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TITLE	Rotax 912 generator stators.
CLASSIFICATION	Cyclone Airsports classify this bulletin as compulsory.
COMPLIANCE	Before next flight.
APPLICABILITY	All Quantum aircraft fitted with Rotax 912 engines.

INTRODUCTION

Rotax recently issued Service Bulletin SB-912 026/E affecting all Rotax 912 engines. The SB calls for the replacement of all Rotax 912 generator stators.

BACKGROUND

A Katana aircraft operated under a Certificate of Airworthiness in the USA was taxiing and the engine stopped. On investigation it was found that two ignition wires sharing a common shroud had shorted together due to the cable insulation having degraded. Other stators removed from Katana aircraft were also found to have degraded cable insulation in the same area. Rotax have stated that the reason was "Unfavourable influence of chemical reactions and improper maintenance or unsuitable installation could cause damage on the insulation material of the stator cables." We have had discussions with Skydrive, the Rotax importer, and gleaned that the situation may have been the following: The Katana is a light aircraft and subject to Certificate of Airworthiness criteria. It would appear that the chemical mentioned in the Rotax service bulletin, may have been used to clean the engine by the maintenance organisation who serviced the aircraft. The Katana is known to run with a high under the cowl temperature and the combined effect of the chemical and the excessive heat could have caused the problem. We believe that due to the high risk of liability in the US, Rotax have decided that they have to discharge their responsibility by issuing the service bulletin and supplying a replacement stator and fixing kit. Skydrive engineers have noticed that in instances where the stator cables have degraded, the white Sikaflex adhesive used to seal the connections on the stator coils has discoloured.

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QUANTUM 912 ENGINES

Pegasus attended the special training session at Skydrive to become authorised by Rotax to carry out the SB work. Subsequently several stators were changed on Quantum 912 engines. One of the engines had been subjected to high ambient temperatures and severe overheating during its life. None of the stators removed from Quantum 912 aircraft showed any sign of degraded cable insulation or discoloration of the Sikaflex. We assume that owners are not washing their 912 engines with chemical agents, and as the engine installation is not cowled we are confident that the engine will not be subject to overheating even in high ambient temperatures. The stator is in fact open to atmosphere in this installation. Around 35 912 stators have been changed in the UK on many aircraft types, and so far none of them have shown any deterioration at all. It was noted that the procedure involved in changing the stator with the engine fitted to the Quantum aircraft was difficult and it was possible to introduce new problems through chaffing, rubbing or snagging cables on moving parts or adjacent sharp edges. This being particularly so as parts of the job are out of sight and have to be carried out by feel. To remove the engine would give an even higher possibility of introducing new problems due to the complex nature of the installation. Following consultation with the CAA and given the background to the problem, it was felt that a greater possibility of engine failure was likely through changing the stator than leaving well alone.

ACTION

On the evidence outlined we have decided that a safer and more satisfactory route for Quantum 912 owners to follow is:

1. Inspect the white Sikaflex for any signs of discoloration.
2. Where an owner suspects that his/her engine may have been subjected to excessive heat or chemicals, then he should contact Pegasus for advice.

ISSUED BY: W.H. Sherlock **DATE: 6th May 1999**

Chief Engineer		Date
Production Manager		Date

Sales Director		Date
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