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SB-GA8-2004-11
Issue 2
MANDATORY

Service Bulletin

Subject:

Control column wheel and aileron cable operating arm shaft inspection.

Applicability:

GA8 serial numbers GA8-00-004 through GA8-04-056.

Amendments:

Issue 2 – Serial number applicability amended. Section 3 amended to replace existing steel shafts with bronze items.

Background:

A situation occurred where a pilot reported that the aileron control was stiff to operate. Subsequent disassembly of the control wheel from the control column revealed a band of wear on the control wheel shaft in the region adjacent to the weld connecting the control wheel shaft bush to the control column. The stiffness of the aileron control was due to galling between the shaft and the bush, and could lead to complete lockup of the aileron control system.

This Service Bulletin documents the inspection, and any required repair, of the shafts and bushes used for the control wheel and the aileron cable-operating arm assembly.

Aircraft S/N's GA8-04-057 and subsequent have been fitted with revised control column bushings during production and are not subject to the requirements of this Service Bulletin.

Compliance:

For all applicable aircraft, inspect the shafts of the control wheel and aileron cable-operating arm assembly within:

- for aircraft with less than 200 hours total time in service (TTIS), at or before accruing 200 hours TTIS.
- for aircraft with more than 200 hours TTIS, within the next 10 hours time in service after receipt of Issue 1 of this Service Bulletin.

For all aircraft, after completing the first inspection, repeat the inspection at intervals not exceeding 300 hours time in service, however, the continuing inspection requirements are cancelled if the original steel shafts are replaced with bronze items as detailed in section 3 of this document.

Weight and Balance:

Negligible effect on weight and balance.

Approval:

This Service Bulletin has been approved pursuant to Regulation 35 of CAR1988.

Parts:

Item	P/N	Description	Qty
1	GA8-952701-25	Shaft - Upper	1
2	GA8-952701-21	Shaft - Lower	1
3	GA8-952701-23	Aileron Cable Operating Arm	1
4	AN6-30A	Bolt	1
5	AN960-616	Washer	2
6	MS21042-6	Nut	2

Parts Availability:

New parts can be obtained directly from Gippsland Aeronautics.

Tel.: +61 03 5172 1200

Fax.: +61 03 5172 1201

Email: spares@gippsaero.com

Instructions:

1. Inspection

1. Remove the control wheel and control column cover panels from the pilot and co-pilot (if fitted) control columns to gain access to the control wheel assembly and the aileron cable-operating arm assembly. Refer to Figure 1.
2. Disconnect the cable assembly between the control wheel sprocket and the aileron operating arm wheel.
3. Disconnect the aileron cables from the aileron link plate (single control installation) or aileron link rod (dual control installation). Refer to Figure 2.

4. Disconnect the aileron cable-operating arm assembly from the aileron link plate (single control installation) or aileron link rod (dual control installation).

5. Remove the control wheel assembly and aileron cable-operating arm assembly from the control column.

6. Inspect the control wheel and aileron cable operating arm shafts for evidence of wear due to galling between the shaft and the control column bush. Refer to Figure 3.

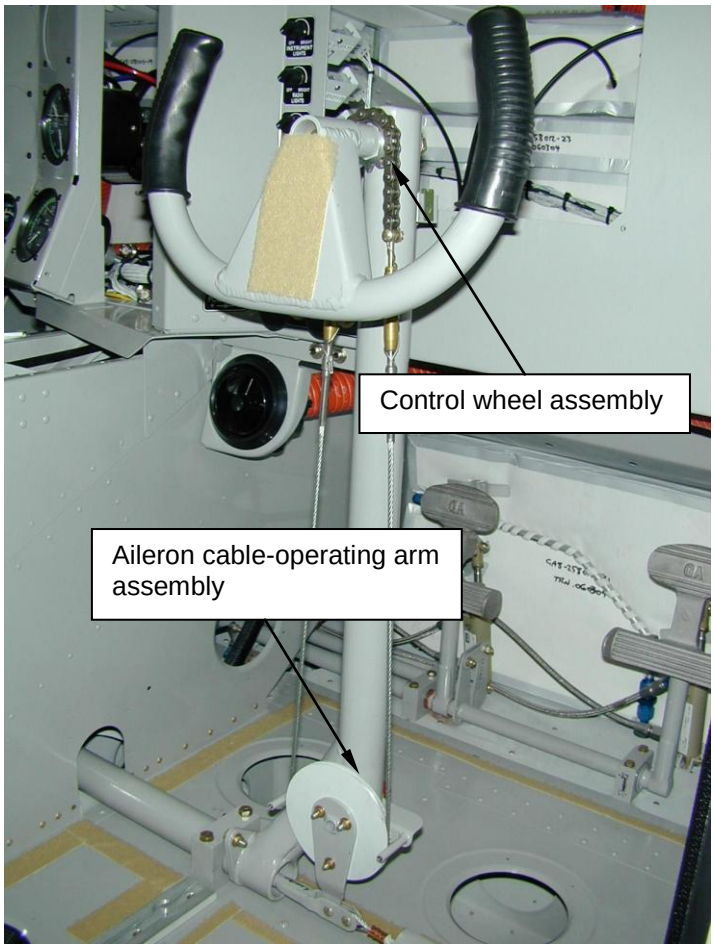

Figure 1

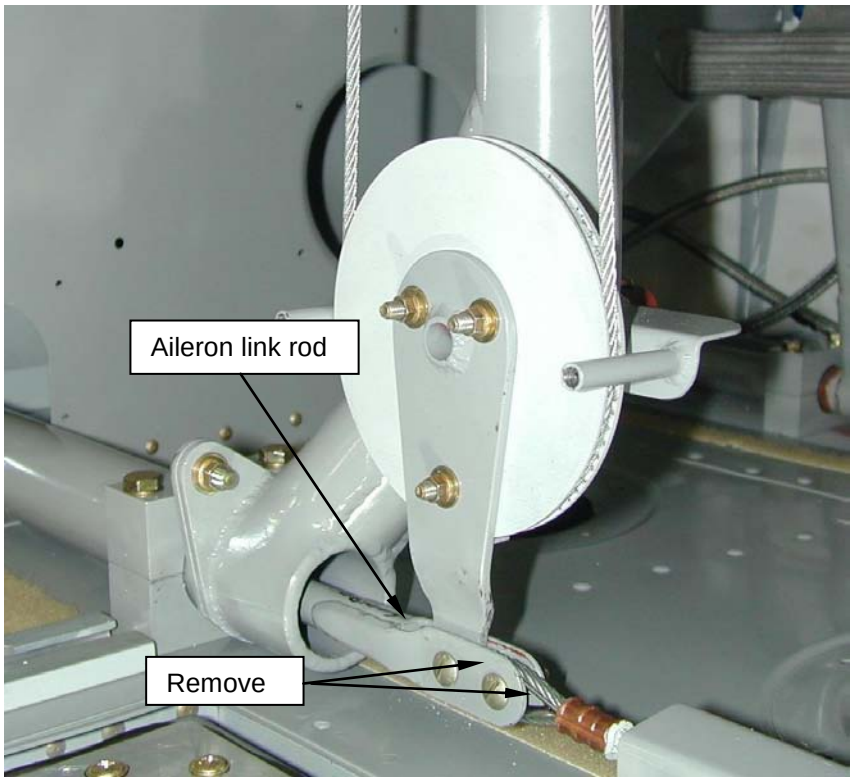

Figure 2 (dual control installation shown)

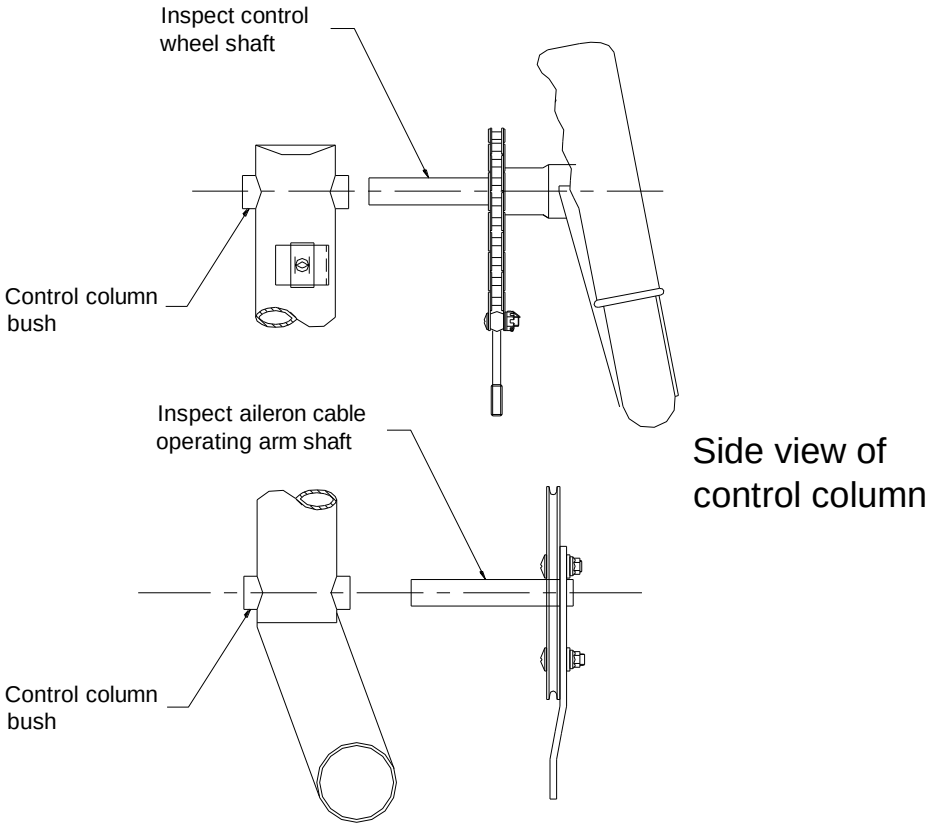

Figure 3

7. If there is no evidence of wear then the shaft is serviceable and no further action is required. Re-install per section 4.

8. If there is evidence of light marking on the shaft as indicated by general even wear adjacent to the weldment then the shaft and the control column bush can be reworked (refer to section 2) or replaced with new bronze items (refer to section 3).

9. If there is evidence of significant marking on the shaft as indicated by scratches, scoring or galling then the shaft must be replaced and the control column bush reworked. Refer to section 3.

2. Rework

1. Remove the control wheel shaft from the control wheel assembly, and/or the aileron cable-operating arm from the aileron cable-operating arm assembly. A lightly marked shaft can be reworked by polishing out the marks provided the amount of material removed does exceed 0.005".

2. Polish the bore of the control column bush to remove any high spots, particularly in the areas where weld may have penetrated.

3. Re-assemble the control wheel and/or aileron cable-operating arm assembly.

4. Reinstall the control wheel assembly and/or aileron cable operating arm assembly to the control column per section 4.

3. Replacement

1. A badly marked shaft must be replaced.

NOTE:

Even if only one shaft requires replacement, new upper and lower shafts must be installed.

Operators who wish to avoid the continuing inspection requirements may also elect to install new components.

2. Remove the control column assembly from the aircraft.

3. Remove the control wheel assembly and aileron cable operating arm assembly from the control column. Discard the aileron cable operating arm assembly.

4. Remove the existing control wheel shaft from the control column and discard.

5. Using a H7 fit 13mm reamer, ream out the existing upper and lower control column bushes. Refer to Figure 4. It is important that this size reamer be used as the bronze shafts supplied have been machined to a normal running fit based on a 13mm bore size.

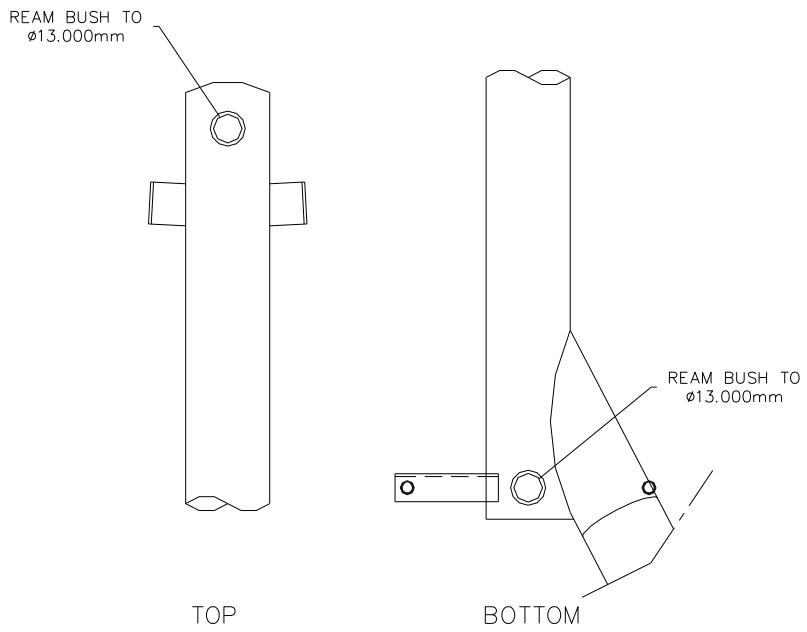

Figure 4

6. The bronze shafts have also been machined slightly over length to account for manufacturing variations in the length of control column bushes between individual aircraft. The required end float of the completed assemblies is 0.005” - 0.010”. Refer to Figure 5. Material can be removed from the bronze shaft if the clearance exceeds 0.010”, or by grinding back the control column bush if the clearance is less than the 0.005” minimum.

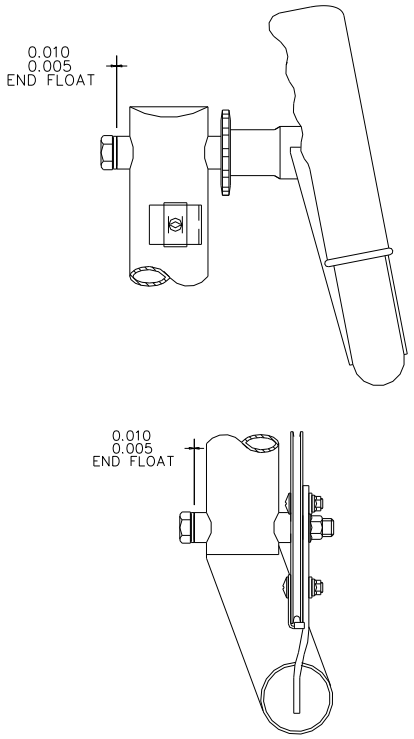

Figure 5

7. Ream the central hole of the aileron operating arm wheel (P/N GA8-273023-31) to 13mm to accommodate the increased diameter of the bronze shaft.

8. Assemble the control column using the items per Figure 6a and 6b. Ensure that the minor diameter of item 1 is inserted into the control wheel housing. Apply a general-purpose grease or an anti seize compound such as Loctite Silver Grade or Bostik Never-Seez to the shafts prior to installation into the control column bushes. Torque the nuts to 160 – 190 in.lbs. Parts not ballooned are existing items that can be re-used.

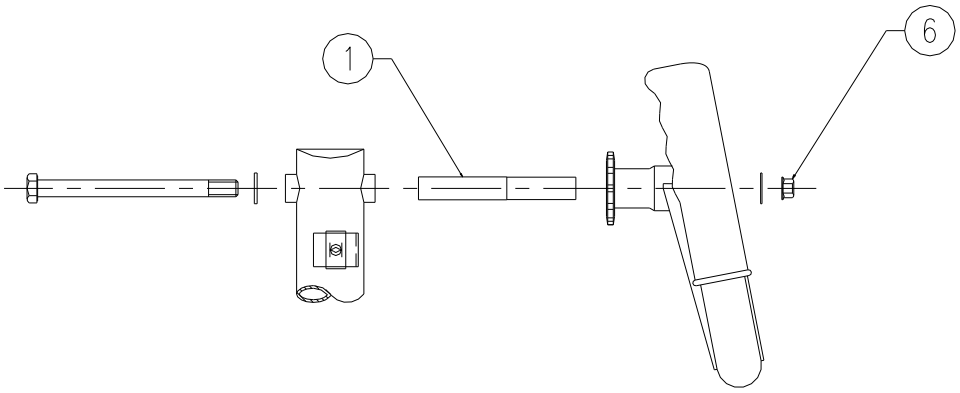

Figure 6a

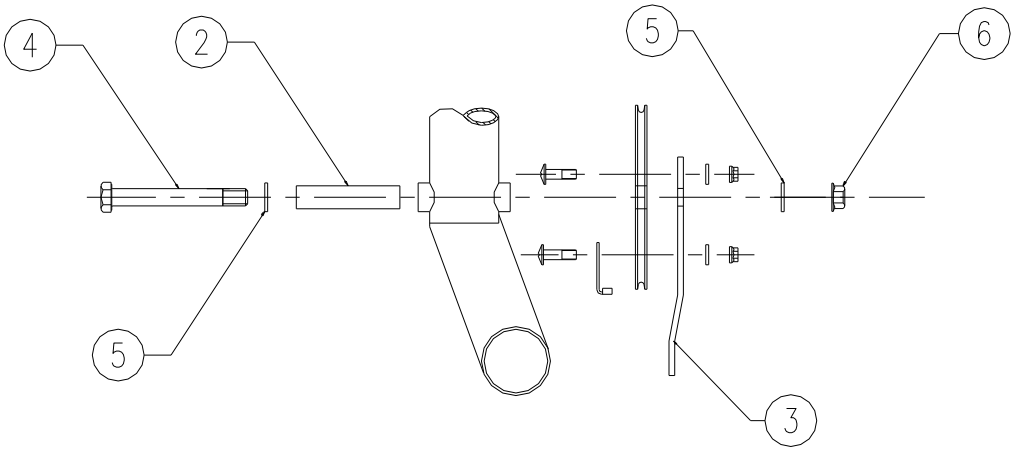

Figure 6b

9. Reinstall the control column into the aircraft.

10. Re-connect and re-rig the control system per the applicable parts of section 4.

4. Re-installation

1. Re-install the control wheel assembly and/or aileron cable operating arm assembly to the control column using the same hardware as removed during the disassembly procedure. Lubricate per section 12-20-30 *Airframe Lubrication* of the GA8 Service Manual.

2. Reconnect the aileron cable-operating arm to the aileron link plate (single control installation) or aileron link rod (dual control installation).

3. Reconnect the aileron cables to the aileron link plate (single control installation) or aileron link rod (dual control installation).

4. Reconnect the cable assembly between the control wheel sprocket and the aileron control operating arm pulley, and tension the cable to 30 ± 5 lbs.

5. Re-rig the aileron control circuit per section 27-10-00 *Aileron System* of the GA8 Service Manual.

Documentation:

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

Compliance Notice:

Complete the Document Compliance Notice and return to Gippsland Aeronautics by fax/mail.

DOCUMENT COMPLIANCE NOTICE

Gippsland Aeronautics	**Document: Service Bulletin SB-GA8-2004-11**

Aircraft Serial Number: GA8-_____

I/we have incorporated Service Bulletin SB-GA8-2004-11 for the above aircraft.

Inspection revealed (please tick as appropriate):

	Pilot Side		Copilot Side (if fitted)	
	Control wheel shaft	Aileron cable operating arm shaft	Control wheel shaft	Aileron cable operating arm shaft
No form of wear	☐	☐	☐	☐
Light wear that has been polished out	☐	☐	☐	☐
Significant wear requiring replacement	☐	☐	☐	☐
No or light wear, but new parts installed	☐	☐	☐	☐

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Signed

Print name_____

Please post or fax this compliance notice to:

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