

RotorSport UK Ltd Service Bulletin (Permit)

Title: Upgrade Cavalon to 560kg MTOW		
SB No.: 084 Iss2	Related documents MC No: MC-281 CCAR No.: None	Compliance Category:
Applicability		OPTIONAL or RECOMMENDED or MANDATORY
Aircraft type & model: Cavalon (Permit-to-Fly)	Aircraft serial Nos. affected: Any	
This form is the response from RotorSport UK Ltd either against a problem found in the product in service requiring a containment or rectification action, or as service information for aircraft modification incorporation. For help, contact RotorSport on 44(0)1588 650769, or email info@rotorsport.org.		
<u>Reason and overview of the Service Bulletin (cause of problem if known)</u>		
During development of the Cavalon Pro “certified” gyroplane the take-off weight was increased from 500kg to 560kg. A modification package has now been introduced and by embodiment of this SB-084 “Permit-to-Fly” variants of the Cavalon may also be increased to 560kg MTOW NB: This service bulletin may only be embodied if the aircraft has a 914UL or 914F turbocharged engine and is fitted with heavy-duty mainwheel tyres approved by RSUK (viz: Heidenau or Sava)		
<u>Approval</u>		
The technical content of this document is approved under the authority of the UK CAA Design Organisation Approval Ref: DAI/9917/06		
<u>Manpower estimates</u>		
Accomplishment of this Service Bulletin requires the following personnel (i) A3-7 Authorised engineer or other approved organisation/approved person (eg. LAA) but limited to RSUK embodiment only and estimated man-hours to complete the task as a standalone item are; 1-2 hours		
<u>Tooling required</u>		
Hand tools only		
<u>Weight and Balance Effects</u>		
There is no significant change to the aircraft weight or balance introduced by this Service Bulletin SB-084, but the aircraft weight placard does require replacement		
<u>Manuals affected</u>		
Cavalon POH RSUK0287 Iss2 Cavalon AMM RSUK0288 Iss4		
<u>Previous Modifications that affect the SB</u>		
None		
<u>Accomplishment instructions (Action required to implement this bulletin):</u>		
Effective date of SB is 03.08 15. There is no relevant MPD or other outside body documentation to be referenced.		

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Instructions

1. Position the aircraft and apply the brakes so that there is no risk of movement whilst the suspension bow is under work. Remove the cowlings and the firewall panel.
2. Temporarily protect the fins of the oil cooler against handling damage with cardboard
3. Examine the cover over the suspension bow mountings. On the CavII body there are two screws to be released but it will be retained on the body by a fillet of Sikaflex EBT. Dress the inspection holes as required to give clearance for the two M8 bolts to be withdrawn. On a CavI body (slide-bolt style doors) remove any bow cover.
4. Release as far as possible any retention (e.g. cable ties) of the two oil hoses attached to the oil cooler and lower the cooler to allow access to the suspension bow mountings. If insufficient access is available the oil cooler must be removed and the oil drained accordingly.
Note: if this is done then the oil system must be re-filled and purged in accordance with Rotax instructions.
5. Remove the M8 fasteners and feed the reinforcing plate into position, pushing it forwards so that the radiused edge of the bracket abuts the matching radius on the bow – see photo below. With the aid of an assistant fit and tighten the two M8 bolts (having verified that large dia washers are fitted under the bolt heads, fit as required)



Reinforcing Plate BT11828



Prototype plate in place (composite cover removed)

6. Verify that large diameter washers are fitted to the two M10 attachments (top and bottom). Fit as required.
7. If the oil cooler was detached replace accordingly – see note in 4 above.
Replace any oil pipe retention removed earlier.
8. Touch-up any damage to the cover plate and remove the cardboard from the oil cooler
9. Refit the firewall panel and cowlings
10. Fit a main aircraft placard that declares MTOW 560kg.

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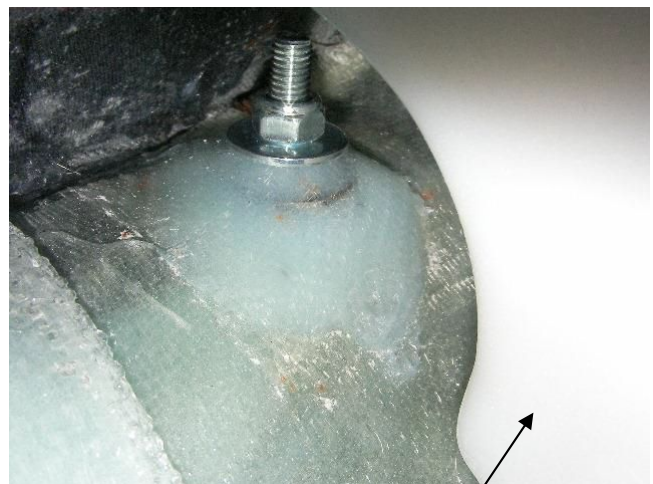
Supplementary instructions for Mk1 body moulding

If the upgrade is being applied to a Mk1 body moulding (recognisable by the slide-bolt door locks) the forward bolts must be removed and the mounting holes drilled-through 10mm diameter to enable M10 x 100 cap-screws to be fitted. As the fuel-tanks are located close-by the fastener position the drilling depth must be mechanically limited to avoid the tank being damaged. This may be accomplished by an appropriate length drill-bit or by use of loose washers around the drill shank. For the drilling operation use a high rpm and slow feed rate

Drill and fit the screws (and large washers) one at a time to avoid the suspension bow moving during the operation. Use Loctite 243 on the new nyloc nuts and tighten to 25Nm



Front fasteners viewed from underside



Front fastener in void under fuel tank

Material information (Parts required to be made to implement this service bulletin):

No parts manufactured during embodiment

List of components (with purchasable part nos)

- Reinforcing plate BT11828
- Large dia washers if not already fitted (body series 1)
 - U8 x 24 BT383
 - U8 x 20 BT1853
 - U10 x 30 BT1176
- Capscrews M10 x 100 RSD6208
- Capscrews M8 x 35 RSD6056
- Nyloc nuts M10 RSD6010
- Nyloc nuts M8 RSD6009
- 560kg MTOW placard from set

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<u>Interchangeability</u> Not affected		
<u>Parts disposition</u> a) Disposal requirements, whether discard or re-use – not applicable b) Environmental hazards of parts containing hazardous materials – not applicable c) Scrap requirements (eg mutilate scrapped items beyond use) – not applicable		
<u>Documentation (Service Bulletin Completion action)</u> a) Entries within the aircraft logbooks, eg CAA BCAR A3-7 Authorised Person to certify that the work is completed by writing 'SB-084 560kg MTOW 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. b) Completion of an SB worksheet (attached). This must contain a PMR statement, and a final check item that no tools or equipment have been left within the aircraft) c) Permit change application document. This is required as the SB will affect the permit limitations in respect of MTOW change, and enables the owner to request the permit change required d) PMR or Permit Flight Release form requirements are defined in b) above		

Document approval signatures			
Engineering Manager	CVE (as required)	Chief Test Pilot (if flight performance or safety effect)	Head of Airworthiness
	Not required as MC-281 approved	Not required as MC-281 approved	

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Service Bulletin implementation Worksheet

Aircraft type:	Serial no:	G-
Worksheet completed by:		Document ref: SB-084 Iss2
Worksheet cross-checked by (if applicable):		
Purpose – record service bulletin implementation actions taken to inspect aircraft and return to service.		
Maintenance manual referred-to and issue level/date:	Cavalon AMM RSUK0288 Iss4	

Note: attach SB sheets to this document

Task	Notes	Eng'r check/date	Inspector check/date
Ensure 914-series engine and heavy-duty mainwheel tyres fitted			
Remove cover plate and/or lower oil cooler			
Fit reinforcing plate, new M8 nyloc nuts and tighten fasteners (25Nm)			
Fit M10 x 100 and M8 x 35 capscrews, large washers and nyloc nuts (Mk1 body shape only)			
Replace cover plate/oil cooler			
Replace firewall panel and cowlings			
Verify oil cooler secure and oil system is purged			
Arrange and verify publication of revised Aircraft Weighing Certificate (AWC)			
Fit new (560kg MTOW) placard, writing in place the current empty weight			

Customer acceptance:

Name: Signature/date:	Aircraft hobbs meter reading: Confirm logbooks annotated:
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Permit Maintenance Release:
'The work recorded above has been completed to my satisfaction and in that respect the aircraft is considered fit for flight. I confirm that no tools, equipment or debris have been left in the aircraft'

Engineer signature and date: CAA PMR Authorisation ref :	Location where work completed
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Permit Change Application

The purpose of this document is to provide sufficient information to the CAA to allow a change of the Permit to Fly to incorporate a specific aircraft modification or upgrade.

Aircraft reg no

G-

Aircraft serial No.

RSUK/

AAN that has been incorporated:
AAN29345 Addendum 1

Service Bulletin number incorporated:
SB-084 Iss2 Cavalon upgrade to 560kg MTOW

Owners name and address

Daytime telephone number

Email

Summary of change required: (cross out as required)

Cavalon Upgrade to 560kg MTOW fitted, as approved by AAN29345 Addendum 1

Documents to be included with this application:

Photocopy of aircraft and/or engine logbook pages with certifying signatures from the A3-7 authorised person that confirm embodiment of the service bulletin and Permit Maintenance Release certification. Existing CAA Permit to Fly (original document, not a copy). The Certificate of Validity is not required Revised Aircraft Weighing Certificate (AWC)

Application fee as specified in the CAA Scheme of Charges paragraph 6.1

(<http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=list&type=subcat&id=1>)

Send to:

CAA Applications and Approvals

Aviation House

Gatwick Airport South

West Sussex

England

RH6 0YR