

## Appendix I

## FLYING CLOTHING

## Introduction

1. The following information includes a list of items available (A.P.830, Vol. 3, Part 3, also refers), the recommended combinations of these items for high and low altitude flying, the dressing and functional tests which are to be conducted before leaving the crew room or cloakroom. The items are also described in A.P.1182E, Vol. 1 and their servicing is dealt with in Vol. 4 of the same publication. Reference is therefore to be made to this information as necessary.

2. The anti-G suit performs two functions when worn; it counters the effects of high 'G' loading on the pilot and it is used as a pressure garment to protect the lower part of the body from the effects of reduced environmental pressure following loss of cabin pressure at great heights. The dual purpose function is made possible by the installation in the aircraft of a barometric anti-G valve which, when cabin pressure falls to the equivalent of 38 000 ft., inflates the anti-G suit; the normal anti-G function of the valve remains unimpaired.

## List of clothing items

3. The following items are available, as required:—

Ref. No.	Description	Ref. No.	Description
		22C/—	
		1121 to 1126	Gloves, cape leather, N.P.
		1640 to 1645	Gloves, cape leather, flying, water resistant
		1904 to 1911	Suits, flying, Mk. 2
		2024	Garters, leg restraint (attached to Mk. 2 flying suit)
		1801 to 1814	Suits, aircrew, flying dress, N.P. blouse
		1815 to 1828	Suits, aircrew, flying dress, N.P. trousers
		1671 to 1675	Blouse, immersion suit
		1676 to 1680	Trousers, immersion suit
		1215	Braces, immersion suit
		1632 to 1639	Boots, rubber, immersion suit
		1856 to 1861	Suit, air ventilated, Mk. 2A
		1996	Knife, emergency, aircrew Mk. 2
		1725 to 1728	Helmets, flying, Type G
		2100 to 2124	Helmet, protective Mk. 1A c/w visor attachment
		1650 to 1651	Visor, anti-glare, Mk. 2, screen
		2093 to 2105	Helmets, partial pressure, Type E (B.W T.)
		1877	Jackets, life saving, Mk. 4A
		1713 to 1718	Jerkin, pressure, Mk. 1
		1841 to 1844	Suits, anti-G, Mk. 5A
		1625	Adapter, Anti-G and/or A.V.S.
		1681 to 1682	Mitts, Mk. 3 (stowed in survival pack)
		6D/—	
		2307	Mask, oxygen, Type P2A
		or	or
		2309	Mask, oxygen, Type Q2A (According to size of face)
		2073	Hose assembly, oxygen mask, Mk. 1
1475 to 1478	Drawers, cotton, short, aircrew		
1162 to 1164	Vests, string, aircrew		
9421244 to 9421250 and 9424959	Socks, woollen, knitted, plain		
9421251 to 9421258	Socks, woollen, knitted, ribbed		
1597 to 1606	Shirts, aircrew, cotton or		
1657 to 1666	Shirts, aircrew, N.P.		
1527 to 1542	Boots, flying, 1952 pattern		

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Ref. No.	Description
6D/-	
2072	Hose assembly, pressure jerkin, Mk. 2
2113	Connector, air ventilated suit
2114	Connector, anti-G suit

#### Flying clothing assemblies

4. For convenience, the combination of items of flying clothing required for high and low altitude flying are defined as assemblies. Each assembly will list only the functional items, since items such as vest, drawers, etc., are common to both and do not materially affect limitations placed on the use of an assembly, e.g. maximum height at which full protection is retained.

5. The oxygen systems of these aircraft includes a Mk. 20 regulator and limitations imposed on the use of a clothing assembly are related only to this type of regulator.

#### Low altitude assembly

6. This assembly consists of the following items:-

Flying helmet, Type G	
Protective helmet Mk. 1A	c/w visor attachment
Oxygen mask Type P2A or Q2A	according to size of face
Air ventilated suit Mk. 2A	c/w connector 6D/2113
Anti-G suit Mk. 5A	c/w connector 6D/2114
Life saving jacket Mk. 4A	
Hose assembly 6D/2073	c/w personal component of P.E.C.

7. The following limitations are placed on the use of this assembly:-

- (1) It provides full protection up to a CABIN altitude of 43 500 ft. If the canopy is lost, this cabin altitude may be achieved at an AIRCRAFT altitude of 35 500 ft. in the worst conditions.

- (2) If cabin pressure is lost for any reason the aircraft is to be brought down to a CABIN altitude of 40 000 ft. at maximum descent rate in a total time of 2 min., followed by a gradual descent to below 30 000 ft. (A.P.4700A-PN (F Mk. 1) and A.P.4700F-PN (F Mk. 1A), refer). It is essential that the emergency is appreciated and action taken in the first 30 sec.

#### High altitude assembly

8. This assembly consists of the following items:-

Partial pressure helmet Type E (B.W T.)	
Anti-G suit Mk. 5A	c/w connector 6D/2114
Air ventilated suit Mk. 2A	c/w connector 6D/2113
Pressure jerkin Mk. 1	
Hose assembly 6D/2072	c/w personal component of P.E.C.

9. The following limitations are placed on the use of this assembly:-

- (1) It provides full protection up to a CABIN altitude of 66 000 ft. If the canopy is lost, the cabin altitude may be achieved at an AIRCRAFT altitude of 57 000 ft. in the worst conditions.
- (2) If the cabin pressure is lost for any reason, the aircraft is to be brought down to a CABIN altitude of 40 000 ft. at maximum descent rate in a total time of 3½ mins., followed by a gradual descent to below 30 000 ft. (A.P.4700A-PN (F Mk. 1) and A.P.4700F-PN (F Mk. 1A) refer). It is essential that the emergency is appreciated and action taken within the first minute.

#### Dressing

10. The recommended order of dressing for high altitude flying is given in para. 13. A Flying Clothing Worker, or other suitably qualified tradesman, will normally be in attendance during dressing to render assistance where necessary

11. When arranging the hoses of the anti-G and

air ventilated suits in conjunction with the pressure jerkin, a better 'run' may be obtained by ignoring the slit and passing them through the leg opening. It is therefore recommended that each individual determines the most suitable configuration, as follows:—

- (1) Sit in the seat of the aircraft, with the P.E.C. components connected.
- (2) Bearing in mind that the hoses are normally cut to the desired length before fitting to their connectors, route the hoses to provide the most convenient 'run' so that they can be marked and cut.

12. When the partial pressure helmet, pressure jerkin and anti-G suit are used, they are to be fitted initially under the supervision of a F.P.M.O.

13. Subject to the conditions in para. 11 and 12, the following is the order of dressing:—

- (1) Vest, drawers and socks
- (2) Air ventilated suit (if required) but see para. 11.

**Note . . .**

*The garment is donned with the slit to the back; the upper pair of tapes (marked RED) should be tied behind the neck and the lower pair (marked BLUE) brought around the waist and tied in front of the body. In warm weather, an air supply should be connected immediately the suit has been fitted and maintained in action until take-off (an A.V.S. adapter is required between the suit and the air supply); this is important, since the risk of heat exhaustion may be more critical during this period than after the aircraft is airborne.*

- (3) Shirt and (if required) trousers of flying dress.
- (4) Anti-G suit (but see para. 11 and 12).
- (5) Boots and blouse of flying dress

(if required).

**Note . . .**

*If an immersion suit is worn the boots are permanently sealed to the bottoms of the trouser legs.*

- (6) Flying suit or immersion suit.

**Note . . .**

*If a flying suit is worn pass the hoses of the anti-G and air ventilated suits through the slits provided. If an immersion suit is worn it will be necessary to pass the hoses through the rubber seals of the adapters positioned on the immersion suit trousers.*

- (7) Leg restraint garters (these may be separate items and are to be fitted and tightened just below the knee).
- (8) Pressure jerkin.

**Note . . .**

*Before closing the sliding fastener of the jerkin, pass the hoses of the anti-G and air ventilated suits through the slit provided in the right leg (but see also para. 11 and 12).*

- (9) Connect the anti-G suit to the personal component of the P.E.C., but leave the air ventilated suit connected to the air supply
- (10) Don the pressure helmet (but see para. 12) and connect the helmet to the jerkin hose assembly
- (11) Connect the Mic/Tel lead plug to the socket on the jerkin hose assembly.
- (12) Conduct a functional test of the clothing assembly, in accordance with the instructions on the universal test rig cabinet.
- (13) Put on the gloves and proceed to the aircraft.

**Note . . .**

*Just before entering the aircraft, disconnect the air ventilated suit from the air supply and connect the hose to the personal component of the P E.C.*

14. The order of dressing for low altitude flying is similar to that described in para. 13, using the items required. A functional test of the assembly is to be conducted in accordance with the instructions on the universal test rig cabinet.

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