FINAL REPORT

AAIU Synoptic Report No: 2006-003
AAIU File No: 2005/0014
Published: 13/03/06

In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, on 6 March 2005, appointed Mr. 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:	Medway Eclipser 912 Microlight EI-CTC
No. and Type of Engines:	1 x Rotax 912
Aircraft Serial Number:	158/137
Year of Manufacture:	1999
Date and Time (UTC):	5 March 2005 @ 1400hrs
Location:	Stradbally, Co. Laois
Type of Flight:	On ground
Persons on Board:	Crew - 1 Passengers - Nil
Injuries:	Crew - Nil Passengers - Nil
Nature of Damage:	Collapse of starboard undercarriage and propeller damage
Commander's Licence:	UK PPL(M)
Commander's Details:	Male, aged 39 years
Commander's Flying Experience:	260 hours, all on microlights.
Information Source:	National Microlight Association of Ireland

SYNOPSIS

The microlight aircraft's undercarriage collapsed whilst the aircraft was being taxied at a private airfield near Stradbally, Co.Laois.

1. FACTUAL INFORMATION

1.1 History of the Flight

The aircraft was in for an oil cooler change as the original one developed a leak. After the cooler was changed and the engine refilled with oil an engine run up was conducted on the hangar apron.

While running up the engine the wash from the prop was causing the hangar door to sway so the decision was made to move the aircraft away from the door. As the brakes were released to move forward, the aircraft's starboard undercarriage suddenly collapsed causing the propeller to strike the ground. The pilot, who was conducting the engine run, switched off the ignition and fuel and vacated the aircraft unhurt.

1.2 Damage to Aircraft

Close examination of the undercarriage revealed that the cause of the failure was due to the draglink pulling out of its anchoring bolt that attaches it to the base tube. This caused the main gear and suspension to bend backwards causing the trike to roll over on its side and the propeller to hit the ground. The suspension arm was also damaged.

1.3 Aircraft Information

This two-seat aircraft is powered by the Rotax 912 80 HP engine, and is fitted with an in-flight variable pitch propeller. It is fitted with an electric starter. The pod, spats and engine cover are made of carbon fibre, and the aircraft has hydraulic rear disc brakes and all round suspension. It carries a 42 litre under-slung fuel tank. Instrumentation includes ASI, Altimeter, Compass, Rev Counter, Oil Pressure, Oil Temperature, Cylinder Head Temperature, Fuel Gauge, and hour meter. At Maximum All Up Weight (MAUW) of 415 kg, the aircraft's minimum performance is:

Rate of climb:	600 ft/min
Climb speed:	45 mph IAS
Stall speed:	36 mph

1.4 Inspection of Aircraft

The port draglink was removed from the aircraft and inspected but was found to be in good condition. There were no fatigue cracks present. The failed starboard draglink was forwarded to a metallurgist and his Report stated:

- There was evidence of rubbing (polishing/bruising) in and around the holes at both ends of the strut.
- In addition there was rubbing/scoring on the internal surface around the failed end of the strut. Some of this appeared fresh and some appeared older.
- The fracture features throughout were indicative of overload failure. However, areas that were oxidised and rubbed/bruised suggest that failure occurred progressively but that it was initiated by some overloading event.
- There was no indication of any inherent defect in the aluminium associated with the failure.

1.5 Manufacturer's Comments

The manufacturer, on being informed of the draglink failure said that there was never a problem in this area previously. They suggested that the failure was probably due to a heavy landing at some previous event. However, the logbook did not contain any reference to a previous heavy landing.

2. ANALYSIS

The manufacturer's comments and the results of the metallurgist's examination would suggest that this failure of the draglink was due to some previous overloading event. Had this failure taken place at a subsequent take-off or landing the consequences could have been far more serious. It is imperative that all heavy landings be recorded in the aircraft logbook. The manufacturer should also issue a Service Bulletin so that the draglink is inspected on a periodic flying hour/calendar basis.

3. CONCLUSIONS

(a) Findings

The starboard undercarriage collapsed during aircraft taxi.

(b) Cause

The draglink detached from the starboard wheel due to overload failure causing the starboard undercarriage to rotate rearwards and causing the propeller to strike the ground.

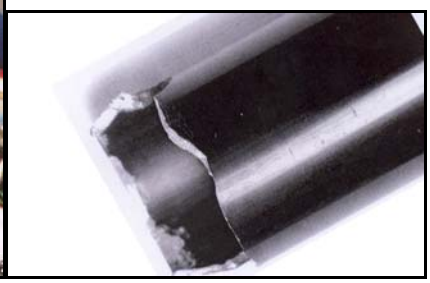
4. SAFETY RECOMMENDATIONS

It is recommended that:

4.1 The manufacturer should issue a Service Bulletin to all operators to have an examination of the draglink securing holes conducted at regular flying hour/calendar times. **(SR 01 of 2006)**

Following a lengthy discussion with the CAA, the manufacturer issued a Service Letter rather than a Service Bulletin. The Service Letter requests the owner/operator to conduct a much closer and vigilant inspection as per the existing Aircraft Manual.

The issue of this Service Letter satisfies the requirement of the above Safety Recommendation.



A trike microlight aircraft similar to EI-CTC. The arrow indicates the location of the starboard drag link. The RH photo shows the fractured end of the drag link.