A Mahindra Aerospace Company

PO Box 881, Morwell, Victoria 3840, Australia
Ph + 61 (0) 3 5172 1200
Fax + 61 (0) 3 5172 1201
www.mahindraaerospace.com

SB-GA8-2018-182
Issue 1

OPTIONAL

Service Bulletin

Subject:

Replacement of AK950 Avionics Cooling Fan with a Lonestar CRB-6457

Applicability:

This Service Bulletin is applicable to the aircraft identified in Table 1.

Table 1 – Applicability

AIRCRAFT	SERIAL NUMBER(s)
GA8	All
GA8-TC 320	All

Amendments:

Issue 1: Initial Issue. Ref GAE11#2256

Background:

This Service Bulletin provides instructions for the removal of the Ameri-King AK 950-F3 or F5 avionics cooling fan and the replacement with a Lonestar CRB-6457 fan.

Compliance:

The accomplishment of this Service Bulletin is optional and may be incorporated at the Operator's, Owner's or Maintenance Provider's discretion.

Weight and Balance:

The effect of this Service Bulletin's incorporation on the aircraft's weight and balance is shown in

Table 2 – Weight and Balance

	WEIGHT		ARM		MOMENT	
ITEM(S) REMOVED	(kg)	(lb)	(mm)	(in)	(kg.mm)	(in.lb)
Ameri-King AK 950-F3 Avionics Cooling Fan	0.494	1.09	17.5	0.69	8.6	0.8

	WEIGHT		ARM		MOMENT	
ITEM(S) ADDED	(kg)	(lb)	(mm)	(in)	(kg.mm)	(in.lb)
Lonestar CRB-6457 Avionics Cooling Fan	0.35	0.8	71	2.8	24.9	2.24

The aircraft's weight and balance record shall be updated to include this information.

Electrical Load Analysis:

The effect of this Service Bulletin's incorporation on the aircraft's electrical load analysis is shown in Table 3:

Table 3 – Electrical Load Analysis

COMPONENT	NOMINAL CURRENT @ 14V	CIRCUIT BREAKER LABEL	ELECTRICAL BUS	PHASES OF FLIGHT
Lonestar CRB-6457 Avionics Cooling Fan	0.49A	FAN	2	All

The aircraft's electrical load analysis shall be updated to include this information.

Approval:

The airframe and/or electrical system modification/repair described in this Service Bulletin has been approved pursuant to Australian Civil Aviation Safety Regulation 21.095 (1998). GippsAero Reference GAE11#2256.

Parts:

The following parts are required to accomplish this Service Bulletin. A kit P/N SB-GA8-2018-182-1 is available.

Table 4 –Kit P/N SB-GA8-2018-182-1

ITEM	PART No.	DESCRIPTION	QTY	REMARKS
21	CRB-6457	COOLING FAN, 14VDC (LONE STAR)	1	
23	LS03-04001	TUBING PVC 5/8"(FAA PMA) (LONE STAR)	A/R	
31	NAS1329A08-75	RIVNUT	4	
33	AN525-832R8	SCREW	4	
43	W23X1A1G-2	CIRCUIT BREAKER 2A	1	
51	1-480698-0	CONN PLUG HOUSING 2 POS MATE-N-LOK	1	
53	1-480699-0	CONN CAP HOUSING 2 POS MATE-N-LOK	1	
55	350690-1	CONTACT PIN 24-18 AWG CRIMP MATE-N-LOK	2	
57	350689-1	CONTACT SKT 24-18 AWG CRIMP MATE-N-LOK	2	

Parts Availability:

New parts can be obtained directly from GippsAero Pty Ltd.

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: aircraft.parts@mahindraaerospace.com

Special Tools:

Specialised tools are listed in Table 5.

Table 5 – Acceptable crimp tools

PART NUMBER	DESCRIPTION
TE Connectivity 91510-1, or AMP P/N 90548-1 which includes frame P/N 354940-1 with die. The die only P/N is 90548-2	Hand crimping tool

Labour:

One and a half (1.5) man-hours should be allocated for completing the work detailed in this Service Bulletin. This time does not include set up etc.

Warranty:

This is an optional modification & warranty is not applicable.

Before Starting:

It is the installers responsibility to check that the installation as described by this Service Bulletin is (i) compatible with the existing aircraft configuration and (ii) that other modifications intended to be done at the same time are compatible with this Service Bulletin & do not occupy the same physical location on the aircraft.

Accomplishment Instructions:

WARNING:

IT IS THE RESPONSIBILITY OF ALL PERSONNEL TO ENSURE WORK HEALTH AND SAFETY REQUIREMENTS ARE MET AT ALL TIMES. ALL PERSONNEL MUST COMPLY WITH ALL WORK HEALTH AND SAFETY REQUIREMENTS AS DEFINED OR RECOMMENDED BY:

- **EQUIPMENT OEM INSTALLATION AND OPERATION MANUALS;**
- **AIRCRAFT MAINTENANCE AND OPERATION MANUALS;**
- **ASSOCIATED AIRCRAFT MODIFICATION INSTRUCTIONS;**
- **RELEVANT NAA REGULATIONS AND ADVISORY DOCUMENTATION;**
- **ORGANISATION MANUALS, INCLUDING NAA ENDORSED OPERATIONAL AND MAINTENANCE MANUALS; AND**
- **RELEVANT LOCAL, STATE AND FEDERAL GOVERNMENT REQUIREMENTS.**

NOTE:

Unless otherwise specified, reference to the GA8/GA8-TC 320 Service Manual and FAA Advisory Circular (AC) 43.13-1B & -2B should be made when carrying out the procedures prescribed in this Service Bulletin. In case of a discrepancy between the Service Manual and the AC, the Service Manual takes precedence.

Part A – Preparation

1. Make the aircraft safe for maintenance by pulling all under floor electrical circuit breakers.

Part B – Accomplishment

1. **Mechanical modifications**

   1.1. Disconnect the electrical plug connected to the fan.

   1.2. Remove the installed Ameri-King avionics cooling fan.

   1.3. Install the LoneStar fan in accordance with Figure 1, Figure 2 & Figure 3. Take great care when locating the fan to the structure to avoid drilling through the stringer shown in Figure 2.

   1.4. Subject to the condition of the existing tubing, it may be reused. The location of the Lone Star fan may mean existing tubing lengths are too long or short. Tubes too long can result in being kinked and impede airflow.

   1.5. Where the existing installed tubing is no longer serviceable, replace with Item 23. Cut the PVC tubing (Item 23) to the required length(s). Attach these lengths of PVC tubing to the Avionics Cooling Fan ports and route the tubing to its desired location. For integration to the KFC 225 installation, refer to FAA approved STC installation manual 006-20038-0000, drawing 159-08311-5005 Sheet 10 “Cooling Fan”. Cable ties may be required to restrain the tubing.

2. **Electrical modifications**

   2.1. Lower the electrical overhead panel. Refer to the GA8/GA8-TC 320 Service Manual Section 31-10.

   2.2. Remove the existing 5A circuit breaker and replace with item 43 as noted in Figure 4.

   2.3. Cut off the electrical connector used to plug into the Ameri-King fan.

   2.4. Re-terminate the wires in accordance with Figure 5. Refer to TE Connectivity Instruction Sheet 408-7300 Rev E or later for wire preparation for guidance.

   2.5. Mark the connector housings using a label or indelible black ink accordance with Figure 5.

   2.6. Join the cap and plug housings.

   2.7. Secure all loose wires associated with this installation onto the adjoining cable harness.

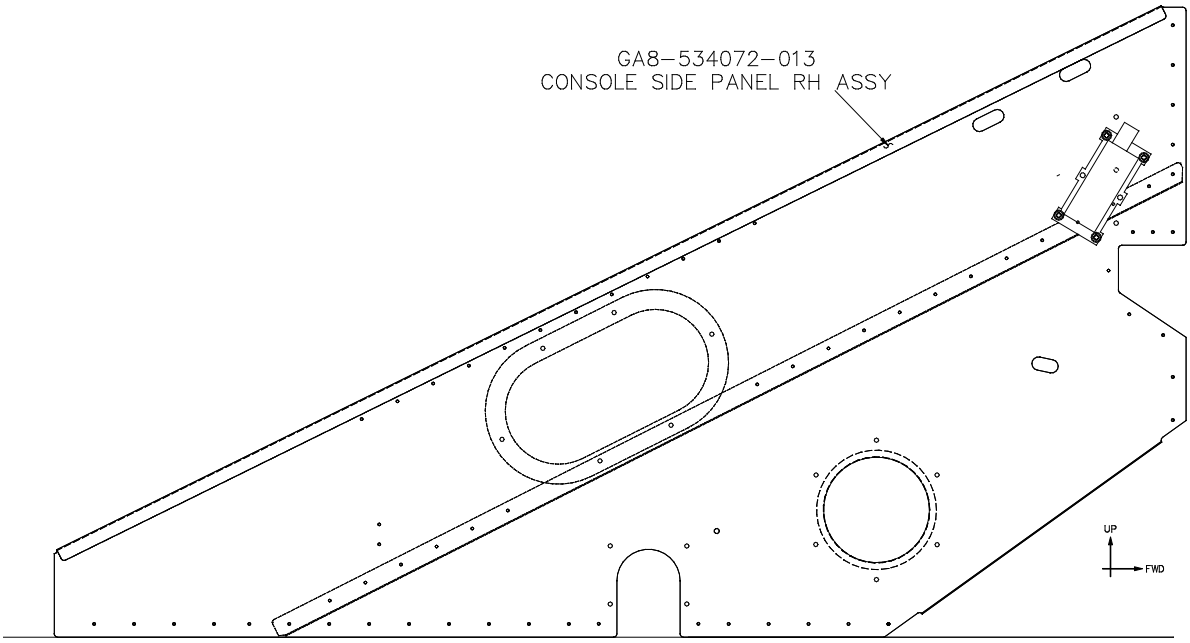

Figure 1 – Non dimensioned location of replacement fan

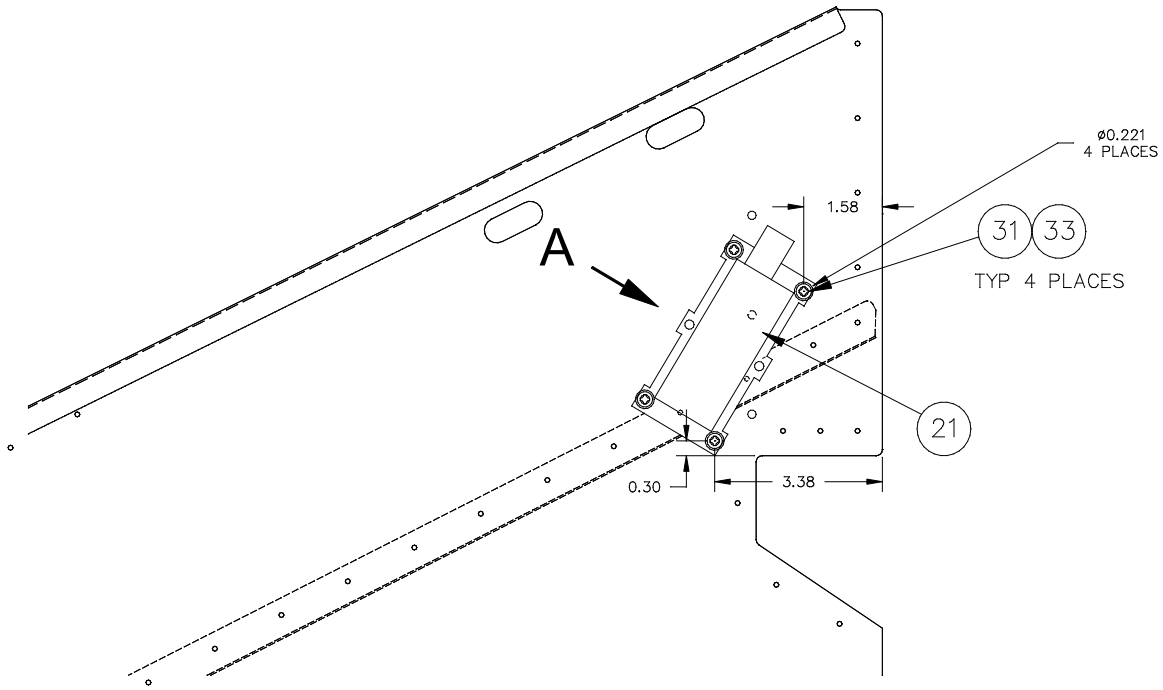

Figure 2 – Location of installed fan

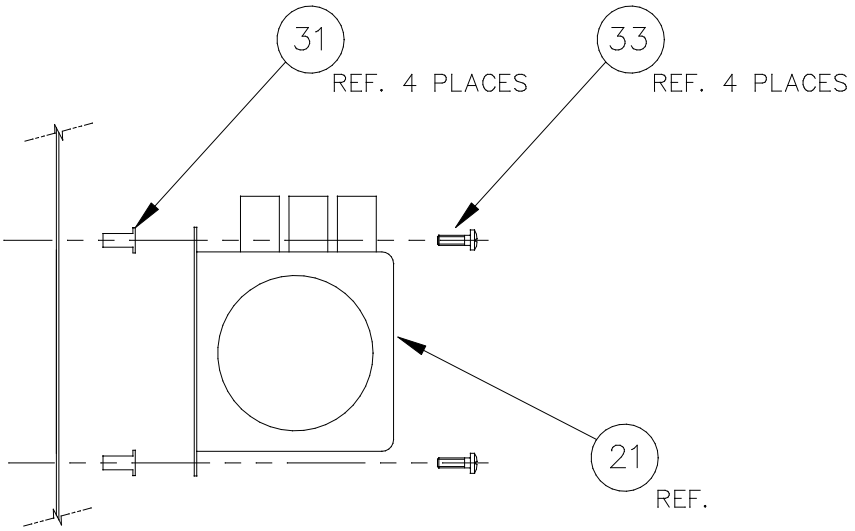

Figure 3 – View A

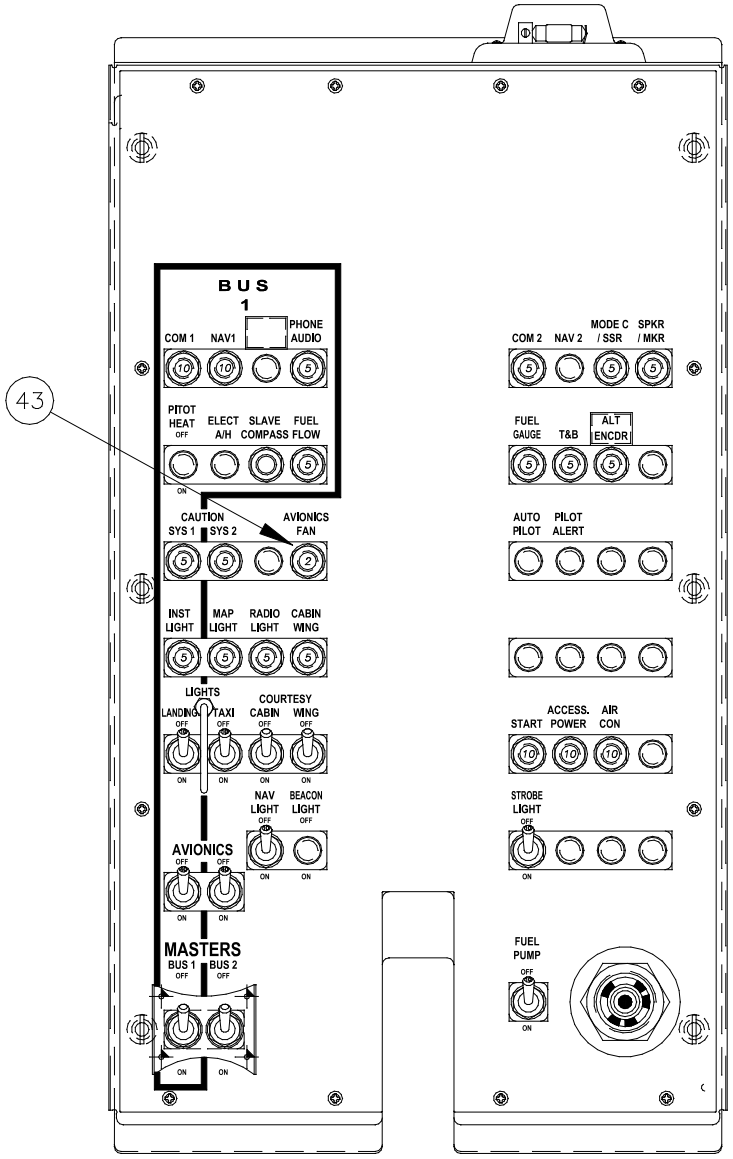

Figure 4 – Modification to electrical overhead panel

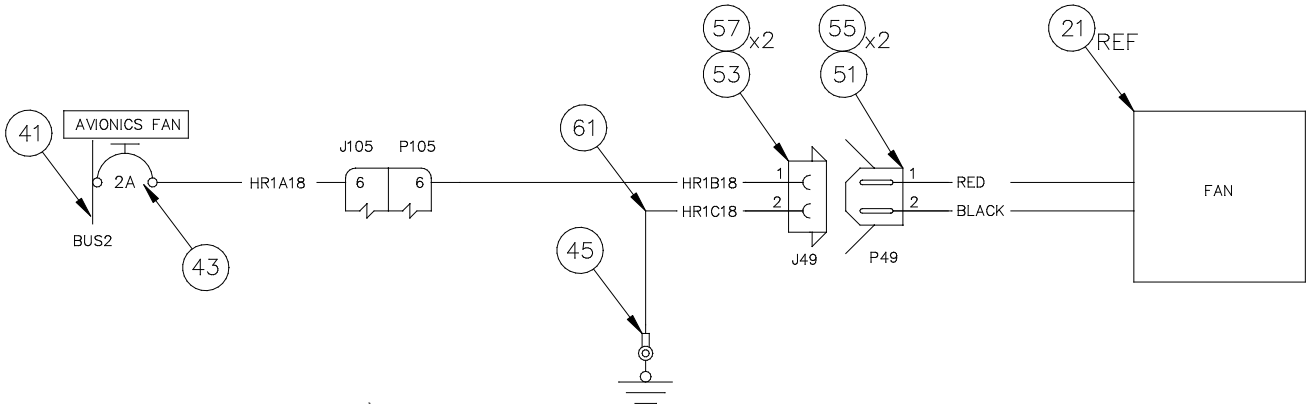

Figure 5 – Electrical wiring diagram

Part C – Restoration

1. Re-install the electrical overhead panel.
2. Push in all under floor electrical circuit breakers.

Part D – Testing

1. With the electrical system available to the aircraft, switch on Bus 2.
2. Observe the fan running and confirm air flow is present.

Documentation:

Update the aircraft log book to reflect the incorporation of this Service Bulletin.

No Flight Manual Supplement or Service Manual Supplement is applicable with this Service Bulletin.

Continuing Airworthiness:

Maintenance of the cooling fan is “on-condition” only.

Compliance Notice:

Complete the Document Compliance Notice and return to GippsAero by mail, fax or email.

DOCUMENT COMPLIANCE NOTICE

A Mahindra Aerospace Company

Document:

SB-GA8-2018-182

Issue 1

Aircraft Serial Number: GA8-_____

Service Bulletin SB-GA8-2018-182, Issue 1 has been incorporated in the above aircraft.

Date of Incorporation:_____

_____
Signed

Print Name: _____

If this Service Bulletin requires any inspections be carried out, describe the result of these inspections:

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GippsAero Technical Services
P.O. Box 881
Morwell Victoria 3840
Australia
Fax.: +61 03 5172 1201
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