

RotorSport UK Ltd

Service Bulletin

This form is the response from RotorSport UK Ltd against a problem found in the product either in service or test, which requires an immediate action.

Upon completion of the action, the person responsible must enter details into the aircraft logbook/worksheet with the SB and/or CAA MPD (Mandatory Permit Directive) 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.

SB No.: 034 issue 3	CCAR No.: None	Classification: OPTIONAL or RECOMMENDED or MANDATORY
Aircraft type & model (applicability) RotorSport UK MT-03and MTOsport series	Aircraft serial Nos. effected RSUK/MT-03/all RSUK/MTOsport all	

Effective date: 08.10.10

Problem description & cause of problem if known

A problem has been found in service on MTseries aircraft where, it is believed, high loads have been exerted on rotor systems as a result of manoeuvres considered to be outside handbook limits. These manoeuvres result in the rotor system having to sustain high ‘g’ loadings whilst at a rotor rpm less than the design rpm for those conditions. This puts the root of the blade under excessive bending stress, and repeated cycles may cause permanent deformation (i.e. bending) or subsequent cracking of the blade in the area of the outboard bolt hole. If present, any cracking can be visually seen by removing the blade from the hub bar. Note that if the crack length should exceed 35mm rear of the bolt hole centre line, it will extend beyond the edge of the hub bar and will be visible to the pilot during pre flight checks.

Issue 3 of this SB requires that a check for evidence of fretting is to be included within the blade off inspection. If the first check has been completed without this additional requirement, then it is to be included in the next inspection – no immediate recheck is required.

Consideration

RotorSport has no control over the actual usage of the aircraft, and endeavours to ensure safe flight is maintained. Whilst RotorSport and AutoGyro are confident that an MT aircraft flown within the handbook limits is completely safe, the CAA require a fleet inspection to prove the safety case to allow continued flight operations.

This bulletin requires immediate inspection of the rotor blade to hub attachment area, and periodic inspection of that area as part of normal 100hr servicing.

It also serves to remind operators that slowing a rotor down deliberately, then quickly exerting high G-loadings (by manoeuvres such as tight turns), will induce significant bending loads on the rotor system, for which it is not designed. Such flight operation invalidates the Permit to Fly, warranty, and insurance.

Weight and CG effect

None

Parts needed to action this bulletin

Main rotor split pin, set M8 Nylock nuts

Materials needed to action this bulletin

Eyeglass magnifier (x5 magnification, or greater)

Steel straight edge, at least 1m long

Action required to implement this bulletin:

1. Remove the rotor from the aircraft and disassemble the rotor blades from the hub, as per the Pilots Handbook RSUK0011 (MT-03) or RSUK0043 (MTOsport) Section 4.2 (reversal of fitment process), ensuring that the location of the side spacers versus the hub bar and the rotor head are marked for refitment, to maintain rotor balance.
2. Lay the blades with their bottom uppermost on trestles.
3. Clean carefully and degrease the inspection area, noting any evidence of fretting (a black dust or residue). If any evidence of fretting is noted, contact RSUK for advice/action required.
4. Raise each blade on one edge, and lay the straight edge along the centreline of the bolt holes (see photo). Check for bend around the outboard hole. No bend permitted.
5. Using the x5 magnifier, carefully visually inspect the area of the outboard bolt hole on both the underside and top-side of the rotor-blade. On Aircopter blades (these have a flat outer end cap) any crack is likely to be around 10mm outboard of the hole, or at the hole. On AutoGyro blades (rounded outer end cap) any crack is likely to be across the outboard bolt hole itself. Obviously, no cracks whatsoever are permitted in any area of the blade.
6. After inspection, and assuming no fault found, reassemble the rotors as per the Pilots Handbook (using new

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Nylocks as required). Re-fit to the aircraft with a new split pin in the teeter bolt nut. Ensure that the teeter bolt is only tightened finger-tight as described in the Pilots Handbook.

- Note the inspection in the aircraft logbook, and sign with engineer authorisation number.
- NOTE! The CAA require that the actual inspection is carried out and signed off by an A3-7 authorised person only!
- If the rotor is considered defective it is to be replaced. Contact RotorSport UK Ltd immediately.
- Advise RotorSport UK Ltd of the inspection completed – registration, serial no of aircraft and of the rotor, aircraft hours logged, date of inspection. A log is kept of aircraft checked.

Repetition of inspection.

This inspection is required immediately, and every 100hr service thereafter. Operators are reminded that the underside of each rotor-blade must be visually checked for cracks before flight, especially around the outboard bolt area.



AutoGyro end cap for reference



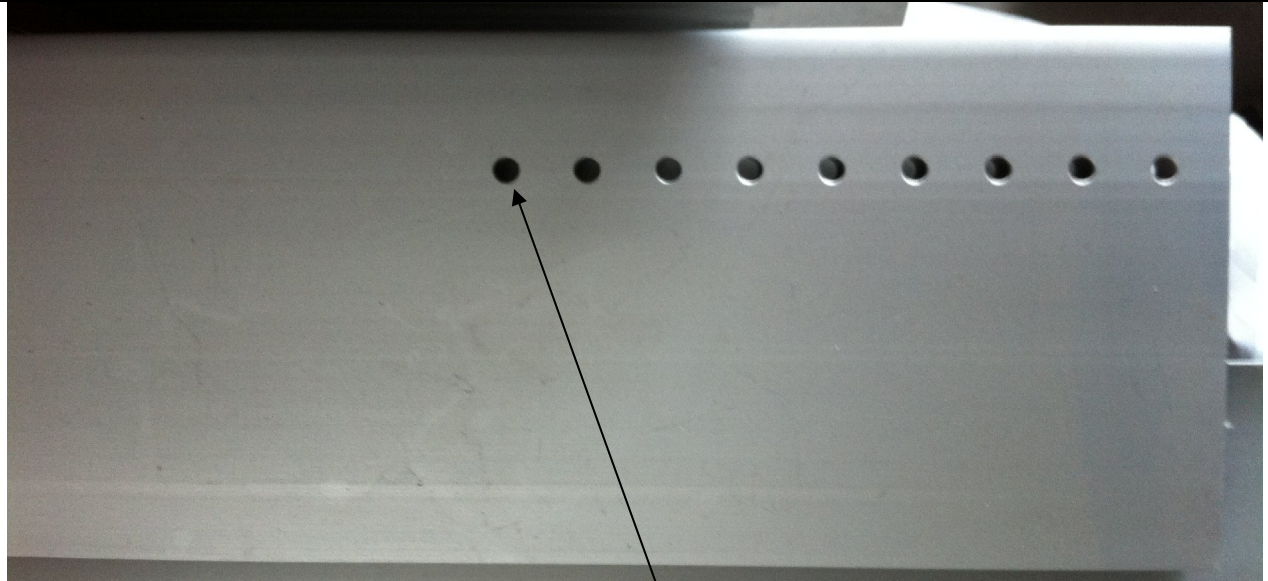
Holding a straight edge to the blade

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View of blade underside Outboard bolt hole.

Effect on Pilots Handbook or Maintenance Manual?
 Yes, to be added in the next issue of the Maintenance Manual and to the service schedule

Service Bulletin Completion action:
 CAA BCAR A3-7 Authorised Person to certify that the work is completed by writing 'SB-034 Rotor blade inspection passed, rotor serial no XXXXX' in the aircraft logbook white pages, and record the action in the pink pages entitled 'Aircraft repetitive checks'. Both entries must be signed by the CAA Authorised Person together with their CAA Authorisation number or pilots licence.

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

Quality Conformance Manager: 8 th Oct 2010 	Engineering Manager: 8 th Oct 2010 	Chief Test Pilot (if flight performance or safety effect) Not required	Structures (where required)  8 th October 2010
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Document completion date:	Issued to:	When	Issuer name	Signature
	Internal			
	CAA			
	Owners			

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Service Bulletin

Aircraft serial no. Registration G-	Service Bulletin implementation Worksheet	Date raised: Raised by:	
Purpose – record service bulletin implementation actions taken to inspect aircraft and return to service.		Document reference: SB-034	
Maintenance manual referred to and issue level/date:			
Note; attach SB sheets to this document			
Task	Notes	Eng'r check/date	Inspector check/date
Check for cracks, bottom surface	Blade serial no. checked:		
Check for cracks, top surface			
Check for bend, bottom surface			
Check for evidence of fretting, bottom surface			
Check for cracks, bottom surface	Blade serial no. checked:		
Check for cracks, top surface			
Check for bend, bottom surface			
Check for evidence of fretting, bottom surface			
Recommendation: if practical, photograph blade bottom surface as evidence of the check			
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 Authorisation code :		Date of work Location where work completed	

PLEASE FAX THIS BACK TO 01588650769 (or send by email to info@rotorsport.org)