Air Accident Investigation Unit Ireland

ACCIDENT REPORT
Snowden, Avid Flyer, G-BTKG
Near Trevet Airfield, Co Meath, Ireland
2 July 2011 @ 16.30 hrs

An Roinn Iompair
Turasóireachta agus Spóirt
Department of Transport,
Tourism and Sport

AAIU Final Report No: 2012-005
State File No: IRL00911059
Published: 6/3/2012

In accordance with the provisions of SI 460 of 2009, the Chief Inspector of Air Accidents, on 2 July 2011, appointed Paddy Judge as the Investigator-in-Charge to carry out a Field Investigation into this Accident and prepare a Final Report. The sole purpose of this Investigation is the prevention of aviation Accidents and Incidents. It is not the purpose of the Investigation to apportion blame or liability.

Aircraft Type and Registration:	Snowden, Avid Flyer, G-BTKG
No. and Type of Engines:	1 x Rotax 582
Aircraft Serial Number:	PFA 189-12037
Year of Manufacture:	1992
Date and Time (UTC):	2 July 2011 @ 16.30 hrs
Location:	Near Trevet Airfield, Co Meath, Ireland
Type of Operation:	General Aviation
Persons on Board:	Crew - 1 Passengers - Nil
Injuries:	Crew - Nil
Nature of Damage:	Substantial
Commander's Licence:	UK PPL(M)[1] expired
Commander's Details:	Male, aged 55 years
Commander's Flying Experience:	267 hours, of which 0 were on type
Notification Source:	Reported by Pilot
Information Source:	AAIU Field Investigation
	AAIU Report Form submitted by Pilot

1 **PPL(M):** Private Pilot Licence Microlight

SYNOPSIS

The aircraft was being restored to flight status, having had a new and larger wing fitted. During a high speed taxi check, the aircraft inadvertently became airborne and drifted off the runway heading. The Pilot, who had not intended to fly the aircraft and who had not flown for six months considered that a safe landing could not be made and commenced a circuit. During this circuit the engine lost power and a forced landing was carried out into a grass field. The subsequent heavy landing caused the nose wheel to detach, destroyed the propeller and led to the collapse of the left main wheel. The Pilot exited the aircraft without injury.

1. FACTUAL INFORMATION

1.1 History of the Flight

The flight from Trevet Airfield and the forced landing nearby was neither planned nor intended by the Pilot when the aircraft became inadvertently airborne in the latter half of Runway (RWY) 23. A left hand circuit was then commenced but a forced landing was made into a pasture field close to the runway threshold when engine power became intermittent. The landing was heavy and damaged the aircraft, but no fire ensued.

1.2 Pilot Interview

The Pilot provided a candid and detailed recall of events to the Investigation in a post-accident interview. He stated that maintenance had been carried out on G-BTKG with a view to returning it to an airworthy status and renewing its UK Permit-to-Fly since the aircraft had not flown for approximately three years. This included fitting new and larger wings. A high power engine run was required that necessitated a fast taxi/brake test along the RWY 23. He believed that *"gusty winds"* led to him becoming prematurely airborne. Once airborne, he said, the aircraft drifted to the left over standing crop and, when he turned it back towards the runway, there was not enough runway remaining to safely land and stop. Therefore he decided to go-around and to conduct a left hand circuit. He knew the aircraft was safe to fly as *"we had established fairly deeply it was"*.

The circuit was initially uneventful but on downwind the engine RPMs dropped momentarily. On base leg the engine RPMs slowly ran down to idle, *"so I turned onto short finals, I wasn't going to make it"*. He started looking for a field and at this stage the engine surged and regained power momentarily. Almost immediately it faded again and the RPMs ran down to idle. At this stage he said he was committed to landing but he forgot to close the throttle when the engine wound down. Coming over the hedge however, the power returned, which the Pilot said distracted him momentarily but he closed the throttle *"and had not enough energy to flare the aircraft and I landed heavily on the left undercarriage leg and the nose wheel collapsed"*. The impact was not particularly severe, he recalled, and the aircraft slid about 10 metres. He vacated the aircraft and, having checked that he himself was uninjured, returned to the cockpit and turned off the master switch, ignition and fuel.

The Pilot said that the aircraft did not have a current Permit- to-Fly and stated emphatically that *"I had no intention of flying it"*. The work being undertaken on the aircraft was preparatory to applying for the renewal of its UK Permit to Fly. He said that, as part of the work, new and slightly larger wings had been fitted but that the aircraft had never been flown with them previously. When asked about the speed achieved on the taxi run, he said that he thought that he did not exceed 30 kts although it was into a gusty wind. In relation to his own flying licence he said that he was not current, that his licence had expired and he had not flown in at least six months.

As regards the engine fluctuations, the Pilot confirmed that there was no fuel in the tank when laid up and that the previous week it had been refuelled with MOGAS[2]. The engine was then run successfully for about 45 minutes. On the day of the accident, the engine was run for 30 minutes before he began the taxi check which, he explained, was necessary as the brakes would not hold the aircraft at full power. He confirmed that the engine run, magneto checks and taxi tests were all satisfactory.

In summary, the Pilot said frankly that if his flying had been current, he would have coped much better with the surprising turn of events but it had been five to six months since his last flight, which had not helped. He thought that the fitting of the larger wings would have reduced the take-off speed by at least 10 kts and this factor, and the gusting wind, clearly caught him unawares and he became airborne.

1.3 Site Examination

The Investigation examined the aircraft shortly after the accident (**Photo No. 1**). No pre-accident defect was observed. Clean uncontaminated fuel was found in the float chambers of both carburettors.

Photo No. 1: Final resting position of G-BTKG.

2 **Mogas**: Motor gasoline.

1.4 Weather

The actual weather reports (METARS) for Dublin Airport (EIDW) about the time of the accident were:

EIDW 021600Z 13010KT 9999 FEW028 SCT050 BKN200 18/10 Q1018 NOSIG
EIDW 021700Z 14013KT 9999 FEW028 SCT050 16/09 Q1018 NOSIG

2. ANALYSIS

The high speed taxi test was conducted to allow the engine to be checked at a high power setting. The combination of high power and the new larger wings, which allowed take-off at a much lower speed, resulted in the aircraft unintentionally leaving the ground in the latter half of RWY 23. This caught the Pilot unawares and the 100° crosswind at 10 kts then caused an immediate drift, which the Pilot was unable to correct in time to land safely. The outcome was that the Pilot, who was not licenced and who had not flown for some time, became airborne in an aircraft that he had never flown before and which was without airworthiness certification. The Pilot's already stressed and fraught situation was exacerbated by engine RPM fluctuations and a power loss which caused him to carry out a forced landing well short of RWY 23.

Had the Pilot more recently flown and/or been familiar with the type of aircraft it is likely that he would have landed safely, either back on the runway or in the large field where the forced landing was conducted. This accident demonstrates the wisdom of using only qualified experienced pilots to conduct high speed taxi runs on newly modified aircraft.

The Investigation found no fault with the engine or its fuel system when they were examined shortly after the accident. Although this unintentional flight was of short duration, the engine had been run for some time at various power settings while on the ground. Interpolation of the carburettor icing graphic in **Appendix 1** shows that, for a temperature of 18°C and a dew point of 10°C, moderate icing was likely at cruise power settings and serious icing at a descent power setting. It is therefore possible that the cause of the engine problems reported was carburettor icing, although this could not be confirmed. Nevertheless, the occurrence was an unwanted distraction for the Pilot in the highly pressurised situation that he found himself.

3. CONCLUSIONS

(a) Findings

1. The aircraft was being prepared for a technical inspection prior to an application for renewal of its UK Permit-to-Fly.
2. New and larger wings had been fitted that reduced the take-off speed of the aircraft.
3. The aircraft had no Permit-to-Fly and flight was not intended.
4. The aircraft unintentionally became airborne while a high power taxi test was being conducted.
5. In endeavouring to recover by flying a circuit, engine power fluctuations caused a forced landing during which the aircraft was substantially damaged
6. The Pilot's PPL(M) was expired and he had not flown any aircraft recently. This lack of currency affected his ability to control the aircraft.
7. The cause of the engine power fluctuations may have been due to carburettor icing following ground running of the engine but this could not be conclusively proven.

(b) Probable Cause

Fitting new larger wings reduced the aircraft take-off speed, which the Pilot did not adequately take into account during a high power taxi test. This and the application of full power for the test generated sufficient lift for the aircraft to inadvertently become airborne.

(c) Contributory Causes

The Pilot's lack of familiarity with the aircraft and lack of currency.

4. SAFETY RECOMMENDATIONS

This Investigation does not sustain any Safety Recommendation.

APPENDIX 1

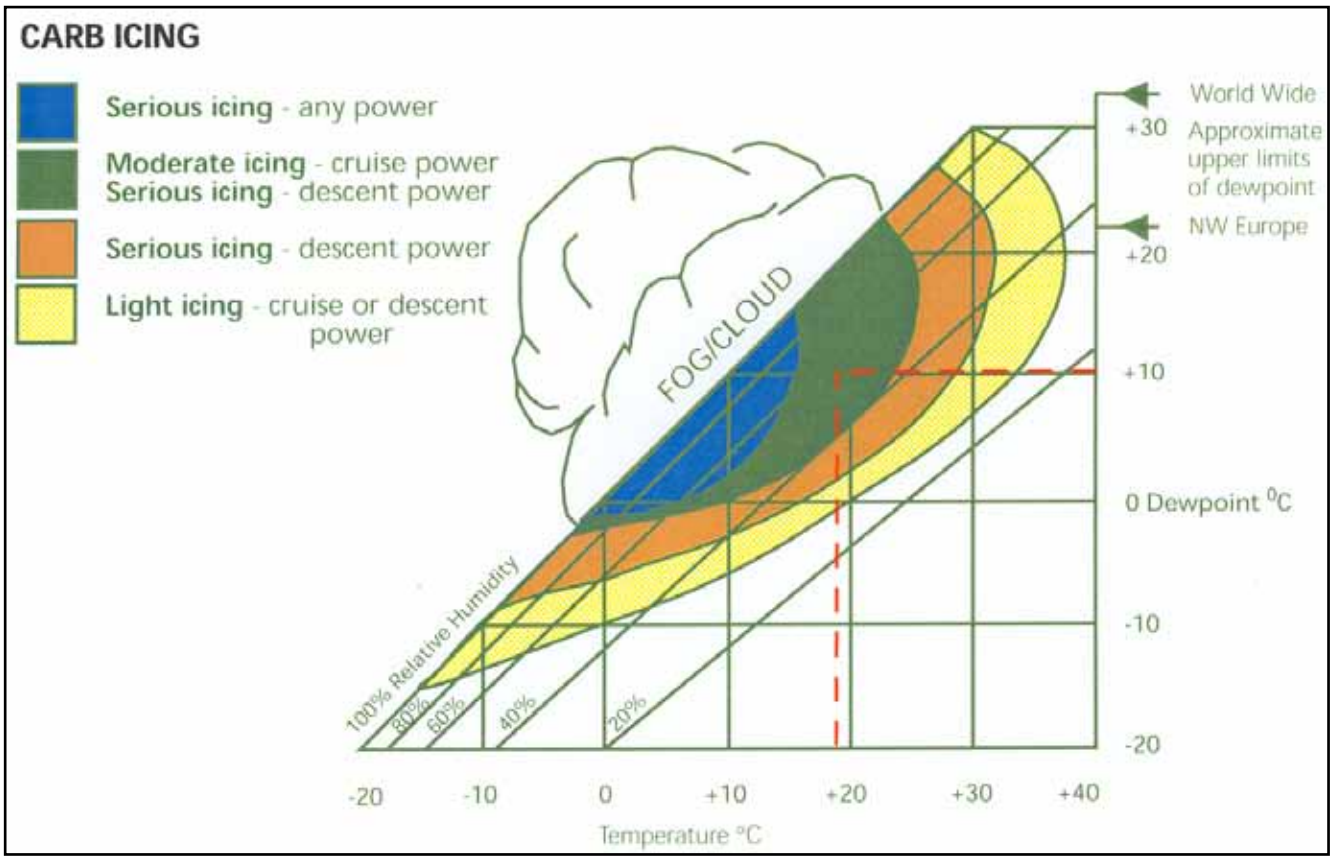

Figure No. 1: Carburettor icing

Note: This graphic displays the likelihood of carburettor icing when AVGAS[3] 100LL is used. A similar graphic is not available for MOGAS but empirical evidence indicates that MOGAS is more susceptible to carburettor icing than AVGAS.

-END-

3 **Avgas:** Aviation gasoline.

In accordance with Annex 13 to the International Civil Aviation Organisation Convention, Regulation (EU) No 996/2010, and Statutory Instrument No. 460 of 2009, Air Navigation (Notification and Investigation of Accidents, Serious Incidents and Incidents) Regulation, 2009, the sole purpose of these investigations is to prevent aviation accidents and serious incidents. It is not the purpose of any such accident investigation and the associated investigation report to apportion blame or liability.

A safety recommendation shall in no case create a presumption of blame or liability for an occurrence.

Produced by the Air Accident Investigation Unit

AAIU Reports are available on the internet www.aaiu.ie

An Roinn Iompair
Turasóireachta agus Spóirt

Department of Transport,
Tourism and Sport

A.A.I.U.,
Department of Transport Tourism and Sport,
2nd Floor, Leeson Lane,
Dublin 2, Ireland.
Tel (24x7): *+353 1 604 1293 or*
+353 1 241 1777
Fax: *+353 1 604 1514*
Email: *info@aaiu.ie*
Web: *www.aaiu.ie*