

AIRWORTHINESS ALERT

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Strut Dowels in Gyroplanes manufactured by Gyroscopic Rotorcraft

Background.

In a recent accident report the Pilot stated that during a practice forced landing, the gyro struck the ground firmly and bounced back into the air. During the subsequent landing the left hand undercarriage vertical strut broke allowing the gyro to roll over with the usual damage.

The gyro involved is of a type popularly known as a Rosco machine. The date that it was manufactured is not known. To determine the frequency of such failures, the manufacturer was contacted and he confirmed that he was aware of such possibilities, and that he changed his manufacturing technique at such time as the ASRA 2 seat standards were introduced. The static drop test required by this standard revealed that the undercarriage was subject to failure unless modified. Bench tests conducted by the manufacturer concluded that by inserting a suitably sized wooden dowel into the aluminium strut increased the ultimate strength of this component by at least 80%. All gyros produced by the manufacturer since then have been reinforced in the manner indicated. This has effectively eliminated failures of this type in gyros known to have been modified.

As it is possible that a gyro will change owners on several occasions, and as it is possible that persons unaware of this modification have carried out work on these undercarriages, it is entirely possible that there may be more unmodified gyros in operation that may be the subject of a similar failure. Contributing to this situation is the fact that some gyro owners/pilots do not keep accurate records of work carried out on their machines, and furthermore, do not pass on a gyroplane's logbook to the new owner when it is sold.

Recommendation.

In light of the above, ASRA **strongly recommends** that gyros that can be identified as Rosco machines or clones thereof cease operations until such time as the original aluminium vertical struts are inspected to determine whether or not a strengthening dowel has been inserted into these struts. Where there is no evidence of dowels in this location, it is **strongly recommended** that such dowels be installed prior to further operations.

NOTE 1: These vertical struts are those that connect the axle area to the mast via rubber dampening doughnuts.

NOTE 2: The manufacturer advises that some owners are fitting wooden dowels in all the struts on the affected gyroplanes. This practice is **not approved** by the manufacturer and must be discontinued immediately. Owners who have modified their gyros other than as recommended above must remove the unapproved dowels without delay.