

# Australian Ultralight Federation Inc

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## Alert - Warp Drive Propellers - Power Absorption Capacity

The following concerns Warp Drive and RANS advice that the two bladed Warp Drive propeller is inadequate to absorb 100 horsepower. While the following refers to the Rotax 912S, anyone operating an engine of 100HP or more with a two blade Warp Drive propeller should also take note.

A letter from Warp Drive has been passed to the AUF from an Australian distributor. This states that *"the two blade propellers don't have enough blade area to load Rotax 912 S 100HP engines to the correct RPM at a reasonable pitch setting. The pitch of these is much too high and the blades cavitate and start to show fatigue cracks over a period of time. The only way we can add more blade area to the propeller is to use a three blade."* Accompanying that letter was a drawing showing areas where failures were occurring and this is attached).

Also, the attention of the AUF has been drawn to the RANS aircraft Mandatory Operational Alert 149 dated 4 June 2001 (Copy Attached) covering Two-blade Warp Drive propellers on the 100 HP Rotax 912S. This advises that the two-blade Warp Drive propeller is "not enough propeller to absorb the horsepower from the 912S". Even short-term use may result in fractures at the hub end of the blades. It recommends that two-blade propellers be removed and replaced with the three-blade Warp Drive or a two-blade Sensenich wood propeller. With use of the three-blade Warp Drive a thorough inspection of the propeller hub and blade roots is required every 25 hours.

A review of the AUF database showed only one aircraft to be affected by the 912S application and contact with the owner reveals that this propeller had been changed to the three blade configuration but the AUF had not been advised.

### Action Recommended.

- Anyone operating an aircraft with a two bladed Warp Drive propeller driven by an engine capable of delivering more than 100HP should cease using it and change the propeller type.
- Anyone using a three bladed Warp Drive propeller on an engine capable of 100HP or more (not only Rotax) should perform a thorough inspection of the hub and blades at least every 25 hours



R Hewitt-Cook  
Technical Manager

RANS, Inc.

Assembly Alert 145

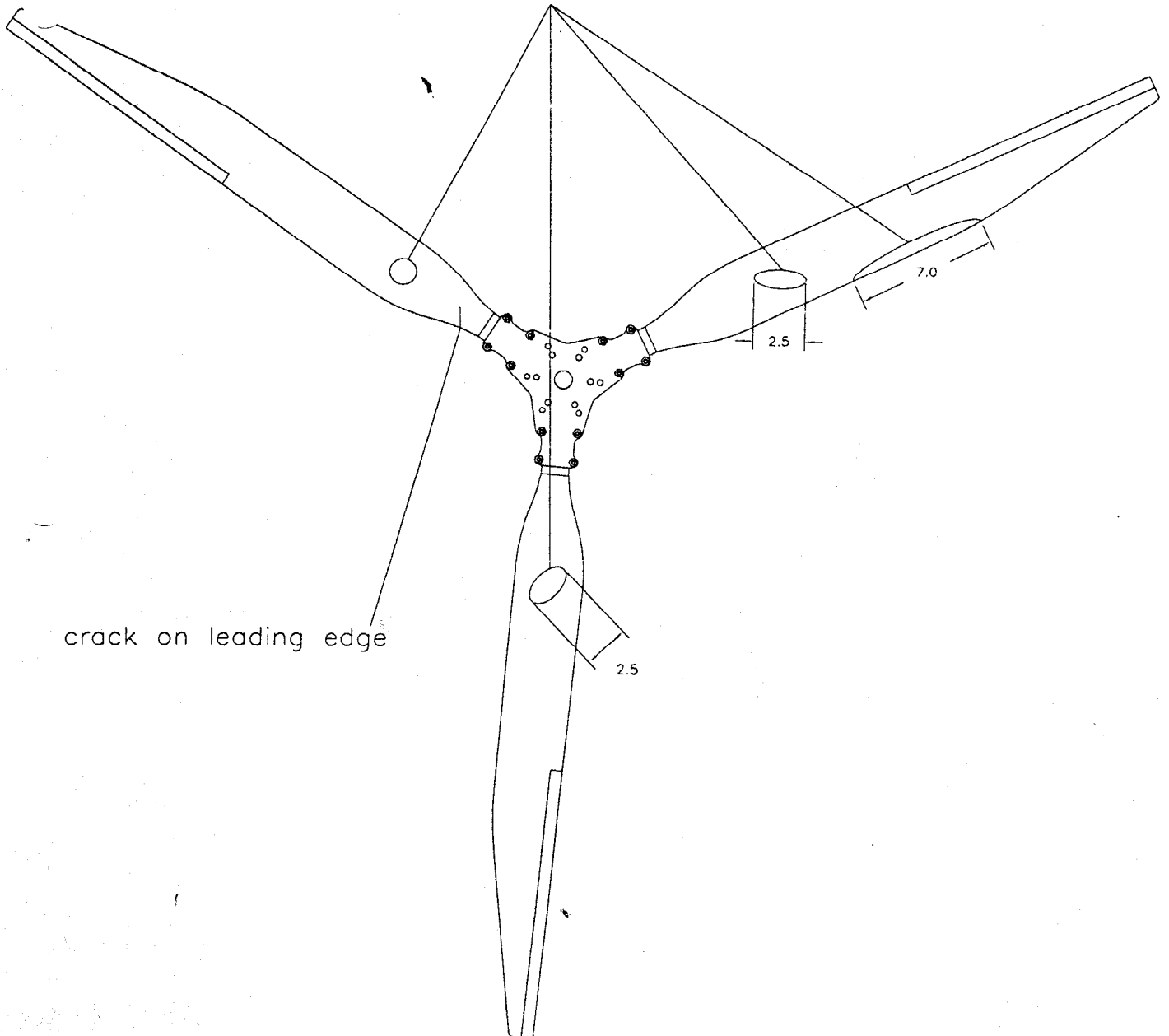
November 15, 2000

Areas of delaminating found on our factory demonstrator

3 blade 72" dia. tapered  
on RANS S-16 factory AC  
with 200 hrs. since new.  
Engine Continental IO-240  
(125 HP)

Pitch  
13.2deg.  
on tip

areas of delaminating



RANS Operational Alert: 149

Date: June 4, 2001

Subject: Two-blade Warp Drive propellers on 100 HP 912S's

Compliance: Mandatory

Models Affected: S-6S, S-6SXL, S-6ES, S-6XL, S-7, S-9, S-10 with Rotax 912S Engine

It has been determined that the two-blade Warp Drive propeller is not enough propeller to absorb the horsepower from the 912S. Even short-term use may result in fractures at the hub end of the blades. It is recommended to stop use of the two-blade propeller and replace it with the three-blade Warp Drive or a two-blade Sensenich wood propeller. With use of the three-blade Warp Drive a thorough inspection of the propeller hub and blade roots is required every 25 hours. Please take action before your next flight.

Thank you for your attention to this matter. Hopefully we have not inconvenienced you to any great degree. Fly safe!