

CHAP	2	SP101C	SERVICING PROCEDURES					AP 101B-1000-5A3F (Section 1 (1st Edition)				TIME	ACT	
TRADE	AIR RADAR		LIGHTNING											
SHEET	1	OF	9	SHEET/S		3		5	6	AL NO	21	DATE		EST
TITLE	AI MK23C/D Installation Check								SERVICING RECORD - RAF F.2988B AC NO DATE					
Safety and Servicing Notes are to be complied with throughout the work detailed on this Card.									(1)	(2)	(3)	(4)	(5)	
Special Tools and Equipment									MAN HOURS	TRADESMEN INIT	BRIEF DETAILS OF OR SUSPECTED DEFECT	F. 720B NO	N.C.O. INITIALS	
Screen RAM Nose Type 6414 - 10AL/4684940 Watches, Stop.														
<p style="text-align: center;">AIR RADAR NCO</p> <p>NB: This SP may be used at the discretion of the Engineering Officer following a Radar Bullet or LRU replacement. It must be noted that the SP is only a confidence check at a lower level than SP101A/B(AR) to ensure that the radar system (excluding the recorder visual) is serviceable. This SP must not be used when the radar system is subject to Form 765B action.</p> <p>1. <u>Preparation</u></p> <p>NB: Ensure aircraft is on a safe heading or screen RAM Nose is fitted.</p> <p>1.1 15 KVA Power (i) Connect to aircraft. (ii) Switch 'ON'.</p> <p>1.2 Instrument master switch. Set to 'ON'.</p> <p>1.3 LFS/CRT switch. Set to 'LFS'.</p> <p>1.4 MRG On/Off switch. Set to 'ON'.</p> <p>1.5 Master armament selector. Set to 'GW'.</p> <p>1.6 Hand control unit. (HCU). (a) Ground test standby switch. Set to 'GROUND TEST'.</p> <p>(b) Tx On/Off switch. Set to 'OFF'.</p> <p>(c) Vis-ident switch. Set to 'OFF'.</p> <p>Note: Sub-item 1.7 is applicable only to Mk T5 aircraft.</p> <p>1.7 Pupil/ Instructor switch. Set to 'PUPIL'.</p>														ASSOCIATED PROCEDURE CARDS
<p>SP NO</p> <p>101C</p>														
Sms/82/357/2									Continued					

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING		AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	101C	CONTINUED			AC NO DATE				
SHEET	2	AL 21			SERVICING RECORD				
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					(1)	(2)	(3)	(4)	(5)
AIR RADAR NCO									
2. <u>Power Run Up</u>									
2.1 HCU main On/Off switch. Set to 'ON' and simultaneously start stopwatch.									
2.2 Indicator/s. (a) Azimuth, Elevation and attitude scale lamps. Ensure lit.									
(b) Polaroid dimmer. Ensure smooth operation.									
2.3 LFS. (i) Raise reflector. (ii) Ensure 'in-range' marker is displayed within 4 minutes PLUS OR MINUS 20 seconds of switching 'on' HCU main on/off switch.									
2.4 HCU range selector switch. Select 60/80nm range.									
2.5 Indicator/s range scale. Ensure 60/80 and 10nm scales illuminated.									
2.6 HCU range selector switch. Select 40 nm range.									
2.7 Indicator/s. (a) Range scales. Ensure 40 and 10 nm scales illuminated. (b) Computer switch. (i) Ensure illuminated. (ii) Set to '1'.									
2.8 LFS. Ensure in-range marker disappears within 4 minutes 30 seconds PLUS OR MINUS 25 seconds of switching 'on' HCU main on/off switch.									
SMS/82/357/2A					Continued				

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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING		AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	101C	CONTINUED			AC NO DATE				
SHEET	3	AL 21							
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD				
					(1)	(2)	(3)	(4)	(5)
AIR RADAR NCO									
2. <u>Power Run Up</u> (Contd)									
2.9 Indicator/s. (i) Ensure timebase is central and elevation marker is approximately +4 degrees.									
(ii) Adjust indicator RV2 to position time-base at zero degrees in azimuth.									
2.10 LFS/CRT switch. Set to 'CRT'.									
3. <u>Search Phase</u>									
3.1 Indicator/s. Ensure search phase displayed.									
3.2 HCU scan selector. Select single bar scan.									
3.3 Indicator/s. (i) Ensure acquisition, attitude and elevation markers are displayed.									
(ii) Check that the position of the attitude marker corresponds to the OR946 attitude indicator.									
3.4 HCU range selector switch. Select 10 nm range.									
3.5 Indicator/s. (i) Ensure position of attitude marker has not moved by more than 2 mm.									
(ii) Ensure that the time base is searching between 50 degrees Port and 50 degrees Starboard with a scan frequency of 1 Hz.									
3.6 HCU handle. Move fully aft.									
3.7 Indicator/s. Ensure elevation marker reads +27 degrees.									
3.8 HCU handle. Move fully forwards.									
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SP NO	1010	CONTINUED			AC NO DATE				
SHEET	4	AL 21							
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD				
					(1)	(2)	(3)	(4)	(5)
AIR RADAR NCO									
3. <u>Search Phase</u> (Contd)									
▶ 3.9 Indicator/s. Ensure elevation marker reads - 8 degrees.									
3.10 HCU handle. Move to set elevation marker at +4 degrees.									
3.11 HCU scan selector. Select 2 bar scan.									
3.12 Indicator/s. Ensure elevation marker moves in 2 bar scan pattern.									
3.13 HCU scan selector. Select 4 bar scan.									
3.14 Indicator/s. Ensure elevation marker moves in 4 bar scan pattern.									
3.15 HCU scan selector. Select single bar scan.									
3.16 HCU gain control. Adjust to give optimum setting, i.e. noise peaks just visible.									
4. <u>Acquisition Phase</u>									
4.1 HCU phase change trigger. Select acquisition phase.									
4.2 Indicator/s. Ensure scan has a width of 10 degrees and that the time for 25 sweeps is between 8 and 12 seconds.									
4.3 HCU range control. Adjust to set acquisition marker to 5 nm.									
4.4 Indicator/s. Ensure acquisition circle is 5 nm.									
4.5 HCU range change switch. Switch to 40 nm.									
4.6 Indicator/s. Ensure acquisition circle is unchanged in shape or position at 5 nm.									
4.7 HCU range control. (i) Adjust to move acquisition circle between top and bottom of display. (ii) Return acquisition circle to 5 nm.									
SMS/82/357/3A					Continued				

CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING		AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	101C	CONTINUED			AC NO DATE				
SHEET	5	AL 21			SERVICING RECORD				
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					(1)	(2)	(3)	(4)	(5)
AIR RADAR NCO									
4. <u>Acquisition Phase</u> (Contd)									
4.8 HCU handle. (i) Move slowly in azimuth and ensure marker and scan follows correctly.									
(ii) Centralise scanner.									
5. <u>Track Phase</u>									
NB1. During item 5 the scanner should not be allowed to reach end stop.									
NB2. Item 5.1 (ii) is applicable to AI23D only.									
5.1 HCU Phase change (i) Select track and trigger.									
(ii) Check noise amplitude on timebase can be varied with gain control.									
(iii) Release.									
(iv) Check gain control has no effect on noise amplitude.									
5.2 Indicator/s. (i) Ensure scanner drift rate is below 5 mm/sec and that the steering dot follows direction of scanner drift.									
(ii) Ensure Target marker is displayed as a 5 mm circle centred on the timebase.									
5.3 HCU Range button. Select 10 mm.									
5.4 Indicator/s. (i) Ensure target marker is still a 5 mm circle.									
(ii) Ensure time circle is a circle of 80 degrees diameter with a gap of 15 degrees positioned between 4 and 5 o'clock.									
5.5 HCU phase change trigger. Select search phase.									
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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING		AP101B-1000-5A3F Section 1 (1st Edition)				
SP NO	101C	CONTINUED			AC NO DATE				
SHEET	6	AL 21							
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD				
					(1)	(2)	(3)	(4)	(5)
<p style="text-align: center;">AIR RADAR</p> <p>6. <u>Transmitter Check</u></p> <p>NB: Sub-items 6.1 to 6.3 inclusive are to be carried out ONLY IF RAM screen nose IS fitted.</p> <p>6.1 Tx on/off switch. Set to 'ON'.</p> <p>6.2 Indicator/s. Ensure that display is unchanged and that transmitter fault counting circuit does not operate.</p> <p>6.3 Tx on/off switch. Set to 'OFF'.</p> <p>NB: Sub-items 6.4 to 6.10 inclusive are to be carried out ONLY IF RAM screen nose IS NOT fitted.</p> <p>6.4 Aircraft. Ensure that the aircraft is on a safe heading and that radiation warning boards are placed 50 degrees either side of the nose of the aircraft to a distance of 80 feet from the nose of the aircraft.</p> <p>6.5 Tx on/off switch. Set to 'ON'.</p> <p>6.6 Indicator/s. Ensure that the transmitter fault counting circuits do not operate and that ground returns are displayed.</p> <p>6.7 HCU. Position acquisition circle over most clearly defined target.</p> <p>6.8 HCU phase change trigger. Select acquisition phase and then track.</p> <p>6.9 Indicator/s. Ensure that the radar locks on to target and shows no sign of breaking lock.</p>									
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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	101C	CONTINUED		AC NO DATE				
SHEET	7	AL 21		SERVICING RECORD				
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.				(1)	(2)	(3)	(4)	(5)
AIR RADAR NCO								
6. <u>Transmitter Check</u> (Contd)								
6.10 HCU.								
(a) Tx On/off switch.				(i)	Wait a minimum of 6 seconds then set 'OFF'.			
				(ii)	Check target marker immediately sweeps about lock on position before drifting inwards.			
(b) Phase change trigger.				Select search phase.				
7. <u>Vis-ident Function</u>								
7.1 Vis-ident switch.				Set to 'ON'.				
7.2 Acquisition marker.				Set to 5 n.m.				
7.3 HCU new facilities switch.				Select 'New Facilities'.				
7.4 HCU reject lever.				Reject inwards.				
7.5 Indicator/s.				Ensure vis-ident thermometer scale displayed.				
7.6 HCU range control.				Adjust to change over from thermometer scale to range circle. Ensure change over occurs at 900 yards.				
7.7 HCU range control.				Adjust to bring range circle to minimum.				
7.8 Indicator/s.				Ensure that range circle centre F aligned with graticule reference circle centre.				
7.9 Vis-ident switch.				Set to 'OFF'.				
8. <u>New Facilities</u>								
8.1 HCU handle.				Move slowly from port to starboard.				
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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	1010	CONTINUED		AC NO DATE				
SHEET	8	AL 21		SERVICING RECORD				
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.				(1)	(2)	(3)	(4)	(5)
AIR RADAR NCO								
8. <u>New Facilities</u> (Contd)								
8.2	Indicator/s.	Ensure acquisition circle movement is limited to PLUS AND MINUS 25 degrees azimuth.						
8.3	HCU handle.	Centralise.						
8.4	HCU scan selector.	Select 2 bar scan.						
8.5	Indicator/s.	Ensure elevation marker shows single bar scan pattern.						
8.6	HCU scan selector.	Select 4 bar scan.						
8.7	Indicator/s.	Ensure elevation marker shows single bar scan pattern.						
8.8	HCU scan selector.	Select single bar scan.						
8.9	Indicator/s.	Ensure that an enlarged time circle with no gap is present.						
8.10	LFS/CRT switch.	Select 'LFS'.						
8.11	HCU reject lever.	Reject 'IN' and hold.						
8.12	LFS.	Ensure 'in range' lamp illuminated.						
8.13	HCU reject lever.	Release.						
8.14	LFS/CRT switch.	Select 'CRT'.						
8.15	HCU phase change trigger.	Select track phase.						
8.16	LFS/CRT switch.	Select 'LFS'.						
8.17	Indicator/s.	Ensure LFS phase displayed.						
8.18	LFS/CRT switch.	Select 'CRT'.						
8.19	Indicator/s.	Ensure search phase displayed. (Post Mod 4702 installations).						
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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING		AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	1010	CONTINUED			AC NO DATE				
SHEET	9	AL 21							
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD				
					(1)	(2)	(3)	(4)	(5)
<p style="text-align: center;">AIR RADAR NCO</p> <p>8. <u>New Facilities</u> (Contd)</p> <p>8.20 HCU phase change Select track phase. trigger.</p> <p>8.21 Master armament Set to 'GUNS'. selector switch.</p> <p>8.22 Indicator/s. Check steering dot moves 1 cm up.</p> <p>9. <u>Completion</u></p> <p>9.1 HCU.</p> <p> (a) Ground Test Set to 'STANDBY'. standby switch.</p> <p> (b) Man on/off Set to 'OFF'. switch.</p> <p> (c) New facilities Set to 'OFF'. switch.</p> <p>9.2 Master armament Set to 'OFF'. selector switch.</p> <p>9.3 MRG on/off switch. Set to 'OFF'.</p> <p>9.4 Instrument Set to 'OFF'. master switch.</p> <p>9.5 15 KVA Power Unit. (i) Switch 'OFF'. (ii) Disconnect from aircraft.</p> <p>9.6 RAM screen nose. Remove from bullet.</p> <p>9.7 Form 705B. ENTER: Day vis-ident (Post Bullet required before next change). night (IMC) vis-ident sortie.</p>									
<p>SMS/82/357/6/STC</p>					Continued				

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