

Service Bulletin

Subject:

Inspection of the Main Undercarriage Axle Assembly

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

Issue 2: Service Bulletin changed to Mandatory. Specific non-destructive inspections introduced.

Issue 3: Operators given time to comply with non-destructive inspection requirements.

Background:

An Operator of a GA8 recently suffered an in-service failure of the Main Undercarriage Axle Assembly, P/N GA8-321013-011. The failure was due to a crack which was found on the upper side of the Axle on the inboard side of the Brake Torque Plate. Cracks have been reported as visible on the outside and inside of the Axle as shown in Figure 1 and Figure 2.

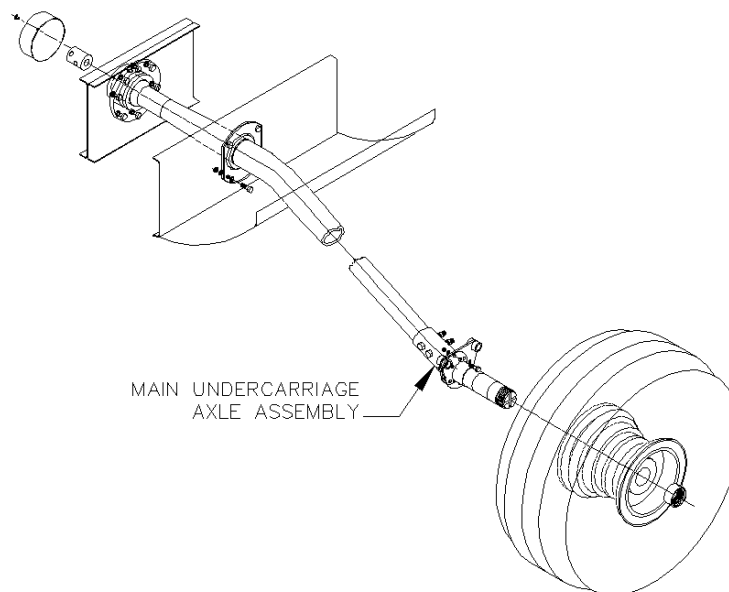


Figure 1 – Main Undercarriage



Figure 2 – Typical Axle Crack

Images courtesy of aircraft Operator and NDT provider

Issue 1 of this Service Bulletin recommended a detailed inspection of the Axle Assembly to look for the cracks in and around welded joints at the next scheduled maintenance event. More cracks in Axle Assemblies were found during those initial inspections, and GippsAero has released Issue 2 based upon those findings.

Issue 3 of this Service Bulletin provides Operators time to comply with the non-destructive inspection requirements in response to their requests.

Compliance:

This Service Bulletin requires recurring visual inspections at intervals not exceeding 110 hours. Within 3 months of date of Issue of this Service Bulletin, non-destructive inspections for any Axle Assembly with more than 2000 hours in service shall commence. More detail is provided under Continuing Airworthiness on Page 7.

Weight and Balance:

This inspection does not impact the aircraft’s weight and balance.

Approval:

The airframe inspection described in this Service Bulletin has been approved pursuant to Australian Civil Aviation Safety Regulation 21.095 (1998). GippsAero Reference GAE11#1958.

Labour:

- 2 man hours should be allocated for completing the work detailed in Part B of this Service Bulletin.
- 3 man hours should be allocated for completing the work detailed in Part C of this Service Bulletin.

These estimates do not include time required to do normal maintenance preparation or set up equipment.

Warranty:

Aircraft covered by warranty may claim the direct cost of incorporating the requirements of this Service Bulletin by contacting GippsAero Customer Service:

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: aircraft.warranty@mahindraaerospace.com

Accomplishment Instructions:

The following instructions are applicable to the Left Hand Side (LHS) of the aircraft; the Right Hand Side (RHS) is opposite, unless noted otherwise.

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 CONSUMABLE USED DURING THE ACCOMPLISHMENT OF THIS SERVICE BULLETIN AND EMPLOY ANY RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE) CONTAINED THEREIN.

NOTE:

Unless otherwise specified, reference to the GA8 or 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. Jack the aircraft in accordance with Chapter 7-10-00 of the GA8/GA8-TC 320 Service Manual.
2. Remove the Main Wheels in accordance with Chapter 32-40-10 of the GA8/GA8-TC 320 Service Manual.
3. Remove the Brake Caliper and secure away from the Axle Assembly. Keep securing fasteners.

NOTE:

Bleeding and filling of the Brake System fluid should not be required

4. Remove the Torque Plate Assembly, P/N GA200-321001-079. Keep securing fasteners.

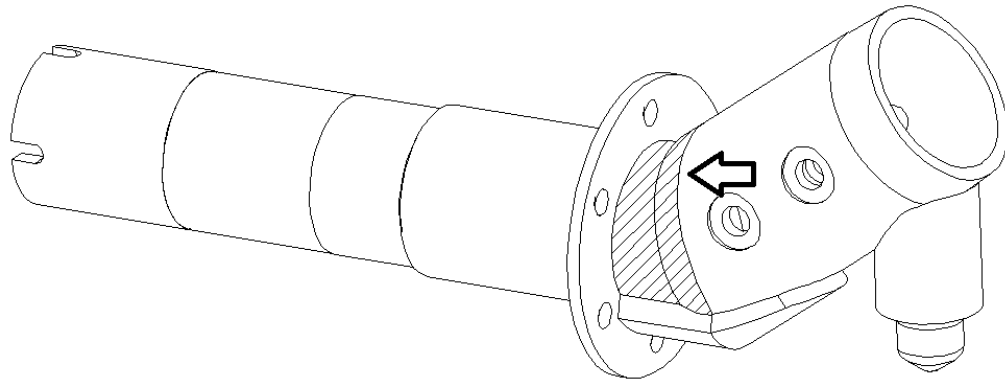


Figure 3 – External Inspection Area of Axle Assembly
Main Landing Gear (MLG) Leg not shown

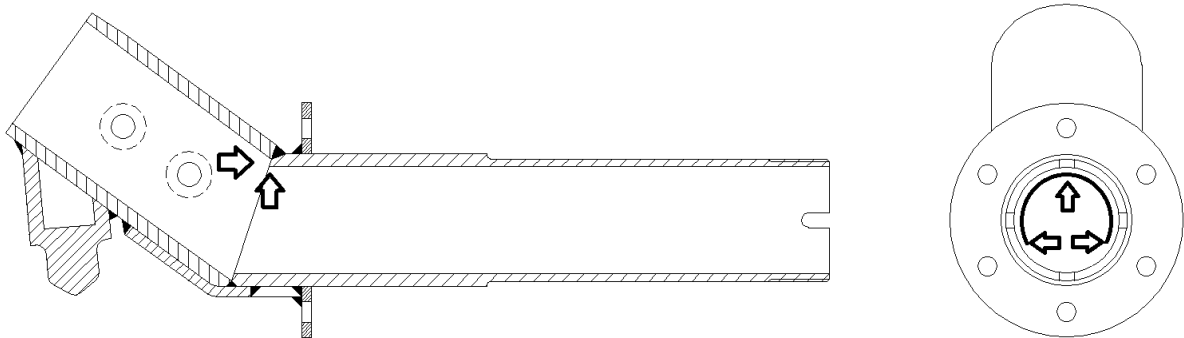


Figure 4 – Internal Inspection Area of Axle Assembly
Area for inspection highlighted with arrow
MLG Leg not shown

Part B – Visual Inspection

NOTE:

Removal of the Axle Assembly from the MLG Leg is not required

NOTE:

The Axle Assembly has a metal spray coating applied at the factory. This coating protects the Axle Assembly from corrosion and damage from foreign objects. Degradation and/or separation of the metal spray coating may give false indications of cracking. If the metal spray coating is separating from the Axle Assembly it cannot be re-applied in the field and the area shall be re-protected in accordance with Part D.

1. Clean the area inboard of the integral Torque Plate using a cleaning solvent or airframe cleaning compound.
2. Do a detailed visual inspection, using at least 10x magnification and a strong light source in the welded area indicated in Figure 3. Look for indications of cracking in the paint or protective thermal spray coating applied to the Axle at the factory.
3. Remove the Axle Sealing Plug, P/N GA8-321023-031.
4. Do a visual inspection of the inside diameter of the Axle Assembly. Look for any corrosion and check for a coating of corrosion preventative compound.

A borescope may be used in lieu of a visual inspection, and will give better results. Clean the inside diameter of the Axle Assembly using a cleaning solvent or aircraft cleaning compound before doing a borescope inspection of the areas shown in Figure 4.

5. If any indications of cracking are found, remove paint from the external inspection area and do another detailed visual inspection.
6. If any indications of cracking are found, contact GippsAero for assistance. If no indications are visible, do Part D.

Part C – Non-Destructive Inspection (NDI)

NOTE:

Removal of the Axle Assembly from the MLG Leg is not required

NOTE:

The Axle Assembly has a metal spray coating applied at the factory. This coating protects the Axle Assembly from corrosion and damage from foreign objects.

Degradation and/or separation of the metal spray coating may give false indications of cracking. If the metal spray coating is separating from the Axle Assembly it cannot be re-applied in the field and the area shall be re-protected in accordance with Part D.

1. Clean the area inboard of the integral Torque Plate using a cleaning solvent or airframe cleaning compound.
2. Do a magnetic particle inspection of the areas indicated in Figure 3 in accordance with ASTM E-1444.
3. If any indications of cracks are found, contact GippsAero for assistance. If no indications are visible, do Part D.

Part D – Return to Service

1. If any areas of paint have been removed, mask machined, threaded and internal surfaces of Axle Assembly shown in Figure 5.

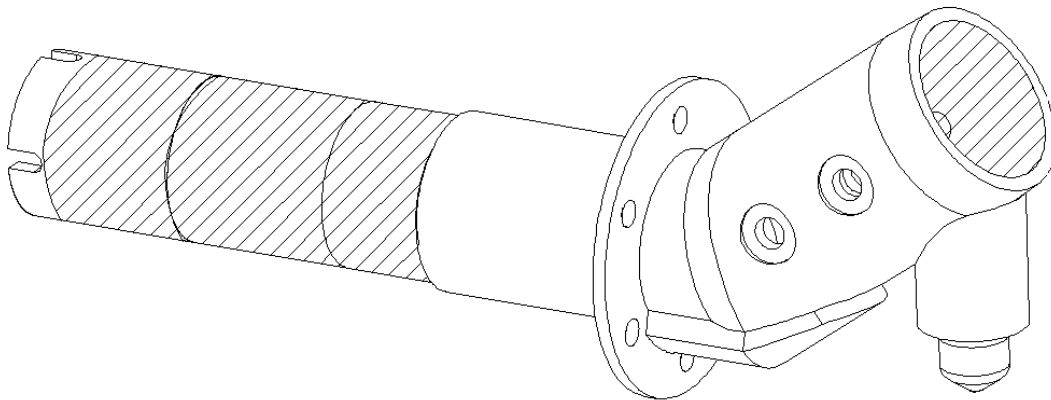


Figure 5 – No Paint Areas

Main Landing Gear Leg not shown

2. Apply a coat of primer that conforms to MIL-PRF-23377K (or later approved revision) or FED-SPEC-TT-P-1757B (or later approved revision). Apply a topcoat of paint that conforms to MIL-PRF-85285E (or later approved revision) and matches the surround colour.
3. Apply a coating of corrosion preventative compound (such as linseed oil, LPS 3® or Ardrox AV-8®) to the inside diameter of the Axle Assembly.
4. Install Axle Sealing Plug.
5. Attach the Torque Plate using retained fasteners.
6. Attach Brake Caliper using retained fasteners.
7. Install Main Wheel in accordance with Chapter 32-40-50 of the GA8/GA8-TC 320 Service Manual.

Documentation:

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

Continuing Airworthiness:

This Service Bulletin requires a combination of recurring visual and non-destructive inspections. Table 1 outlines these inspections.

Inspection	Starts	Interval
Visual (Part B)	Not exceeding 110 Axle hours after receipt of Issue 1 of this SB	100 +/-10 hours
Non-Destructive (Part C)	2000 Axle hours. Initial inspection may be deferred for up to 3 months after the date of Issue of this SB.	1000 +/-10 hours

Table 1 – Inspection requirements

Table 2 shows the non-destructive inspection requirements for a typical block of 1000 Axle hours after the Axle has exceeded 2000 hours in service.

Axle Hours in Service	Inspection Type	
	Visual (Part B)	NDI (Part C)
-	✓	✓
+100	✓	
+200	✓	
+300	✓	
+400	✓	
+500	✓	
+600	✓	
+700	✓	
+800	✓	
+900	✓	
+1000	✓	✓

Table 2 – NDI requirements for 1000 flight hour block

GippsAero may remove these NDI requirements in a future issue of this Service Bulletin.

Compliance Notice:

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

DOCUMENT COMPLIANCE NOTICE



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Document:

SB-GA8-2016-169

Issue 3

Aircraft Serial Number: GA8-_____

Service Bulletin SB-GA8-2016-169, Issue 3 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:

Please post, fax or email this compliance notice to:

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Australia
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