

RotorSport UK Ltd

Service Bulletin

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SB No.: 005 issue 2	CCAR No.: None	Classification: OPTIONAL or RECOMMENDED or MANDATORY
Aircraft type & model (applicability) RotorSport UK MTseries	Aircraft serial Nos. effected RSUK/MT-03/all and RSUK/MTOS/all	

Problem description & cause of problem if known

Problem; How to fit a Garmin GPSmap

The Garmin GPSmaps 196, 296, 495, 496 and similar units exhibit magnetic fields that vary dramatically from unit to unit in terms of strength and polarity, and also vary between battery packs and the units themselves. It is not possible to degauss the GPS units as this destroys the electronics. Therefore the units are mounted remotely from the instrument panel, which also makes access for the pilot easier.

Problem solution:

The GPS is fitted onto a RAM mounting, itself fitted to the instrument panel. CAA approved as modification MC-082. Note that this change was also been issued as SR-001 for the implementation on aircraft originally fitted with the GPS mounting flush on the instrument panel surface.

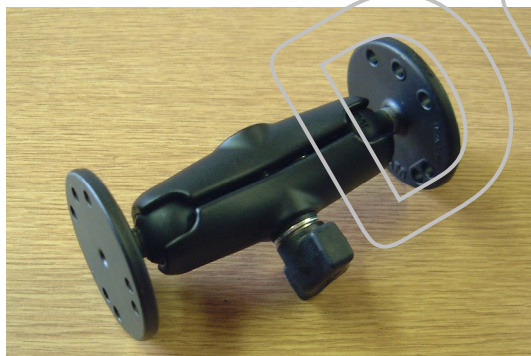
Effective date: 11.12.09

Applicability:

All MTseries gyroplanes to be fitted with Garmin GPSmap 196, 296, 495 and 496 units.

Parts required to implement the Service Bulletin:

1 off RAM extension mounting unit, 4 dome head M4 screws and 4 countersunk M4 screws, washers and nylock nuts, plastic tie, grommet and placard (service kit RSD7112 from RSUK).



RAM extension mount. Note that the mounting hole centres are the same as the GPS mount bracket.

Action required.

1. Remove key and ensure mag switches are OFF.
2. Turn the FLIGHT switch to FLIGHT, remove the tie down bag, and secure the rotor such that the stick is fully rearwards.
3. Place tank tape over upper left face of instr. Panel. On this, carefully mark a point 48 mm to the right, and 40mm below the centre panel mtg screw. This is the centre of the bracket.
4. Using an inclinometer, draw a horizontal line on this tape through that point.
5. The bracket to be fitted is from the Garmin kit, when purchased screwed onto another fitting. Remove the bracket.
6. Draw two lines 13 above and 15mm below the horiz line. Line up the bracket such the centre hole is aligned on the first point, and the four mtg holes are aligned with the second lines such that the bracket is horizontal. Mark the hole centres.
7. Drill out the Garmin bracket holes to 4.2mm, and countersunk 8mm dia. (can be done before or now)
8. Mark another hole ctr 12.5mm below, and 38mm to the right of the lower right mtg hole. This hole to be drilled to 19mm dia.
9. Remove instrument panel retaining screws (seven around the top, and three either side). Leave the top centre screw until last. Put a piece of card or other protective material under the foot of the panel to

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- protect the panel edge and placard.
10. Remove last screw, and pull panel back.
 11. Either mask area to be drilled to catch debris, or remove panel by disconnecting the electrics and air fittings. Make as required for correct reassembly.
 12. Drill panel holes 4.2 to 4.5mm, and the one 19mm hole. Deburr
 13. Remove tape, Hoover up all debris. Offer panel back up to enclosure - If mtg holes would have passed thru the enclosure, bore these holes to 9mm, and file area of 19mm hole as required for clearance. Deburr holes and Hoover up all debris.
 14. Fit RAM mount to panel with dome head screws, washers and nylock nuts. Remount panel, ensuring all fastenings are tight.
 15. Pass power cord thru hole, fit grommet over cord, and to panel. Pass cord behind panel tie excess to harness under 12v socket, and fit to socket.
 16. Fit GPS bracket to RAM mount with countersunk screws and nylock nuts/washers.
 17. Tie power supply lead to mount with plastic tie, and trim off. Check that mount clamps securely with GPS fitted.
 18. Fit mounting bracket to RAM unit utilising countersunk fastenings, with nylock nuts and plain washers under the nut.
 19. Fit mounting to panel, utilising dome head screws with washers under the head, and nylock nuts on the panel reverse side. Tighten securely.
 20. Trial fit GPS unit to bracket, fit power lead, and tie lead to extension bracket with plastic tie. Pull lead thru panel as required to reach GPS, releasing the lead from any ties on the back of the panel to achieve this. Refit ties if needed.
 21. Refit panel to enclosure, starting with the top screw, and loosely fitting all screws first before tightening all securely. Remove protective material.
 22. Secure rotors back to the front of the aircraft, restore power and engage rotor brake. Clear up.
 23. If the panel has been disconnected, check panel functions: turn on keyswitch.
 - a) Check gen light comes on. Check back up fuel pump and ancillary items for normal function.
 - b) Check ASI function by observing needle fluctuation when the pitot is tapped.
 - c) With a trained person or pilot, start the engine and ensure normal gauge function, and that mag switches turn off the engine. Stop engine
 - d) Turn on GPS unit with power lead connected to the aux socket. Remove power lead and note if unit then advises power has been lost, confirms correct power supply.
 - e) Check pneumatic cycle.
 - 1) In 'Brake' position, engage brake, confirm pump and brake operation, and that function is acceptable.
 - 2) Pressurise to maximum (nominal reading 8bar +/- .5bar) Change to flight – check for 2 to 3 sec max to release air from brake system.
 - 3) In 'Flight' position check that trim goes on and off in same direction as button (inc rear switch if fitted).
 - 4) In 'Flight' position, stick forward. Start pre rotator. Ensure cylinders (2) engage, and when the stick is pulled back they disengage. Note that the head cylinder must engage prior to the engine cylinder.
 - 5) Stick to front, release pre rotator and confirm that pressure is applied to trim and stick comes back slightly.
 - 6) In 'Brake' position, put 3 bar pressure on and ensure pre rotator does not function.
 - 7) Press the 'Interlock release button' and ensure that pre rotator functions (both cylinders, head and engine) with brake engaged.
 24. Enter SB-005 in the modification section and the white pages of the aircraft logbook, and sign/date entry.

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RECOMMENDED or
~~MANDATORY~~

Aircraft type & model (applicability)
RotorSport UK MTseries

Aircraft serial Nos. effected
RSUK/MT-03/all and
RSUK/MTOS/all

See pictures for guidance



Use countersunk screws here to hold Garmin bracket to the mounting.
Fit washers under the nylock nuts (four places).

View of mount with GPS bracket fitted



View of new mounting and finished panel

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2mm tie to hold cable here as required

4mm tie here to retain cable

Effect on Pilots Handbook or Maintenance Manual?
NO

Quality Inspection requirements after action:
Checking of installation after completion

1. Check that extension unit clamps securely.
2. Check that the GPS bracket engages correctly with the GPS and locks.
3. Check that the GPS powers up on aircraft power, and that the power lead is not overstretched.
4. Check all fastenings disturbed or new-made are tight.

CAA BCAR A3-7 Authorised Person to certify that the work is completed by writing 'SB-005 Garmin GPS mounting 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.

SB authorised by: (name, signature, and date of signature)

Quality Conformance Manager	Engineering Manager	Chief Test Pilot (if flight performance or safety effect)	Structures (where required)	
Document completion date:	Issued to:	When	Issuer name	Signature
	Internal			
	CAA			
	Owners			
	LAA/BMAA Inspectorate	No		