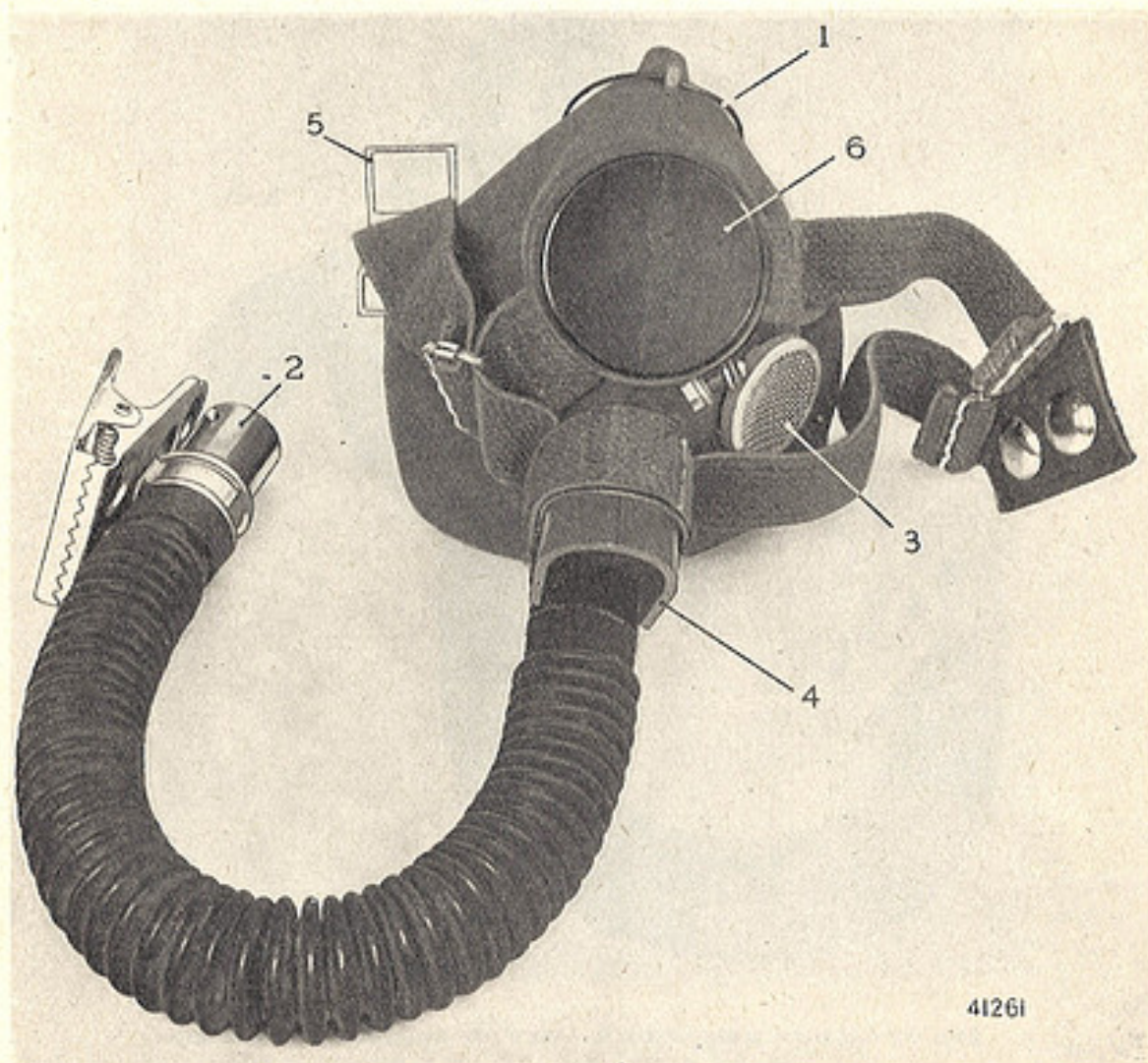


FIG. 2.—OXYGEN MASK, TYPE G—FRONT VIEW

8. The tension of the control spring of the inspiratory valve is so set that, at an air flow of 1 litre per min. S.T.P. through the valve, the back pressure is not less than 12 mm. nor more than 14 mm. of water.

9. The economiser valve which is adjusted to operate at a resultant pressure of approximately 6 mm. of water will trip before the inspiratory valve, thus the latter will remain closed whilst oxygen is being delivered from the economiser. When the oxygen is absorbed, continued inspiration will create a depression sufficient to cause the inspiratory valve to open, when atmospheric air will enter to top up the oxygen supply. The valve is shown in position at (3) fig. 2 and (2) fig. 3.

10. *Expiratory valve.*—During exhalation, the expired breath and condensation is expelled through the expiratory valve (3) fig. 3. This is fitted as a unit in the moulded rubber housing adjacent to the oxygen inlet connector. The body of the valve is a bakelite cylinder which has a cross-piece or spider moulded integrally at one end. A hole at the intersection of the cross locates the stem of a rubber mushroom valve, a shoulder on the stem of the valve acting as a distance piece. The cylindrical valve body is pressed into the rubber housing and, together with the inlet connector, is locked in position. A length of copper wire is bound around the outside of the housing in the grooves provided, and tightened by twisting, afterwards being covered by the ring of elastic webbing (12, fig. 1).

11. The shoulder makes contact with the valve body, thus ensuring that the under-face of the mushroom is at a sufficient distance from the seating to prevent a high resistance to exhalation. A rubber draught shield (4, fig. 2) moulded around the valve housing prevents freezing of moisture caused by condensation of the expired breath.

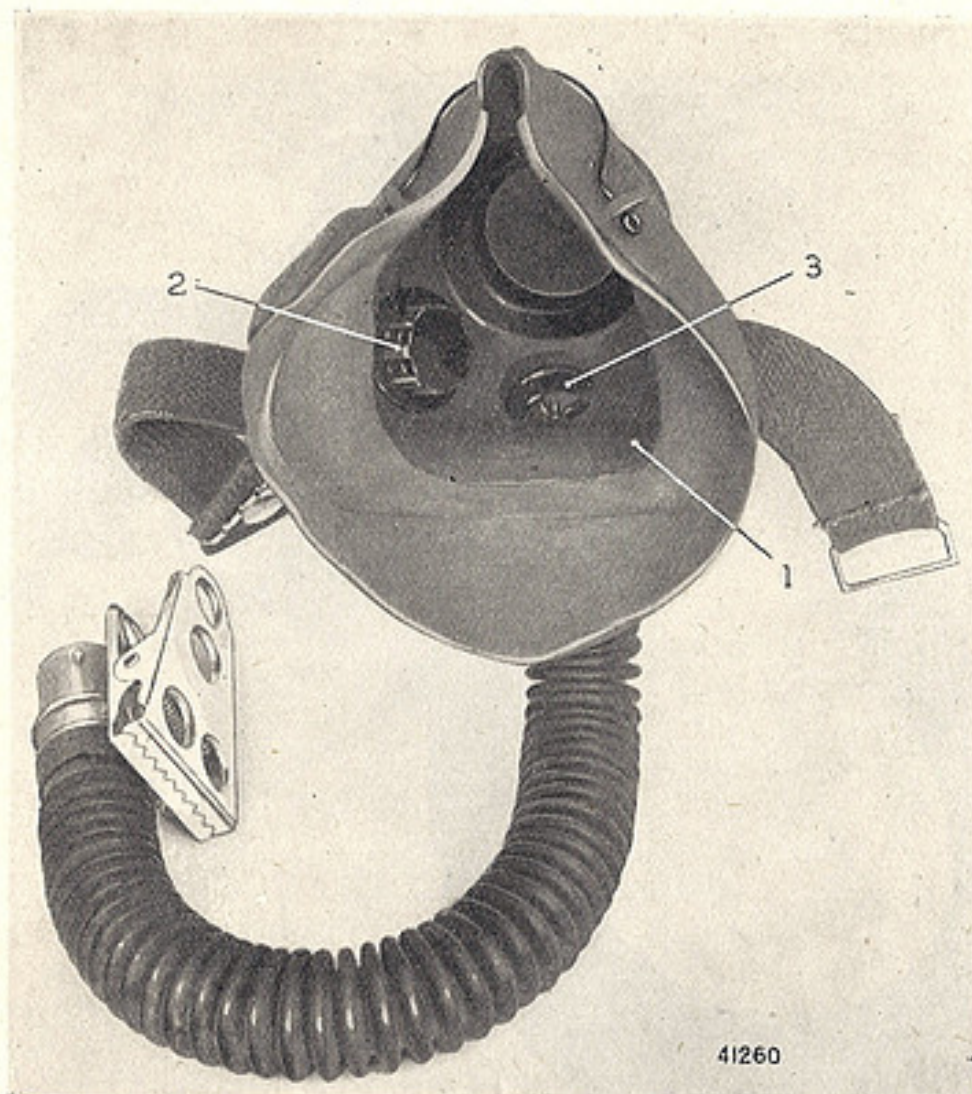


FIG. 3.—OXYGEN MASK, TYPE G—VIEW OF INTERIOR OF FACEPIECE

12. *Strap assembly.*—The mask is secured to the flying helmet by means of elastic webbing straps (10, fig. 1). The strap assembly is fixed to the mask by a clamping ring of high tensile steel wire (11), which passes through loops sewn in the straps. The ring is clamped to the microphone housing by a screw and nut. To hold the assembly in position the straps are sewn to a ring of elastic webbing (12) which fits tightly on the rubber valve housing at the base of the mask.

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