

**SOUTH AFRICAN CIVIL AVIATION AUTHORITY
AIRWORTHINESS DIVISION**

**MAINTENANCE ADVISORY NOTICE
ROBINSON #002**

**ROBINSON R22 AND R44 HELICOPTERS
FLEX PLATE FAILURE**

1. Three accidents where the failure of the forward Flex Plate has been identified as the cause of the accident have necessitated the issuance of this Maintenance Advisory Notice.
2. Numerous discussions regarding this subject matter have taken place with the Industry (AMOs), AMEs and CAA Inspectors with experience and training on these helicopters (R22, R44 & R66 factory courses) and the following have emerged:
 - When looking at the layout and design of the drive train it is evident that:
 - the spacing of the drive train in order to align the Clutch sheave with the bottom sheave,
 - and at the same time ensuring the correct spacing of the Flex plates to prevent the continuous flexing and subsequent failure of the flex plates,
 - are most important.
 - Since the issuance of FAA AD 99.02.02 (effective date Feb 1, 1999), no new Ads or SBs have been issued by either the State of Type Design or the Manufacturer on the Flex Plate.
 - The metallurgic reports of the plates involved in the accidents indicate that the metal conform to specification.
 - Flex plates are life limited to 2200 Hours yet they are not serialized.
3. The following recommendations are made:
 - Disturbance of the Flex Plates to facilitate unscheduled inspections increase the risk of disturbing the alignment and spacing of the drive train as mentioned above.
 - Inspections should remain as per the Manufacturer Instructions, as we believe the that failure of the flex plates emanate from incorrect spacing that lead to increased flexing of the plates and ultimately failure due to metal fatigue.
 - The Flex Plates are life limited to 2200 Hours, yet they are not serialized. It is recommended that, for traceability the Batch Number displayed on the Flex Plates be recorded in the Maintenance Records when the Flex Plates are replaced.

- The FAA 8130-3 Certificate for the Flex Plates to be available for traceability and if this is not available, the Flex Plates should be replaced to ensure compliance and to positively ensure the life limit of 2200 Hrs.
- All Owners/Operators should also bear in mind that any disturbance of the drive train requires a Duplicate Inspection.

4. This Notice is issued in the interest of Aviation Safety.



for DIRECTOR of CIVIL AVIATION

12 APR 2013

DATE