CHAP	2	SP 101B	SERVICING PROCEDURES	AP 101B-1000-5A3 F Section 1 (1st Edition)
TRADE		AIR RADAR	LIGHTNING	
SHEET	1	OF 59 SHEET/S	3 5 6	AL NO 10 DATE
TITLE	AI MK 23C Installation - Test			SERVICING RECORD - RAF F. 2988B AC NO . . . . . DATE . . . . .

TIME ACT EST

Safety and Servicing Notes are to be complied with throughout the work detailed on this Card.

Special Tools and Equipment

Test Set Type MRG Simulator, 6C/4199461.
Screen RAM Nose Type 6414.
Watches Stop.
Waveguide Resonator Feed.
Trolley Air Cooling Mk 3D.
Meter Unit Monitoring Type 16325.
Tester Noise 6625-99-914-0553.
Resonator CT307.
Pitot Static Test Set Mk 3.
Indicator CT300.

(1) MAN HOURS	(2) TRADESMAN INIT	(3) BRIEF DETAILS OF DEFECT OR SUSPECTED DEFECT	(4) F. 720B NO	(5) N.C.O. INITIALS

AIR RADAR

1. **Preparation**

1.1 15kVA power unit.	(i)	Connect to aircraft.
1.2 Cooling air trolley.	(ii)	Switch 'ON'.
1.3 RAM nose screen.		Fit and secure to radar bullet using centring jig.
1.4 Tester noise S-band.		
(a) RF output.		Connect to input socket of RAM nose screen.
(b) Mains input.		Connect to appropriate cableform of radar test set harness.

Sub-item 1.5 is applicable only to Mk F3 and 6 aircraft.

1.5 Meter Unit Monitoring (MUM).	
(a) Mounting clamp.	Securely attach to centre of horizontal member at rear of windscreen.
(b) Support bars.	Remove lid and extend.
(c) Meter unit.	Fit to mounting clamps ensuring mounting pegs are securely engaged with slots in MUM case.

ASSOCIATED PROCEDURE CARDS

ASSOCIATED TRADES

EL NI

SP NO 101B

SMS 17

SMS/73/074/2

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	2	AL 10		AC NO . . . . . DATE . . . . .

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

1. Preparation (Contd)

Sub-item 1.6 is applicable only to Mk T5 aircraft.

1.6	MUM meter unit.	Place on starboard seat.
1.7	Radar test harness.	
	(a) Suspension strap and clip.	Set clip to appropriate notch for aircraft concerned and attach to port edge of cockpit ensuring rubber pad on junction box rests against aircraft skin.
	(b) Cableforms.	(i) Disconnect hand controller and connect 6-way free socket to cableform 6-way plug. (ii) Connect cableform 6-way socket to controller plug. (iii) Connect remaining cableforms to appropriate test points.

NAV INSTRUMENTS

2. Preparation

2.1	MRG simulator.	(i) Connect in place of MRG. (ii) Set pitch, roll and azimuth controls to zero.

AIR RADAR

3. Preparation

3.1	Tester noise S-band.	
	(a) Tuning control.	Set to frequency of external receiver.
	(b) Main On/Off switch.	Set to 'ON'. Note: Indication lights will only illuminate after 4 minutes radar run up.
	(c) RF Osc On/Off switch.	

Sub-item 3.2 is applicable only to Mk T5 aircraft.

3.2	Pupil/Instructor switch.	Set to 'PUPIL'.

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Continued

SMS 17A

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING
SP NO	101B	CONTINUED	
SHEET	3	AL11	

AP 101B-1000-5A3F Section 1 (1st Edition)

AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

3. Preparation (Contd)

3.3	Instrument master switch.	Set to 'ON'.
3.4	MRG On/Off switch.	Set to 'ON'.
3.5	MRG simulator relay 'F' light.	(i) Depress. (ii) Release. (iii) Ensure lamp lit.
3.6	LFS/CRT switch.	Set to 'LFS'.
3.7	Master armament selector switch.	Set to 'GW'.
3.8	Hand control unit. (HCU).	
	(a) Ground test standby switch.	Set to 'GROUND TEST'.
	(b) Tx On/Off switch.	Switch 'ON'.
	(c) Vis-ident switch.	Set to 'OFF'.
3.9	Indicator visor.	Ensure fitted.

4. Power Run Up

4.1	HCU main On/Off switch.,	Set to 'ON' and simultaneously start stopwatch.
4.2	Indicator/s.	
	(a) Azimuth Elevation and Attitude scale lamps.	Ensure lit.
	(b) Polaroid dimmer.	Ensure smooth operation.
4.3	MUM.	
	(a) Test selector.	Set to '4'.
	(b) Meter M1 (0-100).	Check mechanical zeroes.
	(c) Meter M2 (50-0-50).	

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SMS/73/219/2

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	A.P. 101B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED		
SHEET	4	AL 11		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

4. Power Run Up (Contd)

4.3 MUM. (Contd)

(d)	Red cone switch.	Set to 'OFF'.
(e)	Test pulse switch.	
(f)	Aerial control.	Set to 'NORMAL'.
(g)	Rate switch.	Set to 'OFF'.
(h)	Range switch.	Set to 'MAN'.
(j)	Aerial position selector.	Set to '1'.
(k)	Test selector.	
(l)	Elevation control.	Set to '0'.
(m)	Range lock switch.	Set to 'ON'.
(n)	Range track switch.	Set to 'OFF'.
(p)	Azimuth control.	Set to '0'.
(q)	Comp track switch.	Set to 'OFF'.
(r)	Monitor lamp.	Ensure lights after 4 minutes PLUS OR MINUS 20 seconds of switching on HCU main On/Off switch.

NB Sub-item 4.8 is to be carried out within approximately 30 seconds of Sub-item 4.4 to 4.7 inclusive.

4.4 HCU range selector button. — Select 60/80mm range.

4.5 Indicator/s range scales. — Ensure 60/80 and 10nm scales illuminated.

4.6 HCU range selector button. — Select 40 nm range.

4.7 Indicator/s.

(a) Range scales. — Ensure 40 and 10nm scales illuminated.

(b) Computor switch.
(i) Ensure illuminated.
(ii) Set to '1'.

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SMS/78/219/2A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F
SP NO	101B	CONTINUED	LIGHTNING	Section 1 (1st Edition)
SHEET	5	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 98B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

4. Power Run Up (Contd)

4.8	LFS.	(i) Raise reflector. (ii) Ensure RH event marker is displayed.
4.9	MUM monitor lamp.	Ensure extinguishes after 4 minutes 30 seconds PLUS OR MINUS 25 seconds of switching on HCU main On/Off switch.
4.10	LFS.	Ensure RH marker has disappeared.
4.11	MUM.	
	(a) Meter M1.	Check indicating 90 PLUS OR MINUS 4.
	(b) Test selector.	Set to '2'. (Xtal current).
	(c) Meter M1.	(i) Check needle sweeping at approx 1 Hz. (ii) Ensure sweep ceases after approx 1/2 minute and meter indicates indicates between 20 and 80. (iii) Note indication.
4.12	HCU Tx On/Off switch.	Set to 'OFF'.
4.13	MUM meter M1.	Check indication has not altered by more than 10 per cent from that noted in Sub-item 4.11 (c) Operation (iii).

5. Transmitter Power Output and PRF Switching

5.1	LFS/CRT switch.	Set to 'CRT'.

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SMS/78/074/4

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	7	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

6. Indicator Weapon Lamps (Contd)

6.5 MUM P/S weapon switch. Release.

7. Search Phase

7.1 HCU.
- (a) Phase change trigger. Select search phase.
- (b) Scan selector. Select 1 bar scan.

7.2 Indicator/s.
- (a) Markers.
  - (i) Ensure acquisition, attitude and elevation markers are displayed.
  - (ii) Check attitude marker is within 3 degrees of horizontal and positioned between 0 and 3mm below zero pitch.
  - (iii) Select 10 nm range and check markers do not move by more than 2 nm.
- (b) Scan width. Check between 45 and 55 degrees either side of centre line.
- (c) Scan frequency. Ensure approx 1 Hz.
- (d) Elevation marker.
  - (i) Move HCU handle over full fore and aft travel and check elevation marker follows correctly. Leave marker set to approx 4 degrees up.
  - (ii) Select 2 bar scan and check marker shows 2 bar scan pattern

SMS 17A

SMS/78/074/5

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		AC NO ..... DATE .....
SHEET	8	AL 10		SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

7. Search Phase (Contd)

7.2 Indicator/s. (Contd)

(d) Elevation marker. (Contd)

(iii) Select 4 bar scan and check marker shows 4 bar scan pattern

(e) Receiver hoise.

(i) Select 1 bar scan.

(ii) Check noise appears on display as control unit Gain control is moved towards maximum.

(iii) Reduce Gain control setting slowly and ensure noise amplitude diminishes.

(iv) Adjust Gain control for optimum setting, ie noise peaks just visible.

8. Acquisition Phase

8.1 HCU phase change trigger. Select acquisition phase.

8.2 Indicator.

(a) Scan width. Check approx 10 degrees.

(b) Scan frequency. Check time for 25 sweeps is between 8 and 12 seconds.

(c) Acquisition marker.

(i) Set to 5 nm.

(ii) Ensure correct circular form approx 5 mm in diameter.

(iii) Switch to 40 nm range and check marker is unchanged in shape and position at 5nm.

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Continued

SMS 17A

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	9	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

8. Acquisition Phase (Contd)

8.2 Indicator. (Contd)

(c) Acquisition marker. (Contd)

(iv) Using HCU range control check marker can be moved to top and bottom limits of display.

Note: Adjustment of MUM Fine Range control may also be necessary.

(v) Reset marker to 5 nm.

(vi) Operate HCU handle slowly and ensure marker and scan follows correctly.

(vii) Centralize marker.

9. Test Phase

9.1 MUM test position switch. — Operate.

9.2 Indicator/s.

(a) Markers. — Check following markers are displayed:
Steering dot.
Time circle.
Target marker.
(A circle approx 5 mm in dia).

(b) Timebase scan. — Ensure collapsed to a single line.

(c) Time circle.
(i) Check diameter is approx 80 degrees azimuth.
(ii) Check gap is positioned between 4 and 5 o'clock and approx 15 degrees in width.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP 101B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	10	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

10. Adjustment of Graticule

10.1 HCU.

(a) Vis-Ident switch. Select to 'ON'.

(b) Phase change trigger. Select 'SEARCH' phase.

(c) Additional facilities switch. Select 'ON'.

(d) Range control. Adjust until Vis-Ident range indication has collapsed to a 'DOT'.

10.2 Indicator.

(i) Ensure 'DOT' aligns with the intersection of inverted 'T'.

Note: If the graticule is not satisfactorily aligned carry out sub-item 10.3and 10.4.

(ii) Remove 'Visor' and 'Polarised Dimmer'.

10.3 Polarised Dimmer. Adjust graticule.

10.4 Indicator.

(i) Refit 'Polarised Dimmer' and 'Visor'.

(ii) Ensure 'DOT' aligns with intersection of inverted 'T'.

Note: If the graticule is not satisfactorily aligned repeat sub-item 10.3 and 10.4.

10.5 HCU.

(a) Vis-Ident switch. Select to 'OFF'.

(b) Additional facilities switch. Select to 'NORMAL'.

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Continued

SMS 17A

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	11	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

10. Adjustment of Graticule (Contd)

10.6 MUM test position switch.	Operate.

11. Overall Sensitivity

11.1 MUM.	
(a) Aerial control. selector.	Set to 'TEST'.
(b) Rate switch.	Set to '0'.
(c) Test selector.	Set to '6'.
(d) Fine range control.	Set to mid-position.
11.2 HCU.	
(a) Range control.	Set target marker to 1nm.
(b) Handle.	Centralize then adjust in elevation to set indicator/s elevation marker to zero.
(c) Tx On/Off switch.	Set to 'ON'.
11.3 MUM.	
(a) Fine range control.	Adjust for an M1 indication of 7.5.
(b) Test selector.	Set to '4'.
11.4 Screen RAM nose.	
(a) Attenuator.	Set to '0'.
(b) Resonator.	Tune for peak indication on associated meter, adjusting attenuator as necessary to maintain a suitable indication.
11.5 MUM.	
(a) Azimuth control.	Adjust for a minimum indication on M1 and zero indication on M2.
(b) Aerial position selector.	Set to '2'.
11.6 HCU.	Adjust in elevation for a minimum indication on M1.

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SMS/78/074/7

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01B-1000-5A3F Section (1st Edition)
SP NO	101B	CONTINUED		
SHEET	12	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

11. Overall Sensitivity (Contd)

11.7 MUM.		
	(a) Elevation control.	(i) Adjust for zero indication on M2 and a minimum indication on M1.
		(ii) Repeat azimuth and elevation adjustments as necessary until when switching Aerial position selector from 1 to 2, M1 remains at minimum and M2 at zero.
	(b) Aerial position selector.	Ensure set to '2'.
	(c) Test selector.	Set to '6'.
	(d) Fine range control.	Set fully anti-clockwise.
11.8 HCU range control.		Adjust for an M1 indication of 10 PLUS OR MINUS 2.
11.9 MUM.		
	(a) Range switch.	Set to 'AUTO'.
	(b) Test selector.	Set to '5'.
	(c) Meter M1.	Ensure indication is 20 PLUS OR MINUS 2.
	(d) Range set lamp.	Ensure lamp is lit, adjusting range control if necessary and ensuring there is no perceptible change in M1 indication.
	(e) Test selector.	Set to '4'.
	(f) Elevation control.	Adjust as necessary for zero on M2 and minimum on M1.
	(g) Aerial position selector.	Set to '1'.
	(h) Azimuth control.	Adjust as necessary for zero on M2 and minimum on M1.

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Continued

SMS 17A

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	13	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

11. Overall Sensitivity (Contd)

11.10	Screen RAM nose.	
	(a) Thermometer.	Note temperature.
	(b) Resonator.	(i) Adjust for peak indication on associated meter.
		(ii) Note frequency setting.
	(c) Attenuator chart.	Using temperature and frequency noted at 11.10 (a) and (b) operation (ii), determine appropriate attenuator setting.
	(d) Attenuator.	Set to figure obtained from attenuator chart.
11.11	MUM monitor lamp.	Ensure lit.

12. Crossover Slopes

12.1	MUM.	
	(a) Range switch.	Set to 'MAN'.
	(b) Fine range control.	Set fully clockwise and then rotate anti-clockwise until M1 indicates 22 PLUS OR MINUS 2.5. Note: Adjust HCU range control as necessary.
	(c) Aerial position selector.	Set to '2'.
	(d) Elevation control.	Check setting for minimum on M1 and zero on M2.
	(e) Aerial position selector.	Set to '1'.
	(f) Azimuth control.	Check setting for minimum on M1 and zero on M2.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	14	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

12. Crossover Slopes (Contd)

12.1 MUM. (Contd)

(g) Test selector. Set to '6'.
(h) Fine range control. Adjust for an M1 indication of 5.
Note: Adjust HCU range control if necessary.
(j) Test selector. Set to '4'.
(k) Aerial position selector. Set to the following positions and check indications:-

Note: 'M2 Read/Test switch: In this and subsequent items where a M2 adjustment of zero is required, select 'Read' only when the M2 indication is less than 10.

AE POSN	M2 INDICATION
1	0 PLUS OR MINUS 0.5) If not
2	0 PLUS OR MINUS 0.5) check azimuth and elevation controls
3	Plus 8 to plus 42.
4	Minus 8 to minus 42.
5	Positive indication of at least 3.
6	Negative indication of at least 3.

(l) Rate switch. Set to 'OFF' and check M1 indication increases by not less than 8.

13. Short Range Vis-Ident Function

13.1 MUM..
(a) Test selector. Set to '6'
(b) Rate switch. Set to '0'.
(c) Test pulse switch. Set to 'VAR'.

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SMS/78/074/8A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	15	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

13. Short Range Vis-Ident Function (Contd)

13.1	MUM. (Contd)	
	(d) Fine range control.	Set fully 'CLOCKWISE'.
	(e) Range track switch.	Set to 'ON'.
13.2	Screen RAM nose.	Detune resonator.
13.3	HCU.	
	(a) Phase change trigger.	Operate to select Track phase.
	(b) Reject switch.	Operate to run range out or in until lock-on to test pulse occurs.
	(c) Vis-ident switch.	Set to 'ON'.
13.4	Indicator/s.	
	(a) Display.	Check Vis-Ident thermometer scale is displayed at right hand side.
	(b) Range unlocked lamp.	Ensure extinguished.
13.5	MUM.	
	(a) Fine range control.	Adjust test pulse range (slowly to maintain lock-on) until top of thermometer scale is coincident with 10 nm scale marking
	(b) Meter M1.	Check indicating 25 PLUS OR MINUS 2.
	(c) Fine Range control.	Reduce test pulse range slowly, ensuring thermometer scale length reduces steadily until changeover from thermometer scale to short range circle occurs at approx 900 yards.
	(d) Meter M1.	Check indicating 4.5 PLUS OR MINUS 0.5.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	16	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

13. Short Range Vis-Ident Function (Contd)

13.5 MUM. (Contd)

(e)	Fine range control.	Reduce test pulse range until short range circle is coincident with 500 yards calibration mark.
(f)	Test pulse switch.	Set to 1500ft and ensure lock-on is maintained using HCU Reject In/Out switch as necessary.
(g)	Meter M1.	Check indication is 2.5 PLUS OR MINUS 0.5.

13.6 Indicator/s. Ensure short range circle is coincident with 500 yard calibration mark, PLUS or MINUS 2 mm and that the circle dia is 3 cms PLUS or MINUS 2 mm.

13.7 MUM.

(a)	Test pulse switch.	Set to 'OFF' and ensure short range circle blinks and indicator/s range unlocked lamp flashes.

14. Minimum Range Check

14.1 MUM.

(a)	Test selector.	Set to '4'.
(b)	Range track switch.	Set to 'OFF'.
(c)	Test position switch.	Operate to select Test phase.
(d)	Fine range control.	Adjust to display 1/3length Vis-Ident thermometer trace.

14.2 Screen RAM nose. Retune resonator for peak indication on associated meter.

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Continued

SMS 17A

CHAP	2	AIR RADAR	SERVICING PROCEDURES
SP NO	1·01B	CONTINUED	LIGHTNING
SHEET	17	AL 10	

AP 101B-1000-5A3F
Section 1
(1st Edition)

AC NO ..... DATE .....

SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

14. Minimum Range Check (Contd)

14.3	MUM.		
	(a)	Monitor lamp.	Ensure lit,
	(b)	Fine range control.	Carefully reduce range until range circle is coincident with 500 yard mark, ensuring monitor lamp remains lit and GCV reading on M1 remains steady.
	(c)	Meter M1.	
14.4	HCU.		
	(a)	Tx switch.	Set to 'OFF'.
	(b)	Vis-ident switch.	

15. Radar Ranging

15.1	HCU.		
	(a)	Range selector button.	Select 40 nm range.
	(b)	Range control.	Set target marker to 5 nm.
15.2	MUM.		
	(a)	Aerial position selector.	Set to '1'.
	(b)	Test selector.	Set to '9'.
	(c)	Elevation control.	Adjust for an M2 indication of 5.
	(d)	Test selector.	Set to '8'.
	(e)	Azimuth control.	Adjust for M2 indication of 5.
15.3	LFS/CRT switch.		Set to 'LFS'.
15.4	MUM range track switch.		Set to 'ON'.
15.5	Indicator/s.		
	(a)	Display.	(i) Check steering dot has disappeared.

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SMS/78/074/10

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	18	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

15. Radar Ranging (Contd)

15.5 Indicator/s. (Contd).
(a) Display (Contd).

(ii) Check target marker is sweeping between approx 0 and 1 nm.

(b) Range scales. Check 40 and 10 nm scales are illuminated.

15.6 MUM.
(a) Meter M2. Check indicating zero PLUS OR MINUS 2.
(b) Test selector. Set to '9'.
(c) Meter M2. Check indicating zero PLUS OR MINUS 2.

16. Guns Radar Ranging

16.1 MUM.
(a) Test selector. Set to '4'.
(b) Meter M1. Note indication.

16.2 Master armament selector switch. Set to 'GUNS'.

16.3 Indicator/s. Check elevation marker has depressed approx 1.9 degrees.

Sub-item 16.4 is applicable only to Meter Unit (Monitoring) Pre Mod A6854/9.

16.4 MUM.
(a) Meter M1. Check indication is 50 per cent or less than the reading noted at Sub-item 16.1 (b).
(b) Test selector. Set to '9'.
(c) Meter M2. Check reading is minus 6 PLUS OR MINUS 2.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	19	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

16. Guns Radar Ranging (Contd)

Sub-items 16.5 and 16.6 are applicable only to Meter Unit (Monitoring)Post Mod A6854/9.

16.5	MUM.	
	(a) Meter M1.	Check indication is 50 per cent or less than the reading noted at Sub-item 16.1 (b).
	(b) Test selector.	Set to '9'.
	(c) Meter 2.	Check reading is:- 6 PLUS OR MINUS 2.
	(d) Fine range control.	Turn fully anti-clockwise.
	(e) Test pulse.	Set to 1350 ft.
	(f) Monitor lamp.	Ensure lit.
	(g) Meter M1.	Check reading is:- 2.4 PLUS OR MINUS 0.5.
16.6	LFS.	Ensure RH event marker is lit.
16.7	LFS/CRT switch.	Set to 'CRT'.
16.8	Master armament selector switch.	Set to 'GW'.
16.9	MUM test position switch.	Operate.

17. Sightline Rates

17.1	HCU range selector button.	Select 10 nm range.
17.2	MUM.	
	(a) Range track switch.	Set to 'OFF'.
	(b) Elevation control.	Adjust for zero indication on M2 with M2 'Read/Test switch on 'READ'.
	(c) Test selector.	Set to '8'.
	(d) Azimuth control.	Adjust for zero indication on M2 with M2 'Read/ Test' switch on 'READ'.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	20	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

17. Sightline Rates (Contd)

17.3	HCU phase change trigger.	Select Track and simultaneously start stop watch.
17.4	MUM.	
	(a) Meter M2.	Check, as stop watch indicates 10 seconds, that indication is between minus 10 and plus 10.
	(b) Test position. switch.	Operate.
	(c) Test selector.	Set to '9'.
17.5	HCU phase change trigger.	Select Track and simultaneously start stop watch.
17.6	MUM.	
	(a) Meter M2.	Check, as stop watch indicates 10 seconds, that indication is between minus 10 and plus 10.
	(b) Test position switch.	Operate.
	(c) Rate switch.	Set to '1'.
	(d) Aerial position selector.	Set to '10'.
	(e) Elevation control.	Adjust for an indication of minus 40 on M2. Note: Adjustment of HCU elevation control may be necessary.
17.7	HCU phase change trigger.	Select Track and simultaneously start stop watch.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	21	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

			(1)	(2)	(3)	(4)	(5)
		AIR RADAR					
17.	Sightline Rates (Contd)						
17.8	MUM.						
	(a) Meter M2.	Check time taken for pointer to move from minus 40 to plus 40 is 5 PLUS OR MINUS 1.5 seconds.					
	(b) Test position switch.	Operate.					
	(c) Test selector) (d) Aerial position selector.	Set to '8'.					
	(e) Azimuth control.	Adjust for an indication of minus 40 on M2.					
17.9	HCU phase change trigger.	Select Track and simultaneously start stop watch.					
17.10	MUM.						
	(a) Meter M2.	Check time taken for pointer to move from minus 40 to plus 40 is 5 PLUS OR MINUS 1.5 seconds.					
	(b) Test position switch.	Operate.					
		ELECTRICAL					
18.	Preparation						
18.1	Pitot/Static test set.	Connect.					
18.2	Pitot/Static pressures.	Adjust Pitot/Static pressures for an airspeed of 175 PLUS OR MINUS 20 Kts. (Static at prevailing atmospheric).					

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	22	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

19. Lock-on and Reject Function

19.1	MUM.	
	(a) Aerial position selector.	Set to '1'.
	(b) Rate switch.	Set to 'OFF'.
	(c) Test pulse switch.	Set to '8 nm'.
	(d) Comp track switch.	Set to 'ON'.
19.2	HCU.	
	(a) Range control.	Set target marker to '10 nm'.
	(b) Handle.	Adjust to set elevation marker to between 5 and 10 degrees.
19.3	MUM range track switch.	Set to 'ON'.
19.4	Indicator/s.	Check time circle gap moves to 9 o'clock.
19.5	MUM.	
	(a) Rate switch.	Set to '1'.
	(b) Test pulse switch.	Wait a minimum of 6 seconds then set to 'OFF'.
19.6	Indicator.	Check target marker remains at lock-on for approx 5 seconds then moves in and carries out a limited search at a point between 3 and 6 nm.
19.7	MUM.	
	(a) Test pulse switch.	Set to '8 nm'.
	(b) Range track switch.	Set to 'OFF'.
19.8	Indicator.	Check target marker moves out to 10 nm.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	23	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

19. Lock-on and Reject Function (Contd)

19.9	MUM. (a) Range track switch.	Wait for M1 indication to settle then set to 'ON'.
	(b) Test pulse switch.	Wait for target marker to lock-on at 8 nm then set immediately to 'OFF' and check target marker moves immediately into shorter range with neither fire or warning lamps lighting.
19.10	Indicator computer switch.	Set to '2'.
19.11	MUM. (a) Range track switch. (b) Range lock switch.	Set to 'OFF'.
19.12	HCU range control.	Set target marker between 3 and 4 nm.
19.13	Indicator.	Check time circle gap is 4.30 o'clock
19.14	HCU.	Move handle forward until elevation angle is zero and check time circle gap remains at 4.30 o'clock.
19.15	Indicator.	Check steering dot is positioned at 1.30 o'clock.
19.16	HCU.	(i) Move handle forward until elevation angle is 5 degrees down.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	A.P.1018-1000-5A3F Section (1st Edition)
SP NO	101B	CONTINUED		
SHEET	24	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

19. Lock-on and Reject Function (Contd)

19.16 HCU. (Contd)

(ii) Check on moving handle, steering dot moves to 6 o'clock and remains there for 4 seconds before returning to 1.30 o'clock.

19.17 Indicator.

(a) Display. Check time circle gap is between 9 and 10 o'clock.

(b) Computer switch. Set to '1'.

19.18 MUM.

(a) Range track switch.)
(b) Range lock switch.) Set to 'ON'.

(c) Test pulse switch. Set to '8 nm'.

19.19 HCU reject switch.

(i) Operate to achieve lock-on at 8 nm.

(ii) Pull back to reject in and check target marker unlocks and moves inwards in range, allow strobe to run in to approx 3 nm.

(iii) Push forward to reject out and check target marker moves outwards.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01 B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	25	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

19. Lock-on and Reject Function (Contd)

19.20	Gunsight caging button.	(i) Press and check target marker moves outwards. (ii) Release as target marker reaches 8 nm and check lock-on occurs.
19.21	HCU range selector.	Select 40 nm range.
19.22	Indicator targer marker.	Check lock-on is still present.
19.23	HCU reject switch.	(i) Reject out and ensure target marker moves outwards in range. (ii) Release and check target marker returns to approx 8 nm when lock-on occurs.
19.24	MUM. (a) Range track switch. (b) Test pulse switch.	Set to 'OFF'.

20. Computers (Low Altitude)

20.1	MUM rate switch.	Set to '0'.
20.2	Indicator target marker.	Set to between 35 and 40 nm using HCU range control.
20.3	MUM. (a) Test selector. (b) Phase balance.	Set to '5'. Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.

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SMS/78/074/14

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01 B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		AC NO ..... DATE .....
SHEET	26	AL 10		SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.3 MUM. (Contd)

(c)	Test selector.	Set to '8'.
(d)	Azimuth control.	Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.
(e)	Rate switch.	Set to '1' and check M2 indication is approx 1 postive.
(f)	Test selector.	Set to '9'.

20.4 HCU.

(i) Adjust to centralize steering dot in elevation

(ii) Move handle forward until steering dot moves down.

20.5 Indicator.

(a)	Elevation angle marker.	Ensure positioned 2 degrees PLUS OR MINUS 2 degrees down.
(b)	Computer switch.	(i) Set to '2' and check steering dot is stationary.
		(ii) Set to '3' and check steering dot moves between 1.30 and 2 O'clock.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	AP 101B-1000-5A-F Section] (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	27	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.6 HCU.

(a) Handle.

(i) Move backwards and check steering dot moves to 3 o'clock, remaining there until elevation angle reaches 16 PLUS OR MINUS 2 degrees then begins to move upwards.

(ii) Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read', using MUM elevation control for fine adjustment.

(b) Range control. Reduce range to 12 nm.

20.7 MUM.

(a) Test selector. set to '8'.

(b) Azimuth control. Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.

20.8 Indicator. Check steering dot deflection against computer switch setting is as follows:-

COMP SWITCH	DEFLECTION
3	1.30 o'clock
2	1.30 o'clock
1	Centre

Note: Deflection is to be at time circle diameter PLUS OR MINUS 5 nm.

SMS 17A

SMS/78/074/15

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01 B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED		AC NO ..... DATE .....
SHEET	28	AL 10		SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

NB Sub-item 20.9 o 20.22 inclusive are applicable only to Mk 5 aircraft.

20.9 Pupil/Instructor switch. Set to 'INSTRUCTOR'.

NB Sub-item 20.10 to 20.21 are to be carried out using aircraft Starboard controls.

20.10 HCU. Select 40 nm.

20.11 MUM rate switch. Set to '0'.

20.12 HCU. Set target marker indication to between 35 and 40 nm.

20.13 MUM.
- (a) Test selector. Set to '5'.
- (b) Phase balance. Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.
- (c) Test selector. Set to '8'.

20.14 HCU. Adjust azimuth control for zero indication on M2 with M2 'Read/Test' switch on 'Read'.

20.15 MUM.
- (a) Rate switch. Set to '1' and check M2 indication is approx 1 positive.
- (b) Test selector. Set to '9'.

20.16 HCU.
- (i) Adjust to centralize steering dot in elevation.
- (ii) Move forward until steering dot moves down.

SMS 17A

SMS/78/074/15A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	29	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.17	Indicator.		
	(a) Elevation marker.	Ensure positioned 2 PLUS OR MINUS 2 degrees down.	
	(b) Computer switch.	(i) Set to '2' and check steering dot is stationary.	
		(ii) Set to '3' and check steering dot moves to between 1.30 and 2 o'clock.	
20.18	HCU.		
	(a) Handle.	(i) Move backwards and check steering dot moves to 3 o'clock remaining there until elevation angle reaches 16 PLUS OR MINUS 2 degrees then begins to move upwards.	
		(ii) Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.	
	(b) Range control.	Reduce range to 12nm.	
20.19	MUM test selector.	Set to '8'.	
20.20	HCU.	Adjust azimuth control for zero on M2 with M2 'Read/Test' switch on 'Read'.	

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	30	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.21 Indicator. Check steering dot deflection against computer switch setting is as follows:-

COMP SWITCH	DEFLECTION
3	1.30 o'clock
2	1.30 o'clock
1	Centre

Note: Deflection is to be at time circle diameter PLUS OR MINUS 5 nm.

20.22 Pupil/Instructor switch. Set to 'PUPIL'.

20.23 MUM.

(a) Test selector. Set to '9'.

(b) Rate switch. Set to '0' and check M2 moves approx 1 negatively.

(c) Elevation control. Adjust for zero indicaton on M2 with M2 'Read/Test' switch on 'Read'.

(d) Test selector. Set to '8'.

(e) Azimuth control. Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.

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Continued

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.3 MUM. (Contd)

(f) Aerial selector.)
(g) Test selector.) Set to following positions and check M2 indication is as follows:-

AE SEL	TEST SEL	M2
1	7	0 PLUS OR MINUS 0.5
1	6	0 PLUS OR MINUS 0.5
10	6	MINUS 18 to MINUS 24
10	7	PLUS 18 to PLUS 24
10	9	MINUS 30 to MINUS 36
9	7	MINUS 18 to MINUS 24
9	6	PLUS 18 to PLUS 24
8	8	MINUS 30 to MINUS 36

20.24 Indicator. Check steering dot is positioned 1.5 to 2 cm right of centre.

NB During Sub-items 20.25 to 20.30 inclusive the airspeed indication is to be 175 PLUS OR MINUS 20 Kts.

20.25 MUM.
(a) Aerial position selector. Set to '1'.
(b) Test selector. Set to '9'.
(c) Range selector. Set to 'SWEEP'.

20.26 HCU range control. Set fully forward.

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CHAP	2	AIR RADAR	SERVICING PROCEDURES
SP NO	101B	CONTINUED	LIGHTNING
SHEET	32	AL 10	

API 01 B-1000-5A3F Section (1st Edition)

AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.27 MUM.

(a) Meter M1. (b) Sweep switch.

(i) Wait for M1 to settle and then hold sweep switch on and ensure following sequence occurs:-

	MUM	
INDICATOR	LAMP LIT	M1 INDICATION
1st T Circle contraction	Warning and Fire	18 PLUS OR MINUS 5
2nd T Circle contraction	Warning and Fire	13 PLUS OR MINUS 4
Breakaway	Breakaway	10 PLUS OR MINUS 3

(ii) Release Sweep switch.

20.28 Indicator computer switch. Set to '2'.

20.29 MUM.

(a) Meter M1. Wait for indication to settle before proceeding.

(b) Sweep switch. (i) Hold to 'ON' and check M1 indicates 10 PLUS OR MINUS 3 when breakaway lamp lights.

(ii) Release.

(c) Test selector. Set to '11'.

SMS 17A

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES
SP NO	101B	CONTINUED	LIGHTNING
SHEET	33	AL 10	

AP101B-1000-5A3F Section (1st Edition)

AC NO ..... DATE .....

SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

20. Computers (Low Altitude) (Contd)

20.29 MUM. (Contd)

(d) Meter M1. — Check indicating not less than 90.

(e) Test selector. — Set to '9'.

20.30 Indicator computer switch. — Set to '4'.

20.31 MUM.

(a) Rate switch. — Set to '1'.

(b) Sweep switch.

(i) Hold 'ON'.

(ii) Check range move in, time circle collapses and warning lamp lights when M1 indicates 33 PLUS OR MINUS 5.

(iii) Check 2nd time circle collapses and fire lamp lights when M1 indicates 30 PLUS OR MINUS 5.

(iv) Check breakaway cross and lamp appear when M1 indicates. 17 PLUS OR MINUS 4.

(v) Release.

(c) Test selector. — Set to '11'.

(d) Meter M1. — Check indicating not less than 90.

(e) Test selector. — Set to '9'.

ELECTRICAL

21. General

21.1 Pitot/Static pressures. — Set for 30000 ft with an indicated airspeed (IAS) of 600 Kts.

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Continued

SMS 17A

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	34	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

22. General

22.1	MUM meter M1.	Ensure indication changes smoothly as altitude input increases to 30000ft.

23. Computer (Kinemetic Ranging)

23.1	Pitot/Static pressures.	Ensure instrument indications are 600 PLUS OR MINUS 10 Kts and 30000 PLUS OR MINUS 1000ft.
23.2	MUM aerial position selector.	Set to '10'.
23.3	HCU.	
	(a) Range control.	Set target marker to between 35 and 40 nm.
	(b) Handle.	(i) Set elevation to zero degrees and check time circle gap is positioned at 4.30 o'clock.
		(ii) Set fully back and check time circle gap moves to 9.30 o'clock.
23.4	Indicator computer switch.	Set to '3'.
23.5	MUM aerial control.	Set to 'NORMAL'.
23.6	HCU.	(i) Set fully forward and ensure time circle gap moves to 4.30 o'clock.
		(ii) Adjust for an elevation angle of 20 degrees up with zero degrees in azimuth.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES
SP NO	101B	CONTINUED	LIGHTNING
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API 01B-1000-5A3 F
Section
(1st Edition)

AC NO ..... DATE .....

SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

23. Computer (Kinemetic Ranging) (Contd)

NB During Sub-items 23.7 to 23.21 inclusive an elevation angle of 20 degrees is to be maintained when adjusting handle in azimuth.

23.7	Indicator computer switch.	Set to '4' and ensure steering dot is positioned at 2.30 o'clock.
23.8	HCU.	Move outboard and check steering dot remains stationary until display angle is 25 degrees left, then moves left, being fully left when display angle is between 40 and 45 degrees.
23.9	MUM rate switch.	Set to '2'.
23.10	Indicator.	Check steering dot is positioned between 9 and 10 o'clock.
23.11	HCU.	Move inboard and check steering dot remains left until display angle is 25 degrees starboard, then moves right, being fully right when display angle is between 40 and 45 degrees.
23.12	MUM rate switch.	Set to '1'.
23.13	HCU.	Adjust to set time circle gap at 12 o'clock.
23.14	Indicator.	Ensure display angle is between 15 and 25 degrees starboard.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	36	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

23. Computer (Kinemetic Ranging) (Contd)

NB Sub-item 23.15 to 23.18 inclusive are applicable only to Mk 5 aircraft.

23.15	Pupil/Instructor switch.	Set to 'INSTRUCTOR'.
23.16	Starboard indicator.	Set computer switch to '4'.
23.17	Using starboard controls.	Repeat Sub-items 23.8 to 23.14 inclusive.
23.18	Pupil/Instructor switch.	Set to 'PUPIL'.
23.19	HCU.	Reduce range until steering moves anti-clockwise.
23.20	Indicator.	Check range is 18 PLUS OR MINUS 2nm.
23.21	HCU.	
	(a) Range control.	Set target marker to between 35 and 40 nm.
	(b) Handle.	Move slowly to 25 degrees port (when steering dot just starts to move left). Note: Care is to be taken to avoid overshooting this point.
	(c) Range control.	(i) Reduce range until a steering dot movement to the left occurs.
		(ii) Check range is between 9 and 13 nm.

24. Computers (High Altitude)

24.1	HCU range control.	Set target marker to between 35 and 40 nm.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
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Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988

(1)	(2)	(3)	(4)	(5)

AIR RADAR

24. Computers (High Altitude) (Contd)

24.2	Indicator computer switch.	Set to '1'.
24.3	MUM.	
	(a) Aerial control.	Set to 'TEST'.
	(b) Aerial position selector.	Set to '1'.
	(c) Test selector.	Set to '8'.
	(d) Azimuth control.	Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.
	(e) Test selector.	Set to '9'.
	(f) Elevation control.	Adjust for zero indication on M2 with M2 'Read/Test' switch on 'Read'.
24.4	Pitot/Static pressures.	Ensure instrument indications are:- IAS = 600 PLUS OR MINUS 10 knots. Altitude = 30000 PLUS OR MINUS 1000ft.
24.5	Indicator.	Check steering dot is positioned at centre.
24.6	HCU.	Move forward and ensure steering dot moves down when elevation angle reaches 2 PLUS OR MINUS 2 degrees down.
24.7	Indicator computer switch.	Set to '2' and check steering dot remains down.
24.8	HCU.	
	(a) Range control.	Set to Minimum and ensure steering dot moves to 1.30 o'clock
	(b) Handle.	Adjust for an elevation angle of 5 degrees up.

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Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	38	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

24. Computers (High Altitude) (Contd)

24.8 HCU. (Contd)

(c)	Range control.	Wait for M1 to stabilize then adjust for an indication of 50.

24.9 MUM.

(a)	Sweep switch.	(i) Hold to 'ON' and ensure the following sequence occurs:-

INDICATOR	MUM	
	LAMP LIT	M1 INDICATION
1st T circle contraction	Warning	33 PLUS OR MINUS 5
2nd T circle contraction	Fire	30 PLUS OR MINUS 5
Breakaway cross	Breakaway	17 PLUS OR MINUS 4

		(ii) Release.
(b)	Red cone switch.	Set to 'ON'.
(c)	Test selector.	Set to '10'.
(d)	Rear lamp.	Ensure lit.
(e)	Meter M1.	Check indicating 54 PLUS OR MINUS 7.
(f)	Comp track switch.	Set to 'OFF'.
(g)	Front lamp.	Ensure lit.
(h)	Meter M1.	Check indicating 80 PLUS OR MINUS 8.
(j)	Comp track switch.	Set to 'ON'.
(k)	Test selector.	Set to '11'.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	39	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

24. Computers (High Altitude) (Contd)

24.9 MUM. (Contd)

(1) Meter M1. Check indicating 30 PLUS OR MINUS 4.

25. Tracking Time Constant

25.1 MUM.

(a) Aerial position selector. } Set to '9'.
(b) Test selector. }

(c) Rate switch. Set to '3'.
(d) Range control. Set to 'MAN'.

25.2 HCU.

(a) Range switch. Select 10 nm range.
(b) Range control. Set target marker to 5 nm.

25.3 Indicator computer switch. Set to '4'.

25.4 Elevation control. Adjust for an M2 indication of plus 40

25.5 Indicator. Ensure time circle is at full diameter.

25.6 HCU phase change trigger. Select Track and simultaneously start stop watch.

25.7 MUM.

(a) Meter M2. Ensure time taken for pointer to move from plus 40 to minus 40 is between 4 and 6 seconds.
(b) Test position switch. Operate.

25.8 HCU range control. Reduce range to 2 nm.

SMS 17A

SMS/78/074/21

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	40	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

25. Tracking Time Constant (Contd)

25.9	MUM.	
	(a) Rate switch.	Set to '2'.
	(b) Fine range control.	Adjust for an indication of 20 on M1.
	(c) Rate switch.	Set to '3'.
25.10	HCU phase change trigger.	Select Track and simultaneously start stop watch.
25.11	MUM.	
	(a) Meter M2.	Check time taken for pointer to move from plus 40 to minus 40 is between 2 and 3.5 seconds.
	(b) Test position switch.	Operate.
	(c) Comp Track switch.	Set to 'OFF'.
25.12	Indicator.	Ensure breakaway cross is displayed.
25.13	MUM.	
	(a) Test selector.	Set to '8'.
	(b) Aerial position selector.	Set to '7'.
	(c) Azimuth control.	Adjust for an M2 indication of plus 40.
25.14	HCU phase change trigger.	Select Track and simultaneously start stop watch.
25.15	MUM.	
	(a) Meter M2.	Check time taken for pointer to move from plus 40 to minus 40 is between 4 and 6 seconds.
	(b) Test position switch.	Operate.

SMS 17A

SMS/78/074/21A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	41	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

25. Tracking Time Constant (Contd)

25.16	HCU range control.	Reduce range to 1 nm.
25.17	MUM.	
	(a) Rate switch.	Set to '2'.
	(b) Fine range control.	Adjust for an M1 indication of between 5 and 15.
	(c) Rate switch.	Set to '3'.
25.18	HCU phase change trigger.	Select Track and simultaneously start stop watch.
25.19	MUM.	
	(a) Meter M2.	Check time taken for pointer to move from plus 40 to minus 40 is between 2 and 3.5 seconds.
	(b) Test position switch.	Operate.
	(c) Rate switch.	Set to '1'.
	(d) Fine range control.	Adjust for an M1 indication of between 16 and 24.
	(e) Comp Track switch.	Set to 'ON'.
	(f) Fine range control.	Reduce range as necessary to obtain a steady launch warning signal.
	(g) Range lock switch.	Set to 'OFF'.
25.20	Indicator.	Check contracted time circle with no gap is displayed.
25.21	HCU range control.	Set fully back and check M1 pointer remains stationary.

26. Roll Programme

26.1	MUM.	
	(a) Aerial position selector.	Set to '1'.

SMS 17A

SMS/78/074/22

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	42	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

26. Roll Programme (Contd)

26.1 MUM. (Contd)

(b)	Test selector.	Set to '9'.
(c)	Range control.	Set to 'SWEEP'.
(d)	Rate switch.	Set to '0'.
(e)	Range lock switch.	Set to 'ON'.

26.2 HCU.

(a)	Handle.	Adjust in elevation for zero indication on M2 with M2 'Read/Test' switch on 'Read'.
(b)	Range control.	Set fully forward and adjust, if necessary, for an indication of at least 30 on M1.

NAV INSTRUMENTS

27. General

27.1 MRG simulator. Adjust pitch control for 10 degrees nose down.

AIR RADAR

28. Roll Programme

28.1 MUM meter M2. Check indication moves positive.

28.2 Indicator.

(a)	Artifical horizon bar.	Check moves upwards.
(b)	Elevation marker.	Check stationary.

NAV INSTRUMENTS

29. General

29.1 MRG simulator. Reset pitch control to zero.

SMS 17A

SMS/78/074/22A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES
SP NO	101B	CONTINUED	LIGHTNING
SHEET	43	AL 10	

API 01 B-1000-5A3F Section 1 (1st Edition)

AC NO ..... DATE .....

SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

			(1)	(2)	(3)	(4)	(5)
		AIR RADAR					
30.	**Roll Programme**						
30.1	MUM. (a) Aerial position selector.	Set to '7'.					
	(b) Rate switch.	Set to '1'.					
30.2	Indicator.	Check steering dot is at approx 12 o'clock.					
		NAV INSTRUMENTS					
31.	**General**						
31.1	MRG simulator.	Adjust roll control for 20 degrees starboard wing down.					
		AIR RADAR					
32.	**Roll Programme**						
32.1	MUM meter M2.	Check indication reads positive.					
32.2	LFS/CRT switch.	Set to 'LFS'.					
32.3	MUM meter M2.	Ensure indicating zero PLUS OR MINUS 2.					
32.4	LFS/CRT switch.	Set to 'CRT'.					
32.5	MUM test position switch.	Operate.					
32.6	Indicator.	Ensure artifical horizon and steering dot have moved anti-clockwise.					
32.7	MUM sweep switch.	(i) Hold to 'ON'. (ii) Check at 1st T circle contraction that steering dot moves to 1.30 o'clock.					

SMS 17A

SMS/78/074/23

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	AP101B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	44	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

32. Roll Programme (Contd)

32.7 MUM sweep switch. (Contd)

(iii) Check at breakaway that steering dot moves towards 1 o'clock.

(iv) Release.

NAV INSTRUMENTS

33. General

33.1 MRG simulator. Reset roll control to zero.

AIR RADAR

34. External Receiver

34.1 HCU.

(a) Phase change trigger. Select search phase.

(b) Range selector button. Select 40 nm range.

34.2 Ext Tx CU function switch. Set to 'ON' and ensure S-band noise spectrum appears at bottom of indicator display.

34.3 Noise tester RF Osc On/Off switch. Set to 'OFF'.

SMS 17A

SMS/78/074/23A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	45	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

34. External Receiver (Contd)

34.4	Ext Rx CU	(i)	Rotate fully anti-clockwise and check indicator is free from noise for first 3 to 6 nm except for approx 1 nm of S-band noise at foot of display.
		(ii)	Rotate fully clockwise and check noise level limits between 3 and 5 nm.
		(iii)	Adjust for a mean noise level of approx 2 nm.
34.5	Resonator CT 307.	(i)	Connect to indicator unit CT 300.
		(ii)	Connect RF input to socket F on external receiver.
		(iii)	Set to 2979 MHz using calibration charts.
34.6	External receiver.		Adjust local oscillator tuning dial to give maximum deflection on CT 300 meter.
34.7	Resonator CT 307.		Set to 2790 and 3090 MHz in turn and repeat Sub-item 34.6 for GCI frequencies of 2820 and 3120 MHz respectively.
34.8	External receiver.		Reset to frequency in use.

SMS 17A

SMS/78/074/24

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	46	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

34. External Receiver (Contd)

34.9	Tester noise S-band.	
	(a) Set zero control.	Adjust to zero RF Power Level on meter.
	(b) RF level control.	Set fully anti-clockwise.
	(c) Tuning control.	Ensure set to frequency of external receiver.
	(d) RF Osc On/ Off switch.	Set to 'ON'.
	(e) RF level control.	Adjust to set RF Level meter indication to Power Set mark.
	(f) Output level attentuator.	Set to '60dB'.
	(g) RF level meter.	Check still indicating Power Set.
34.10	Indicator.	Check amplitude of largest peak of S-band display exceeds 3 nm.
34.11	HCU range selector button.	(i) Select 10 nm range and check S-band display is removed.
		(ii) Select 40 nm range.

35. Computer (Azimuth)

35.1	Nav display unit.	
	(a) Mode switch.	Set to 'TAC'.
	(b) Heading selector knob.	Push in and rotate two turns clockwise and ensure selected heading pointer moves 90 degrees clockwise.
35.2	Ext Rx CU.	
	(a) Function switch.	Set to 'ALIGN' lifting knob to clear stop.
	(b) Indicator lamp.	Ensure lit.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED		
SHEET	47	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

35. Computer (Azimuth) (Contd)

35.3	Indicator.	(i)	Check acquisition marker has been replaced by homer marker.
		Note:	Adjustment of Heading Selector may be required as homer marker may be positioned off display.
		(ii)	Check marker is a vertical line positioned at approx 7 nm.
35.4	Nav display unit.		
	(a) Heading selector knob.	(i)	Push in and rotate clockwise
		(ii)	Check homer marker moves from right to left on indicator, returning rapidly after a slight delay to right hand side.
	(b) Selected heading pointer.		Check selected heading does not follow Heading Selector position.
	(c) Mode switch		Set to 'D/L' and check there is no change to display or selected heading.
35.5	Ext Ru CU.		
	(a) Function switch.		Set to 'PROP NAV'.
	(b) Indicator lamp.		Ensure extinguished.
35.6	Nav display unit heading selector.	(i)	Push in and rotate to centralize home marker.
		(ii)	Note selected heading pointer indication.

SMS 17A

SMS/78/074/25

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	48	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

35. Computer (Azimuth) (Contd)

35.6 Nav display unit heading selector. (Contd)

(iii) Push in and rotate one turn clockwise.

(iv) Check selected heading pointer moves 40 degrees clockwise and homer marker moves 10 degrees right.

35.7 Ext Rx CU function switch. — Set to 'ATTACK'.

35.8 Indicator. — Check S-band display has been removed and acquisition marker has reappeared.

35.9 Ext Rx CU function switch. — Set to 'OFF'.

35.10 Tester noise S-band.
(a) RAF Osc On/Off switch.
(b) Main On/Off switch.
(c) Ext Rx CU
— Set to 'OFF'.

36. External Receiver Tuning Operational Readiness (GCI Frequency)

36.1 GCI frequency. — Obtain.

36.2 AI 23C.

(i) Ensure fully run up.

(ii) Select search phase.

(iii) Select 40 nm range.

36.3 External receiver CU. — Set to 'ON'.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES
SP NO	101B	CONTINUED	LIGHTNING
SHEET	49	AL 10	

AP101B-1000-5A3 F Section 1 (1st Edition)

AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

36. External Receiver Tuning Operational Readiness (GCI Frequency) (Contd)

36.4	Resonator CT 307.	Set to 30 MHz below given GCI frequency using calibration charts.
36.5	External receiver.	Adjust local oscillator tuning dial to give maximum deflection on CT 300 meter.
36.6	External receiver CU.	Set to 'OFF'.

37. Additional Facilites Mode

37.1	MUM.	
	(a) Test pulse switch.	Set to 'OFF'.
	(b) Range track switch.	
	(c) Range lock switch.	Set to 'ON'.
	(d) Comp track switch	
	(e) Test selector.	Set to '7'.
	(f) Aerial position selector.	Set to '1'.
	(g) Aerial control.	Set to 'NORMAL'.
	(h) Range control.	Set to 'MANUAL'.
	(j) Rate switch.	Set to '1'.
	(k) Test position switch.	Operate.
37.2	HCU.	
	(a) Range switch.	Select 10 nm.
	(b) Range control.	Set target marker to 5 nm.
	(c) PRF switch.	Set to 'HIGH'.
	(d) Phase change trigger.	Select 'SEARCH'.

SMS 17A

SMS/78/074/26

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	API 01B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		
SHEET	50	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

37. Additional Facilites Mode (Contd)

37.2 HCU. (Contd)

(e)	Additional facilities switch.	Select 'ON'.

37.3 Indicator.

(a)	Acquisition marker.	Check azimuth sweep is PLUS OR MINUS 25 degrees.
(b)	Elevation marker.	Ensure single bar only scan for all positions of the HCU scan bar switch.

37.4 HCU.

(a)	Azimuth control.	Centralize.
(b)	Reject level.	Reject inwards.(Rear).

37.5 Indicator. Ensure that an enlarged time circle with no gap is present.

37.6 MUM.

(a)	Test selector.	Set to '8'.
(b)	Meter M1.	Check indicates 52 PLUS OR MINUS 2.

37.7 HCU azimuth control.

(i)	Adjust carefully to ensure M2 will read positive and negative deflections.
(ii)	Adjust carefully to set M2 to zero with M2 'Read/Test' switch on 'Read'.

37.8 MUM.

(a)	Test selector.	Set to '9'.

SMS 17A

SMS/78/074/264

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	51	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

37. Additional Facilities Mode (Contd)

37.8 MUM (Contd).

(b) Meter M2. — Using HCU elevation control set to zero with M2 'Read/Test' switch on 'Read'.

37.9 Indicator elevation marker. — Check between plus 1 and plus 5 degrees.

37.10 MUM.

(a) Meter M2.
- (i) Check reading minus 48 PLUS OR MINUS 2 with HCU elevation control fully forward.
- (ii) Check reading full scale deflection with backward movement of HCU elevation control.

(b) Test selector. — Set to '10'.

37.11 Indicator comp switch. — Set to '2'.

37.12 MUM range control. — Set to 'SWEEP'.

37.13 HCU range control. — Set to minimum and wait for M1 to stabilize.

37.14 MUM.

(a) Red cone switch. — Switch 'ON'.

(b) Comp track switch. — Switch 'OFF'.

(c) Front lamp — Ensure lit.

(d) Meter M1. — Check indicating 58 PLUS OR MINUS 7.

(e) Comp track switch. — Switch 'ON'.

(f) Rear lamp. — Ensure lit.

SMS 17A

SMS/78/074/27

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)
SP NO	101B	CONTINUED		AC NO ..... DATE .....
SHEET	52			SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

AIR RADAR

37. Additional Facilities Mode (Contd)

37.14 MUM. (Contd) . .

(g) Meter M1. — Check indicating 58 PLUS OR MINUS 7.

(h) Test selector. — Set to '11'.

(j) Meter M1. — Check indicating 30 PLUS OR MINUS 4.

37.15 HCU reject lever. — Push forward.

37.16 MUM launch warning lamp. — Ensure lit.

37.17 HCU reject lever. — Release.

37.18 MUM launch warning lamp. — Ensure extinguished.

37.19 Gunsight caging button. — Press.

37.20 MUM launch warning lamp. — Ensure lit.

37.21 Gunsight caging button. — Release.

37.22 MUM launch warning lamp. — Ensure extinguished.

37.23 Indicator comp switch. — Set to '4'.

37.24 MUM.

(a) Test selector. — Set to '10'.

(b) Meter M1. — Check reading 80 PLUS OR MINUS 8.

37.25 LFS/CRT switch. — Select 'LFS'.

37.26 HCU reject lever. — Reject inwards.

37.27 LFS in range lamp. — Ensure lit.

SMS 17A

SMS/78/074/27A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	53	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

38. Guns Pure Pursuit

38.1	LFS/CRT switch.	Set to 'CRT'.
38.2	HCU phase change trigger.	Select 'TRACK'.
38.3	Master armament selector switch.	Set to 'GUNS'.
38.4	Indicator.	Check steering dot moves 1 cm up.
38.5	Master armament selector switch.	Set to 'GW'.
38.6	HCU additional facilities switch.	Select 'NORMAL'.

39. Control Unit Recheck

39.1	Test harness.	Disconnect 6 way connexions at HCU and aircraft.
39.2	HCU.	Reconnect aircraft cable.
39.3	MUM.	
	(a) Aerial control.	Set to 'NORMAL'.
	(b) Rate switch.	Set to '0'.
	(c) Comp track switch.	Set to 'OFF'.
39.4	Indicator computer switch.	Set to '1'.
39.5	HCU.	(i) Move inboard and outboard and check acquisition marker follows.
		(ii) Move backwards and forwards and check elevation marker follows.

SMS 17A

SMS/78/074/28

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	54	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

39. Control Unit Recheck (Contd)

39.5 HCU. (Contd)

(iii) Park handle in fully aft, fully port position, ensuring clutch engages.

40. Item 40 is applicable only to Mk 5 aircraft.

Starboard HCU Check

40.1 Pupil/instructor switch. Set to 'INSTRUCTOR'.

40.2 HCU.

(a) Phase change trigger. Select 'SEARCH'.

(b) Range selector. Select 40 nm range.

(c) Handle.
(i) Move inboard and outbaord and ensure acquisition marker follows.
(ii) Move backwards and forwards and ensure elevation marker follows.
(iii) Adjust to position elevation marker at plus 5 degrees and azimuth at zero degrees.

(d) Multi-bar scan switch.
(i) Select 2 and 4 bar scan and ensure elevation marker shows appropriate scan pattern.
(ii) Set to single bar scan.

SMS 17A

SMS/78/074/28A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	API 01B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	55	AL 11		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

40. Starboard HCU Check (Contd)

40.2 HCU. (Contd)

(e)	Range selector.	(i)	Select 60/80nm range and ensure 60/80nm scale is illuminated.
		(ii)	Select 10 nm range and ensure 10 nm scale is illuminated.
		(iii)	Select 40 nm range and ensure 40 nm scale is illuminated.
(f)	Gain control.	(i)	Operate and ensure that noise level on indicator/s varies evenly from minimum to maximum.
		(ii)	Reset to optimum, noise peaks just visible.
(g)	Tx On/Off switch.		Set to 'ON'.

40.3 MUM.

(a)	Test selector.	Set to '3'.
(b)	Meter M1.	Check indicating not less than 16.
(c)	Range control.	Set to 'MAN'.

40.4 HCU.

(a)	Tx On/Off switch.	Set to 'OFF'.
(b)	Phase change trigger.	Select 'ACQUISITION'.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	AP101B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	56	AL 10		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F.988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

40. Starboard HCU Check (Contd)

40.4 HCU. (Contd)

(c)	Range control.	Operate and ensure that acquisition marker can be moved between top and bottom limits of display.
(d)	Range selector.	Select 10 nm range.
(e)	Vis-ident switch.	Set to 'ON'.
(f)	Phase change trigger.	(i) Select track and ensure vis-ident lamp flashes. (ii) Select 'SEARCH'.
(g)	Vis-ident switch.	Set to 'OFF'.
(h)	Handle.	Park fully aft and fully starboard ensuring clutch engages.

ELECTRICAL

41. Completion

41.1	Pitot/Static pressures.	Restore to atmospheric.
41.2	Pitot/Static test set.	(i) Disconnect. (ii) Remove.

NAV INSTRUMENTS

42. Completion

42.1	MRG simulator.	(i) Disconnect. (ii) Remove.
42.2	Electronic unit.	Refit aircraft connections.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES	AP 101B-1000-5A3 F Section (1st Edition)
SP NO	101B	CONTINUED	LIGHTNING	
SHEET	57	AL 11		AC NO ..... DATE .....

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F.988B

(1)	(2)	(3)	(4)	(5)

AIR RADAR

43. Item 43 is applicable only if visual recorder is NOT to be tested.

Completion

43.1	HCU.	
	(a) Main On/Off switch.	Set to 'OFF'.
	(b) Ground test standby switch.	Set to 'STANDBY'. position.
43.2	Master armament selector switch.	Set to 'OFF'.
43.3	MRG On/Off switch.	
43.4	Instrument master switch.	
43.5	LFS sighting head.	Lower reflector.
43.6	Radar test harness.	(i) Disconnect.
43.7	RAM Nose screen.	(ii) Remove.
43.8	Tester noise S-band.	
43.9	Dummy plug.	Refit to test socket.
43.10	Cooling air trolley.	(i) Switch 'OFF'.
43.11	15 kVA power unit.	(ii) Disconnect.
43.12	MUM.	Disconnect.
43.13	MUM.	
	(a) Meter unit.	Remove.
	(b) Support bar.	Retract and fit lid.
	(c) Mounting clamp.	Remove.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3F Section 1 (1st Edition)
SP NO	101B	CONTINUED		AC NO . . . . . DATE . . . . .
SHEET	58	AL 10		SERVICING RECORD - RAF F. 2988B

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

(1)	(2)	(3)	(4)	(5)

MUM AERIAL POSITION AND TEST SELECTOR FUNCTIONS

(a) Test Selector Functions

TEST SELECTOR	METER M1	METER M2
1	HT	No indication
2	Crystal current	No indication
3	Tx power	No indication
4	GCV	Radar error (Ax or El as appropriate to Aerial Position selected).
5	Range (0 - 3.75 nm)	Phase balance.
6	Range (0 - 10 nm)	FS yaw
7	Range (0 - 10 nm).	FS pitch
8	Range (0 - 10 nm).	Az slaving signal
9	Range (0 - 10 nm).	El slaving signal
10	RT K factor	No indication
11	RT altitude factor	No indication
12	No indication	Steering error yaw.
13	No indication	Steering error pitch.

SMS 17A

Continued

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)
GP NO	101B	CONTINUED		
SHEET	59	AL 10		AC NO . . . . . DATE . . . . .

Safety and Servicing Notes are to be complied with throughout the work detailed on this card.

SERVICING RECORD - RAF F. 2988B

(1)	(2)	(3)	(4)	(5)

MUM AERIAL POSITION AND TEST SELECTOR FUNCTIONS

(b) Aerial Position Selector Functions

SELECTOR	AERIAL POSITION
1	0
2	0
3	0.5 Starboard
4	0.5 Port
5	0.5 Up
6	0.5 Down
7	7.5 Starboard
8	7.5 Port
9	7.5 Up
10	7.5 Down

SMS 17A

SMS/73/074/31(STC)