

CHAP	2	SP 104	SERVICING PROCEDURES						AP.101B-1000-5A3 F Section 1 (1st Edition)			TIME	ACT					
TRADE	AIR RADAR		LIGHTNING															
SHEET	1	OF 11	SHEET/S	1	1A	2	2A	3	4	5	6	AL NO	DATE	EST				
TITLE	IFF/SSR (Using PT 12004)						SERVICING RECORD AC NO DATE											
Safety and Servicing Notes are to be complied with throughout the work detailed on this Card.												(1)	(2)	(3)	(4)	(5)		
<u>Special Tools and Equipment</u> Pumps Pressurizing. Watches Stop GS 1/5 second. Trolley Type 12036. Tester, Performance, Type 12004. Test Kit Aerial.												MAN HOURS	TRADESMAN INIT	BRIEF DETAILS OF DEFECT OR SUSPECTED DEFECT	F. 720B NO	N.C.O. INITIALS		
AIR RADAR																		
1. <u>Preparation</u> 1.1 TR 16928. Ensure pressurized to 4 lbf/in ² . 1.2 PT 12004 Connect to 28V d.c. supply. 1.3 RF cover. Place on lower aerial and secure ensuring cover is seated correctly. 1.4 Aerial test switch. Set to 'LOWER'. 1.5 Co-axial connector. Interconnect PT 12004 Low Level RF-In socket and RF cover. 1.6 External power supplies. Switch on 1.7 Secondary warning panel. Ensure IFF warning lamp lit. 1.8 CU 16929. (a) Mode 1 switch. Set to 'ON'. (b) Mode 2,3, C and D switches. } Set to 'OFF'. (c) Mode 3A/B switch. } (d) Mode 1 and 3 code switches. Set to '0000'.																		
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ASSOCIATED PROCEDURE CARDS

ASSOCIATED TRADES

CHAP	2	AIR RADAR	SERVICING PROCEDURES	AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	104	CONTINUED	LIGHTNING	AC NO DATE				
SHEET	2			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								
1.	<u>Preparation</u> (Contd)							
1.8	CU 16929.							
	(e) Civil/	Set to 'MIL'.						
	Mil switch.							
	(f) Function	Set to 'STBY'.						
	switch.							
1.9	Secondary	Ensure IFF warning lamp						
	warning panel.							
1.10	CU 16929	Set to 'NORM' after one						
	Function switch.	minute warm up.						
1.11	Secondary	Ensure IFF warning lamp						
	warning panel.	remains extinguished.						
1.12	CU 16929.							
	(a) Self Test.	(i) Depress						
	button.	(ii) Ensure Green						
		confidence lamp						
		lights.						
		(iii) Release.						
	(b) Function	Set to 'STBY'.						
	switch.							
1.13	PT 12004.							
	(a) Power switch.	Set to 'ON'.						
	(b) Set Sig Gen	Set to 'TRANSPONDER'.						
	switch.							
	(c) Set Sig Gen	Adjust for maximum						
	frequency	meter indication and not						
	control.	counter setting.						
	(d) Set Sig Gen	Set to 'LEVEL'.						
	switch.							
	(e) Set Sig Gen	Adjust for meter						
	Level control	indication of Set Level.						
	(f) Power and	Set fully anti-clockwise.						
	Sensitivity							
	controls.							
	(g) Brilliance	Adjust for clearly						
	and Focus	defined trace.						
	controls.							
	(h) 'X' and 'Y'	Position start of trace						
	Shift controls	at junction of						
		horizontal and first						
		vertical graticule line.						
	(j) Time base	Set to '1'.						
	Duration							
	switch.							
	(k) Timebase	Set so that trace reaches						
	Amplitude	last graticule line.						
	control.							
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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	104	CONTINUED		AC NO DATE				
SHEET	3			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								
2.	<u>PT 12004 Self Test</u>							
2.1	PT 12004							
	(a)	Mode selector switch.	Set to 'TRANSPONDER 1'.					
	(b)	Self Test switch.	(i) Depress and check leading edge of second pulse coincides with Mode 1 marker on lower scale. Release.					
	(c)	Mode Selector switch.	Set to 'TRANSPONDER 2'.					
	(d)	Self Test switch.	(i) Depress and check leading edge of second pulse coincides with Mode 2 marker on lower scale. Release.					
	(e)	Mode Selector switch.	Set to 'TRANSPONDER 3'.					
	(f)	Self Test switch.	(i) Depress and check as for Modes 1 and 2. Release.					
3.	<u>Receiver Sensitivity</u>							
3.1	CU 16929 Function switch.		Set to 'NORM'.					
3.2	PT 12004.							
	(a)	Mode Selector switch.	Set to 'TRANSPONDER 1'.					
	(b)	Sensitivity control.	(i) Set dial indication to '67' and check pulse has no line across base.					
			(ii) Adjust until a faint line just appears across base of pulse.					
			(iii) Check dial indication is not greater than '72' and note.					
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CHAP	2	AIR RADAR	SERVICING PROCEDURES		AP101B-1000-5A3 F				
SP NO	104	CONTINUED	LIGHTNING		Section 1				
SHEET	4				(1st Edition)				
					AC NO DATE				
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									
3. <u>Receiver Sensitivity</u> (Contd)									
3.1 PT 12004									
(c) Set Sig Gen Frequency control.									
(i) Adjust for maximum response of pulse on display and minimum paint across base line.									
(ii) Note indication.									
(iii) Using calibration chart, check difference is frequencies from indications noted in Sub-item 1.13 (c) and Operation (ii) of this Sub-item is not greater than 2.5 MHz.									
3.3 CU 16929 Function switch. Set to 'LOW SENS'.									
3.4 PT 12004 Sensitivity control.									
(i) Turn fully anti-clockwise then slowly clockwise until a faint line just appears across base of pulse.									
(ii) Check dial indication exceeds '55'.									
3.5 CU 16929 Function switch. Set to 'NORM'.									
3.6 PT 12004 Sensitivity control. Set fully anti-clockwise.									
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CHAP	2	AIR RADAR	SERVICING PROCEDURES		AP101B-1000-5A3 F				
SP NO	104	CONTINUED	LIGHTNING		Section 1				
SHEET	5				(1st Edition)				
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					AC NO DATE				
<p style="text-align: center;">AIR RADAR</p> <p>4. <u>Power Output</u></p> <p>4.1 PT 12004.</p> <p>(a) Set Sig Gen switch. Set to 'POWER'.</p> <p>(b) Power control</p> <p>(i) Adjust for meter indication of Set Level.</p> <p>(ii) Check dial indication exceeds '6'.</p> <p>(iii) Set fully anti-clockwise.</p> <p>(c) Set Sig Gen switch. Set to 'LEVEL'.</p> <p>5. <u>Coding</u></p> <p>5.1 PT 12004</p> <p>(a) Timebase switch. Set to '2'.</p> <p>(b) Timebase Amplitude and 'X' shift controls. Adjust to align leading edge of framing pulses with graticule frame markers.</p> <p>5.2 CU 16929 Mode 1 Code switches. Operate in sequence as in column 1 of the following table and check the corresponding pulses listed in column 2 are displayed on PT 12004.</p>					(1)	(2)	(3)	(4)	(5)
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CHAP	2	AIR RADAR	SERVICING PROCEDURES		AP101B-1000-5A3 F	
SP NO	104	CONTINUED	LIGHTNING		Section 1	
SHEET	6				(1st Edition)	
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					AC NO DATE	
					SERVICING RECORD	
					(1)	(2)
					(3)	(4)
					(5)	
AIR RADAR						
5. <u>Coding</u> (Contd)						
MODE 1						
COL 1		COL 2				
1000		A1				
2000		A2				
3000		A1, A2				
4000		A4				
5000		A1, A4				
6000		A2, A4				
7000		A1, A2, A4				
0000		Bracket Pulses Only.				
0100		B1				
0200		B2				
0300		B1, B2				
0400		B4				
0500		B1, B4				
0600		B2, B4				
0700		B1, B2, B4				
0000		Bracket Pulses Only.				
0010		C1				
0020		C2				
0030		C1, C2				
0040		C4				
0050		C1, C4				
0060		C2, C4				
0070		C1, C2, C4				
0000		Bracket Pulses Only.				
0001		D1				
0002		D2				
0003		D1, D2				
0004		D4				
0005		D1, D4				
0006		D2, D4				
0007		D1, D2, D4				
0000		Bracket Pulses Only.				
5.3 PT 12004 Mode Selector switch						
(i) Set to 'TRANSPONDER 2' and 'TRANSPONDER 3' in turn and check no reply pulses are present.						
(ii) Set to 'TRANSPONDER 3'.						
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CHAP	2	AIR RADAR	SERVICING PROCEDURES		AP101B-1000-5A3 F ¹		
SP NO	104	CONTINUED	LIGHTNING		Section 1 (1st Edition)		
SHEET	7				AC NO DATE		
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD		
					(1)	(2)	(3)
AIR RADAR							
5.	<u>Coding</u> (Contd)						
5.4	CU 16929.						
	(a) Mode 3A/B switch.	Set to '3A'.					
	(b) Mode 1 switch.	Set to 'OFF'.					
	(c) Mode 3 Code switches.	Operate in sequence as in Sub-item 5.2 for Mode 1 pulses.					
5.5	PT 12004 Mode Selector switch	(i) Set to 'TRANSPONDER 2' and 'TRANSPONDER 1' in turn and check no reply pulses are present.					
		(ii) Set to 'TRANSPONDER 2'.					
5.6	CU 16929.						
	(a) Mode 3A/B switch.	Set to 'OFF'.					
	(b) Mode 2 switch	Set to 'ON'.					
5.7	TR 16928 Mode 2 Code switches.	Operate in sequence as in Sub-item 5.2 for Mode 1 pulses.					
5.8	PT 12004.						
	(a) Mode selector switch.	Set to 'TRANSPONDER 1' and 'TRANSPONDER 3' in turn and check no reply pulses are present.					
	(b) Timebase switch.	Set to '4'.					
5.9	CU 16929.						
	(a) Function	Set to 'EMGY'					
	(b) Mode 1 and 3 Code	Set to Codes 7777 and 2200 respectively.					
5.10	PT 12004 Mode Selector switch.	(i) Set to 'TRANSPONDER 1' and check first pulse train corresponds to Mode 1 code switches followed by three pulse trains containing bracket pulses only					

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CHAP	2	AIR RADAR	SERVICING PROCEDURES		AP101B-1000-5A3F		
SP NO	104	CONTINUED	LIGHTNING		Section 1 (1st Edition)		
SHEET	8				AC NO DATE		
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD		
					(1)	(2)	(3)
AIR RADAR							
5.	<u>Coding</u> (Contd)						
5.10	PT 12004 Mode Selector Switch.	(ii) Set to 'TRANSPONDER 3' and check first pulse train corresponds to Mode 3 code switches followed by three pulse trains containing bracket pulses only.					
		(iii) Set to 'TRANSPONDER 2' and check first pulse train corresponds to Mode 2 code switches followed by three pulse trains containing bracket pulses only.					
5.11	CU 16929 Civil/Mil switch.	Set to 'CIVIL'.					
5.12	PT 12004 Mode Selector switch.	Set to 'TRANSPONDER 3' and check first pulse train corresponds to code 7700 (A1, A2, A4, B2, B4 pulses) containing bracket pulses only.					
5.13	CU 16929.						
	(a) Civil/Mil switch.	Set to 'MIL'.					
	(b) Function switch.	Set to 'NORM'					
	(c) Mode 1 and 2 switches.	Set to 'ON'.					
	(d) Mode 3A/B switch.	Set to '3A'.					
	(e) I/P switch.	Depress.					

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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	104	CONTINUED		AC NO DATE				
SHEET	9			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								
5.	<u>Coding</u> (Contd)							
5.14	PT 12004 Mode Selector switch.	Set to 'TRANSPONDER 1' and check two pulse trains are present corresponding to code '7777'.						
5.15	CU 16929 I/P switch.	Release and check PT 12004 display continues for approximately 22.5 seconds.						
5.16	PT 12004 Mode Selector switch.	Set to 'TRANSPONDER 2'						
5.17	CU 16929 I/P switch.	Depress.						
5.18	PT 12004 display.	Check pulse train, corresponding to Mode 2 code switches on TR 16928, is present followed by F1 pulse of a second train.						
5.19	CU 16929 I/P switch.	Release and check PT 12004 display continues for approximately 22.5 seconds.						
5.20	PT 12004 Mode Selector switch.	Set to 'TRANSPONDER 3'.						
5.21	CU 16929 I/P switch.	Depress.						
5.22	PT 12004 display	Check pulse train, corresponding to Mode 3 code switches on TR 16928 is present followed by F1 pulse of a second train.						
5.23	CU 16929 I/P switch.	Release and check PT 12004 display continues for approximately 22.5 seconds.						
5.24	PT 12004 Timebase switch.	Set to '1'.						
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CHAP	2	AIR RADAR	SERVICING PROCEDURES LIGHTNING	AP101B-1000-5A3 F Section 1 (1st Edition)				
SP NO	104	CONTINUED		AC NO DATE				
SHEET	10			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								
6.	<u>Aerial Switching</u>							
6.1	Aerial Test switch.	Set to 'FLIGHT' and check pulses displayed on PT 12004 flicker.						
6.2	RF cover.	(i) Remove from lower aerial. (ii) Position on forward upper aerial.						
6.3	Aerial Test switch.	(i) Set to 'UPPER' and repeat Items 3 and 4. (ii) Set to 'FLIGHT'.						
6.4	PT 12004.	Check pulses are present and display flickers.						
7.	<u>General</u>							
7.1	CU 16929.							
	(a) Function switch.	} Set to 'OFF'.						
	(b) Mode 1 and 2 switches.							
	(c) Mode 3A/B switch.							
	(d) Mode 1 and 3 Code switches.	Set to '0000'.						
	(e) Mode C and D switches.	Set to 'OFF'.						
NB	Item 8 is applicable only to aircraft Post SRIM 3756							
8.	<u>General</u>							
8.1	Pocket	Disconnect from ejection seat.						
8.2	Pt 12004 Mode selector switch.	(i) Set to 'TRANSPONDER 1' and check four pulse trains present on display (ii) Set to 'TRANSPONDER 2' and check four pulse trians present on display						
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CHAP	2	AIR RADAR	SERVICING PROCEDURES		AP101B-1000-5A3 ^F	
SP NO	104	CONTINUED	LIGHTNING		Section 1 (1st Edition)	
SHEET	11				AC NO DATE	
Safety and Servicing Notes are to be complied with throughout the work detailed on this card.					SERVICING RECORD	
					(1)	(2)
AIR RADAR						
8.	<u>General</u> (Contd)					
8.2	Pt 12004 Mode selector switch.	(iii) Set to 'TRANSPONDER 3' and check four pulse trains present on display				
8.3	CU 16929 Function switch.	Set to Low 'SENS'				
8.4	PT 12004 Mode selector switch	Repeat Sub-item 8.2				
8.5	Plocket	Refit to ejection seat.				
8.6	PT 12004 display	Ensure no pulses present				
9.	<u>Completion</u>					
9.1	External power supplies.	Switch 'OFF'.				
9.2	PT 12004	(i) Switch 'OFF'. (ii) Disconnect.				
9.3	RF cover.	Remove from aerial.				
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