FINAL REPORT

AAIU Synoptic Report No:2004-020
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In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, on 15 August 2003, appointed John Hughes as the Investigator-in-Charge to carry out a Investigation into this occurrence and prepare a Synoptic Report.

Aircraft Type and Registration:	Piper PA18-150 STC 180, EI-BIK
No. and Type of Engines:	1 x Lycoming 0-360 A3A of 150 HP
Aircraft Serial Number:	18-7809088
Year of Manufacture:	1979
Date and Time (UTC):	15 August 2003 @ 18.00 hrs
Location:	Gowran Grange, Co. Kildare
Type of Flight:	Taxiing following refuelling
Persons on Board:	Crew - 1 Passengers - Nil
Injuries:	Crew - Nil Passengers - Nil
Nature of Damage:	Damage to starboard wing and propeller.
Commander's Licence:	Irish PPL
Commander's Details:	Male aged 70 years
Commander's Flying Experience:	1,417 hours (of which 460 hours were on type).
Information Source:	Report by gliding club flying instructor and AAIU Field Investigation

1. FACTUAL INFORMATION

1.1 History

The aircraft in question had been refuelled following the days flying and was about to be started for taxiing to the hangar. With the throttle set, the mixture control rich and the aircraft facing a fence/gate, the starter button was pressed, at which time the engine fired and over-sped on full power. With the throttle lever immediately closed, and the mixture control returned to lean mixture by the pilot, the aircraft moved forward and ran into a farm gate with the resulting damage to the starboard wing and propeller. There were no injuries to persons either inside or outside the aircraft.

1.2 Damage to the aircraft

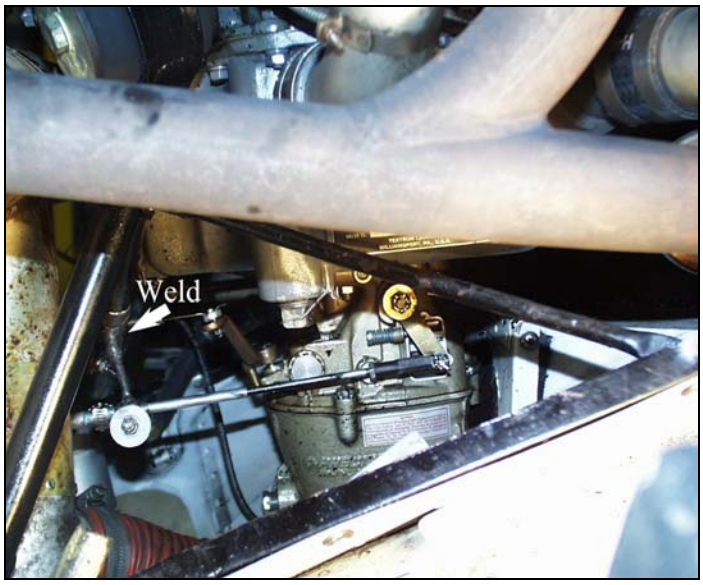
The starboard wing of the aircraft was written off due to impact damage. The two steel Vee wing lift struts were pushed in as a result of contact with the gatepost and had to be replaced. Their attached Jury struts were also damaged. This allowed the wing to collapse with resulting internal damage to the aluminium spar and ribs. The engine was removed for shock load testing. There was extensive damage to the fabric covering of both wings. The starboard wing tank was also replaced.

1.3 Other Damage

There was considerable damage to the farm gate and security wire caused by the rotating propeller under full power.

1.4 Aircraft Information

On inspection of the aircraft following the incident, the Investigation found that the securing point for the boden throttle cable had come apart (see below). This was due to the fracture of a weld at the bowden support inboard end. Closer examination indicated that at one time previously the support had broken and had been welded back on again. This weld had now fractured with the result that the bowden cable could no longer function properly. This support was fitted during the STC modification of the aircraft from a PA-18-150 to a PA-18-180.



1.5 Aerodrome Information

Gowran Grange is an unlicenced private airfield used by the Dublin Gliding Club and is situated 2 NM SE of Naas. The grass runway, RWY 21/03, is 504 metres in length and has a gentle slope from the most northerly point down to the 03 end. This slope increases down to the SE corner of the aerodrome to where a fuel Intermediate Bulk Container (IBC) is installed in a shed on the far side of a wire fence. The aircraft is refuelled using a short length of hose with a standard nozzle attached. This necessitates that the aircraft be brought close to the fence for refuelling.

1.6 Additional Information

The aircraft manufacturers said that welding of the support for something as important as the throttle control cable was not recommended. However, it was not possible to establish who carried out this repair.

2. ANALYSIS

The pilot stated that he understood that the cause of the incident was due to the failure of the throttle linkage between the cockpit and the engine carburettor which resulted in the engine achieving maximum power. This is inherent in the design of the system so that full power is available to the pilot should the linkage fail. However, it is not known at what precise point the linkage failed in this case.

Good airmanship would dictate that aircraft should not be restarted while facing a near obstruction. During and after refuelling, the aircraft should be facing away from the source of fuel or at least parallel to the fence, so that a safe exit may be made in case of an emergency. This in turn implies that the aircraft must be parked sufficiently far away from fences and boundaries of the aerodrome when being refuelled. In the licencing of small aerodromes the IAA state *that aircraft will usually taxi and park under their own power. In order to do this safely the taxi and parking areas should allow for at least 15 metres separation between aircraft extremities and between aircraft extremities and vehicles, fences, etc.* Even for an unlicenced airfield it is good practice to follow this guidline and also to allow sufficient length of hose so as to be able to refuel the aircraft safely. It should be noted that the storage, quality control and dispensing of aviation fuel at unlicenced aerodromes still requires an approval issued by the IAA.

3. CONCLUSIONS

(a) Findings

3.1 The pilot was unable to control the aircraft following start-up after refuelling.

3.2 The park procedure used was inappropriate and unsafe.

(b) Causes

3.3 A weld at the throttle cable support failed prior to or during propeller and wing contacting the security fencing and gate.

3.4 The aircraft was restarted with an obstacle immediately in front of it.

4. RECOMMENDATIONS

4.1 The Procedures Manual published by the Aircraft Operator, should specify the safe method for the parking of aircraft at the refuelling area. **(SR 44 of 2004)**