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

SB-GA8-2023-215
Issue 3

OPTIONAL

Service Bulletin

1 Subject:

Blower Fan Repair or Replacement

2 Applicability:

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

Table 1: Applicability

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

Note: This Service Bulletin is also applicable at a component level to the Blower Fans listed in Table 5.

3 Amendments:

Issue 1: Initial Issue.

Issue 2: Revised for alternative motor. GippsAero Reference GAE11#2819.

Issue 3: Revised to give the option of a complete fan replacement.

4 Background:

This Service Bulletin provides instructions to replace or repair the cabin blower fan.

5 Prerequisites:

The aircraft must comply with GippsAero Mandatory Service Bulletin SB-GA8-2009-56 Issue 3 (or later approved issue).

Aircraft upgrading from a Low-Speed blower to a High-Speed blower must do so in accordance with GippsAero Service Bulletin SB-GA8-2005-18 Issue 3 (or later approved issue).

6 Compliance:

The accomplishment instructions contained within this Service Bulletin are optional and may be incorporated at the Operator's, Owner's or Maintenance Provider's discretion.

7 Compatible equipment:

The installer must ensure this design change is compatible with configuration of the aircraft. Any installed equipment should be assessed for compatibility with this and co-requisite design changes. This includes reviewing the aircraft ELA to verify that the aircraft battery and alternator have sufficient capacity to support the current draw detailed in Table 3.

While this bulletin is applicable to all GA8 and GA8-TC, this modification is not compatible to aircraft equipped with air-conditioning systems as they use a different cabin air blower system.

8 Weight and Balance:

Replacing the fan motor in accordance with Section 16 has no effect on empty weight and empty weight centre of gravity.

The effect of replacing the fan assembly in accordance with Section 17 is detailed in Table 2.

Table 2: Weight and Balance Effect of Fan Replacement

	WEIGHT		ARM		MOMENT	
TOTAL	(kg)	(lb)	(mm)	(in)	(kg.mm)	(in.mm)
Replace GA8-212002-011 or GA8-212002-013 with GA8-212002-15	-0.50	-1.10	4443.0	174.92	-2207.3	-191.6

9 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

CHANGE	COMPONENT	NOMINAL CURRENT	CIRCUIT BREAKER LABEL	ELECTRICAL BUS	PHASES OF FLIGHT
Motor Replacement	CABIN FAN (LOW SETTING) *(LOW SPEED BLOWER)* *(P/No. GA8-212002-012)*	No Change (4.8A)			
	CABIN FAN (LOW SETTING) *(HIGH SPEED BLOWER)* *(P/No. GA8-212002-014)*	5 A	AIR CON	BUS 2	ALL
Fan Replacement	CABIN FAN (LOW SETTING) *(MK 3 BLOWER FAN)* *(P/No. GA8-212002-015)*	5 A	AIR CON	BUS 2	ALL

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

10 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#2793.

11 Parts:

The following parts are required to accomplish this Service Bulletin.

Table 4: Parts for Motor Replacement

ITEM	PART No.	DESCRIPTION	QTY
1	GA8-212002-012	LOW SPEED MOTOR ASSY	1 per Low-Speed Blower Rework.
	GA8-212002-014	HIGH SPEED MOTOR ASSY	1 per High-Speed Blower Rework.

Table 5: Replacement Motor Applicability

INSTALLED BLOWER PART NUMBER	TYPE	REPLACEMENT MOTOR
GA8-212002-011	Low Speed Blower Fan-Modified	GA8-212002-012
GA8-212002-013	High Speed Blower Fan-Modified	GA8-212002-014

Table 6: Parts for Fan Replacement

ITEM	PART No.	DESCRIPTION	QTY
11	GA8-212002-015	MK 3 BLOWER FAN	1
12	AN525-10R6	SCREW	4

Table 7: Compounds

ITEM	COMPOUND NUMBER	DESCRIPTION
C1	DOW CORNING 747, 780 (or equivalent).	General Purpose, Non-Acidic Silicone Sealant, White.
C2	LOCTITE 272	Threadlocker
C3	LOCTITE 7471	Activator / Primer

12 Parts Availability:

New parts can be obtained directly from GippsAero.

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: PARTS@gippsaero.com.au

13 Labour:

2 man-hours should be allocated for replacing the fan motor as detailed in Section 16 of this Service Bulletin.

2 man-hours should be allocated for replacing the fan as detailed in Section 17 of this Service Bulletin.

These times do not include set up etc.

14 Warranty:

This is an optional modification. Installation warranty is not applicable, however component warranties are provided by the respective manufacturers.

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: SUPPORT@gippsaero.com.au

15 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.**

WARNING:

READ THE APPLICABLE MATERIAL SAFETY DATA SHEET (MSDS) FOR ANY MATERIAL/CONSUMABLE USED DURING THE ACCOMPLISHMENT OF THIS SERVICE BULLETIN AND EMPLOY ANY RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE) CONTAINED THEREIN.

NOTES:

Unless otherwise specified, reference to the GA8/GA8-TC 320 Service Manual and FAA Advisory Circular (AC) 43.13-1B 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.

Read all the applicable instructions prior to initiating any work.

All work specified in this Service Bulletin shall be carried out by appropriately qualified personnel.

Unless stated otherwise, hardware removed during the procedure below is to be inspected and re-used if serviceable.

16 Part A: Fan Motor Replacement.

1. Prepare the aircraft for maintenance as detailed in the applicable GA8 / GA8-TC 320 Service Manual and install a suitable tail stand.
2. Gain access to the tail cone by removing the luggage bin or tail cone forward bulkhead panel (Figure 1).
3. Remove the Dorsal Fin Fairing.
4. Disconnect plug P38 at the Blower Fan and remove cable ties as required to allow removal of the motor and lead assembly.
5. Remove the three fasteners indicated in View B (Figure 2) and remove the motor / fan assembly from the blower fan housing.
6. Remove the fan from the motor shaft.

NOTE:

Ensure fan is not damaged.

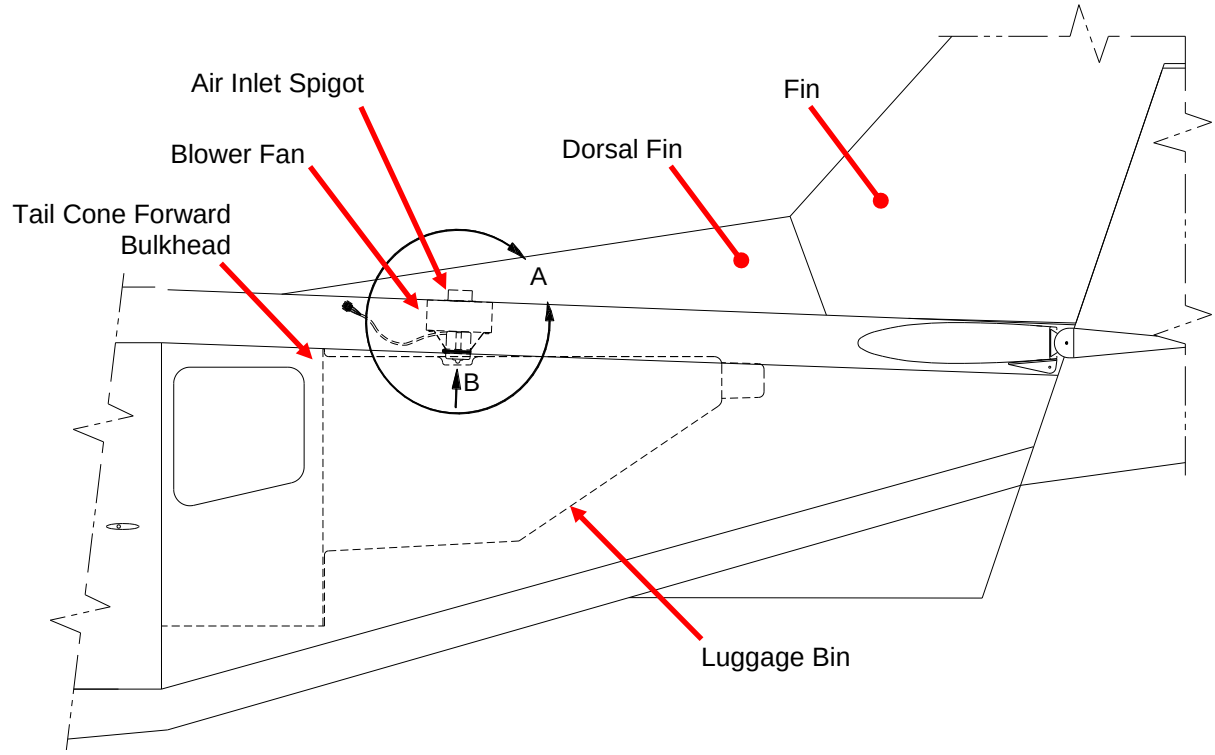

Figure 1: Fan Installation, General

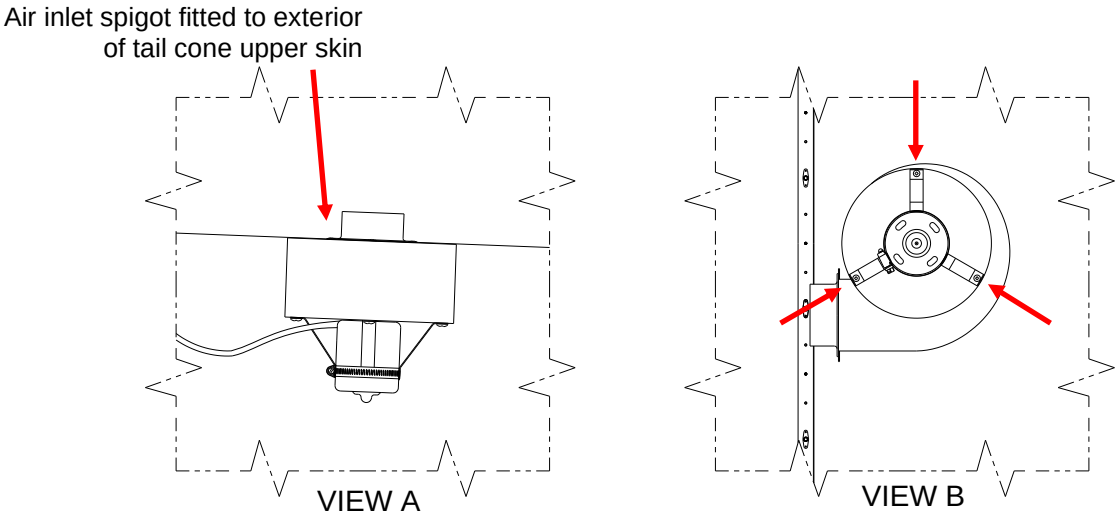

Figure 2: Fan Installation Details

7. Inspect the fan wheel for corrosion or cracking. Discard if damage is found.

8. From Table 5 ensure that the correct fan motor is being installed, then reassemble the fan to the Replacement Motor:

   i. Order of assembly of the motor to the housing is shown in Figure 3. Apply Compound C2 (Table 7), in accordance with the manufacturer's directions, to the attachment nuts.

   ii. Centre the fan inside the housing (i.e. slide it up and down the shaft until it has equal clearance on top and bottom; DIM A = DIM B, per Figure 4).

   iii. Position the existing P/No. GA8-212022-021 Modified Fan Stiffeners so that the motor shaft is perpendicular to the housing, per Figure 4.

   iv. Apply Compound C2 (Table 7), in accordance with the manufacturer's directions, to secure the grub screw holding the fan to the motor shaft.

NOTE:

Primer/activator compound C3 (Table 7) is recommended where rapid cure is preferred.

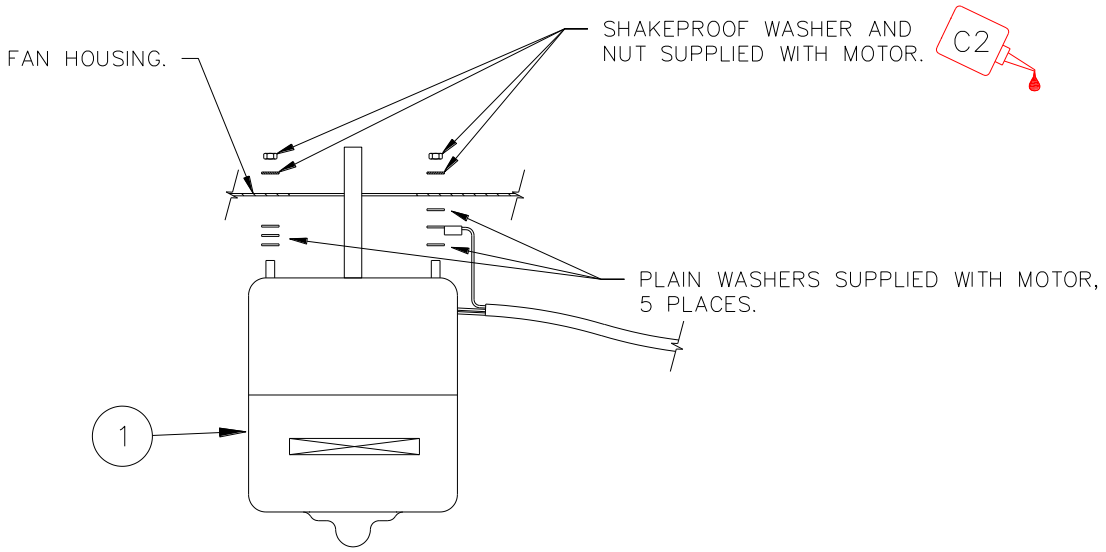

Figure 3: Order of Assembly

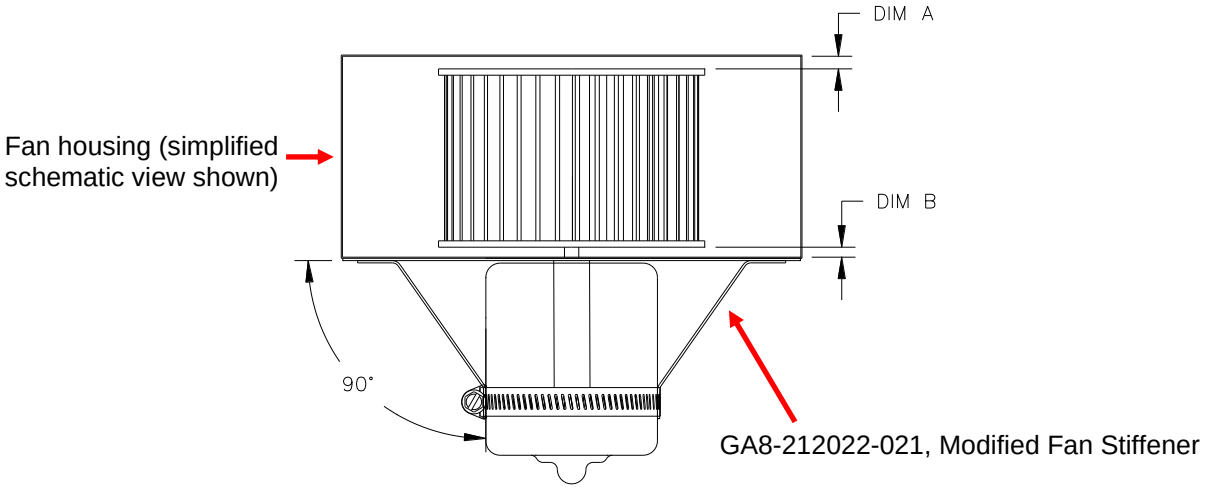

Figure 4: Fan Wheel Installation

9. Refit the blower fan and reconnect the P38. Install chafe protection and secure wiring harness in accordance with AC43.13-1B.
10. Switch on electrical power and carry out a functional test of the blower fan. Check for smooth running and ensure that the fan wheel is not contacting the fan housing.
11. Switch off electrical power.
12. Apply sealant, Compound C1 (Table 7) to seal the air inlet spigot to the upper tail cone skin.
13. Refit the dorsal fin.
14. Refit the luggage bin or tail cone forward bulkhead panel.
15. Remove the maintenance tail stand.
16. Complete re-assembly and inspection of the aircraft as detailed in the applicable GA8 or GA8-TC 320 Service Manual.

17 Part B: Fan Replacement.

1. Prepare the aircraft for maintenance as detailed in the applicable GA8 / GA8-TC 320 Service Manual and install a suitable tail stand.
2. Gain access to the tail cone by removing the luggage bin or tail cone forward bulkhead panel (Figure 1).

3. Remove the Dorsal Fin Fairing.
4. Disconnect plug P38 at the Blower Fan and remove cable ties as required to allow removal of the fan assembly.
5. Disconnect the SCAT hose from the fan outlet.
6. Remove the 8 screws holding the fan to the upper tail cone skin. Remove the fan assembly from the aircraft.
7. Install the new Blower Fan (Item 11 of Table 6) using 4 screws (Item 12 of Table 6) as shown in Figure 5. Seal the 4 un-used holes and apply three Ø0.5" beads of sealant, Compound C1 (Table 7) at the locations shown.
8. Install chafe protection and secure wiring harness in accordance with AC43.13-1B.
9. Switch on electrical power and carry out a functional test of the blower fan. Check for smooth running and ensure that the fan wheel is not contacting the fan housing.
10. Switch off electrical power.
11. Connect the SCAT hose from the fan outlet.
12. Apply sealant, Compound C1 (Table 7) to seal the air inlet spigot to the upper tail cone skin.
13. Refit the dorsal fin.
14. Refit the luggage bin or tail cone forward bulkhead panel.
15. Remove the maintenance tail stand.
16. Complete re-assembly and inspection of the aircraft as detailed in the applicable GA8 or GA8-TC 320 Service Manual.

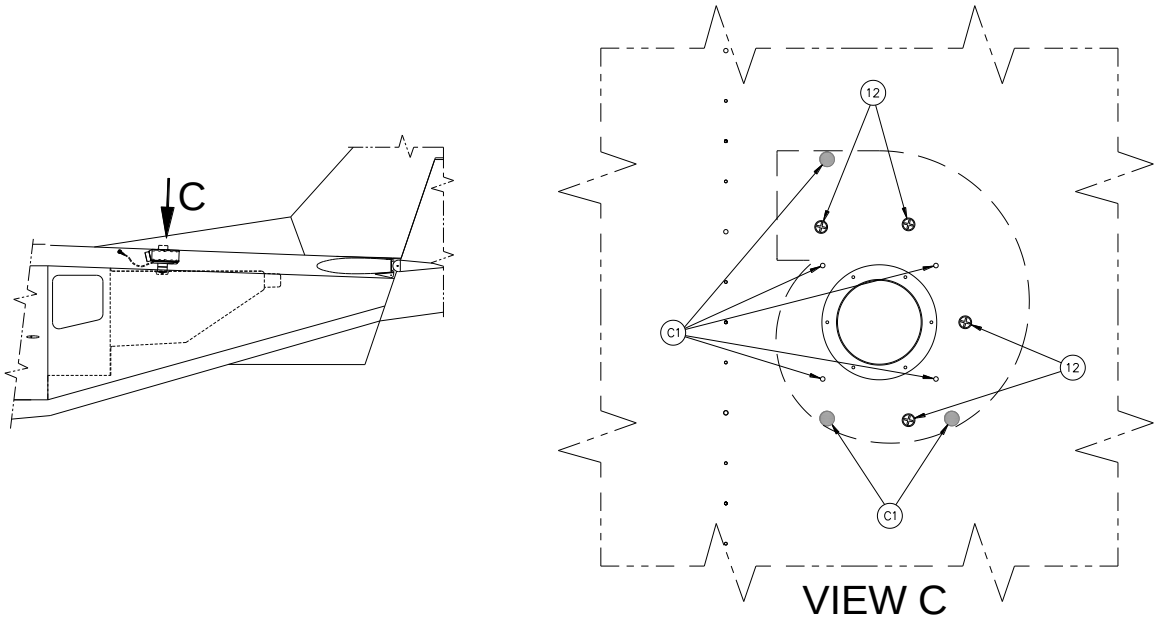

Figure 5: Replacement Fan Installation

18 Documentation:

Update aircraft logbook to reflect incorporation Part A (motor replacement) or Part B (fan replacement) of this Service Bulletin.

19 Continuing Airworthiness:

There are no new Instructions for Continued Airworthiness associated with this Service Bulletin

20 Compliance Notice:

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

DOCUMENT COMPLIANCE NOTICE

Document:

SB-GA8-2023-215

Issue 3

Aircraft Serial Number: GA8-_____

The following part of Service Bulletin SB-GA8-2023-215, Issue 3 has been incorporated in the above aircraft (tick as appropriate).

☐ Part A – Motor Replacement

☐ Part B – Fan Replacement

Date of Incorporation:_____

_____
Signed

Print Name: _____

Please post, fax or email this compliance notice to:

GippsAero Technical Services
P.O. Box 881
Morwell Victoria 3840
Australia
Fax.: +61 03 5172 1201
Email: TECHPUBS@gippsaero.com.au