

Chapter 14

CASUALTY INFLATABLE SLEEPING BAG

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LEADING PARTICULARS

	<i>Ref. No.</i>
<i>Bag, sleeping, c/w pack</i>	22C/1997
<i>Bag, sleeping</i>	22C/1998
<i>Pack, fabric</i>	22C/1999
<i>Dimensions (approx.)</i>	16 in. × 11 in. × 2½ in.
<i>Weight, complete (max.)</i>	7 lb.

Introduction

1. This bag comprises a combined cover and pillow assembly and an internally located mattress assembly. Both assemblies are inflatable either by mouth or by the use of a dinghy hand pump. Employment of the latter method necessitates the use of an adapter which is normally attached to the pillow.

2. The cover incorporates an inflatable

double skin to provide efficient insulation against cold irrespective of whether the occupant's clothing is wet or dry. As the bag is proofed against water, vapour and wind, no evaporation can take place and thus cooling, arising from evaporation and wind exposure, is eliminated.

3. A furled central closure is designed to 'seal' the occupant against the ingress of water and can, when desired, easily be

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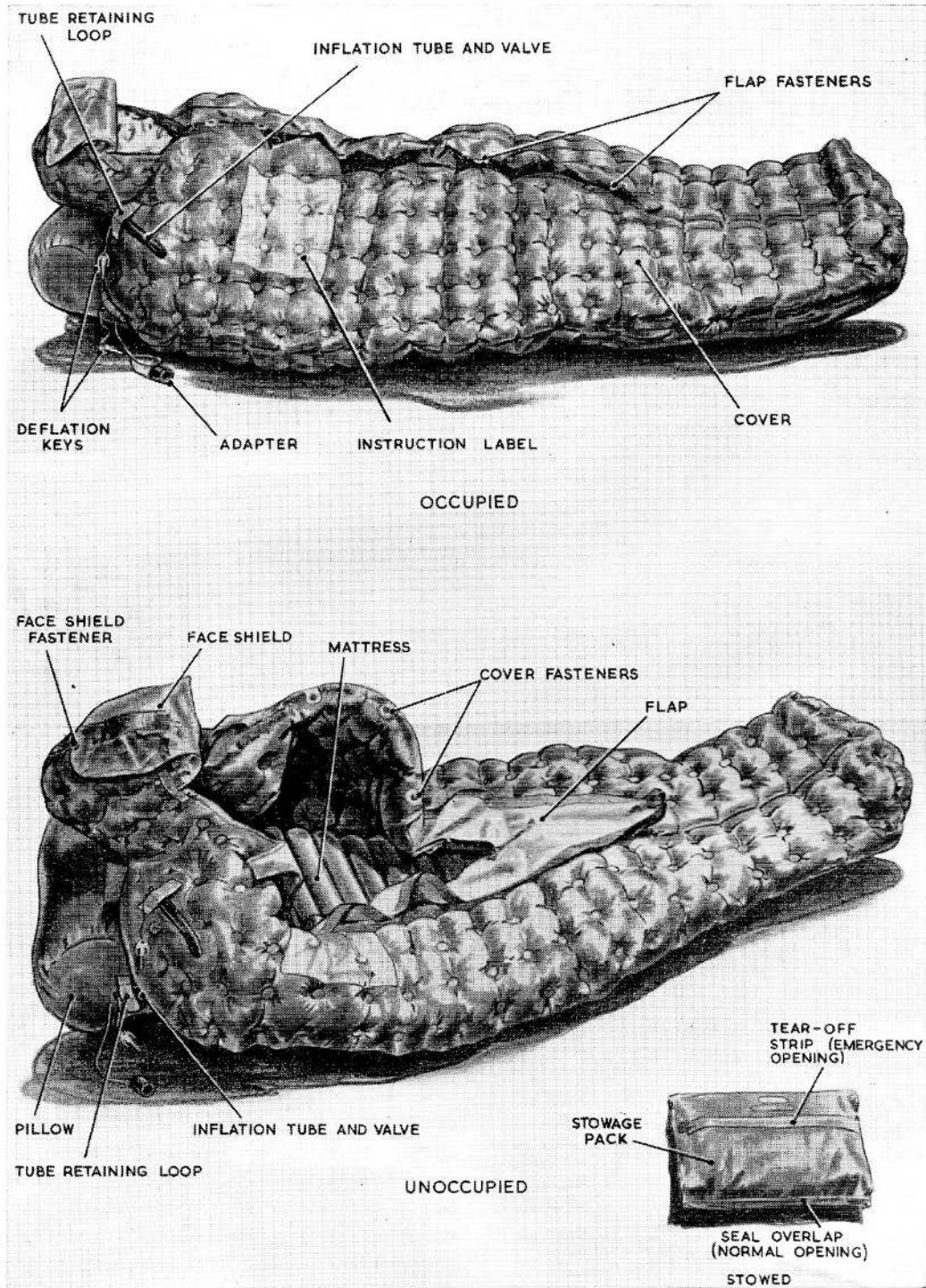


Fig. 1. Sleeping bag

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pulled open. A clear P.V.C. shield, attached to the cover hood, is provided to give face protection against spray.

4. When not in use, the bag is stowed within a fabric pack, the 'packed' dimensions of which are given in the Leading Particulars.

DESCRIPTION

Structure

5. The inflatable cover (*fig. 1*) is made in two layers of a rubber-proofed fabric, the two layers being bonded together in transverse lines over the mattress section and 'spotted' together over the remainder of the surface. The central opening can be closed by the engagement of nylon press stud fasteners, secured at intervals, to the side of the opening. Similar fasteners interspaced with those previously mentioned, are fitted to a single ply flap on each side of the opening. These flaps must be rolled inwards before the fasteners can be engaged. A fabric reinforcement patch at the base of each stud is coloured to make the two sets of fasteners readily distinguishable in the event of an emergency. Those for the central opening fasteners are coloured red, and those for the flap fasteners are coloured white.

6. At one end of the cover it has a hood and pillow attachment, the hood so designed that the base, or neck, portion extends into the cover and forms an effective but soft seal against draughts. A face protection shield, secured by adhesive to the forward section of the hood, can be folded clear of the face and secured by a press stud fastener to the top of the hood.

7. The inflatable pillow is an integral part of the cover and provides a comfortable headrest. An inflation channel between cover and pillow houses a short fixed length of nylon cord. This cord is installed to prevent complete closure of the channel, a condition which could otherwise occur by the relevant surfaces adhering together under certain climatic conditions. A fabric loop, attached to one end of the pillow, forms a storage housing for the valve end of an inflation tube which protrudes from the undersurface of the cover. This tube is connected with the mattress. The loop also provides anchorages for a deflation key and

an inflation adapter, a lanyard from each of these items being attached by stitching to the inside surface of the loop.

8. A second tube, for cover inflation, protrudes from the upper surface of the cover. Its valve end is contained by a fabric loop which is secured to the right shoulder of the cover. The lanyard of a second deflation key is stitched to the inside surface of the loop.

9. Each inflation tube accommodates a polystyrene oral inflation valve (*fig. 2*) which also acts as a non-return valve. Each valve is an interference fit in its respective tube to prevent air leakage.

Oral inflation valves

10. The two oral inflation valves are identical in construction and operation. Each valve consists of a body which is cylindrical for the greater part of its length and then tapers at one end into a nozzle mouthpiece. The body incorporates two external flanges, one at the change of section and the other at the extreme end of the mouthpiece, and is counterbored internally to form a housing for the inflation control mechanism.

11. This mechanism comprises a rubber diaphragm, a sealing member and a compression spring, all of which are retained in the body by a flanged and shouldered base insert. The diaphragm is secured by adhesive, to the flat, grooved head of the sealing member and seats against a shoulder formed around the inside of the body by the counterbore. A shank, protruding from the underside of the sealing member head, is hollow to accept a projecting spigot at the inner end of a shank on the shouldered base insert. The two shanks are enclosed in opposite ends of the compression spring, the spring being contained between the underside of the sealing member head and the shoulder formed at the outer end of the base insert shank. The base insert is a push fit within the valve body, with its flanged end abutting the outlet end of the body. A series of tapered holes through the outer end of the insert permits air to flow to and from the appropriate inflation tube.

Deflation keys

12. Made from similar material as the oral inflation valve, each key is of simple one-

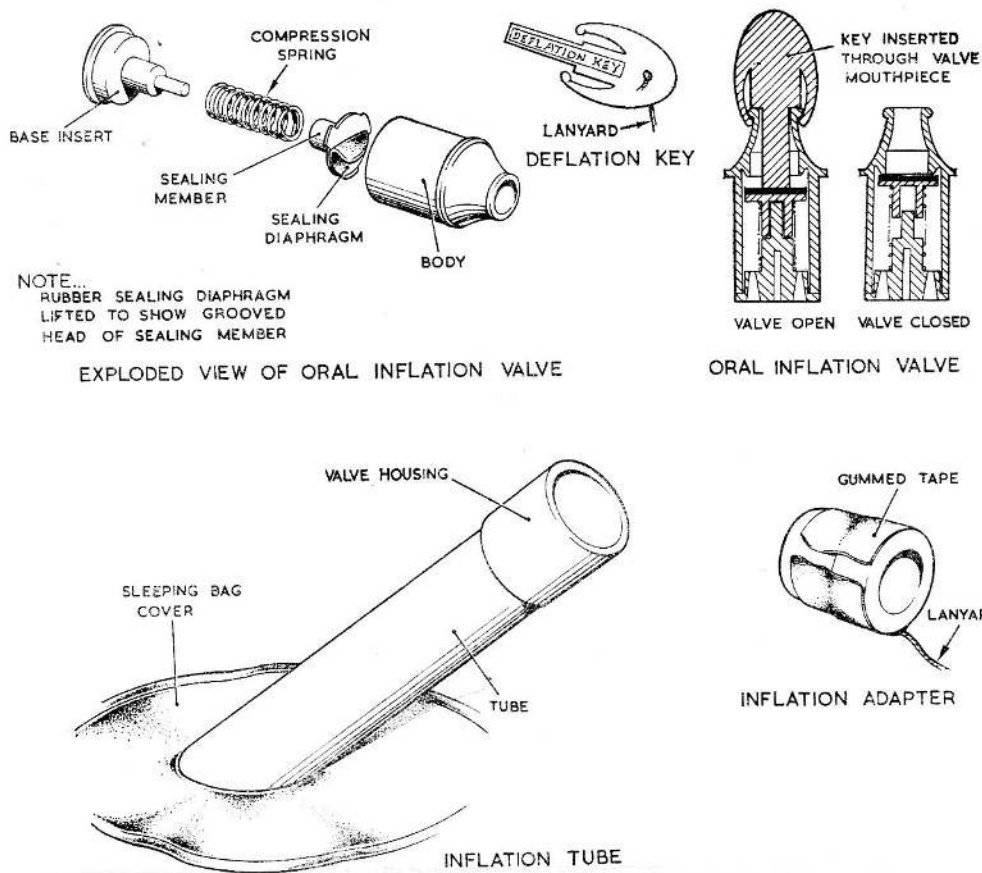


Fig. 2. Inflation and deflation components

piece flat section construction. It comprises a shouldered central probe and two curved lobes, and is drilled to provide lanyard attachment.

OPERATION

Accommodating a casualty

13. It is recommended that, in the absence of a medical officers' directions, the following procedure (whenever possible) should be adopted:—

- (1) Remove the bag from its stowage pack (fig. 3) and open it out.
- (2) Roll the injured person on to the open bag, tucking the feet into the lower section of the bag. Close the bag around the casualty and engage the 'red-base' fasteners.
- (3) Roll the side flaps inwards and engage the 'white-base' fasteners.

Inflation

14. Inflate as follows:—

- (1) Fit the inflation adapter, attached by the lanyard to the pillow, over the mouthpiece of the valve in the upper inflation tube. Connect a dinghy inflation pump to the adapter and gently inflate the cover and pillow.

Note . . .

Do not over-inflate. Too great a pressure will impose added restriction to an occupant's movements and cause discomfort. A good guide for suitable pressure is given by the position of the occupant's head and degree of softness of the pillow.

- (2) Remove the pump connection and adapter and connect them with the valve of the lower inflation tube. Gently in-

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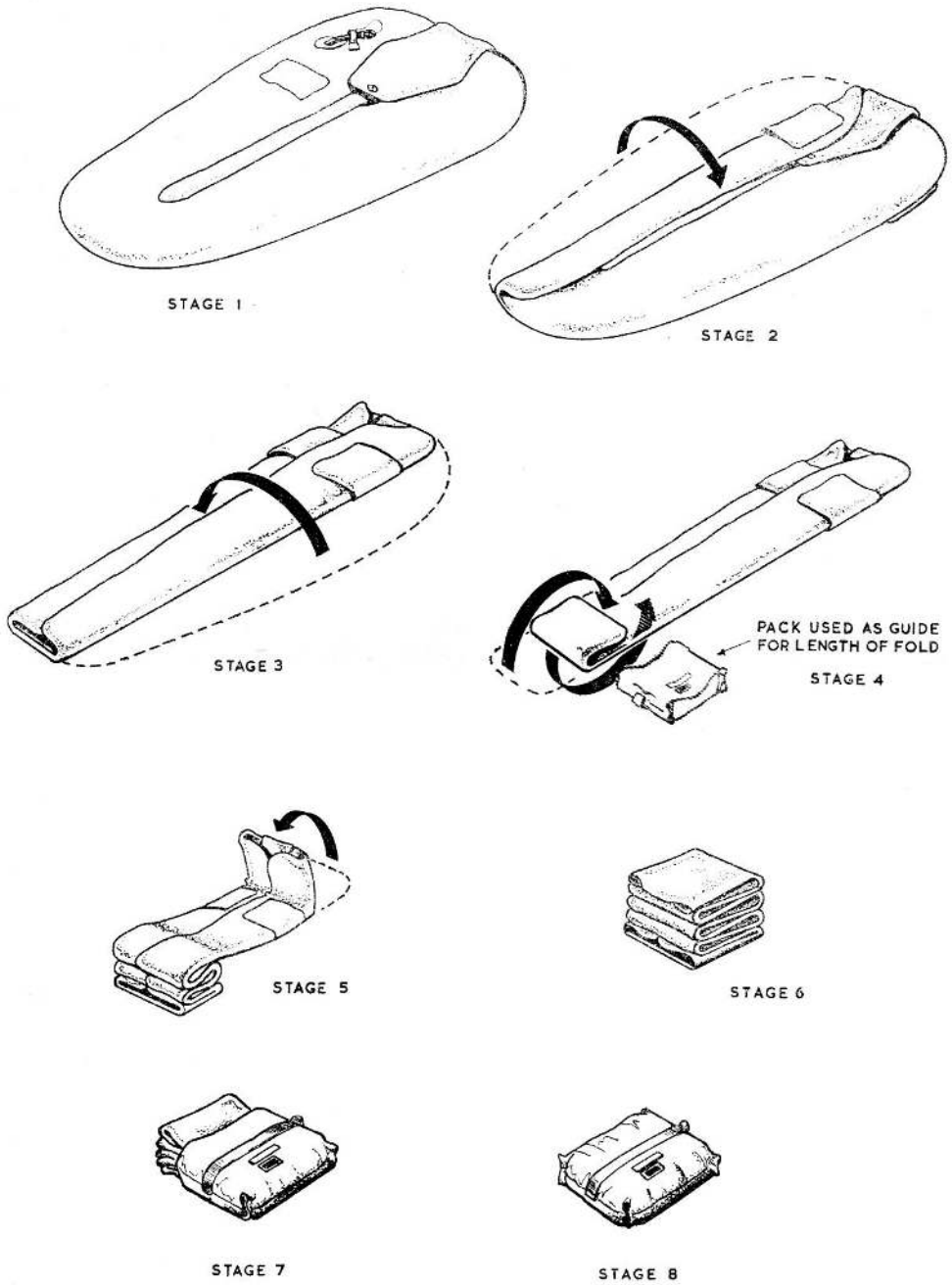


Fig. 3. Folding and packing details

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flate the mattress to a slightly higher pressure than that for the cover and pillow as the mattress must support the occupant from direct contact with the ground or bottom of a dinghy.

Note . . .

If no hand pump is available, dispense with the adapter and inflate by mouth.

Deflation

15. Deflation of the bag is a simple operation involving the use of the two deflation keys. To deflate:—

(1) Insert the probe of the key into the mouthpiece of the relevant oral inflation valve and press until the probe shoulder contacts the valve. As a result of this action, the bulbous ends of the key lobes will have been “sprung” around the external flange at the inlet end of the mouthpiece to retain the probe in the valve. On insertion, the probe end contacts the rubber diaphragm and forces it, away from its seating, along the inside of the valve body. The shank of the sealing member slides over the spigot end of the base insert and the spring is compressed. Displacement of the sealing diaphragm allows the air to escape, via the tapered holes in the base insert and the grooves in the sealing member, through the valve mouthpiece to atmosphere.

16. On withdrawal of the key probe, the compression spring forces the sealing member outwards until the diaphragm returns to its seating to blank-off the flow of air through the valve body.

Folding and stowing

17. Referring to fig. 3, fold and pack the bag in the following manner:—

(1) Insert the deflation keys into the oral inflation valves and, commencing at the foot, roll up the bag to expel the air inside the cover, pillow and mattress.

(2) Lay the bag out flat. Engage the inner set of fasteners (red to red) and then the outer set of fasteners (white to white). Place each deflation key in its respective loop. Insert the valve end of each inflation tube through its respective loop (stage 1).

(3) Fold right-hand side of bag towards the centre (stage 2).

(4) Fold left-hand side of bag over the folded right-hand side (stage 3).

(5) Commencing at the foot, fold the bag in a concertina fashion, using the length of the stowage pack as a guide for the length of each fold. Make five folds in this manner (stage 4).

(6) Working from the head of the bag, fold in a concertina fashion. Make three folds in this manner (stage 5). The folding should now be complete, with the inflation tubes lying flat to avoid kinking (stage 6).

(7) Insert the bag into the pack (stage 7) and seal the pack (stage 8) by applying adhesive solution (*Ref. No. 27C/2063*) along the top and bottom edges of the open side, then overlapping and pressing down. Width of overlap should be approximately $\frac{1}{2}$ in.

Servicing

18. Servicing is to be carried out in accordance with the instructions given, and at the periods stated, in Vol. 4.

Testing

19. Tests must be carried out with the bag laid on a flat surface, with complete freedom from draughts. The temperature must be constant.

Cover and pillow assembly

20. (1) With the oral inflation valve removed, connect an air supply to the inlet end of the appropriate inflation tube and inflate to an internal pressure equal to 30 cm. head of water.

(2) Maintain this pressure for five minutes. During this period, examine all attached items for signs of peeling and detachment.

(3) Shut off the air supply. After a period of five minutes, check the internal pressure reading. The pressure should not be less than that equal to 20 cm. head of water.

(4) Disconnect the air supply.

Mattress

21. (1) With the oral inflation valve removed, connect an air supply to the inlet end of each inflation tube in turn and inflate to an internal pressure equal to 60 cm. head of water.

(2) Maintain this pressure for five

minutes. During this period, examine all attached items for signs of peeling and detachment.

(3) Shut off the air supply. After a period of five minutes, check the internal pressure reading. The pressure should not be less than that equal to 55 cm. head of water.

(4) Disconnect the air supply.

Oral inflation valves

22. (1) Connect an air supply to the outlet

end of each valve and leak test with a pressure equal to 30 cm. head of water.

(2) Immerse the mouthpiece of each valve vertically in water. The leakage rate should not exceed one bubble in ninety seconds. Valves failing this test should be discarded.

Note . . .

On no account must french chalk be used as a lubricant when inserting a valve in its respective inflation tube. Use cold, clean water only.

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