RotorSport UK Ltd

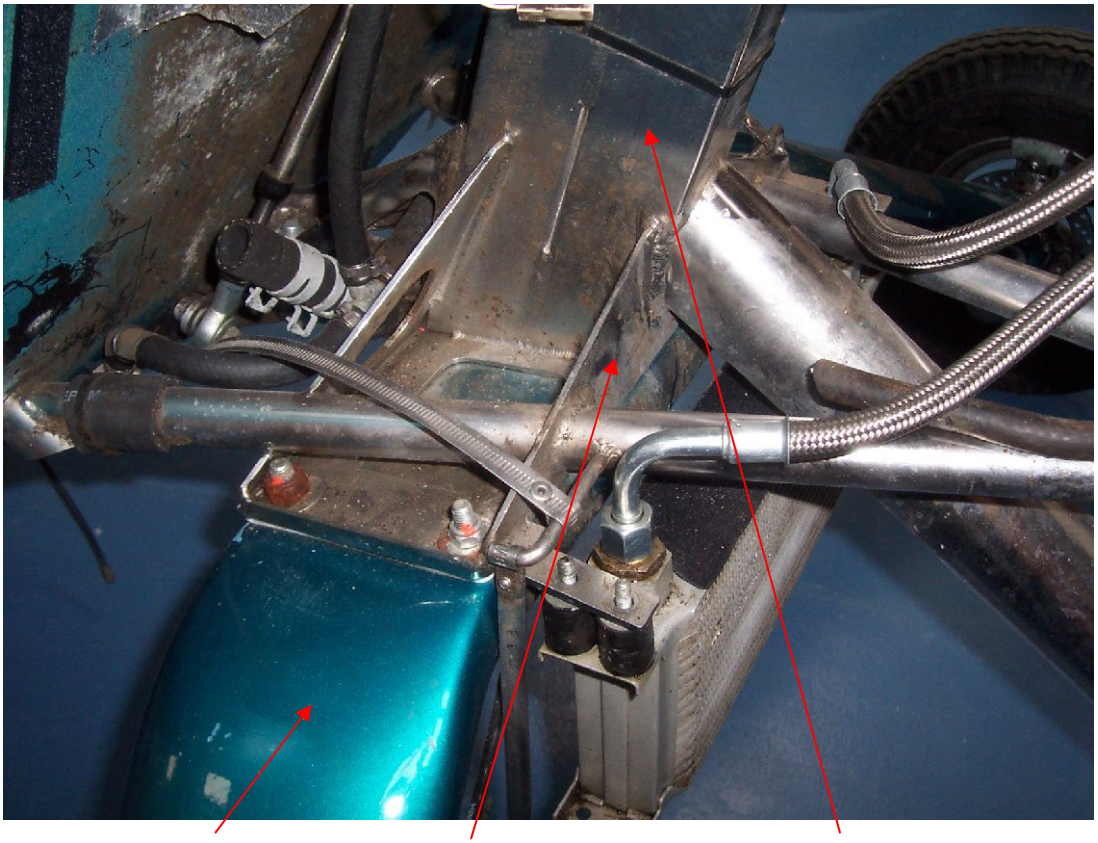
Service Repair Request and Evaluation/Approval

This form (Part 2 of 2) is the response from RotorSport UK Ltd to a Service Repair and Evaluation/Approval request, which specifies the company authorised repair method. Deviation from this method renders the authorisation ineffective.
Upon completion of the repair the repairer must enter details into the logbook/worksheet with the repair number and sign as normal.
If any problems with carrying out the work authorised, contact RSUK immediately on +44(0)1588 505060, or email engineering@rotorsport.org.

Repair No. and Issue: SRA-024 Iss1 **Calidus bow attachment repair**	**CCAR No.: None** **Mod approval No: None**	Repair classification: ~~**MAJOR**~~ or **MINOR**
Aircraft type **Calidus**	**Aircraft serial No. RSUK/CALS/006** **First application: G-KASW**	

Repair problem description & cause of problem if known

The Calidus suspension bow is attached to the aircraft by way of a 'U' shaped bracket that is welded to the mast structure.



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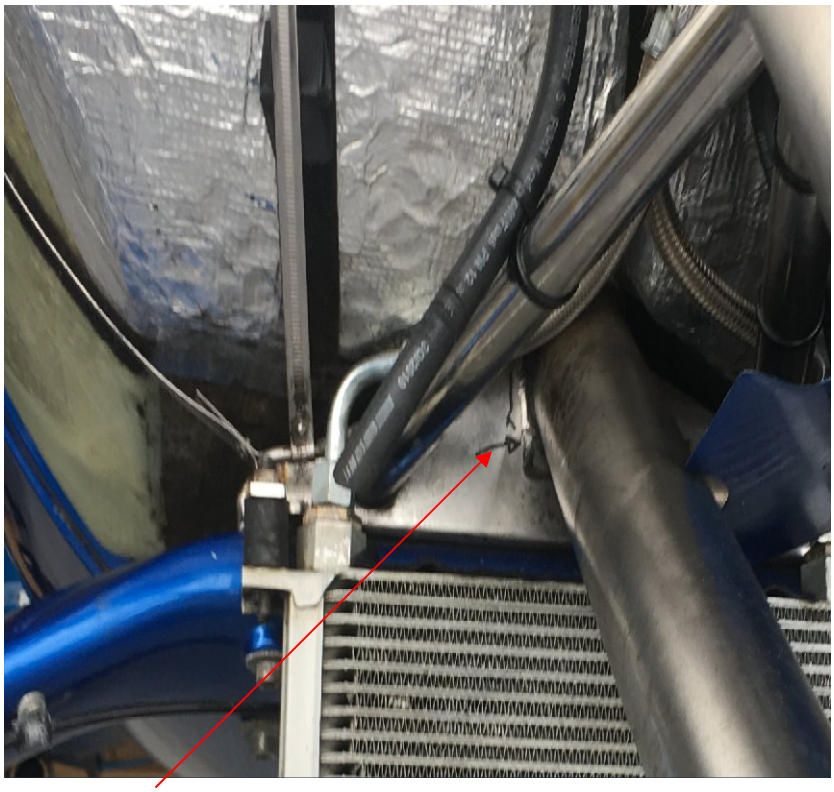
It has previously been found that the vertical fillet weld attaching the rear vertical face to the mast may sustain a crack (see SRA-023) but this repair SRA-024 relates to a crack in the bracket itself. However, the bracket should be carefully inspected for either crack.



Crack position for SRA-023 (could be either side of the mast)

Crack position for this SRA-024 (mounting bolt removed and illuminated from rear)

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Magnified view of crack for this SRA-024

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Limitations on implementation

1) The weld repair must be made by a CAA or RSUK authorised welder.
2) The crack must not have propagated into the mast or keel tube weld and the plate must not be distorted. If found such contact RotorSport UK Ltd.

Approval statement.

The technical content of this document is approved under the authority of the UK CAA Design Organisation Approval Ref: DAI/9917/06.

Tooling required.

Conventional hand tools and TIG welding equipment only

Weight and balance.

Not affected

Manuals affected.

None affected

Previous modifications affecting this SRA.

None

List of materials required to complete this SRA:

Weld filler rod only

List of components required to complete this SRA:

None

Interchangeability:

Not applicable

Parts disposition:

Not applicable

Accomplishment instructions/details of the repair:

1) Remove the fuel tanks and protect any adjacent cables by suitable non-flammable covering.

2) Jack the aircraft securely so that the suspension bow may be released. If required for access release the oil cooler, move to one side and protect from weld spatter

3) Stop-drill the crack ends 1.5 – 2.0mm

4) Using a Dremmel-type tool with small grinding wheel (typ 0.75mm thick) progressively grind-out the length of the crack in an opposing V-shape 1 – 1.5mm wide. Remove all grinding debris and clean-up with Amberclene LO30.

5) Inspect the plate interface and establish that the crack has not propagated into the mast or keel tube weld.

6) Weld-up the prepared crack in two opposing passes, one inside and one outside of the bracket (see below for welding requirements).

7) Inspect the resulting welds (see below)

8) Clean-up and re-assemble the aircraft using new fasteners.

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Welding requirements (to be carried-out by CAA authorised welder only)

1. Final preparation of weld area (immediately before welding)
Remove any deposits by cleaning with a lint-free cloth and halogen-free solvent (Amberclene LO30).
Remove any surface debris by brushing with a stainless-steel wire-brush.

2. Welding
Set the TIG welder for job +ve, electrode -ve.
Using an electrode 2.4mm diameter, filler metal 316 stainless steel and heat-setting 60-70amps produce a continuous fillet weld in a single run.
Ensure that filler metal is present in the whole welded length so that a joint "fused only" is not created.

3. Clean-up
Remove burn marks from the weld and areas adjacent using a stainless-steel wire-brush followed by Scotchbrite pads or rubbing blocks if required. Do not use any acid treatment for clean-up.
Do not dress the weld by grinding, leave the visible fillet intact.

4. Inspection
Using a magnifying glass at least 4x and good illumination inspect the weld to ensure that there is a high build for the whole length of the weld with no inclusions or voids present and that the start and end of the run are of uniform shape.

Reference to other documentation:

No modification has been raised as it is considered that this repair reinstates the bracket to the original specification.

Test and inspection records:

Complete attached worksheet

Special Tools & Health and Safety requirements, and/or components required for repair:

No special tools or components required

Quality Inspection requirements after repair:

Visual inspection required as described above

Flight test requirements after repair:

No flight test required

Documentation completion:

1. Complete the SRA worksheet attached
2. After embodiment of this repair SRA-024 the authorised engineer/welder must make an entry in the airframe logbook white pages stating that the repair has been embodied.

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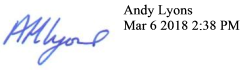
Service repair authorised by: (name, signature, and date of signature)				
Quality Control Manager	Engineering Manager  	Chief Test Pilot (where an effect on flight performance or safety) None required	CVE  	Head of Airworthiness 
Document effectivity date: 2 March 2018				

Form F023 Issue 4 Part 2 of 2

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Aircraft serial no. Registration G-	**Service Repair Implementation Worksheet**	Date raised: Raised by:
Purpose – record service repair implementation actions taken, then to inspect aircraft and return to service.		Document reference: SRA-024 iss1
Maintenance manual referred to and issue level/date:		
Note; attach any secondary sheets to this document		

Task	Notes	Eng'r check/date	Inspector check/date
Remove cowlings and fuel tanks and suitably protect the welding environment on the aircraft			
Primary clean-up and inspection satisfactory			
Weld satisfactory			
Final clean-up completed			
Remove protective materials			
Re-assemble aircraft, replacing fuel tanks and cowlings, etc.			
Confirm no tools or equipment left in aircraft			
	Intentionally blank		
	Intentionally blank		
	Intentionally blank		

Customer acceptance: Name: Signature/date:	Aircraft Hobbs meter reading: Confirm logbooks annotated:

Permit Maintenance Release: The work recorded above has been completed to my satisfaction and in that respect the aircraft is considered fit for flight.

Engineer/Inspector signature Name: CAA or CAMO Authorisation code :	Date of work Location where work completed:
Welder signature Name: CAA Authorisation code:	