

AUSTRALIAN SPORT ROTORCRAFT ASSOCIATION INC

AIRWORTHINESS ALERT



ABN 53 412 417 012

No: AA 2008.02

Date: February 8th 2008

Subject: Foam Type Air Filters

Background.

An EJ 25 Subaru powered gyroplane suffered loss of engine power shortly after takeoff. Successful returns to land were carried out in all cases. Extensive troubleshooting failed to establish a positive reason for the losses, however fuel system was modified to remove all unnecessary bends in fuel lines that were also replaced.

Operations were normal for another 20 hours or so when the problem re-surfaced. Again, exhaustive testing and component exchanges failed to provide positive causes of the power loss. During tethered engine runs to full power, observers noted that as the engine attained full power, the foam air cleaner that was fitted was sucked flat which corresponded with the sound of loss of power. A process of elimination revealed that this was indeed the cause of the power losses on takeoff. It was noted that the foam filter that was fitted did not incorporate a metal screen commonly used in quality filter systems to preclude the possibility of the foam being sucked into the induction manifold.

A standard paper element type air cleaner system was fitted and several successful ground and flight tests resulted.

Recommendation.

It is *strongly recommended* that the owners and operators of gyroplanes with engines that are fitted with foam type air cleaner systems inspect the filters without delay to determine that there is a metal cage incorporated to preclude the foam being sucked into the induction system. Where there is doubt in respect of the existence of such a screen, the filter should be replaced with one that is known to be fitted with a screen.

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