


1. Approving Competent Authority/Country Civil Aviation Authority United Kingdom		2. AUTHORISED RELEASE CERTIFICATE EASA FORM 1			3. Form Tracking Number PGAE: 52403-1	
4. Organisation Name and Address CURTISS - WRIGHT		Penny & Giles Aerospace Ltd 15 Enterprise Way, Aviation Park West, Bournemouth International Airport, Christchurch, Dorset, BH23 6HH, United Kingdom. Tel: +44 (0) 1202 034000 An agent of Curtiss - Wright Controls (UK) Ltd.			5. Work Order/Contract/Invoice Cust. PO: 046418 Advice Note: 26923 Work Order: WA00018140	
6. Item	7. Description	8. Part No.	9. Qty.	10. Serial No.	11. Status/Work	
1.	MULTI PURPOSE FLIGHT RECORDER SW110522 ver. 3 Data Rate 512 WPS.	D51615-142-090	1.00	96005-002	Modified	
12. Remarks Customer: Prime Industries Inc. Repair Works Order: 130698 Repair Completion Date: 03/11/2020 Repair Data: RS 187 Issue 2 Repaired In accordance with: CMM31-34-22 rev. 8 Repair Work Pack Approved By: QA 7 Signatory Approved Stampholder Reference: Mike Moss The work identified in Block 11 and described herein has been accomplished in accordance with 14 CFR part 43 and in respect to that work, the items are approved for return to service under Certificate No PGM501X Repair and return 130698 refers. Beacon SN AT151577. Expiry May 2027 SB D51615-31-29 SB D51615-31-18 No Airworthiness Directives apply.						
13a. Certifies that the items identified above were manufactured in conformity to: <input type="checkbox"/> approved design data and are in a condition for safe operation. <input type="checkbox"/> approved design data specified in block 12				14a. <input checked="" type="checkbox"/> Part 145.A.50 Release to Service <input checked="" type="checkbox"/> Other regulation specified in block 12 Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12, was accomplished in accordance with Part 145 and in respect to that work the items are considered ready for release to service.		
13b. Authorised Signature		13c. Approval/Authorisation Number UK.21G.2144		14b. Authorised Signature  PGAL QA 7 SIGNATORY		
13d. Name		13e. Date (dd mmm yyyy)		14c. Certificate/Approval Ref. No UK.145.00218		
13d. Name		13e. Date (dd mmm yyyy)		14d. Name M. Moss		
13d. Name		13e. Date (dd mmm yyyy)		14e. Date (dd mmm yyyy) 10 Nov 2020		
USER/INSTALLER RESPONSIBILITIES This certificate does not automatically constitute authority to install the item(s). Where the user/installer performs work in accordance with regulations of an airworthiness authority different than the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1. Statements in blocks 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.						

RFGB3

WA18140

REPAIR REPORT

RR: 130698

Customer Name : Prime Industries Inc. Date Received : 18 Aug 2020
 Part Number : D51615-102 Serial No. : 96005-002
 Description : MULTI PURPOSE FLIGHT RECORD Cust. Order No. : 046418
 Last Release Date : 31 Aug 2017 Last RR : 126534
 Customer Comments : Upgrade to -14-090

Mod. 1 Issue 12

Evaluation Report Summary

Repair Reference RS 187 Issue 2 QS 14430 Issue 37 CMM 31-34-22 Revision 8

Functional Test INTERMITTENT MEMORY FAULT REPORTED IN EVENT LOGS.

Visual Remarks CONVERSION TO D51615-142-090 REQUESTED.

Signature *[Signature]* Date 28/8/20

Conclusion

	Yes	No
Warranty		
Customer Comments		
Repair Actions		Upgrade to D51615-142-090 Build Standard. Replace RCSMM PEE and Associated Insulation Bunch, Vibration and test to QS14430 Configure as per Customer Request

Repair Contract Summary

Action	Yes	No
Test/Inspect		
Repair		
Overhaul		
Modify	✓	
Other		
Source Inspection		✓
Export Licence	NA	
End User Certificate	NA	

P/N Release D No. D51615-142-090 Iss. 1 Mod. State ✓
 Configuration Number SW110522 U3 Data Rate 51.2 WPS

Final Clearance (Op. 888) Date 3/11/2020 Repair Reference Still Current Yes ✓
 No



Comments

Bracon SN AT151577 Expiry MAY 2027
 SB D51615-31-18, SB D51615-31-29

Quality

	Yes	No		Yes	No		Yes	No
C of Q		✓	ISO C of C		✓	EASA	✓	
FAA 8130	✓		MOD 640		✓	MOD 650		✓
Other		✓	Concession		✓	Ref:		

Repair Approval

Signature *[Signature]* Date 30/9/20

	DB Parameter Name	Expected Value/Range/Label or Required Action	Note Value	Records
1.	Baro Corr Cplt	Note Displayed Value	1010	1010
2.	Baro Corr Plt	Note Displayed Value	1010	1010
3.	Coll Pitch	Note Displayed Value	0	-0.6
4.	Coll Pitch (Trim)	Ref. to Step 5		N/A
5.	Decision Height Cplt	Note Displayed Value	0	0
6.	Decision Height Plt	Note Displayed Value	0	0
7.	DME Distance 1	Note DME Displayed Value (If tuned and available) otherwise N/A	0	0
8.	DME Distance 2	Note DME Displayed Value (If tuned and available) otherwise N/A	0	0
9.	Drift Angle (FMS1)	0 (± 1deg.)		0
10.	Drift Angle (FMS2)	0 (± 1deg.)		0
11.	EEC1 DSCWD 1 bit 1	OFF		OFF
12.	EEC1 DSCWD 1 bit 6	Not In Flight		NOT IN FLIGHT
13.	EEC2 DSCWD 1 bit 1	OFF		IDLE
14.	EEC2 DSCWD 1 bit 6	Not In Flight		NOT IN FLIGHT
15.	EEC1 DSCWD 2 bit 1	Auto (Switch on the pilot collective set to AUTO)		AUTO
16.	EEC2 DSCWD 2 bit 1	Auto (Switch on the pilot collective set to AUTO)		AUTO
17.	fcs1ApAttModeC	ACTIVE		ACTIVE
18.	fcs1ApAttModeM	ACTIVE		ACTIVE
19.	fcs1ApEngagedC	NOT ENGAGED REQUEST		N.E.R.
20.	fcs1ApEngagedM	NOT ENGAGED REQUEST		NOT E.R.
21.	fcs1ApSasModeC	NOT ACTIVE		NOT ACTIVE
22.	fcs1ApSasModeM	NOT ACTIVE		NOT ACTIVE
23.	fcs2ApAttModeC	ACTIVE		ACTIVE
24.	fcs2ApAttModeM	ACTIVE		ACTIVE
25.	fcs2ApEngagedC	NOT ENGAGED REQUEST		N.E.R.
26.	fcs2ApEngagedM	NOT ENGAGED REQUEST		N.E.R.
27.	fcs2ApSasModeC	NOT ACTIVE		NOT ACTIVE
28.	fcs2ApSasModeM	NOT ACTIVE		NOT ACTIVE
29.	Format Cplt MFD	Note Current DU Format	MFD	MFD
30.	Format Cplt PFD	Note Current DU Format	PFD	PFD
31.	Format Pilot MFD	Note Current DU Format	MFD	MFD

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	DB Parameter Name	Expected Value/Range/Label or Required Action	Note Value	Records
32.	Format Pilot PFD	Note Current DU Format	PFD	PFD
33.	FuelLeftQty1a	Note Displayed Value (recorded value could be different from displayed value in a range of ± 16 kg)	808	+ 800
34.	FuelRightQty1b	Note Displayed Value (recorded value could be different from displayed value in a range of ± 16 kg)	808	+ 800
35.	Glideslope Dev (MRC1)	Note Displayed Value	0	0
36.	Glideslope Dev (MRC2)	Note Displayed Value	0	0
37.	Hyd 1 Low Press	Note Status <i>Normal/Warning</i>		WARNING
38.	Hyd 1 Sel	Note Selection <i>Not Selected/Selected</i>	NOT SEL	POT SEL
39.	Hyd 2 Low Press	Note Status <i>Normal/Warning</i>		WARNING
40.	Hyd 2 Sel	Note Selection (<i>Not Selected/Selected</i>)	NOT SEL	POT SEL
41.	HydCaution_1&2&4 Hyd Pump	Note the displayed caution, otherwise <i>Inactive</i>	1-2-4 HYD PUMP	1-2-4 HYD PUMP
42.	IAS	Note Displayed Value	0	0
43.	IGB Oil Temp	Note Displayed Value	33	33
44.	Inner Marker Cpt	Not Displayed		NOT DISPLAY
45.	Inner Marker Plt	Not Displayed		POT DISPLAY
46.	ITT1	Note Displayed Value	0	-15
47.	ITT2	Note Displayed Value	0	-14
48.	Lat Acc (Tri-Axial accelerometer)	Ref. to Step 5		- 0.23
49.	Lat Cyc (TRIM)	Ref. to Step 5		+ 44.1
50.	Latitude (FMS1)	Note Displayed Value	3.075	3.075
51.	Latitude (FMS2)	Note Displayed Value	3.075	3.075
52.	Loc Dev (MRC1)	Note Displayed Value	0	0
53.	Loc Dev (MRC2)	Note Displayed Value	0	0
54.	Long Acc (Tri-Axial accelerometer)	Ref. to Step 5		- 0.33
55.	Long Cyc (TRIM)	Ref. to Step 5		+ 49.0
56.	Longitude (FMS1)	Note Displayed Value	101.33	101.33
57.	Longitude (FMS2)	Note Displayed Value	101.33	101.33
58.	Mag Heading	Note Displayed Value (± 1 deg.)	147	+ 146.4
59.	MFD Config Cplt	Note MFD CPLT configuration	NONE	NONE
60.	MFD Config Plt	Note MFD PLT configuration	MAINT	MAINT
61.	MGB Oil Press	Note Displayed Value (± 0.250 BAR)	0	0
62.	MGB Oil Temp	Note Displayed Value ($\pm 5\%$)	32	32
63.	Middle Marker Cplt	Not displayed		NOT DISPLAYED
64.	Middle Marker Plt	Not displayed		NOT DISPLAYED
65.	NF1	Note Displayed Value ($\pm 0.1\%$)	0	0
66.	NF2	Note Displayed Value ($\pm 0.1\%$)	0	0
67.	NG1	Note Displayed Value ($\pm 0.1\%$)	0	0
68.	NG2	Note Displayed Value ($\pm 0.1\%$)	0	0
69.	Norm Acc (AHRS)	0 g on support ($\pm 5\%$)		0
70.	Norm Acc (Tri-Axial accelerometer)	Ref. to Step 5		+ 0.93
71.	NR1	Note Displayed Value ($\pm 0.1\%$)	0	0
72.	NR2	Note Displayed Value ($\pm 0.1\%$)	0	0

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	DB Parameter Name	Expected Value/Range/Label or Required Action	Note Value	Records
73.	OAT	Note Displayed Value ($\pm 1^\circ\text{C}$)	30	+ 29.31
74.	Outer Marker Cplt	Not displayed		NOT DISPLAYED
75.	Outer Marker Plt	Not displayed		NOT DISPLAYED
76.	Pitch Angle	Note Displayed Value (± 1 deg.)	0	+ 1.05
77.	Press Alt1	Note Displayed Value	110	117
78.	Press Alt2	Note Displayed Value	110	117
79.	PTT Cplt	Note <i>Inactive</i> (PTT Released), <i>Active</i> (PTT Pressed)	INACT	INACT
80.	PTT Plt	Note <i>Inactive</i> (PTT Released), <i>Active</i> (PTT Pressed)	INACT	INACT
81.	Radar Altitude 1a	Note Displayed Value (± 1 feet)	0	0
82.	Radar Altitude 1b	Note Displayed Value (± 1 feet)	0	0
83.	Roll Angle	Note Displayed Value (± 1 deg.)	0	0
84.	Rotor Brake	OFF		OFF
85.	Sel Altitude	Note Selected Value	96	96
86.	Sel Course Cplt	Note Selected Value	360	360
87.	Sel Course Plt	Note Selected Value	360	360
88.	Sel Heading	Note Selected Value	147	147
89.	Sel Speed (FCS 1)	Not testable on ground	---	---
90.	Sel Speed (FCS 2)	Not testable on ground	---	---
91.	Sel Vert Speed (FCS 1)	Not testable on ground	---	---
92.	Sel Vert Speed (FCS 2)	Not testable on ground	---	---
93.	Tail Rotor Pedal (TRIM)	Ref. to Step 5		+144.6
94.	TGB Oil Temp	Note Displayed Value ($\pm 5\%$)	33	32
95.	Time-Hour	Note the displayed Value	19	19
96.	Time-Minute	Note the displayed Value	43	43
97.	Time-Second	Note the displayed Value (± 4 sec.)	0	0
98.	TQ1	Note Displayed Value ($\pm 0.1\%$)	0	0
99.	TQ2	Note Displayed Value ($\pm 0.1\%$)	0	0
100.	Vert Speed (ADS)	Note Displayed Value (± 30 feet/min)	0	0
101.	Vert Speed Inertial (AHRS)	0		0
102.	VOR/ILS-Ch NAV1	Note Tuned Freq.	114.7	114.70
103.	VOR/ILS-Ch NAV2	Note Tuned Freq.	114.7	114.70
104.	Warn-1&2EecFail	Note which is active	INACT	INACT
105.	Warn-1&2EngFire	Note which is active	INACT	INACT
106.	Warn-1&2EngIdle	Note which is active	INACT	INACT
107.	Warn-1&2EngOilPress	Note which is active	INACT	INACT
108.	Warn-1&2EngOut	Note which is active	2 ENG OUT	2 ENG OUT
109.	Warn-1-2DCGen	Note which is active	INACT	INACT
110.	Warn-AuxMainBattHot	Note which is active	INACT	INACT
111.	Warn-BagFire	Note if it's active	INACT	INACT
112.	Warn-MgbOilPress	Note if it's active	MGB OIL PRESS	MGB OIL PRESS
113.	Warn-MgbOilTemp	Note if it's active	INACT	INACT
114.	Warn-RotorHigh	Note if it's active	INACT	INACT
115.	Warn-RotorLow	Note which is active	ROTOR LOW	ROTOR LOW

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	DB Parameter Name	Expected Value/Range/Label or Required Action	Note Value	Records
116.	Wind Angle (FMS1)	0 (± 1 deg.)		0
117.	Wind Angle (FMS2)	0 (± 1 deg.)		0
118.	Wind Speed (FMS1)	0 Knots		0
119.	Wind Speed (FMS2)	0 Knots		0
120.	WOW1	Note Status <i>ON</i> (Hel. On GND), <i>OFF</i> (Hel in Fit.)	0 N	0 N
121.	WOW2	Note Status <i>ON</i> (Hel. On GND), <i>OFF</i> (Hel in Fit.)	0 N	0 N
122.	Yaw Rate	0 (± 1 deg.)		0

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Table A - Trim Position Recorded Values

PARAMETER	POSITION	REQUIRED VALUES	EXPECTED VALUES (NOTE)	RECORDED VALUE
Lat Cyc (TRIM) (deg)	Centred	49%	$50^{\circ} \pm 2^{\circ}$	49.7°
	Full Left	5%	$72^{\circ} \pm 2^{\circ}$	72.2°
	Full Right	95%	$27^{\circ} \pm 2^{\circ}$	27.2°
Long Cyc (TRIM) (deg)	Centred	36%	$50^{\circ} \pm 2^{\circ}$	44.9°
	Full Aft	5%	$68^{\circ} \pm 2^{\circ}$	67.7°
	Full Fwd	95%	$16^{\circ} \pm 2^{\circ}$	15.4°
Tail Rotor Pedal (TRIM) (deg)	Centred	50%	$45^{\circ} \pm 2^{\circ}$	45.5°
	Full Left	PRIMUS EPIC 4.8 INSTALLED	$72^{\circ} \pm 2^{\circ}$	71.4°
		PRIMUS EPIC 5.6 OR SUBSEQUENT		
	Full Right	PRIMUS EPIC 4.8 INSTALLED	$21^{\circ} \pm 2^{\circ}$	22.2°
PRIMUS EPIC 5.6 OR SUBSEQUENT				
Collective Pitch (TRIM) (% coll)	Centered	50%	$50\% \pm 3\%$	44.8°
	Full Up	95%	$95\% \pm 3\%$	93.9°
	Full Down	5%	$5\% \pm 3\%$	5.2°

NOTE: The given angular tolerance (between synoptic page displayed angle "α" and the FDR recorded angle "β") is calculated with this formula: $\beta = \alpha \pm \phi$ where "φ" is the angular adjustment caused by

- AIOP processing and approximation
- FCS synoptic page approximation.

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Table B - Triaxial Accelerometer Values

PARAMETER	EXPECTED VALUES	RECORDED VALUE
Lateral Acceleration (Tri-Axial)	$\approx 0 \text{ g} \pm 5\% \text{ FS}$	+0.00
Longitudinal Acceleration (Tri-Axial)	$\approx 0 \text{ g} \pm 5\% \text{ FS}$	+0.00
Normal Acceleration (Tri-Axial)	$\approx 1 \text{ g} \pm 5\% \text{ FS}$	+0.91

Table C - Recorded Audio Channels

CHANNEL	AUDIO QUALITY
Channel 1 (Hoist Comms)	SATISFACTORY
Channel 2 (Copilot ICS)	SATISFACTORY
Channel 3 (Pilot ICS - Cabin CA-900)	SATISFACTORY
Channel 4 (Cockpit Area Microphone)	SATISFACTORY


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