

Chapter 4

PERSONAL SURVIVAL PACKS

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Introduction

1. Personal survival packs are designed primarily for use in Mk. 2 and Mk. 3 series ejection seats, but may be used in any other type of aircraft seat, ejection or non-ejection, in which they can be accommodated. They contain a single-seater dinghy and a scale of survival equipment suitable for one of the following climatic conditions, Arctic, Temperate, Tropical and Desert.

2. The scales of equipment carried in the packs are at present only provisional, pending the availability of new items. Until these scales of equipment are finalised it is not proposed to indicate the precise position which each item will occupy in the various containers provided with the pack; these instructions will, therefore, contain only such information as is necessary to indicate which container they are to be stowed in, the disposition being left to the discretion of the individual.

Description

3. There are four main components, the pack proper, one large and one small

rectangular container, and one cylindrical container.

Pack

4. The pack consists of two parts each made from yellow water-proof canvas; one is a box-like container for the dinghy and the three containers, the other is the lid or cover; the two parts are joined by a zip-fastener which extends round the circumference of the pack. In shape the pack is almost rectangular, but the back slopes outwards towards the top to conform to the contour of the back of the ejection seat pan.

5. There is a pocket in the lid or cover to accommodate a hairlock cushion and a Type D water cushion; the pocket is closed by a zip-fastener and a narrow flap on the inside covers the cushions when they are stowed to prevent the sliding part of the fastener fouling when it is drawn across. The hairlock cushion is moulded to the shape of the buttocks and thighs for comfort.

6. The larger part of the pack is reinforced just below the zip-fastener with 1 in. wide

webbing which also forms the lanyard by which the pack is secured to the person of the wearer; there are also two quick-release fittings, one at each side, which are attached to their counterparts on the life jacket or parachute harness, as applicable; these fittings are on adjustable straps.

Contents of pack

7. Many of the items are already described in this publication or in A.P.1182C, Vol. 1, others require no description since they are by nature easily understood. New items of equipment will be described, as necessary, at a later stage when the contents of the pack have been finalised.

Preparing and folding the dinghy

8. The following items are required:—

<i>Item</i>	<i>Quantity</i>
Type SS, Mk. 1 or Mk. 2 dinghy	1
Bellows, topping-up	1
Sponge	1
Drogue	1
CO ₂ cylinder, Mk. 9C, charged with 9½ oz. of gas	1
Kite cord, 12 oz., 7 ft. 6 in. long	2
Kite cord, 8 oz., 7 ft. 6 in. long	1
Kite cord, 4 oz., 3 ft. long	3

9. Thoroughly deflate the dinghy until the

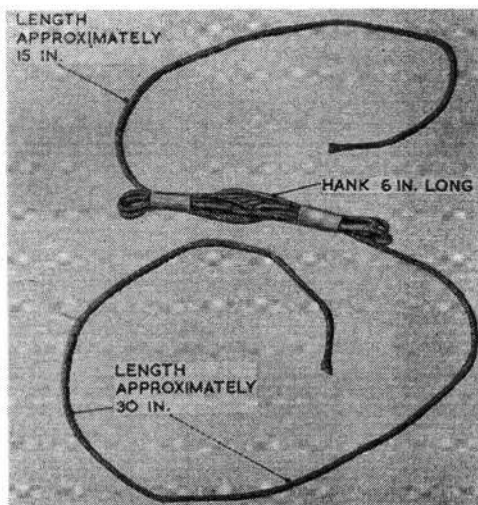


Fig. 1. Method of hanking the two lengths of 12 oz. kite cord

creases are knife-edged and fit the CO₂ cylinder. Dust the dinghy liberally with french chalk.

10. Attach one end of the 7 ft. 6 in. length of 8 oz. kite cord to the loop at the end of the drogue line with a bowline knot and attach the other end of the cord to the stern loop of the dinghy with a similar knot. Stow the drogue in the water ballast pocket.

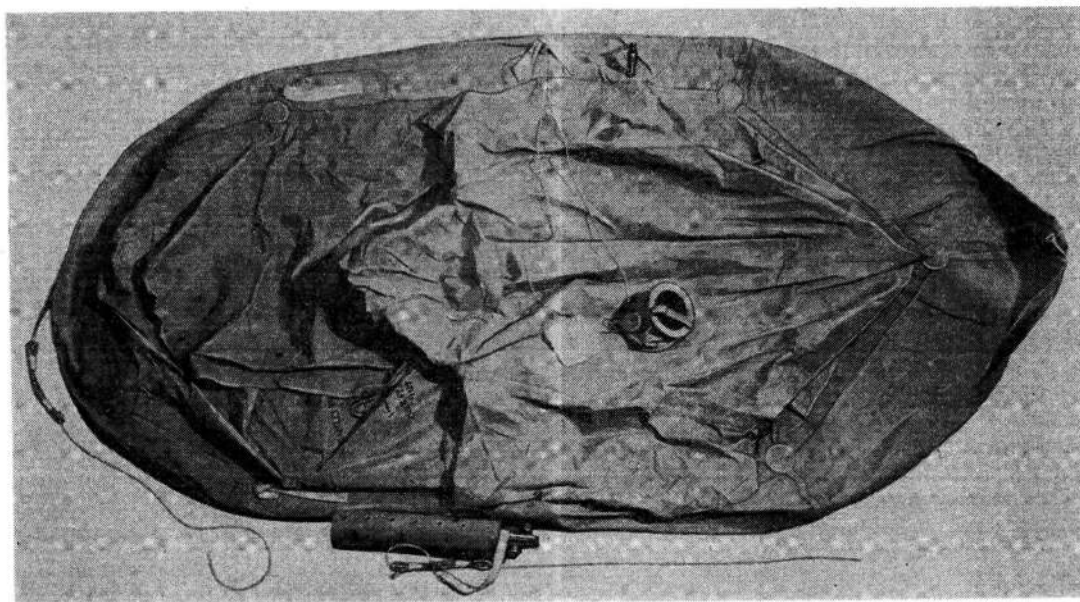


Fig. 2. Dinghy spread out on table ready for folding

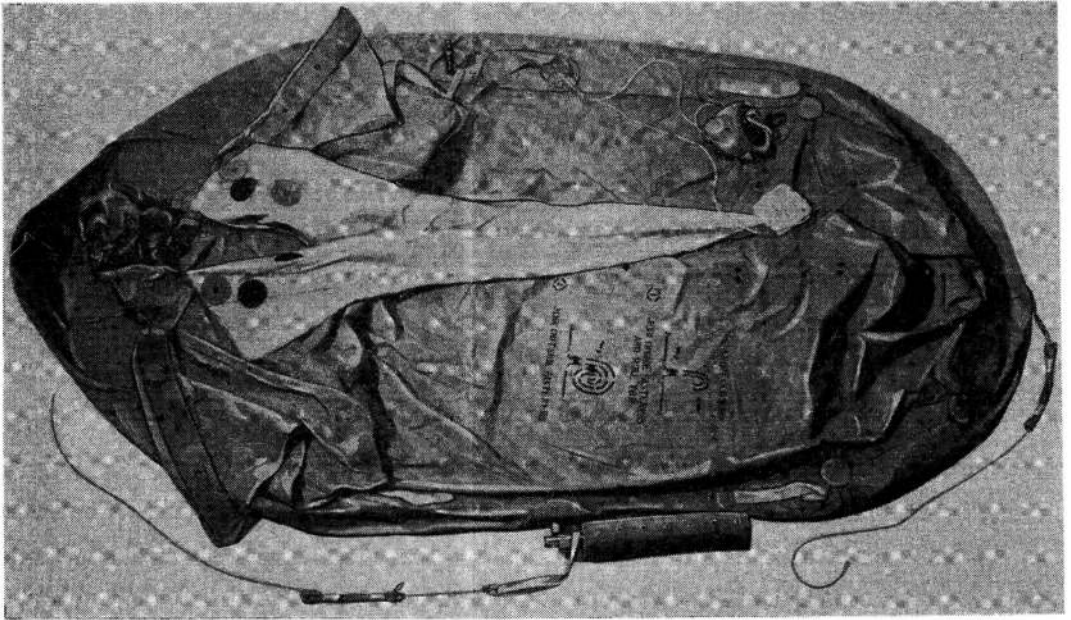


Fig. 3. Exposure equipment folded flat on dinghy

11. Attach one end of a 3ft. length of 4oz. kite cord to the stern loop of the dinghy with a bowline knot and secure the other end of the cord to the webbing loop inside the lid or cover of the pack before the two parts are joined (*para. 20 refers*).

12. The two remaining 3 ft. lengths of 4 oz. kite cord are required to secure the bellows

and sponge to the dinghy. Secure one end of each piece of cord to the boarding handle nearest the stern on the port side with a bowline knot and secure one of the free ends to the bellows and one to the sponge with similar knots.

Note . . .

If a Mk. 1 dinghy is used it will be necessary

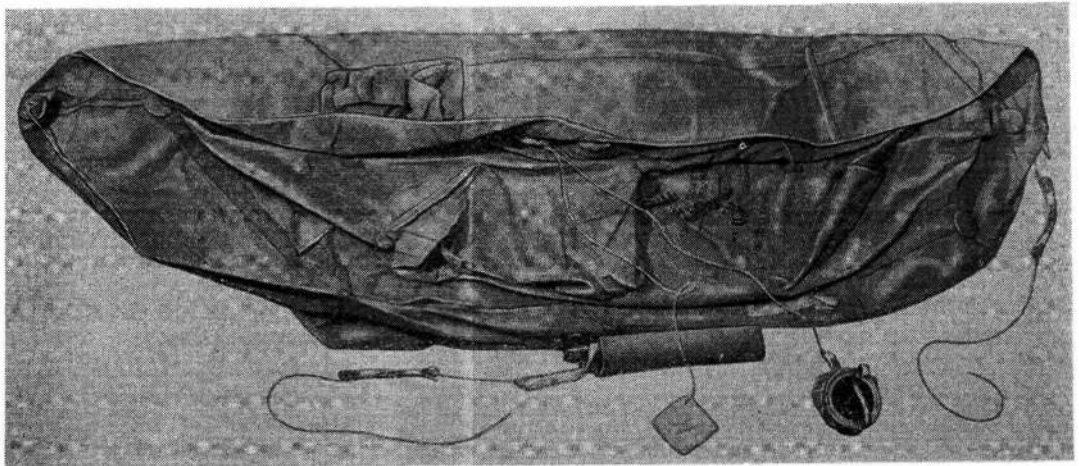


Fig. 4. First longitudinal fold

(A.L. 41, Sep. 54)

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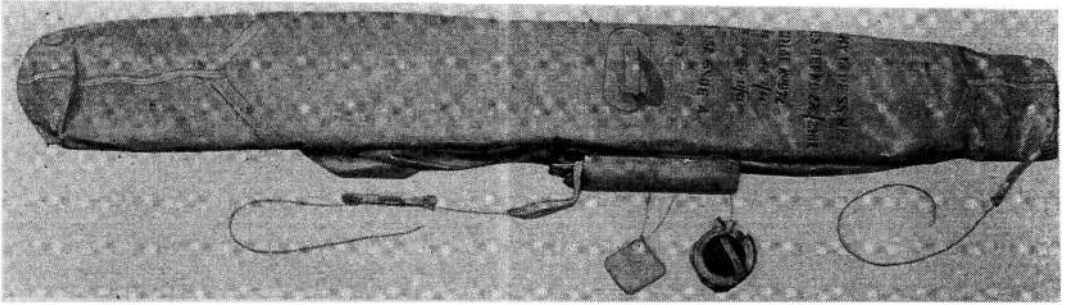


Fig. 5. Second longitudinal fold

to secure an additional length of 4 oz. kite cord to the same boarding handle. The free end of this cord is secured to a pack containing an inflatable exposure suit.

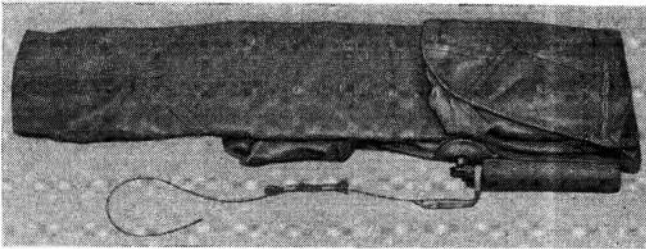


Fig. 6. First lateral fold

13. Form the two 7 ft. 6 in. lengths of 12 oz. kite cord into hanks (*fig. 1*); the hank is approximately 6 in. long and the two ends are about 15 in. and 30 in. respectively. Secure the shorter end of one hank to the webbing loop on the CO₂ cylinder operating head with a bowline knot and secure the shorter end of the other hank to the bow loop on the dinghy with a similar knot.

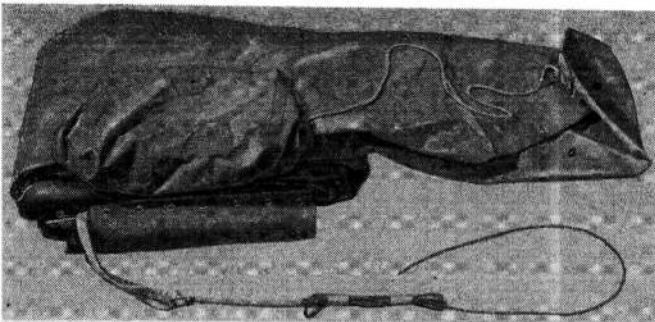


Fig. 7. Second lateral fold

14. Spread out the dinghy on a table ready for folding (*fig. 2*) and apply more french chalk; ensure that there is plenty of chalk underneath the exposure cover and round the seams.

15. Five folds are used, two longitudinal and three lateral. Before folding the dinghy, arrange the exposure equipment, i.e., cape and apron, as shown in *fig. 3*; the cape and apron are laid flat with the front opening turned back to form a VEE, the sleeves are folded towards the centre and the outer edges overlap the buoyancy chamber.

16. Commence folding from the side opposite the CO₂ cylinder. Turn this side inwards towards the centre line (*fig. 4*) and then turn the whole over to meet the



Fig. 8. Third lateral fold ; dinghy ready for stowing in pack

opposite edge (*fig. 5*) ; keep the sponge and bellows outside these folds by bringing them outside the edge where the CO₂ cylinder is fitted.

17. Insert the sponge and bellows between the folds near the CO₂ cylinder, the bellows behind but parallel with the base and the sponge in a similar relative position to the operating head.

18. Turn the bow end of the dinghy over until the folded edge is approximately 1 in. beyond the base of the CO₂ cylinder (*fig. 6*) ; it may be necessary to turn the extreme end under to bring it level with the end of the operating head.

19. Turn the stern end of the dinghy over the bow end so that the folded edge is approximately 1 in. beyond the end of the operating head (*fig. 7*) and turn it back on itself to complete the folding (*fig. 8*). The dinghy should now be about the same dimensions as the inside of the pack.

20. If a Mk. 1 dinghy is used follow the instructions from para. 9 to 14, then place the pack containing the exposure suit and cushion on the floor of the dinghy under the cape and apron, near and in line with the CO₂ cylinder ; make sure that the package

is secured to the boarding loop (*para. 13*) and continue the operations from para. 15 to 19. The pack containing the exposure suit will be contained within the folds of the dinghy.

Stowing the survival equipment

21. The cylindrical container (*fig. 9*) is intended to hold a solar still, but until this item is available it will contain three 2-star RED distress signals and a plastic drinking cup.

22. The smaller of the two rectangular containers is marked SURVIVAL AID CONTAINER, and is intended to carry the smaller items, such as water purifying tablets, heliograph, compass, etc. ; these items are so arranged that the overall dimensions of the container are not unduly disturbed.

23. The remainder of the equipment, except the hairlock and Type D water cushions, is stowed in the larger container ; the items are so arranged that the completed package is approximately 15 in. × 10 in. × 3 in. The eyeshields and water carrier are laid flat at the bottom of the container and the SURVIVAL AID CONTAINER and poncho cape are placed on top followed by the remainder of the equipment. It may be necessary to use a wooden block to fill space and maintain the shape of the container ; the size of this wooden block depends on the actual contents of the container, but the dimensions will normally be 15 in. × 4 in. × 2 in. or 15 in. × 4 in. × $\frac{3}{4}$ in.

24. When all items have been stowed, fold the mouth of the container to form two flaps (*fig. 10*) and turn the package over. Fasten the flaps together round the contents ; this provides sufficient rigidity to prevent the items becoming unduly displaced during subsequent handling.

25. The Type D water cushion is filled with approximately 1½ pints of fresh water

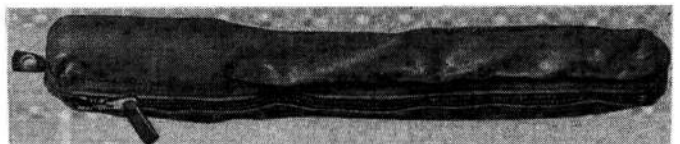


Fig. 9. Cylindrical container ready for stowing in pack

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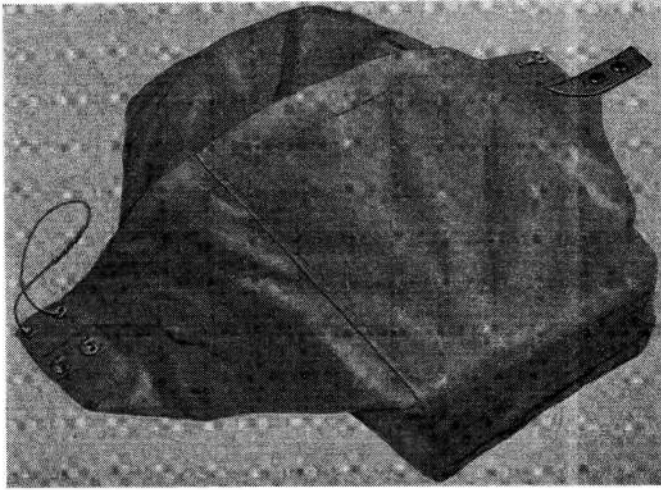


Fig. 10. Survival equipment stowed in large container : mouth folded to form flaps fastened round package

and is then inserted into the pocket of the lid after the hairlock cushion has been stowed (*fig. 11 and 12*). Ensure that the moulded side of the cushion is towards the outside in the correct relative position and close the zip-fastener. Tie the cord from the stern loop of the dinghy to the webbing loop on the inside of the lid or cover with a bowline.

Packing the dinghy and survival equipment

26. Place the cylindrical container in the bottom of the pack against the rear wall and the other container beside it (*fig. 13*). Draw or place the folded dinghy near the pack, tie the loose end of the hanked cord from the bow of the dinghy to the cord on the larger container and then to the eyelet on the cylindrical container with a bowline.

27. Lift the folded dinghy into the pack so that the CO₂ cylinder rests on the cylindrical container at the back; stow the hanked cord from the bow between the dinghy and containers. Place the cover or lid on top of the folded dinghy with the side bearing the words PERSONAL SURVIVAL PACK to the front, i.e., in line with the words and other symbols on the lower part of the pack. Mate the two sides of the zip-fastener in the sliding part and commence to close the pack.

28. Before finally closing the pack, ensure that the flap covering the zip-fastener in the lid or cover is in position, tuck the hanked part of the cord from the operating head between the dinghy and the rear wall of the pack. Lay the free end of the cord underneath the two sides of the fastener as the pack is closed and ensure that the sliding part of the fastener is located against the spring clip at the end of its travel.

29. Make sure that the two parts of the pack are properly mated as the fastener is closed, secure the free end of the cord to the eye in the sliding part of the fastener and then to the loop in the reinforcing webbing (*fig. 14*).

Tuck the lanyard into the pocket at the side and close the small flap.

Fitting the lowering cord

30. Stow the lowering cord in the loops of its satchel (*fig. 15*) and close the zip-fastener. Secure the split fitting on one end of the cord to the looped end of the dinghy lanyard (*fig. 14*) and attach the satchel to the rear wall of the pack by the four press studs (*fig. 16*).

31. This completes the preparation, except that the correct identification label should be inserted into the small pocket at the front of the pack (*fig. 17*).



Fig. 11. Hairlock cushion, water cushion and lid or cover

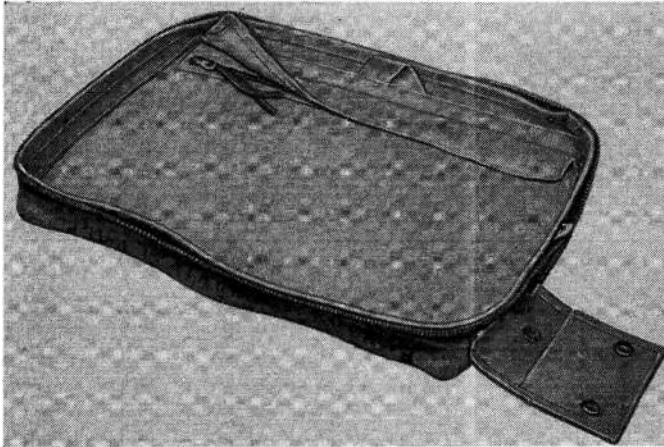


Fig. 12. Hairlock cushion and water cushion stowed in lid or cover

Installation

32. The pack is installed in the seat together with the emergency oxygen equipment and the parachute assembly. The pack is placed in the back of the seat pan with the lowering cord satchel to the rear; bring the end of the lowering cord carrying

the quick-release fitting over the left-hand side of the seat.

33. The emergency oxygen equipment may be carried in a special cushion attached to the seat part of the parachute harness, or it may be in a separate container attached to the personal pack. In either case, the oxygen equipment is to rest in the space in front of the pack and when carried in the special cushion a block of wood, $3\frac{1}{2}$ in. \times $3\frac{1}{2}$ in. \times 15 in., is inserted in front of the pack on which the oxygen cylinder rests.

34. Fit the parachute pack into its container and set the cushion on top of the personal pack; make sure that the oxygen cylinder is pressed down on the wooden block. Open the straps of the harness, make sure that the straps carrying the quick-release fittings on the side of the pack are also opened out and fit the parachute harness to the wearer. Secure the quick-



Fig. 13. Survival equipment stowed in pack : containers secured to dinghy



Fig. 14. Pack closed: end of lowering cord attached to dinghy lanyard

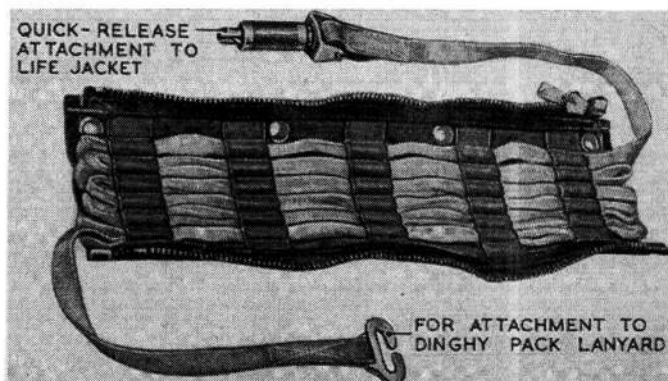


Fig. 15. Lowering cord stowed in its satchel



Fig. 16. Lowering cord satchel secured to back of pack

release fittings at the sides of the pack to their respective fittings on the sides of the parachute harness and secure the quick-release fitting on the lowering cord to the fitting on the left-hand side of the life jacket in front; the straps attaching the pack to the parachute harness and the lowering cord must be passed over, not under, the harness before being fitted.

Instructions for use

35. After leaving the seat and after the parachute has developed, the pack may be lowered at any time by pressing down the collars of the quick-release fittings at each side of the parachute harness. DO NOT RELEASE THE LOWERING CORD ATTACHED TO THE LIFE JACKET. The elastic loops will provide sufficient resistance to prevent any violent jerk when the weight is taken by the lowering cord.

36. To open the pack, lift the small flap at the side and pull the cord; this will remove the sliding part of the fastener from its position against the spring clip and enable the two parts to be separated easily. Pull the cord under the fastener backwards until the two parts are separated.

37. Board the dinghy and haul in the pack and containers. The lid or cover can be used as a cushion and the dinghy can be baled out initially with the bottom part of the pack. Secure the bellows to the topping-up valve ready for use as soon as possible after boarding.

38. Don the exposure equipment without delay in Arctic regions. This equipment is part of the SS, Mk. 2 dinghy, it consists of a cape and apron and a false floor which are



Fig. 17. Pack ready for installation in seat

inflated initially by the CO₂ cylinder. If a SS, Mk. 1 dinghy is used, remove the inflatable exposure suit and cushion from the package, don the suit and inflate both the suit and the cushion through the oral inflation valves.

39. When a multi-seat aircraft is ditched, the personal packs can be taken into the multi-seat dinghy. The contents of these packs can be used to supplement survival equipment provided with the larger dinghies,

and the single-seat dinghy can be used as a marker to assist rescue.

40. Information concerning the use of first-aid kits is contained in each kit, similar information is also provided with many other items of survival equipment, e.g., the desalting apparatus and solar still. The information about other items of equipment is either self-evident or is already in this publication or in A.P.1182C, Vol. 1.

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