

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 650769, or email info@rotorsport.org.

Repair No.: 004 issue 4, 04/Jan/10	CCAR No.: None Mod approval No. MC-115	Repair classification: MAJOR MINOR
Aircraft type: MT-03	Aircraft serial No.: OPEN (first application G-CFBJ)	

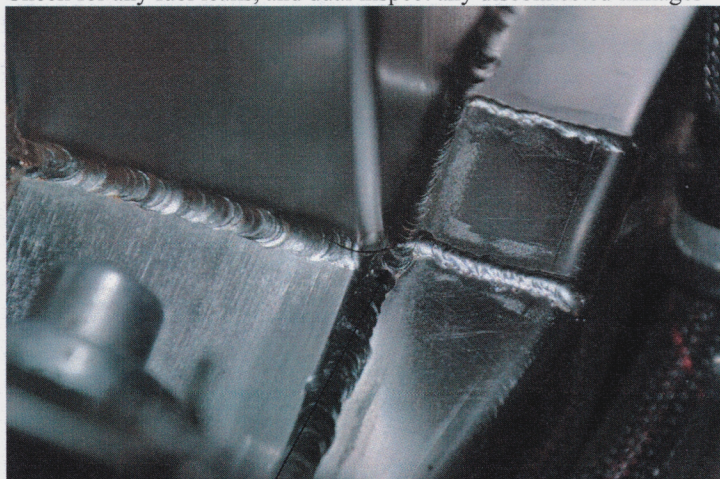
Repair problem description & cause of problem if known

Aircraft has received some distortion of the airframe resulting in a small crack at the base of the mast, at the joint to the front keel. To rectify this it is proposed to straighten the airframe with a strap, cut back and repair the weld, and then weld a gusset between the mast and keel. In addition, the mast is to be braced with two straps as currently approved for the MT0sport, both in readiness for installation of the 500Kg suspension bow, and to further brace the area. Note that the mast is doubled in this area.

Service repair authorised by RotorSport UK Ltd (and only permitted to be carried out at/by RSUK):

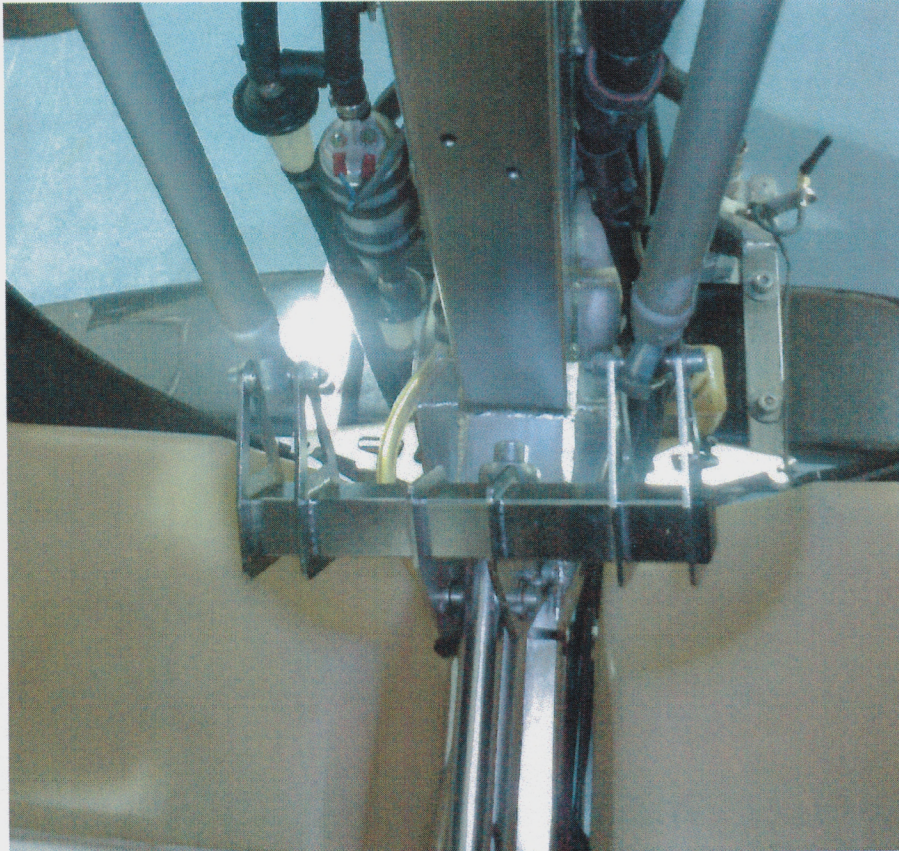
1. To enable the repair, the fuel tanks, front and rear seat are first removed.
2. The lower control rods are disconnected and moved out of the way.
3. Using a ratchet strap, linked between the doubled area under the front seat to the top of the doubled area on the mast, pull the aircraft carefully to straighten the mast so that the front keel to mast angle is a nominal 5 degrees. Do this in steps to prevent over bending! Ensure the mast is vertical in the roll plane too!
4. Clean out the cracked weld, locate the ends of the split using suitable crack detection method, and reweld with 1.4301 graded filler material.
5. Weld gusset in place as per photo. Gusset is cut from 2mm thick, 50mm square 1.4301 tube, cut to give a gusset length of 20mm and welded at 30 deg to the vertical mast.
6. Weld in place two straps, from Fastener and strap kit RSD7175 (straps are 500 x 20 x 3mm 1.4301 stainless steel), carry over from MT0sport and to be released for the MT-03 500Kg. See photos for position, and also fit lugs shown if a 914UL engined aircraft (see SB-013).
7. Reconnect disconnected items, and replace removed parts.

Check for any fuel leaks, and dual inspect any disconnected linkages



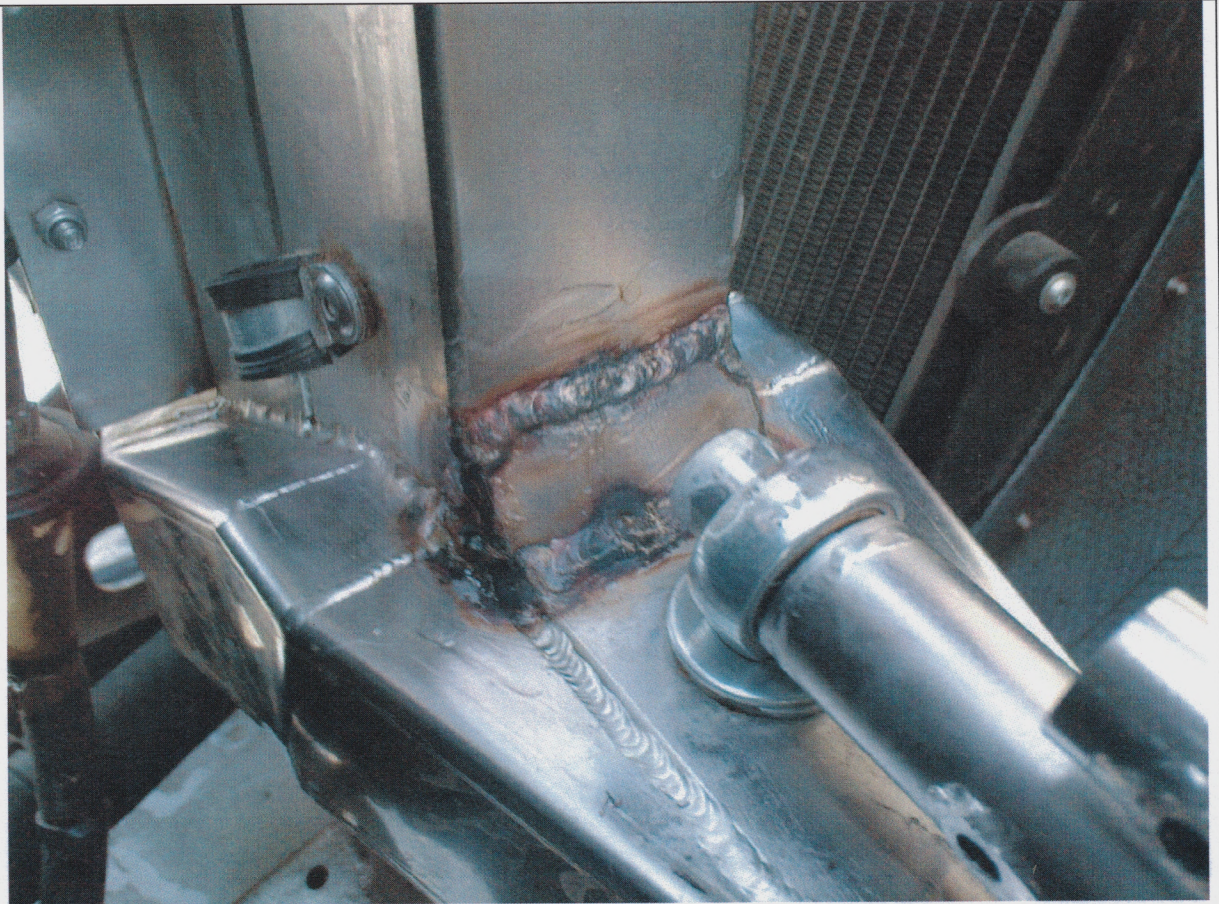
Crack at base of mast

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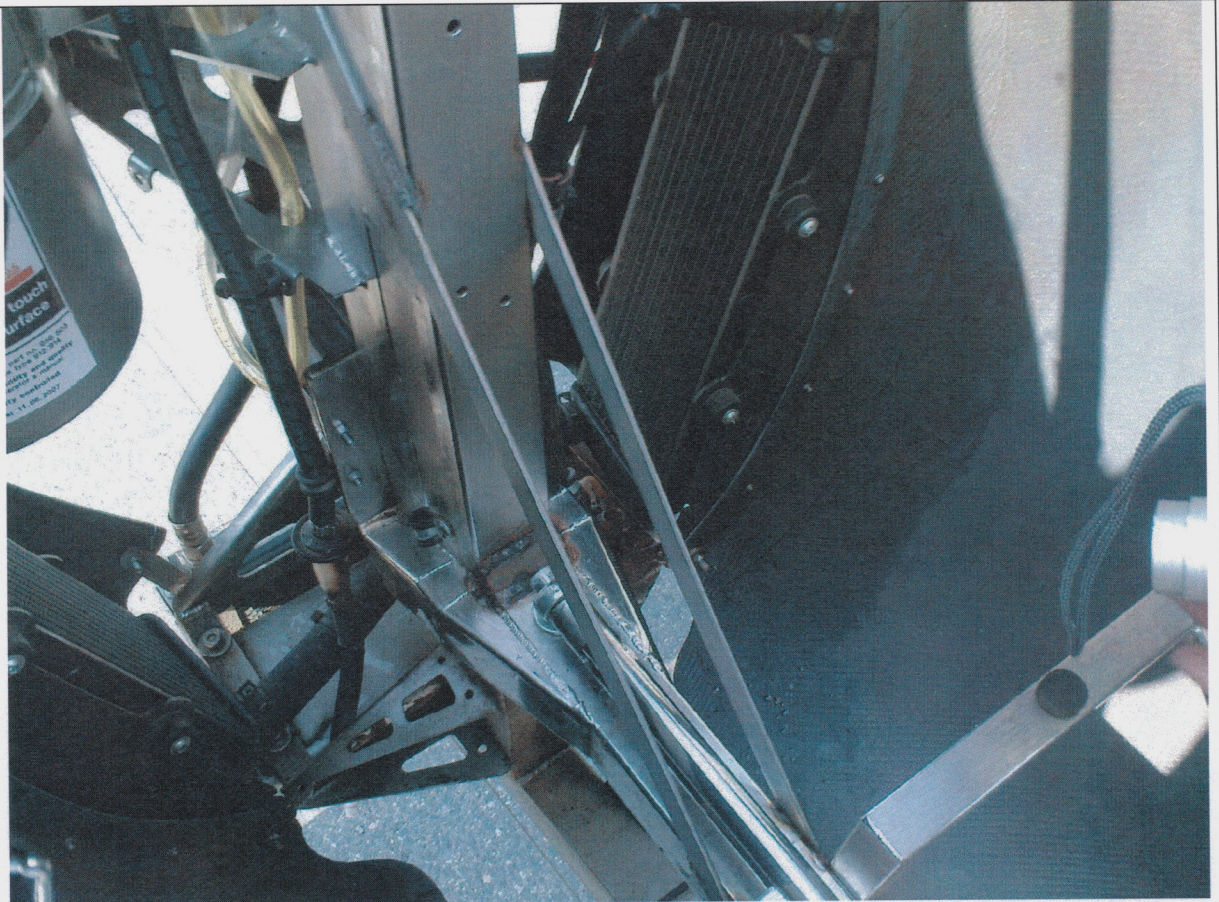
View of original mast to keel area.

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View of gusset welded into place prior to clean up. NOTE! It is highly recommended to remove ALL the controls before welding!

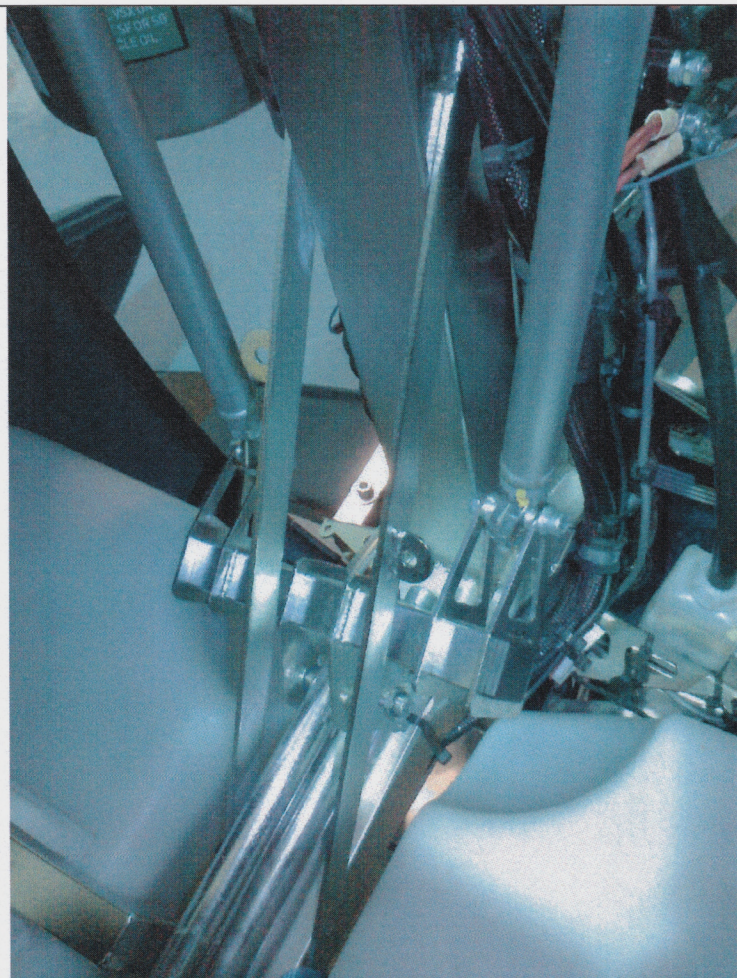
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View of gusset with straps, as released in Germany.

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View of straps welded in place The straps are welded at 35 degrees to the mast, and must clear the control fork on full articulation!

Welding requirements

1. Preparation of weld area

Remove any lubricant deposits by cleaning with a lint-free cloth and suitable halogen-free solvent.
Remove any surface debris by brushing with a stainless-steel wire-brush.

2. Welding

Position and clamp the parts in place

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 continuous fillet welds 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.

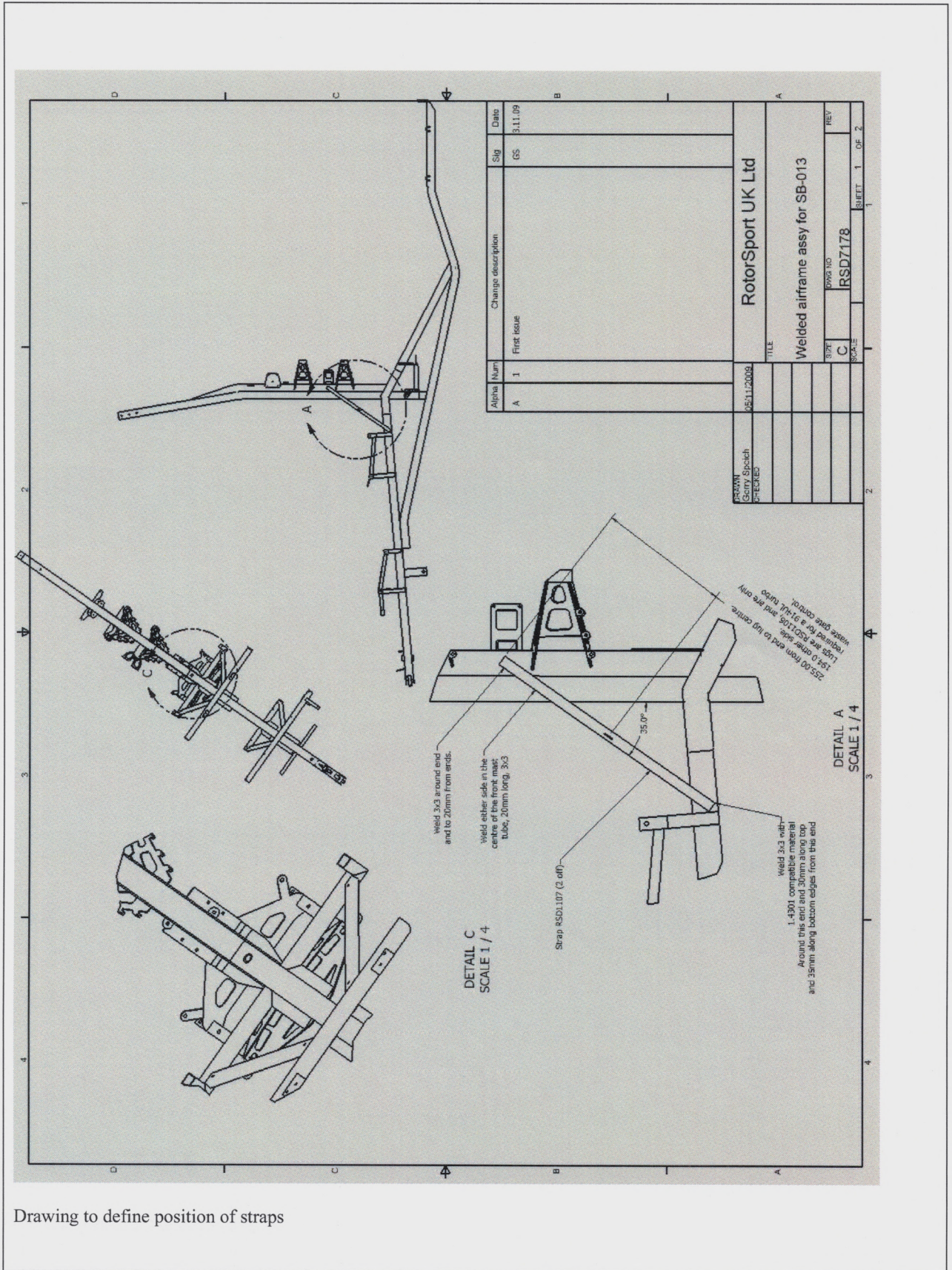
Do not use any acid treatment for clean-up

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 each run are of uniform shape.

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Drawing to define position of straps

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View of welded on strap. Weld as per RSD7178. Use filler metal suitable for stainless steel 1.4301

Special tools & Health and Safety requirements, and/or components required for repair:
None – observe existing welding operational requirements.

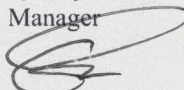

Quality Inspection requirements after repair:

Ensure all fastenings are secure.

Ensure fuel system free of leaks.

CAA BCAR A3-7 Authorised Person to certify that the work is completed by writing 'SRA-004 Weld repair and 500Kg MTOW straps incorporated' in the aircraft logbook white pages, and record the action in the pink pages entitled 'Aircraft Modifications'. Both entries must be signed by the CAA Authorised Person together with their CAA Authorisation number.

Service repair authorised by: (name, signature, and date of signature)

Quality Conformance Manager  28.11.09	Engineering Manager  28.11.09	Chief Test Pilot (where an effect on flight performance or safety)	Structures (where required) REF. ATTACHED AAS NOTES DE 28/11/09 AD/1827/01	Civil Aviation Authority (if a major repair)
Document completion date:	Issued to:	When	Issuer name	Signature
	Internal			
	CAA			
	Owners			
	PFA/BMAA Inspectorate			

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