



THE GLIDING FEDERATION OF AUSTRALIA INC

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Airworthiness Alert 2021-2 **PIK-20E Engine Stay (Safety) Wire** **Turnbuckle Failure**

Overview

A PIK-20EII has suffered a failure of the engine thrust stay wire resulting in the pylon and propeller moving forward and contacting the fuselage. The failure occurred at full power and during the initial take off roll. The pilot reacted quickly bringing the aircraft safely to a stop.



Investigation

On inspection, the upper steel fitting of the turnbuckle assembly failed due to fatigue. The part has been sent for further analysis. The airframe had logged 1813 hours time in service, the engine and propeller 178 hours.

The cable when under full thrust load is taught. The cable when the engine is idling can be seen to oscillate.

The maintenance manual states the retracting crank in the cockpit is positioned uppermost when the engine is fully retracted and extended. The locks on the chain prevent the crank from going over these positions. The extended position is adjusted with the lever against the chain lock by tautening the safety wire. The cable tension figure is stated to be less than 200N (45 lbs) when retracted but no figure is given for rigging when the engine is fully extended. It is very possible that the tension will vary greatly between PIK-20E variants and therefore some cable assemblies may be subject to more fatigue.

Some operators place a safety cable around the turnbuckle to mitigate any damage experienced with such a failure.



Recommendation/Action

The GFA recommends that the engine stay turnbuckle be visually inspected for cracks during the Daily Inspection process. Any visual indications require further NDT investigation or turnbuckle replacement. The GFA further recommends that the turnbuckle is replaced prior to the engine reaching 150 hours time in service.

Reporting

Notify the GFA in the usual manner if you have information relating to any similar or related occurrence.

A handwritten signature in black ink, appearing to be 'Dennis Stacey', with a long horizontal line extending to the right.

Dennis Stacey
GFA CTO
28/04/2021