FINAL REPORT

AAIU Synoptic Report No: 2005-027
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In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, on 16 October 2004, appointed John Hughes as the Investigator-in-Charge to carry out a Field Investigation into this occurrence and prepare a Synoptic Report.

Aircraft Type and Registration:	Fournier RF3, D-KMDP
No. and Type of Engines:	1x Rectimo 1200
Aircraft Serial Number:	37
Year of Manufacture:	1964
Date and Time (UTC):	15 October 2004 @ 15.30 hrs
Location:	Galway Airport
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - Nil
Injuries:	Crew - Nil Passengers - Nil
Nature of Damage:	Undercarriage damaged
Commander's Licence:	Irish Private Pilots Licence
Commander's Details:	Male, aged 39 years
Commander's Flying Experience:	236 hours (of which 110 were on type)
Information Source:	Watch Manager, Galway Airport ATC

1. FACTUAL INFORMATION

1.1 History of the Flight

The pilot carried out his pre-flight checks prior to taking off on Runway 26 (RWY 26) at Galway Airport. Following take-off at about 500 ft he pulled the safety catch and undercarriage release knob. The undercarriage released but it would not lock in the up position. He continued the climb to 1000 ft and tried to lock the undercarriage up and then down. He pulled positive and negative "g" but this had no effect.

He reported the problem to Galway Tower and requested a fly past in order to have them make a visual assessment of the situation. The undercarriage had jammed in the almost "up" position with about 3 inches of tyre protruding from the fuselage.

He then informed Galway Tower that he intended landing with the undercarriage in its jammed position. He performed downwind checks and increased the aircraft speed to 150 kph.

When at a safe gliding range he turned off the engine. He flared at the normal height and touched down on the same runway at 70 kph at a point 100 metres from the threshold. The aircraft continued its run a further 30 metres before ending up at an angle of 20º to the runway centreline. The pilot exited the aircraft in the normal way. There was no fire and no injuries reported. There was no damage to the aircraft or other property as a result of this landing. The Rescue Services lifted the aircraft by means of forks placed under the propeller in order to remove it from the runway.

1.2 Aircraft Information

Designed in 1963, this one seater, mono-wheeled motorglider of wood and fabric structure, was manufactured in series in France by Alpovia, a company owned by the designer René Fournier. Between 1963 and 1966 this company manufactured about 100 aircraft of this particular design. The basic weight of this aircraft is 138 kg with a span of 11.30 metres and a length of 6 metres.

1.3 Aircraft Examination

The Investigation examined the aircraft and found the guide wire on the starboard side of the wheel had broken at its forward end (see **Appendix A**). This had broken at a point where the wire was welded to a fixing washer. There was evidence of some corrosion at the weld. There were marks on the starboard undercarriage door. An inner cowling was also found loose.

1.4 Pilots Comments

The pilot said that one week prior to this incident, during aircraft taxi, the aircraft experienced large vertical oscillations when the wheel brake was applied. This occurred three times and each time could only be stopped by release of the brake. The wheel's tyre had also been removed and been replaced just 3 months prior to this incident. He had not flown the aircraft since tyre replacement.

1.5 Certification and Registration

The German Certificate of Airworthiness was issued by the Luftfahrt-Bundesamt (LBA) in June 1998 and is unlimited. The Annual Inspection and flight test must be carried out by an LBA approved Maintenance Organisation or an approved foreign Maintenance Organisation accepted by the LBA. A "Permit to Fly" is then issued by LBA.

The aircraft was imported into Ireland in 2001 with a German "Permit to Fly" valid for one year. As the owner did not have a PPL at the time the aircraft remained in the hangar at Galway. The German Certificate of Registration was issued on 17 September 2002.

In September 2003, an inspection and a permit flight test schedule was conducted and the aircraft was "found to be in accordance with its approved flight manual and did not display any abnormal handling characteristic". An application was made to the LBA for a renewal of the "Permit to Fly" and this was granted in October 2003.

The incident flight on 15 October 2004 was part of the inspection and test flight for a further Annual Renewal of the Permit to Fly.

2. ANALYSIS

The undercarriage would not lock in the up position because the loose guide wire impinged on the door during the retracting attempt and prevented the wheel from being fully retracted. The aircraft had not been flown since the tyre had been replaced 3 months prior to this incident. Thereafter, when the brake was applied during taxi, the aircraft went into vertical ground oscillations, which would only cease on release of the brake. It is possible that the guide wire was weakened during wheel replacement and broke loose during the subsequent oscillations.

This motor-powered glider has an annual renewable "Permit to Fly" certificate, is issued subject to associated conditions and is operated without a renewable standard "Certificate of Airworthiness" as issued for General Aviation aircraft. The age of the aircraft, its low usage and conditions of storage are factors, which should be taken into account during routine inspection of such aircraft.

The aircraft was lifted from the runway using an unapproved method. Rescue Services should ensure that disabled aircraft are handled in an appropriate manner so as not to cause any possible damage to engine, engine mounts or fuselage.

3. CONCLUSIONS

(a) Findings

The undercarriage failed to fully retract and lock in the up position on take off and to extend for the subsequent landing.

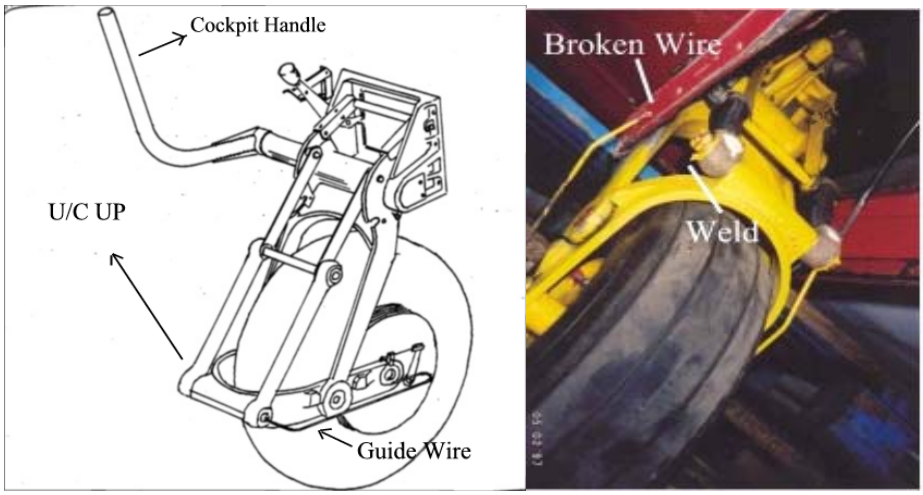
(b) Causes

The wheel starboard guide wire fractured prior to retraction and, on retraction, impinged on the wheel door, which prevented the undercarriage from locking in the up position. The guide wire fouled the door, which prevented full extension of the undercarriage.

4. SAFETY RECOMMENDATIONS

This report does not sustain any safety recommendations.

APPENDIX A



Drawing of complete undercarriage system, photo of fractured weld and broken guide wire.

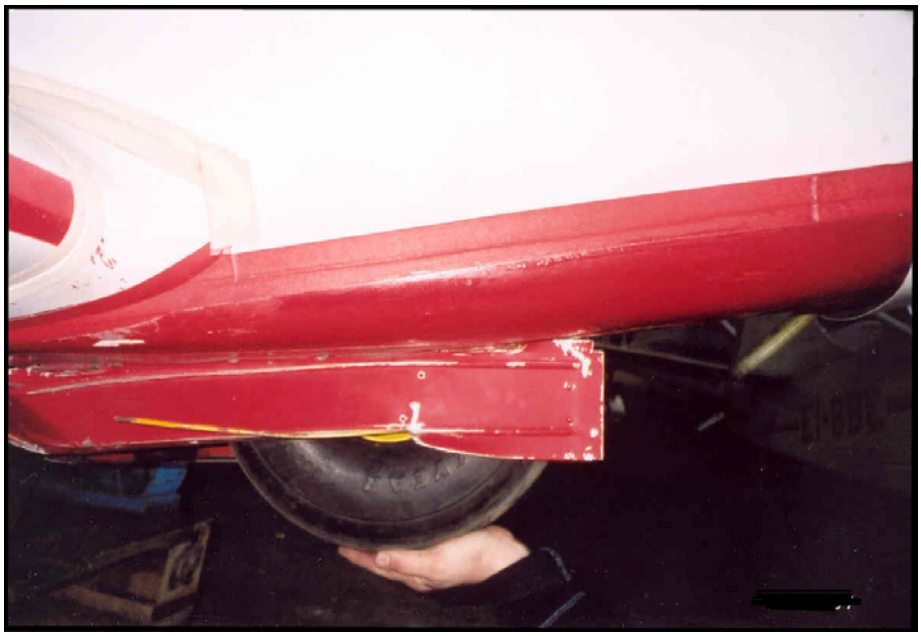


Photo showing guide wire impinging on undercarriage door thus preventing full retraction.