

## CHAPTER 3-7

## HEADSET: SUPERGARD

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## GENERAL DESCRIPTION

1 Supergard headset Type RA101/1076, NSN 5965-99-584-1881, is a development of the Jetgard headset and is designed for use by VC10 Tanker crews. The headset is fitted with two noise attenuating earshells flexibly mounted on a spring wire headband. A soft padded cover fitted to the headband spreads the weight of the headset over the head. A neckstrap is also fitted. Double sets of lugs for the neckstrap and oxygen mask are fitted to the earshells to enable the headset to be reversed, if required.

2 A noise cancelling microphone is fitted to a flexible boom arm which, in turn, is attached to one earshell. The boom arm mounting boss allows the boom to rotate through approximately 270° to enable use of the microphone when the headset is reversed. A 2800 mm long downlead is fitted, with a PTT switch and clothing clip. The downlead free end is terminated with a one shank, four conductor, telephone plug, NSN 5935-99-946-6652.

3 A general view of this headset and a wiring diagram are shown in Fig 1 and Fig 2 respectively. In the following paragraphs, numbers in brackets, e.g. (5), refer to items in Fig 3, Fig 4 and Fig 5.

## SERVICING

4 The headset must be tested at regular intervals and after servicing for correct electrical performance using the Comprehensive Headset Tester Type 21A/200/1, NSN 6625-99-620-0369, or Type 21A/400/6, NSN 6625-99-794-0189. Refer to AP117L-0402-1, Chapter 4, or AP117L-0404-1, Chapter 4, respectively for test method information.

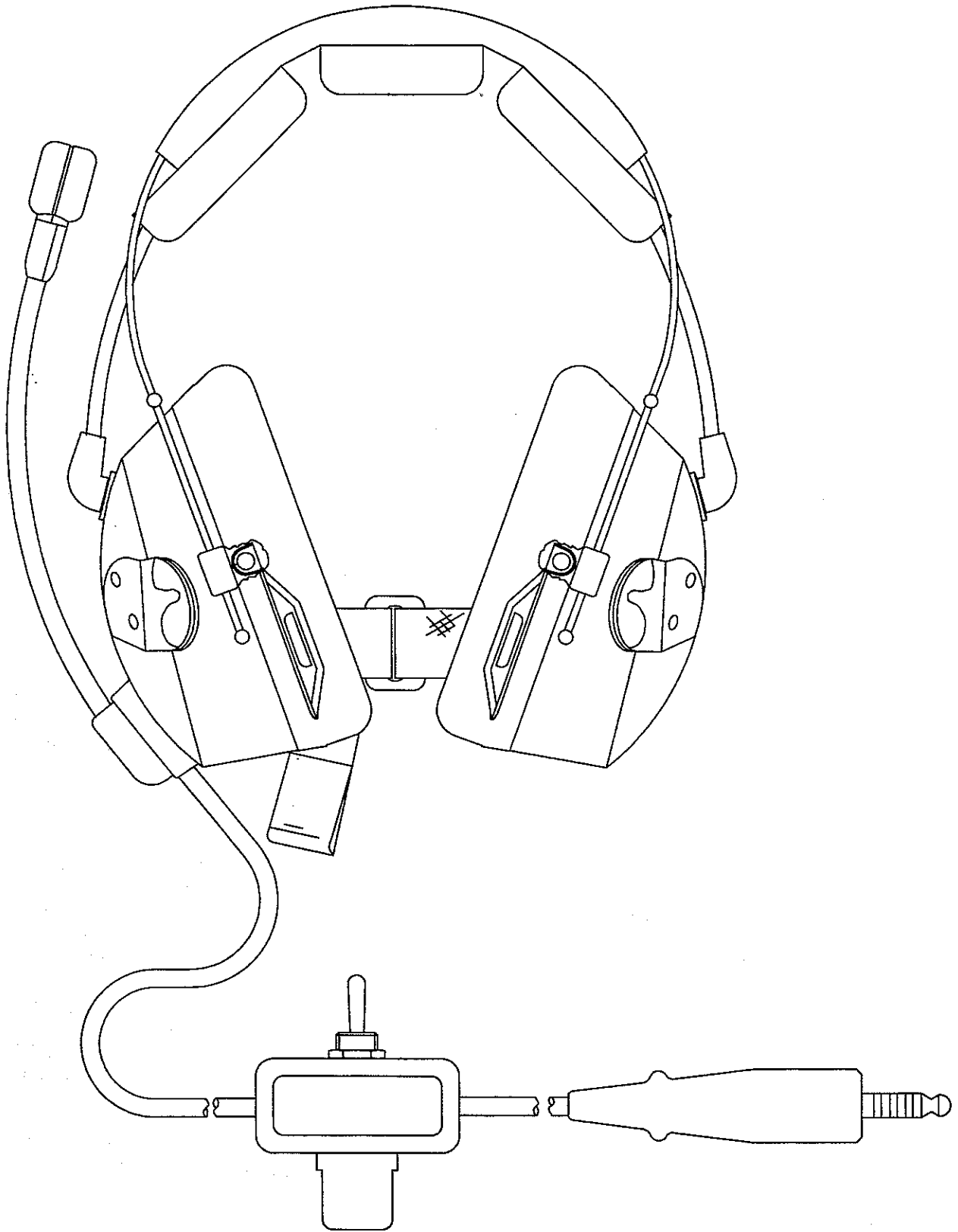


Fig 1 Headset, Supergard, 5965-99-584-1881

15. To replace an earphone, proceed as follows.
  - 15.1 Connect the wires to the earphone (22) in accordance with Fig 2.
  - 15.2 Insert the replacement earphone into the earshell.
  - 15.3 Replace in sequence the acoustic filter (25), foam cover (23), and damper cover (24).
  - 15.4 Replace the earcushion.

#### **Replacement of earphone (plain side)**

16. To remove a plain side earphone, proceed as follows.
  - 16.1 Remove the earcushion (9) as detailed in Para 12.
  - 16.2 Refer to Fig 5. Remove the damper cover (32), foam cover (31), acoustic filter (29), and earphone (30) from the earshell through the platform (34) attached to the earshell.
  - 16.3 Disconnect the wires from the earphone (30).
17. To replace an earphone, proceed as follows.
  - 17.1 Connect the wires to the earphone (30) in accordance with Fig 2.
  - 17.2 Insert the replacement earphone into the earshell.
  - 17.3 Replace in sequence the acoustic filter (29), foam cover (31), and damper cover (32).
  - 17.4 Replace the earcushion.

#### **Replacement of panel, electronic circuit (PEC)**

18. To remove a panel, electronic circuit (PEC), proceed as follows.
  - 18.1 Remove the earcushion (9) and earphone (22) as detailed in Para 14.
  - 18.2 Remove the acoustic filter (21).
  - 18.3 Ease the PEC (20) out of the earshell. Note the connections to the PEC and disconnect all the wires.
19. To replace the PEC, proceed as follows.
  - 19.1 Connect the wires to the PEC (20) in accordance with Fig 2, and insert the replacement PEC into the earshell.
  - 19.2 Replace the acoustic filter (21).
  - 19.3 Replace all other removed items as detailed in Para 17.

#### **Replacement of headband cable assembly**

20. The headband cable assembly (4) runs through the headband cover and connects the earphone (plain side) (33) to the PEC (20) in the earshell (boom side). Proceed as follows:-
  - 20.1 Remove the headband cover (2) as detailed in Para 7.
  - 20.2 Remove the earcushions (9) as detailed in Para 12.
  - 20.3 In the plain earshell, remove the earphone (30) as detailed in Para 16.

- 20.4 In the boom-side earshell, remove the earphone (22) and PEC (20) as detailed in Para 18.
- 20.5 Pull the cable assembly (4) ends, complete with grommets, from both earshells.
- 21 To replace the headband cable assembly, proceed as follows:-
  - 21.1 Commence at the plain earshell side. Feed the replacement cable assembly (4) into the earshell and locate the grommet in the earshell.
  - 21.2 Refer to Fig 2. Connect the cable assembly to the earphone (30).
  - 21.3 Lay the cable around the outside of the headband (3), feed the other end of the cable assembly into other earshell and locate the grommet in the earshell.
  - 21.4 Refer to Fig 2. Connect the cable assembly to the PEC (20) and refit the PEC in the earshell.
  - 21.5 Reassemble the headset as detailed in Paras 19.2 and 17.

### **Replacement of main cable assembly**

- 22 To remove the main cable assembly, proceed as follows.
  - 22.1 Remove the boom-side earcushion (9) as detailed in Para 12.
  - 22.2 In the boom-side earshell, remove the earphone (22) and the PEC (20) as detailed in Paras 16, 18.2 and 18.3.
  - 22.3 Remove the acoustic filter (19) and disc (18).
  - 22.4 Note the position of the cable entry into the boom arm (12) base. Remove and retain the boom arm fixing screws and seals from the earshell.
  - 22.5 Remove the boom arm (12) and the main cable (7) from the earshell.
  - 22.6 Note the position of the main cable strain relief ring in the boom arm base and remove the cable.
- 23 To replace the main cable, proceed as follows.
  - 23.1 Place the main cable (7) on the boom arm (12) base with the cable strain relief correctly positioned.
  - 23.2 Refer to Fig 1 and Fig 2. Insert the replacement main cable end into the earshell. Position the boom arm and the main cable on the earshell and fit the screws and seals. Tighten the screws until the seals are fully collapsed.
  - 23.3 Refer to Fig 3. Fit the disc (18) and the acoustic filter (19).
  - 23.4 Refer to Fig 2. Connect all the wires to the PEC (20).
  - 23.5 Refit the PEC into the earshell.
  - 23.6 Reassemble the headset as detailed in Paras 19.2 and 15.

### **Replacement of microphone**

- 24 To remove a microphone, proceed as follows.
  - 24.1 Remove and retain the screws (15) and nuts (16).

**Replacement of microphone**

- 24 To remove a microphone, proceed as follows.
- 24.1 Remove and retain the screws (15) and nuts (16).
  - 24.2 Remove and retain the cover (14).
  - 24.3 Note the orientation of the microphone (13) on the boom arm and the position of the wires.
  - 24.4 Disconnect the wires and remove the microphone.
- 25 To replace the microphone, proceed as follows.
- 25.1 Connect the boom arm (12) wires to the microphone (13) and position the replacement microphone in the boom arm end recess.
  - 25.2 Position the cover (14) on the boom arm.
  - 25.3 Fit the nuts (16) into the recesses in the boom arm.

**WARNING**

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- 25.4 Apply anti-tracking varnish, Part No XA 401544, to the end threads of the screws (15), fit the screws through the cover (14) into the nuts (16) and tighten.

**Replacement of boom arm**

- 26 To remove a boom arm, proceed as follows.
- 26.1 Remove the boom-side earcushion (9) as detailed in Para 12.
  - 26.2 In the boom-side earshell, remove the earphone (22) and the PEC (20) as detailed in Para 18.
  - 26.3 Remove the acoustic filter (19), disc (18), boom arm (12) and main cable (7) as detailed in Paras 22.3 to 22.6.
- 27 To fit a replacement boom arm, carry out the procedure given in Para 23.

**Replacement of platforms**

- 28 Both earshells have platforms (27, 34) to which the neckstrap (5, 6) is attached and which support the earcushions (9). The platforms are secured to the earshells by self-adhesive foam gaskets. To remove a platform, proceed as follows.
- 28.1 Remove the earcushion (9) as detailed in Para 12.
  - 28.2 Refer to Fig 5. Remove the damper cover (24 or 32) and the foam cover (23 or 31) from the earshell through the platform (27 or 34) attached to the earshell (17 or 28).
  - 28.3 Carefully remove the sealant from the slot at the top of each earshell.
  - 28.4 Position a wide, plain bladed screwdriver in the slot and carefully twist it to ease the platform from the earshell.
  - 28.5 Remove all traces of the gasket from the platform and the earshell. Use a blunt instrument if necessary.

29 To replace a platform, proceed as follows.

- 29.1 Ensure the mating faces of the earshell (17 or 28) and the platform (27 or 34) are clean and free from grease.
- 29.2 Remove the protective paper from one side of the replacement gasket (26 or 33).
- 29.3 Position the gasket on the platform around the inner lip and press down firmly.
- 29.4 Remove the protective paper from the other side of the gasket.
- 29.5 Position the replacement platform on the earshell and apply even pressure all round the platform to ensure proper attachment and sealing.
- 29.6 Fill the slot in the top of the earshell with sealing compound NSN 8030-01-448-9339.
- 29.7 Replace, in sequence, the acoustic filter (25), foam cover (23), and damper cover (24).
- 29.8 Replace the earcushion.

### Replacement of earshells

30 To remove a boom side earshell, proceed as follows.

- 30.1 Refer to Figs 3, 4 and 5 and remove the neckstrap (6) as detailed in Para 10.
- 30.2 Remove the earcushion as detailed in Para 12.
- 30.3 Carefully remove the sealant from the slot at the top of the earshell (17).
- 30.4 Insert a flat head screwdriver into the slot. Twist it carefully to ease the platform (27) away from the earshell.
- 30.5 Remove the damper cover (24), the foam cover (23), and the acoustic filter (25).
- 30.6 Remove the earphone (22). Note the wiring arrangement and then disconnect the earphone wires.
- 30.7 Remove the acoustic filter (21).
- 30.8 Note the wiring arrangement on the PEC (20) and then disconnect all the wires and remove the PEC.
- 30.9 Remove the acoustic filter (19) and disc (18).
- 30.10 Pull the headband cable (4), complete with the grommet, from the earshell.
- 30.11 Note the position of the main cable (7) entry into the boom arm (12) base. Remove and retain the boom arm fixing screws and seals from the earshell. Remove the boom arm (12) and the main cable (7) from the earshell.
- 30.12 Applying a constant pull of minimum force, carefully remove the headband arms (3) from the earshell lugs (11).
- 30.13 Remove and retain the oxygen mast brackets (11A) and the associated fixings.
- 30.14 Discard the earshell (17) complete with the lugs (11), anti-friction sleeves (10) and the suspension hole plugs (11B).

- 31 To replace a boom side earshell, refer to Figs 3, 4 and 5 and proceed as follows.

**WARNING**

**VARNISH. REFER TO THE VARNISH WARNING IN THE PRELIMINARY PAGES TO THIS PUBLICATION.**

- 31.1 Remove any traces of the gasket from the platform (27).
- 31.2 Replace the oxygen mask brackets (11A) with the retained fixings. Secure the nuts with anti-tracking varnish, Part No XA 401544.
- 31.3 Apply a small amount of sealing compound (NSN 8030-01-448-9339) around the body of the suspension hole plugs (11B) and push the plugs fully into the earshell. Wipe off any excess sealant from the outside of the earshell.
- 31.4 Insert the replacement lugs (11) into the earshell (17). Use pliers to pull them into position.
- 31.5 Cut off the excess material inside the earshell and then insert an antifriction sleeve (10) into each lug (11).
- 31.6 Carefully insert the headband (3) arms into the earshell lugs (11), ensuring that the antifriction sleeves (10) remain in place.
- 31.7 Reassembly of the earshell contents is the reverse of the disassembly procedure. Refer to Sub-paras 30.5 to 30.12 inclusive.
- 31.8 Tighten the boom arm retaining screws until the seals are fully collapsed.
- 31.9 Reassemble the remaining earshell components as detailed in Para 29.
- 31.10 Refit the neckstrap (6) as detailed in Para 11.
- 32 To remove a non boom-side earshell, and proceed as follows.
- 32.1 Refer to to Figs 3, 4 and 5 and remove the neckstrap (5) from the earshell.
- 32.2 Remove the earcushion (9) as detailed in Para 12.
- 32.3 Carefully remove the sealant from the slot at the top of the earshell (28).
- 32.4 Insert a flat head screwdriver into the slot. Twist it carefully to ease the platform (28) away from the earshell.
- 32.5 Remove the damper cover (35), the foam cover (34), and the acoustic filter (32).
- 32.6 Remove the earphone (33). Note the wiring arrangement and then disconnect the earphone wires.
- 32.7 Remove the acoustic filter (31), the disc (29) and the acoustic damper (30) from the earshell.
- 32.8 Pull the headband cable (4), complete with the grommet, from the earshell.
- 32.9 Applying a constant pull of minimum force, carefully remove the headband arms (3) from the earshell lugs (11).
- 32.10 Remove and retain the oxygen mask brackets (11A) and fixings.
- 32.11 Discard the earshell (28) complete with the lugs (11), the antifriction sleeves (10) and the suspension hole plugs (11B).

- ▶ 33 To replace a non boom-side earshell, refer to Figs 3, 4 and 5, and proceed as follows.

- 33.1 Remove all traces of gasket from platform (37).

**WARNING**

**VARNISH. REFER TO THE VARNISH WARNING IN THE PRELIMINARY PAGES TO THIS PUBLICATION.**

- 33.2 Replace the oxygen mask brackets (11A) with the retained fixings. Secure the nuts with anti-tracking varnish, Part No XA 401544.

- 33.3 Apply a small amount of sealing compound (NSN 8030-01-448-9339) around the body of the suspension hole plugs (11B) and push the plugs fully into the earshell. Wipe off any excess sealant from the outside of the earshell.

- 33.4 Insert the replacement lugs (11) into the earshell (17). Use pliers to pull them into position.

- 33.5 Cut off the excess material inside the earshell and then insert an antifriction sleeve (10) into each lug (11).

- 33.6 Carefully insert the headband (3) arms into earshell lugs (11) ensuring that the antifriction sleeves (10) remain in place.

- 33.7 Reassembly of the earshell contents is the reverse of the disassembly procedure. Reassemble earshell contents by following Paras 32.5 to 32.7 in reverse order.

- 33.8 Reassemble the remaining earshell components as detailed in Para 29.

- 33.9 Refit the neckstrap (5) as detailed in Para 11.



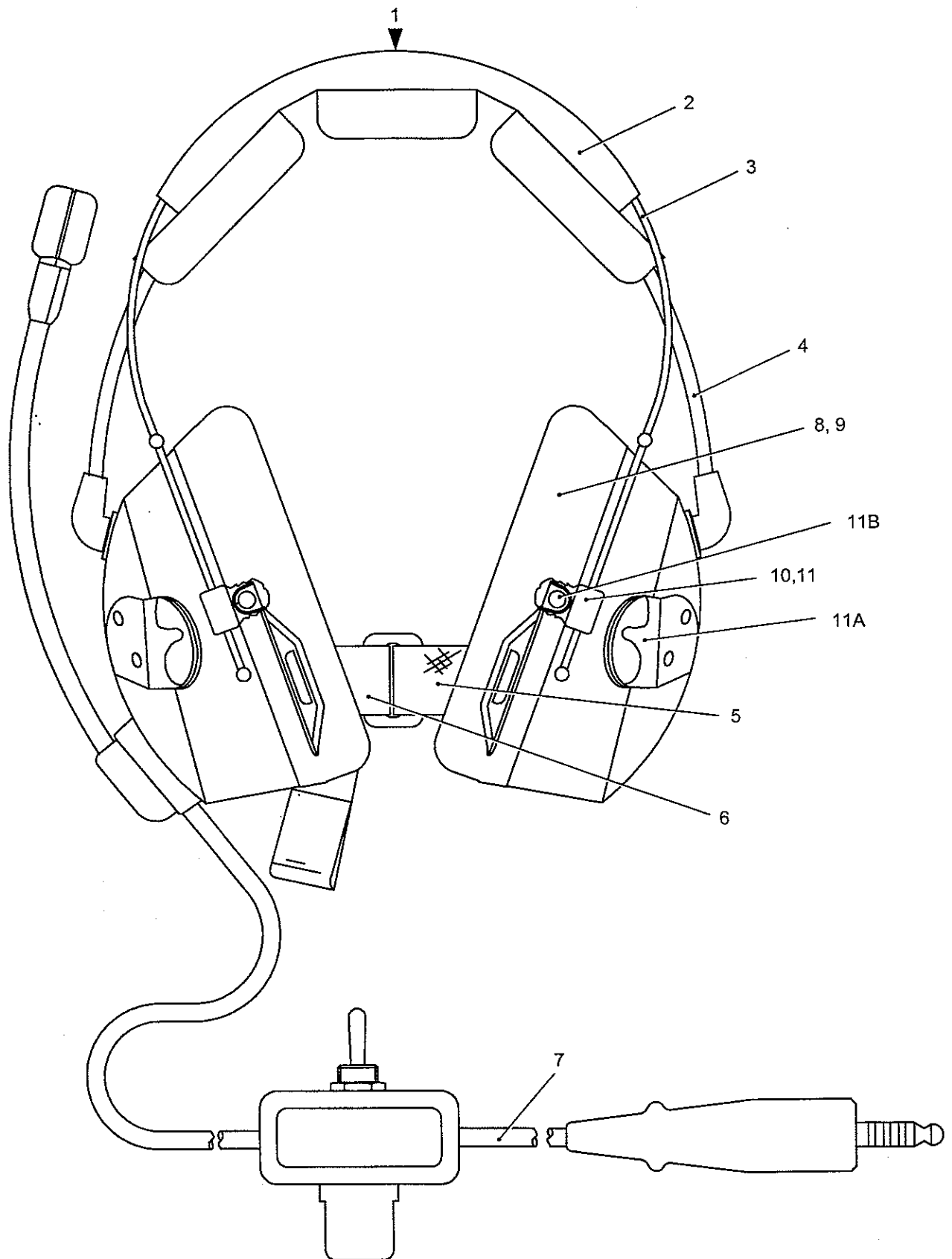


Fig 3 Headset Supergard - front view

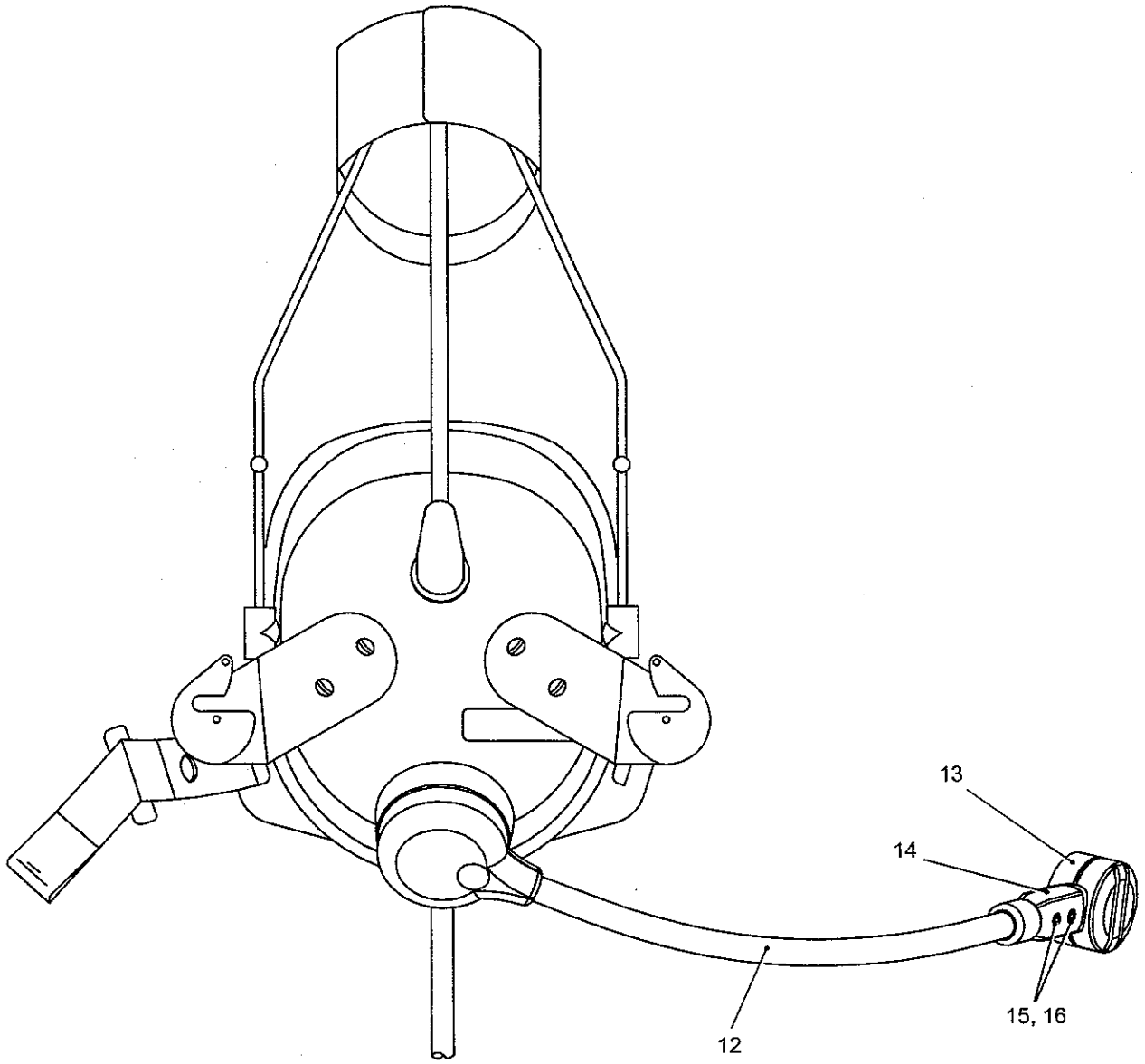


Fig 4 Headset, Supergard - boom-side view

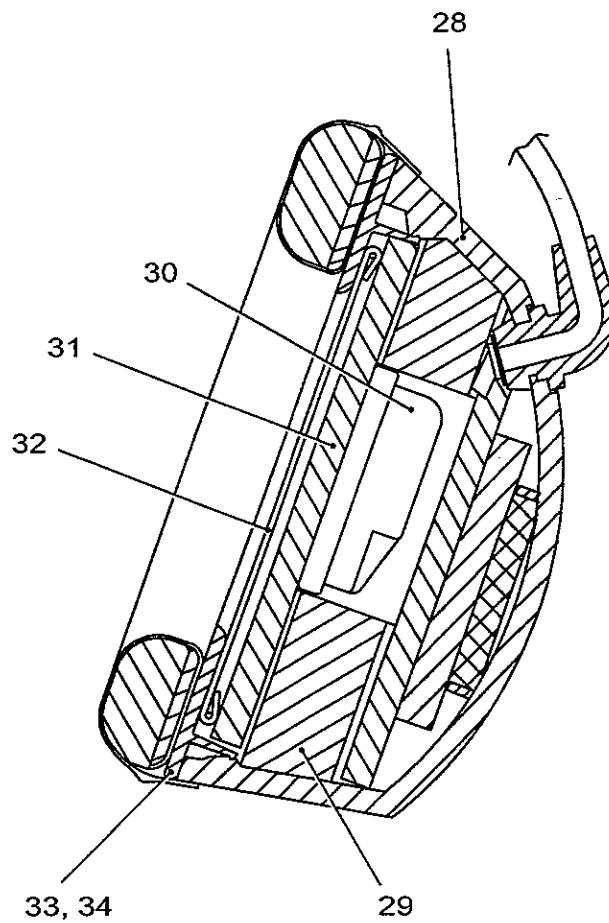
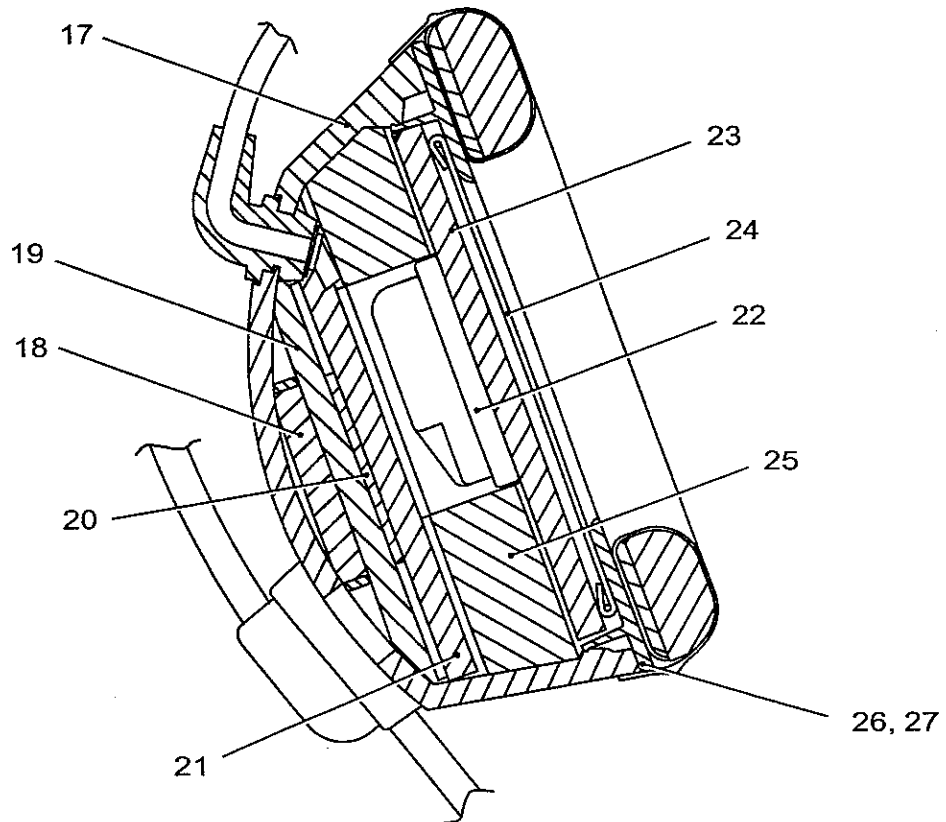


Fig 5 Headset, Supergard - earshells

