



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-GA200-2015-10

Issue 1

MANDATORY

Service Bulletin

Subject:

Enhanced Wing Front Spar Inspection

Applicability:

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

AIRCRAFT	SERIAL NUMBER(s)	REFERENCE
GA200	All	
GA200C	All	
PA-25-235/A9	All	Civil Aviation Safety Authority (CASA) STC 83-4

Table 1 - Applicability

Amendments:

Issue 1: Initial Issue

Background:

This Service Bulletin provides enhanced inspection instructions for the Wing Front Spar.

Operators of the GA200C have reported cracks developing in the Front Spar Web in the region of the Lower Cap at the wing root. These cracks have been found during incorporation of SB-GA200-2011-06, Wing Spar Life Extension, which is an optional Service Bulletin available from GippsAero. These cracks, if left unattended, may impact the structural integrity of the Wing.

Service Letter SL-GA200-2013-02, Inspection of Wing Spars, emphasised the importance of inspections in the Spar Cap regions and this Service Bulletin mandates detailed visual inspections of the same regions. This Service Bulletin GA200-2015-10 supersedes SL-GA200-2013-02.

CASA STC 83-4 documented a design change where an all metal wing assembly designed and manufactured by GippsAero (formerly Gippsland Aeronautics) was installed on Piper PA-25-235 aircraft. These aircraft were identified as PA-25-235/A9 aircraft and feature a wing similar to the ones installed on the GA200C aircraft; therefore these may display similar cracks to those found on the GA200C.

Some typical cracks are shown in Figure 1 and Figure 2.



Figure 1 – Crack in Front Spar

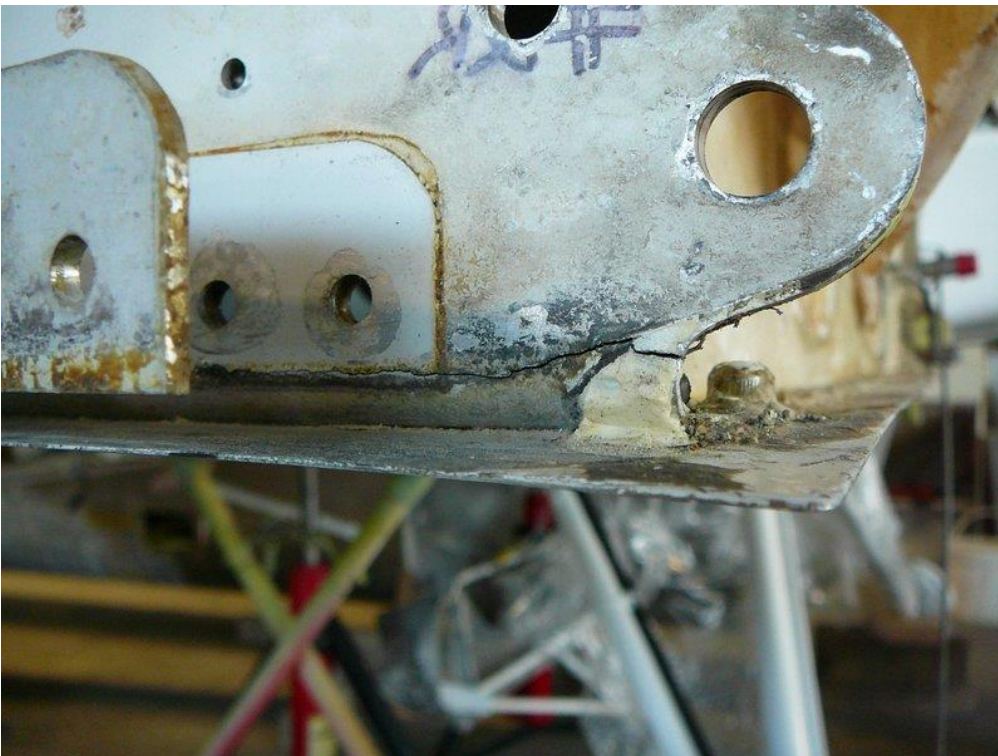


Figure 2 – Crack in Front Spar

Compliance:

The inspections in this Mandatory Service Bulletin must be carried out at the next scheduled maintenance inspection, and must continue at intervals of 200+/-20 hours or 12 months, whichever occurs first.

Weight and Balance:

There is no effect upon the aircraft's weight and balance as a result of these inspections.

Approval:

The airframe modification described in this Service Bulletin has been approved pursuant to Australian Civil Aviation Safety Regulation 21.437 (1998). GippsAero reference GAE12#2395.

Parts:

The parts that are removed by Part B of this Service Bulletin are listed in Table 1.

Table 1 - Parts

Item	Part Number	Description	Qty
1	GA200-571002-7	Packer Fwd Face	2
2	GA200-571002-31	Lug Front Spar Attach	4
3	GA200-571002-33	Lug Front Spar Attach	4
4	GA200-571002-35	Lug Front Spar Attach	4
5	GA200-571102-55	Doubler Fwd Face	1
6	GA200-571102-56	Doubler Fwd Face	1
7	GA200-571002-57	Doubler Aft Face	2
8	GA200-571002-71	Root Strap (Long)	2
9	GA200-571002-73	Root Strap (Short)	2
10	AN4-11A	Bolt	8
11	AN4-13A	Bolt	4
12	AN5-15A	Bolt	2
13	AN6-15A	Bolt	2
14	AN960-416	Washer	24
15	AN960-516	Washer	4
16	AN960-616	Washer	4
17	MS21042-4	Nut	12
18	MS21042-5	Nut	2
19	MS21042-6	Nut	2

Parts for Local Procurement

20	MS20470AD4	Rivet, Solid	A/R
21	MS20470AD5	Rivet, Solid	A/R
22	TLPD424BS (or equivalent)	'Pop' Rivet	A/R
23	TLPD321BS (or equivalent)	'Pop' Rivet	A/R

Replacement parts can be obtained directly from GippsAero.

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: aircraft.support@mahindraaerospace.com

Labour:

Part A – 1 man hour.

Parts B, C and D - The work requires the removal of affected wings, disassembly of the Front Spar, visual inspections and part replacement. The time required to accomplish this Service Bulletin will vary due to the result of rework required.

Warranty:

No aircraft are eligible for warranty claims incorporating this Service Bulletin.

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:

- AIRCRAFT SERVICE AND OPERATION MANUALS;
- 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 GA200/GA200C 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.

If this Service Bulletin is being accomplished on a Piper PA-25 aircraft, refer to the applicable approved maintenance data when conducting work.

Part A – Preparation and Initial Inspection

1. Make the aircraft safe for maintenance and prepare for inspections as described in Chapter 5-20-00 of the GA200/GA200C Service Manual or as required by relevant Piper Aircraft equivalent.
2. For GA200/GA200C aircraft, identify and remove access panels to get access to the LH and RH wing roots. The LHS access panel is shown in Figure 3, the RHS is the opposite.

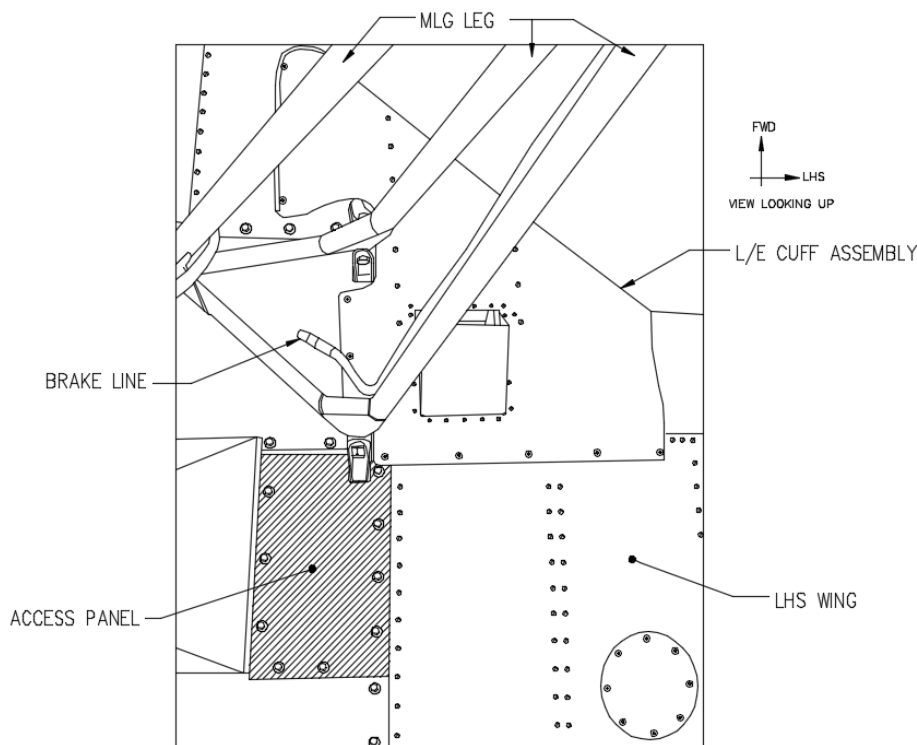


Figure 3 – Access Panel on fuselage belly. LHS of aircraft, view looking up

3. For Piper aircraft, get access to see the aft flange of the Front Spar lower cap.
4. Look at the P/N GA200-571002-5, Front Spar Cap flange in the region around the lug on both the LHS and RHS wings. Clean the lower regions of the Front Spar using a cleaning solvent or other airframe cleaning compounds to remove all foreign matter and help inspection.

Use a strong light source and inspection equipment (such as mirrors or borescopes if available) to look for cracks starting at the edges and in the bend radius in the region shown in Figure 4.

NOTE:

Look for the typical cracks shown in Figure 1 and Figure 2 when conducting inspections. Concentrate inspection on the areas where those cracks were found. Cracks may be obscured by spar straps and difficult to see.

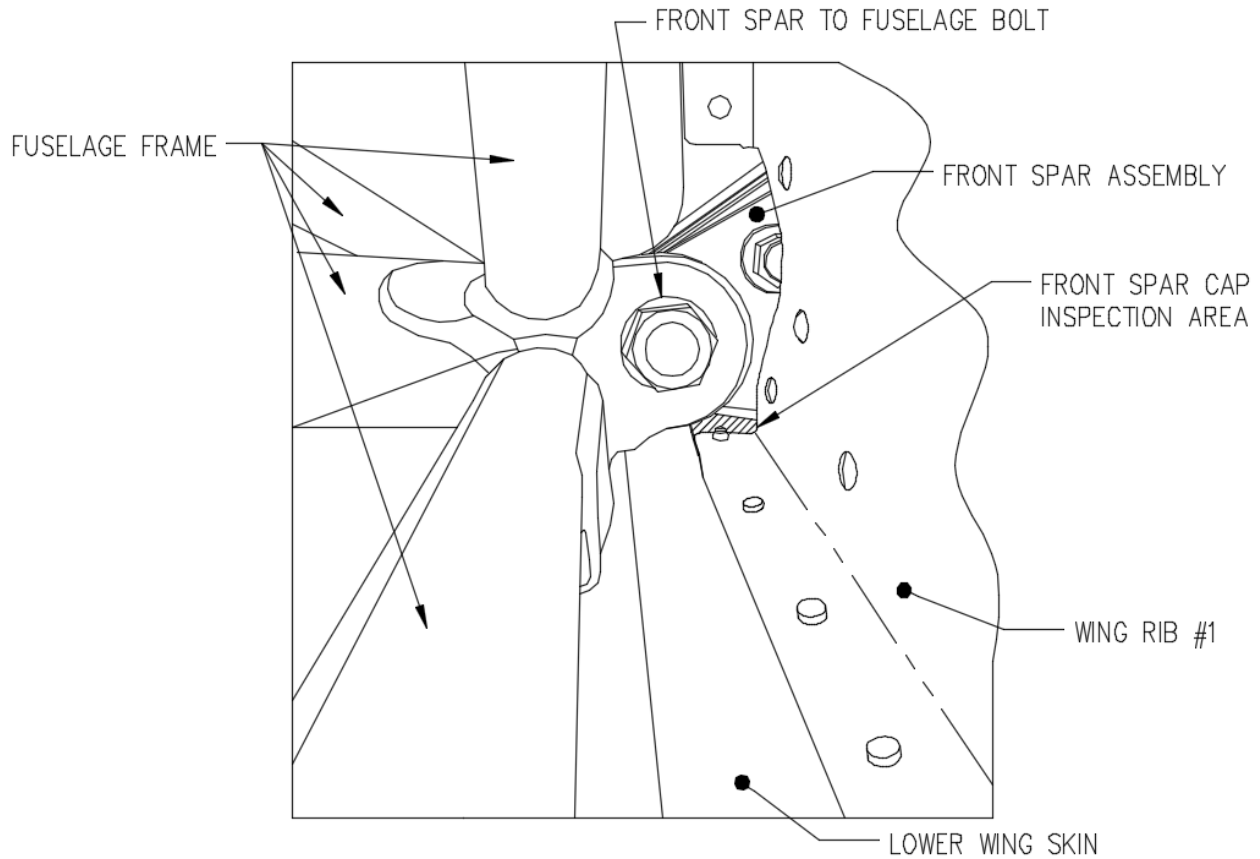


Figure 4 – Front Spar Cap initial inspection area, RHS wing shown

5. If **no** cracks are seen, replace access panel on GA200/GA200C aircraft or restore Piper aircraft to a serviceable configuration. Inspection is complete.
6. If cracking is seen, do Part B, Part C and Part D.

Part B – Disassembly

If the initial inspection in Part A reveals indications, or the possibility of indications, of a crack in the Front Spar Cap around the lug or in the bend radius, disassemble the aircraft wings as described here and do the inspections in Part C.

GA200/GA200C Aircraft

1. Remove the P/N GA200-571030-1 LE Cuff Assembly, LH and P/N GA200-571030-2, LE Cuff Assembly, RH. Retain Cuffs and securing fasteners.

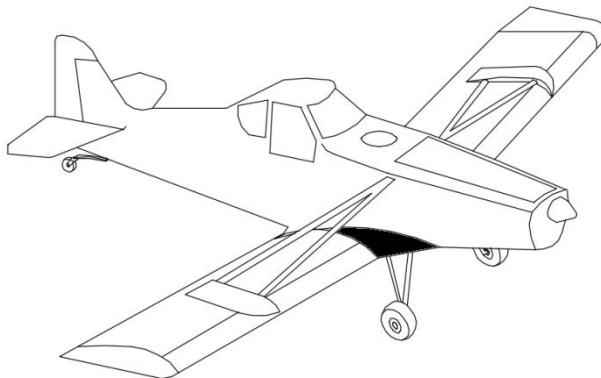


Figure 5 – Wing Cuff Assembly Location, RHS

2. If fitted, note the fastener types and diameters securing the Front Spar Cover.

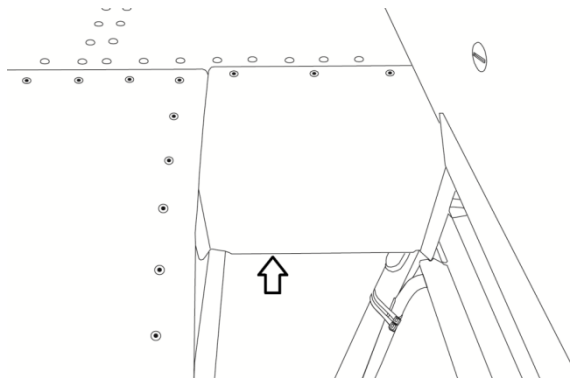


Figure 6 – Front Spar Cover, RHS shown

CAUTION:

WORK CAREFULLY WHEN DRILLING THROUGH THE WING UPPER AND LOWER SKINS AND SPAR CAPS. DO NOT MAKE ANY FASTENER HOLES LARGER WHEN REMOVING FASTENERS

NOTE:

Record the location, head orientation, type and size of any solid or blind rivet or bolt, nut and washer removed from the Spar Assembly. This information will be required for assembly after inspection.

3. Remove the Front Spar cover by carefully removing fasteners attached to the wing upper and lower skins.

All Aircraft Types

1. Remove the Wing Assembly from the aircraft in accordance with Chapter 57-10-10 of the GA200/GA200C Service Manual or Piper Aircraft equivalent, if applicable. Support wing on stands or equivalent.
2. Remove the inboard leading edge skin by drilling out 'pop' rivets. Work carefully and make sure the Front Spar and leading edge Ribs remain free from damage.
3. Remove the nuts, bolts and washers attaching lugs to the Front Spar Assembly as shown in Figure 7. Retain all fasteners if serviceable.

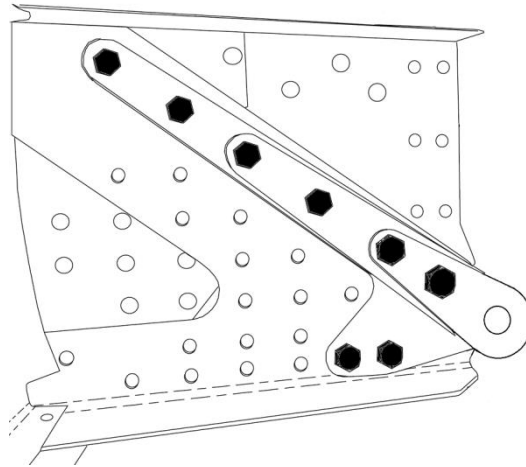


Figure 7 – Front Spar bolts, RHS shown

CAUTION:

DO NOT DAMAGE OR MAKE LARGER HOLES IN THE SPAR WEB OR CAPS.

4. Remove the following items from the Front Spar assembly, removing solid rivets as required:

Forward

- P/N GA200-571002-31, Lug Front Spar Attach
- P/N GA200-571002-33, Lug Front Spar Attach
- P/N GA200-571002-35, Lug Front Spar Attach
- P/N GA200-571102-55, Root Doubler Forward
- P/N GA200-571002-7, Root Packer

Aft

- P/N GA200-571002-31, Lug Front Spar Attach
- P/N GA200-571002-33, Lug Front Spar Attach
- P/N GA200-571002-35, Lug Front Spar Attach
- P/N GA200-571002-57, Root Doubler Aft

5. Remove any remaining rivets from the lower Spar Strap outboard until around Rib #2.

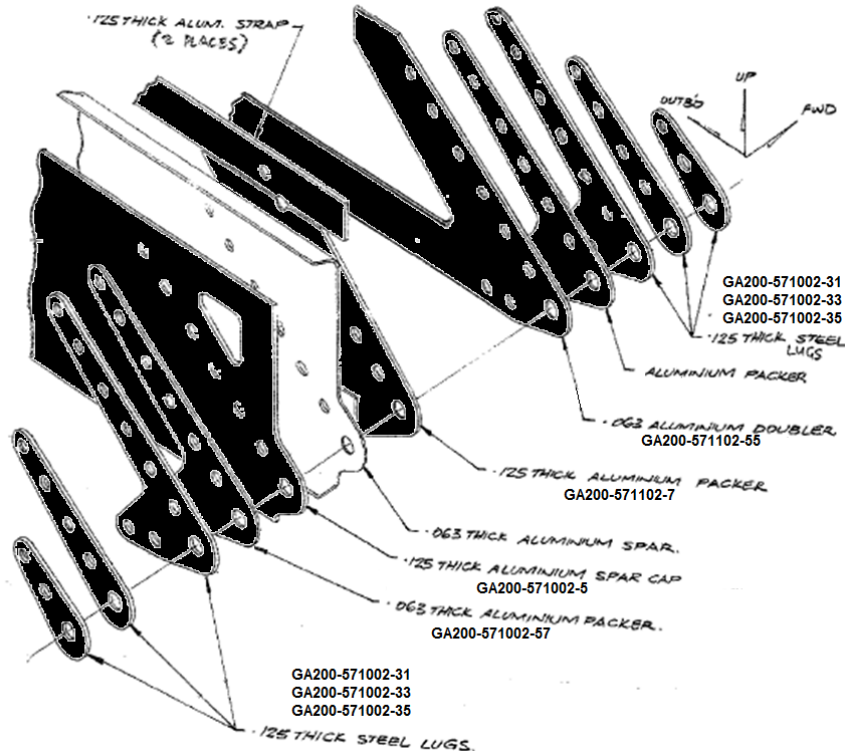


Figure 8 – Front Spar Root Fitting exploded view; LHS shown

Part C – Detailed Inspection

If the initial inspection in Part A reveals indications of a crack in the Front Spar Cap around the lug or in the bend radius, do this inspection.

1. Clean the lower regions of the Front Spar using a cleaning solvent or other airframe cleaning compounds to help inspection.
2. Do a detailed visual inspection of the P/N GA200-571002-5, Front Spar Cap using at least 10x magnification and a strong light source. Look for cracks, notches or corrosion. Concentrate inspections at the root fitting end particularly around the relief under the lug area as shown in Figure 9.

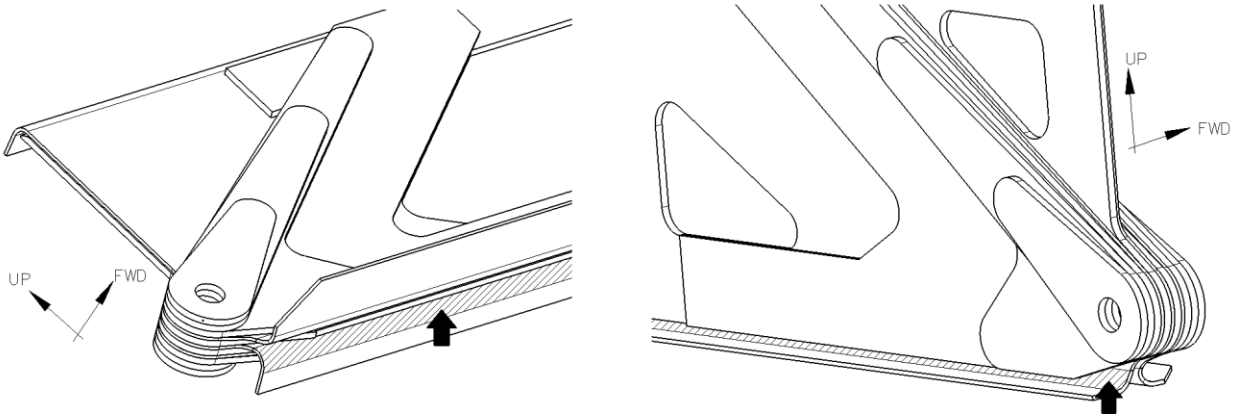


Figure 9 – Concentrated area for inspection; LHS Spar shown

3. If any crack indication is observed, either replace the Front Spar Cap with a new part, replace the Front Spar Assembly or contact GippsAero for further instructions. Otherwise, continue.
4. Do a detailed visual inspection of the radius under the lug area. Look for any notches, dents, protrusions, corrosion or gouges that may cause a crack to start. If any of these are found, contact GippsAero. Otherwise, continue.

Part D - Assembly

1. Assemble Front Spar Assembly using parts removed in Part B, or serviceable equivalents. Factory fit fastener types are noted in Figure 10.

If fastener types noted during disassembly are different to those shown in Figure 10, consult the design approval holder that installed and/or approved the different fasteners.

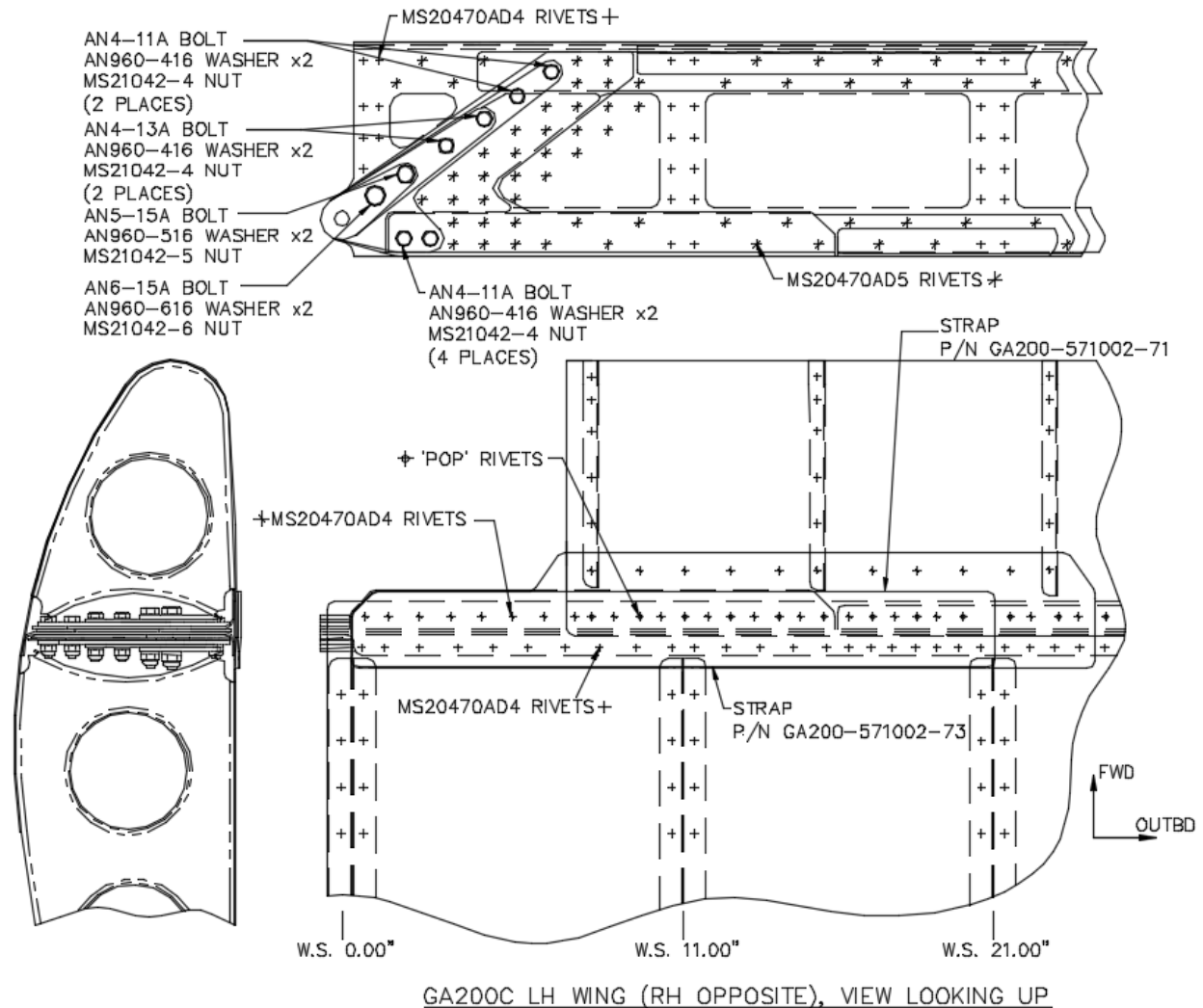


Figure 10 – Fastener Types and Locations

2. Install Wing Assembly in accordance with Chapter 57-10-10 of the GA200/200C Service Manual or Piper Aircraft equivalent if applicable.
3. Rig all flight control surfaces in accordance with Chapter 27 of the GA200/200C Service Manual or Piper Aircraft equivalent if applicable.

Documentation:

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

Continuing Airworthiness:

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

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-GA200-2015-10

Issue 1

Aircraft Serial Number: GA8-_____

Service Bulletin SB-GA200-2015-10, 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:

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: aircraft.techpubs@mahindraaerospace.com