

Appendix 5

AIR DATA COMPUTER, TYPE B, Ref. No. 6A/5404
and TYPE C, Ref. No. 6A/8743

SERVICING

REMOVAL AND REPLACEMENT OF COMPONENTS

LIST OF CONTENTS

	Para.		Para.
<i>Introduction</i>	1	<i>Transistor amplifier component panels</i> ...	19
<i>Tools and materials</i>	5	<i>Components on panels</i>	20
Removal and replacement of components		<i>Transformers T1, T2 and T3</i>	22
<i>Replacement procedure</i>	7	<i>Relays RLA, RLB and RLC</i>	23
<i>Cover</i>	8	<i>Preset potentiometers RV1 and RV2</i> ...	25
<i>Steady plate</i>	9	<i>Gearbox components</i>	26
<i>Sub-units and separate components</i> ...	10	<i>Log Mach No. gearbox (G1)</i>	27
<i>Plugs/sockets</i>	12	<i>Mach No. output gearbox (G5)</i>	35
<i>Transistor amplifiers</i>	13	<i>Temperature gearbox (G6)</i>	46
<i>Magnetic amplifiers</i>	15	<i>True airspeed gearbox (G7)</i>	53
<i>Gearboxes</i>	16	<i>Rate of climb gearbox (G2)</i>	59
<i>Magnetic amplifier component panels (de-</i> <i>modulators)</i>	18	<i>Vertical speed output gearbox (G4)</i> ...	69
		<i>Height gearbox (G3)</i>	74

LIST OF ILLUSTRATIONS

	Fig.
<i>Typical magnetic amplifier (demodulator)</i> <i>component panel</i>	1

Introduction

1. This appendix describes the removal and replacement of sub-units and components of the air data computer Type B or Type C to a depth consistent with the second line range of spares held up to and including modification ADS/143.

2. Illustrations of the computer, circuit diagrams of the various gearboxes and an overall circuit are contained in Chap. 7.

3. It can be seen from Chap. 7 that computers may well be modified up to varying standards. It is important to note the modification state of the computer being serviced in order that replacement sub-units or components demanded may be of the correct type.

4. The general construction of the computer is given in Chap. 7, para. 16. Components permitted to be removed and replaced within the depth of servicing are:—

- (1) Gearboxes complete with gearbox assembly tagboards.
- (2) Motor-tachogenerators.
- (3) Synchros.
- (4) Servo-driven potentiometers.
- (5) D.C. tachogenerators.
- (6) All other gearbox electrical components.
- (7) Magnetic amplifiers.
- (8) Transistor amplifiers.
- (9) Component panels complete and individual components.
- (10) Relays RLA, RLB and RLC.
- (11) Transformers T1, T2 and T3.

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(12) Potentiometers RV1 and RV2.

(13) Plugs and sockets.

Unserviceable items will be returned for repair in accordance with current servicing instructions (reference to be made to A.P.4685, Vol. 3, Part 1 (NAVAL)).

Tools and materials

5. The following tools and materials are required:—

(1) Tools:—

Plug/socket, Plessey Mk. 4 special tool.

(2) Materials (in addition to those of para. 6):—

(a) Solder, 18 SWG 6C/40 resin cored.

(b) Lubricating oil DTDB22.

(c) Sleeve HELLERMAN, Type T to DEF20 Type A, size No. H15.

(d) PVC filament 3/4 mm.

(e) Silicon rubber sleeving 0.028 in. bore.

(f) 22 SWG copper wire.

(g) Compound silicone MS4.

6. All screws and nuts 8 B.A. and smaller should be locked on assembly with LOCTITE sealant Type E, Ref. No. 33H/225. All other screws and nuts should be locked with LOCTITE sealant Type C, Ref. No. 33H/176.

REMOVAL AND REPLACEMENT OF COMPONENTS

Replacement procedure

7. Unless otherwise detailed, the replacement procedure for all components is a reversal of the removal. Where split clamps have to be replaced attention is drawn to App. 4, Table 6.

Caution . . .

Damage may be caused to components by the transfer of excessive heat due to misuse of a soldering iron. This damage can largely be prevented by the use of a heat shield between the iron and the component. The soldering iron must be allowed to reach the required temperature before being applied to the component. Sleeving PTFE will not suffer damage when in contact with the hot soldering iron.

Cover

8. Unscrew the two captive cover nuts at the rear of the computer until they disengage from the two flanged studs of the computer (Chap. 7, fig. 2) and slide back the cover. When replacing, ensure that the front edge engages securely with

the spring clips at either side of the rear of the front panel. Two cover guides (Chap. 7, fig. 2) ensure that tagboard connections are not damaged when the cover is removed or replaced.

Steady plate

9. The steady plate is positioned above the upper deck of the computer. Remove the cover (para. 8) and the twelve or fourteen 4 B.A. screws, dependent upon the state of modification of the computer, securing the steady plate. Lift the plate away.

Note . . .

Each gearbox assembly is held secure by two of the screws securing the plate (para. 17), this eliminates gearbox assembly vibration and the possibility of ensuing damage.

Sub-units and separate components

10. The number and/or type of sub-units or components in the computer depends upon the modification state. In many cases the procedure for removing similar sub-units or components is the same; in such instances only one procedure per type has been detailed in the following paragraphs, and where differences do occur they are noted in the text.

11. In all the following cases it is assumed that the cover and, where necessary, the steady plate have been removed.

Plugs/sockets

12. Remove the rate of climb output gearbox assembly (G2) (para. 16) without disturbing the cable-form. If the plug/socket to be extracted is one of the lower three, remove the tie rail situated between the rear of the front panel and G2 by unscrewing the 6 B.A. ch.hd. screws securing the tie bar to the front panel. With the special tool provided, remove the locking ring of the relevant plug/socket and extract the plug/socket to the rear. Unsolder the connections to the plug/socket pins, labelling each wire as it is released and lift the plug/socket clear.

Transistor amplifiers (Chap. 7, fig. 1 and 2)

13. Open the hinged chassis by releasing the three Dzus fasteners on the underside of the main deck (Chap. 7, fig. 3). Unsolder the connections to pins a to j on the transistor amplifier, labelling each wire as it is released. Remove the four 6 B.A. ch.hd. screws securing the transistor amplifier component panel to the underside and the transistor amplifier to the topside, of either the hinged chassis or the main chassis. Lift the transistor amplifier clear.

14. Detailed servicing of the transistor amplifier is given in Appendix 4.

Magnetic amplifiers (Chap. 7, fig. 1 and 2)

15. Open the hinged chassis (para. 13) and unsolder the connections to pins A, D, H, J, K and N of the magnetic amplifier, labelling each wire as it is released. Remove the four 6 B.A. ch.hd.

screws securing the magnetic amplifier component panel to the underside and the magnetic amplifier to the topside, of either the hinged chassis or the main chassis. Lift the magnetic amplifier clear.

Gearboxes

16. Each gearbox assembly incorporates a tagboard which is known as the gearbox assembly tagboard (e.g. TBD G2). There is also associated with each gearbox a tagboard mounted on the main chassis; this tagboard is used for linking the gearbox tagboards to servo amplifiers and front panel sockets and plugs, etc., and is known as the gearbox interconnection tagboard (e.g. TBD G2 (INT)).

17. Removal of the steady plate releases one end of each gearbox. Remove the 6 B.A. screws at each end of the gearbox assembly interconnection tagboard on the underside of the main chassis. Lift the gearbox gently away from the unit, unclipping the cable-form if required, in order to give sufficient clearance for the unsoldering of the connections to the gearbox assembly tagboard. Each wire should be labelled as it is released, in order to ease identification on replacement. Remove the gearbox.

Note . . .

(1) *The log Mach number gearbox (GB1) is secured by the forward screw of the gearbox interconnection tagboard and the 2 B.A. screw beneath the protective bar aft of the tagboard.*

(2) *Care should always be taken not to damage or disturb the gear train when removing gearboxes or gearbox components. Damage necessitates the gearbox being declared unserviceable; disturbance necessitates complete recalibration.*

Magnetic amplifier component panels (demodulators) (fig. 1 and Chap. 7, fig. 3)

18. Open the hinged chassis (para. 13) and un-

solder the four external circuit leads to the component panel (fig. 1). Remove the four 6 B.A. screws securing the panel and its associated magnetic amplifier to either the main chassis or hinged chassis. Lift the demodulator clear. Replace the four 6 B.A. screws if replacement is not to be immediate.

Transistor amplifier component panels (Chap. 7, fig. 3)

19. Open the hinged chassis (para. 13) and unsolder all external circuit leads to the panel. Remove the four 6 B.A. screws securing the component panel and transistor amplifier to either the chassis or hinged chassis. Lift the component panel clear. Replace the four 6 B.A. screws if replacement is not to be immediate.

Components on panels

20. Individual components can be removed from component panels without disturbing the panel. They can be unsoldered and in the case of silicon diodes and transistors removed from their associated spring clip. On replacement care must be taken that silicon diodes and transistors are wired up the correct way round.

21. On component panel 3A20293 (TA2), resistors R8, R9, R11 and R12 should be matched to within 0.1 per cent.

Transformers T1, T2 and T3 (Chap. 7, fig. 1)

22. Each transformer is mounted on the upper side of the main chassis and is held in position by two 6 B.A. ch.hd. screws from the underside of the chassis beneath transformer pins D and E. To take out a transformer remove its two associated screws and draw the transformer out until it is possible to unsolder the following pin connections:—

- (1) T1—pins A to L.
- (2) T2—pins A to H.
- (3) T3—pins A to H.

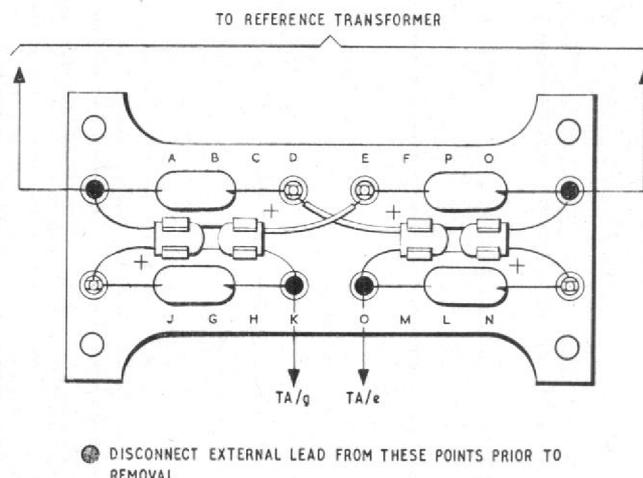


Fig. 1. Typical magnetic amplifier (demodulator) component panel

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Relays RLA, RLB and RLC (Chap. 7, fig. 1)

23. RLA is removed by modification ADS/134, RLB and RLC are removed by modification ADS/130. In unmodified units they are mounted on the upper side of the main chassis in proximity to T1, T2 and T3. Each relay is secured by a clamping ring, which is fastened by two 8 B.A. studs. The washers and hexagonal nuts relating to the studs are on the underside of the chassis.

24. The procedure for removal is as follows:—

(1) Unsolder the pin connections for the relevant relay, viz.:—

- (a) RLA pins 1, 2, 3, b and d.
- (b) RLB pins 2, 3, b and d.
- (c) RLC pins 2, 3, b and d.

(2) Unscrew the two associated nuts and lift the relay and clamping ring from the main chassis.

Preset potentiometers RV1 and RV2 (Chap. 7, fig. 2)

25. RV1 and RV2 are screwed to the underside of the lower portion of the hinged chassis. Unsolder the connections to pins 3 and 4 of the potentiometer to be removed. Open the hinged chassis (para. 13) and unscrew the 8 B.A. ch.hd. screw immediately above the potentiometer. Lift the potentiometer clear.

Gearbox components

26. Before removing components from a gearbox, the gearbox assembly must be removed from the computer (para. 16 and 17).

Log Mach No. gearbox (G1) (Chap. 7, fig. 1, 8 and 9)

Motor-tachogenerator

27. (1) Remove the three 6 B.A. screws securing the potentiometer panel to its three hexagonal pillars and lift it clear of the motor-tachogenerator.

(2) Remove the four 6 B.A. screws securing the motor-tachogenerator to the motor plate and lift it, complete with pinion, clear of the motor plate in order to obtain access to the terminal block.

(3) Remove the tie wire securing the cable loom, containing the eight motor-tachogenerator leads, to the side of the motor-tachogenerator body.

(4) Unsolder the eight input leads to the motor-tachogenerator terminal block and lift the motor-tachogenerator clear of the gearbox assembly.

Servo-driven potentiometers (Chap. 7, fig. 8 and 9)

28. (1) Remove the connections to terminals on the potentiometer.

(2) Remove the tie wire securing the cable loom to the potentiometer body.

(3) Remove the dog clamps and their associated screws.

(4) Release the split clamp screws retaining the gear/pinion to the potentiometer shaft. On replacement refer to App. 4, Table 6.

(5) Proceed as follows for the required potentiometer. In each case refitting should be carried out immediately to avoid disturbance to the gear train.

29. *RV6, RV7, RV8 and RV11.* Hold the screw-driver on the split clamp in order to retain the pinion key secure in its recess in the inner spring housing of the computation cam and draw out the potentiometer vertically.

Note . . .

Mod. ADS/103 removes RV8, and mod. ADS/104 removes RV7.

30. *RV9 and RV10.* Hold the requisite gear and pinion steady and draw out the potentiometer vertically.

Preset potentiometers (Chap. 7, fig. 8)

31. *RV1, RV2, RV4 and RV5.* (1) Unsolder the connections to the potentiometer and, where fitted, remove the fixed resistor.

(2) Remove the 6 B.A. screws securing the potentiometer panel to its three hexagonal pillars and lift it clear of the motor-tachogenerator to obtain access to the underside of the panel.

(3) Remove the 6 B.A. screw securing the potentiometer to the panel.

32. *RV3.* (1) Remove the two 6 B.A. screws securing the gearbox assembly tagboard and lift the tagboard away in order to gain access to the underside of the gear plate.

(2) Remove the 6 B.A. screw securing the potentiometer to the gear plate.

(3) Unsolder the connections to the potentiometer and lift it clear.

Fixed resistors R1, R2 (Chap. 7, fig. 8) and (post-mod. ADS/104) R5

33. Unsolder the connections at either end of the relevant resistor and lift clear.

Capacitor C1 (Chap. 7, fig. 8)

34. Remove the 6 B.A. screw securing the capacitor clip. Unsolder the connections to the capacitor and remove it.

Mach No. output gearbox (G5) (Chap. 7, fig. 1, 10, 11 and 12)

Motor-tachogenerator

35. (1) Remove the tie wires from the body of the motor-tachogenerator.

(2) Unsolder the eight input leads to the motor-tachogenerator at the terminal block.

(3) Remove the four 6 B.A. screws securing the motor-tachogenerator to the motor plate and lift it clear complete with pinion.

Synchro CX1 (Chap. 7, fig. 10)

36. (1) Remove the five leads to the top of the synchro.

(2) Remove the dog clamps securing the synchro to the component plate.

(3) Remove the tie wire from the synchro.

(4) Slacken the 8 B.A. split clamp screws above the upper 135T gear, on axis 6, and draw out the synchro vertically.

Note . . .

On replacement, the dog clamps must not be fully tightened until the electrical zero setting procedure of App. 4 has been completed. When tightening the split clamp screws refer to App. 4, Table 6.

Servo-driven potentiometers RV3, RV4 and RV5 (Chap. 7, fig. 10 and 12)

37. (1) Remove the connections to the potentiometer(s).

(2) Remove the tie wire.

(3) Remove the dog clamp securing the potentiometer(s) to the component plate.

(4) Proceed as follows for the potentiometer in question. In both cases refitting should be carried out immediately in order to avoid disturbance to the gear train. Reference should be made to App. 4, Table 6 when tightening split clamps.

38. *RV3.* Remove the two 6 B.A. screws securing the gearbox assembly tagboard and lift it away in order to gain access to the underside of the component plate. Slacken the two 12 B.A. split clamp screws beneath the component plate on axis 8. Hold the screwdriver on the split clamp to retain the pinion key secure in its recess in the inner spring housing of the computation cam and draw out the potentiometer vertically.

39. *RV4/RV5.* Ensure that the replacement potentiometer is within easy reach. Hold the compound gear assembly of axis 5 so that the 145T split gear and 45T pinion remain meshed with the 29T pinion of axis 4 and the upper 135T split gear of axis 6 respectively until refitting is complete. Slacken the 12 B.A. split clamp screws above the compound gear assembly on the potentiometer spindle. Draw out the potentiometer vertically.

Preset potentiometer RV1

40. The removal of this component would entail stripping down the gearbox assembly to gain access to its securing screw. At second line, therefore, the replacement of this component demands an entire new gearbox assembly.

Fixed resistor R1

41. Proceed as in para. 33.

Capacitor C1

42. Proceed as in para. 34.

Microswitch MSW1

43. (1) Unsolder the connections to the switch.

(2) Remove the two 8 B.A. screws securing the switch to the underside of the motor plate and lift the microswitch and actuator clear.

Microswitches MSW2 and MSW3

44. (1) Unsolder the connections to the required switch.

(2) Remove the two 8 B.A. nuts and bolts securing the switches to the motor plate (MSW2 to the topside, MSW3 to the underside) and lift the required switch and actuator clear.

Microswitch actuators

45. (1) The actuators can be removed without unsoldering connections to the relevant microswitch.

(2) Proceed as in para. 43 (2) or 44 (2) as the case may be.

(3) Remove the actuator from the switch.

Temperature gearbox (G6) (Chap. 7, fig. 15 and 16)

Motor-tachogenerator

46. Proceed as in para. 35.

Servo-driven potentiometers RV3 and RV4 (Chap. 7, fig. 15)

47. *RV3.* (1) Proceed as in para. 37.

(2) Ensure that the replacement potentiometer is within easy reach. Hold the compound gear assembly of axis 6 so that the two 100T split gears remain meshed with the 20T pinion of axis 4 (upper) and the 46T pinion of axis 6 (lower) until refitting is complete. Slacken the 12 B.A. split clamp screws below the compound gear assembly on the potentiometer spindle. Draw out the potentiometer vertically.

48. *RV4.* Proceed as in para. 37 and 38.

Note . . .

On replacement of either RV3 or RV4, when tightening the split clamps refer to App. 4, Table 6.

Preset potentiometers RV1, RV2, RV5, RV6 and RV7 (Chap. 7, fig. 15)

49. *RV1, RV5, RV6 and RV7.* (1) Unsolder the connections to the potentiometer and, where fitted, remove the fixed resistor.

(2) Remove the 6 B.A. screws securing the gearbox assembly tagboard and lift the tagboard away.

(3) Remove the four 6 B.A. screws securing the potentiometer panel to the component panel, and lift the former in order to gain access to the 8 B.A. screws retaining the potentiometers to the potentiometer panel.

(4) Release the tie wires where necessary.

(5) Remove the appropriate retaining screw and lift the potentiometer clear.

50. *RV2.* (1) Unsolder the connections to the top of the potentiometer and remove the tie wire.

(2) Remove the 8 B.A. screw securing the potentiometer to the component plate; access is via the hole provided for this purpose in the motor plate.

(3) Lift off the potentiometer.

Fixed resistors R1 and R2

51. Unsolder the resistor from the appropriate preset potentiometer and stand-off insulator and remove.

Capacitor C1

52. Proceed as in para. 34.

True airspeed gearbox (G7) (Chap. 7, fig. 17 and 18)

Motor-tachogenerator

53. (1) Remove the four 6 B.A. screws securing the motor-tachogenerator to the motor plate and lift the motor-tachogenerator and 20T pinion clear.

(2) Unsolder the eight input leads to the motor-tachogenerator at the terminal block and remove the motor-tachogenerator.

Synchro CX1 (Chap. 7, fig. 17)

54. (1) Remove the tie wire and the leads to the top of the synchro.

(2) Release and hinge upwards the gearbox assembly tagboard.

(3) Release the split clamp on the synchro spindle (axis 5) and remove the 100T split gear.

(4) Remove the three dog clamps securing the synchro to the synchro mounting plate and lift the synchro vertically clear of the gearbox assembly.

(5) On replacement, when tightening the split clamp screws, refer to App. 4, Table 6.

Servo-driven potentiometers (RV4 and RV5/RV6) (Chap. 7, fig. 17)

55. (1) Unsolder the connections to the potentiometer(s).

(2) Remove the three dog clamps securing the potentiometer(s) to the mounted component plate.

(3) Lift the potentiometer(s) clear of the gearbox assembly, slacken the split clamp retaining the gear on the potentiometer spindle and remove the gear.

Note . . .

When replacing, great care is required when meshing the potentiometer gear with the split gear at either axis 9 or axis 6. When tightening the split clamp screws, refer to App. 4, Table 6.

Preset potentiometers (RV1 and RV2) (Chap. 7, fig. 18)

56. (1) Unscrew and remove the 8 B.A. screw securing the potentiometer to either the motor plate (RV1) or component plate (RV2). In the latter case, access is via a hole in the motor plate provided for the purpose.

(2) Unsolder the three connections to the potentiometer.

Fixed resistors R1 and R2 (Chap. 7, fig. 18)

57. Unsolder the resistor from its connections and gently pull clear.

Capacitor C1 (Chap. 7, fig. 18)

58. Unsolder the capacitor leads from their respective stand-off insulators. Remove the 6 B.A. clip retaining screw and lift clip and capacitor clear. Slide the capacitor out of the clip.

Rate of climb gearbox (G2) (Chap. 7, fig. 21 and 22)

Motor-tachogenerator

59. Remove the four 6 B.A. screws securing the motor-tachogenerator to the component plate. Lift the motor-tachogenerator clear of the component plate and unsolder the eight input leads to the terminal block. Remove the motor-tachogenerator.

D.C. tachogenerator TG1

60. (1) Remove the 200T gear and 30T pinion of axis 2 from the tachogenerator spindle by means of the split clamp (Chap. 7, fig. 22). (Pre-mod. ADS/80 this gear is a split gear.) Remove the tie wire and the terminal leads from the top of the tachogenerator. Unscrew

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and remove the five 6 B.A. screws securing the component panel (Chap. 7, fig. 21); remove the three dog clamps securing the tachogenerator to the component plate. Lift the tachogenerator clear.

(2) On replacement, when tightening the split clamp screws, refer to App. 4, Table 6.

D.C. tachogenerator TG2

61. (1) Remove the 200T gear of axis 2A from the tachogenerator spindle by means of the split clamp (Chap. 7, fig. 22). Remove the tie wire, and the terminal leads from the top of the tachogenerator. Remove the three dog clamps securing the tachogenerator to the component plate. Lift the tachogenerator clear.

(2) On replacement, when tightening the split clamp screws, refer to App. 4, Table 6.

Synchro transformer CT1

62. (1) Remove the tie wire and the five leads to the top of the synchro. Remove the 200T gear from axis 5 by means of the split clamp. (Post-mod. ADS/80 this is a split gear.) Remove the dog clamps securing the synchro to the component plate and lift the synchro clear.

(2) On replacement, when tightening the split clamp screws, refer to App. 4, Table 6.

Preset potentiometer RV1

63. Remove the two 6 B.A. screws and nuts securing the potentiometer mounting bracket to the underside of the component panel (Chap. 7, fig. 21). The potentiometer can now be withdrawn sufficiently to permit unsoldering of the three leads to the potentiometer, after which the potentiometer can be lifted clear.

Capacitor C1 (Chap. 7, fig. 21)

64. Unsolder the connections above and below the bearing plate to the capacitor; slacken the 2 B.A. capacitor clamp tightening screw and withdraw the capacitor.

Fixed resistors and capacitors C6 and C7

65. Locate the required component and unsolder the two connections. As the leads are only hooked round the turret lugs, use snipe nosed pliers to remove the connecting ends from them. When refitting it should be remembered to wind the wire only half way round the turret lug in order to facilitate possible future removal.

Capacitors C2 to C5

66. Unsolder the lead to the relevant capacitor clip on top of the component panel, and bend the two clips away from the panel. Remove the component panel (para. 60 (1)), unsolder the other lead to the capacitor and remove the capacitor.

Transistors VT1 and VT2

67. Unsolder the three transistor leads from their respective turret lugs, using snipe nosed pliers as in para. 65, and remove the transistor from its clip.

Rectifier MR1

68. Unsolder the rectifier leads from their respective turret lugs, using snipe nosed pliers as in para. 65, and remove the rectifier.

Vertical speed output gearbox (G4) (Chap. 7, fig. 1, 23 and 24)

Motor-tachogenerator

69. Proceed as in para. 35.

Synchro TX1 (Chap. 7, fig. 23 and 25)

70. (1) Remove the tie wire and the five connections to the top of the synchro. Remove the dog clamps securing the synchro to its mounting on the component plate. Ensure that the replacement synchro is within easy reach.

(2) Slacken the two 12 B.A. split clamp screws beneath the component plate on axis 8; hold the screwdriver on the split clamp to retain the pinion key secure in its recess in the inner spring housing of the computation cam and draw out the synchro vertically.

(3) Replacement should be carried out immediately and when tightening the split clamp screws reference should be made to App. 4, Table 6.

Servo-driven potentiometers RV4/RV5 (Chap. 7, fig. 23 and 24)

71. Unsolder the leads to the top of the component. Slacken the two 12 B.A. screws on the split clamp retaining the 100T split gear (axis 5) on the spindle of the ganged potentiometer and remove the gear. Remove the dog clamps securing the component to the component plate. Lift the component clear. On replacement, when tightening the split clamp screws, refer to App. 4, Table 6.

Preset potentiometers RV1, RV2 and RV3 (Chap. 7, fig. 23 and 24)

72. Unscrew and remove the distance pieces supporting the potentiometer bracket. Unsolder the three leads to the relevant potentiometer and remove the 6 B.A. screw securing the potentiometer to the bracket. The potentiometer can now be removed.

Capacitor C1 (Chap. 7, fig. 23)

73. Unsolder the connections from the capacitor to the stand-off insulators and remove the tie wire. Slacken the 6 B.A. screw securing the capacitor clamp through one of the potentiometer bracket distance pieces. Withdraw and remove the capacitor.

Height gearbox (G3) (pre-mod. ADS/134) (Chap. 7, fig. 28, 29 and 30)

Motor-tachogenerator

74. Proceed as in para. 27 (2) to 27 (4).

Synchro transformer CT1

75. Remove the tie wire and the five leads to the top of the synchro. Slacken the 4 B.A. screws of the split clamp on the spindle of the synchro and remove the split gear and pinion of axis 5. Remove the dog clamps securing the synchro to the gear plate and lift the synchro clear. Care is required when refitting the gear combination back on to the synchro spindle and when tightening the split clamp screws, reference should be made to App. 4, Table 6.

Servo-driven potentiometer (RV3/RV4 pre-mod. ADS/103, RV3 post-mod. ADS/103)

76. Proceed as in para. 28 and 29.

Preset potentiometers (RV1 and RV2)

77. Pre-mod. ADS/25 these preset potentiometers were mounted on the top of the gear plate and a fault in either necessitated the replacement of the complete gearbox.

78. Post-mod. ADS/25 these preset potentiometers are located underneath the motor plate. Remove the two 8 B.A. screws securing the potentiometer to the motor plate, unsolder the connections and remove the potentiometer.

Microswitches

79. MSW1 is secured in a similar way to MSW2 (para. 80), but to the motor plate. Removal of this switch necessitates the stripping of the complete gearbox; switch failure will therefore be remedied by the replacement of the gearbox complete.

80. MSW2, together with the switch actuator, is removed by releasing the two 8 B.A. screws securing the microswitch to a keeper plate underneath the gear plate. Care must be taken not to lose the keeper plate. Remove the switch and actuator and, if required to change the switch, unsolder the two connections.

Fixed resistors R1 and R2

81. Proceed as in para. 65.

Capacitor C1

82. Proceed as in para. 58.

Rectifier panel and rectifiers (Chap. 7, fig. 28)

83. Remove the two 6 B.A. screws, washers and distance pieces securing the rectifier panel to the gear plate. Select the required rectifier and remove the 6 B.A. nut and washer, and solder tag from the upper side of the rectifier panel and the 4 B.A. nut and solder tag from the lower side of the rectifier panel. Remove the rectifier.

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