Microlight Accident and Incident Summary 03/2011

This accident report summary is collated by the BMAA from information gathered. The information sources used are the Air Accident Investigation Branch of the Department for Transport (AAIB), the Civil Aviation Authority Mandatory Occurrence Reports (CAA MOR) and reports made directly to the BMAA by members and operators.

The individual reports within the accident summary are taken from the information available to the BMAA and where the BMAA has made comment this is clearly shown.

The BMAA does not investigate accidents and incidents, this role being the responsibility of the AAIB and the CAA who have the expertise, experience and funding for investigation.

All pilots reading the reports should try to make their own assessment of underlying causes and use the experience of others to enhance their own knowledge to help them become safer pilots.
**ACCIDENT**

<table>
<thead>
<tr>
<th>Aircraft Type and Registration:</th>
<th>Ikarus C42 FB80</th>
</tr>
</thead>
<tbody>
<tr>
<td>No &amp; Type of Engines:</td>
<td>1 Rotax 912-UL piston engine</td>
</tr>
<tr>
<td>Year of Manufacture:</td>
<td>2005</td>
</tr>
<tr>
<td>Date &amp; Time (UTC):</td>
<td>21 September 2010 at 1400 hrs</td>
</tr>
<tr>
<td>Location:</td>
<td>Training</td>
</tr>
<tr>
<td>Type of Flight:</td>
<td>Training</td>
</tr>
<tr>
<td>Persons on Board:</td>
<td>Crew - 1  Passengers - None</td>
</tr>
<tr>
<td>Injuries:</td>
<td>Crew - None  Passengers - N/A</td>
</tr>
<tr>
<td>Nature of Damage:</td>
<td>Significant damage to forward fuselage and right wing</td>
</tr>
<tr>
<td>Commander’s Licence:</td>
<td>Student pilot</td>
</tr>
<tr>
<td>Commander’s Age:</td>
<td>53 years</td>
</tr>
<tr>
<td>Commander’s Flying Experience:</td>
<td>40 hours (of which 40 were on type)</td>
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<tr>
<td></td>
<td>Last 90 days - 6 hours</td>
</tr>
<tr>
<td></td>
<td>Last 28 days - 6 hours</td>
</tr>
<tr>
<td>Information Source:</td>
<td>Aircraft Accident Report Form submitted by the pilot</td>
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</table>

The student pilot was undertaking a solo flight from Long Marston to Croft Farm. He was landing on Runway 09 with a light and variable crosswind from the south. The aircraft bounced on landing and veered to the left. He elected to go around to avoid a runway edge marker and applied full power. The aircraft struck a hedge a few metres from the runway and came to rest in the adjacent field. The student pilot, who was uninjured, attributed the accident to having insufficient speed for a go-around.

**BMAA Comment**

Landings in crosswind conditions, particularly for students or pilots with limited experience on type, are challenging. If the circumstances force a snap decision to take off or stay on the ground, it may be better to be braking on the ground than accelerating in flight into a potential accident. You cannot, however, be taught experience.
ACCIDENT

**Aircraft Type and Registration:** P & M Aviation Ltd QuikR

**No & Type of Engines:** 1 Rotax 912ULS piston engine

**Year of Manufacture:** 2010

**Date & Time (UTC):** 16 October 2010 at 1430 hrs

**Location:**

**Type of Flight:** Private

**Persons on Board:**

<table>
<thead>
<tr>
<th>Crew</th>
<th>Passengers</th>
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**Injuries:**

<table>
<thead>
<tr>
<th>Crew</th>
<th>Passengers</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
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</table>

**Nature of Damage:** Wing, propeller, cockpit

**Commander’s Licence:** National Private Pilot’s Licence

**Commander’s Age:** 41 years

**Commander’s Flying Experience:**

- 78 hours (of which 41 were on type)
- Last 90 days - 31 hours
- Last 28 days - 10 hours

**Information Source:** Aircraft Accident Report Form submitted by the pilot

During the flight from Tain to Durness, in light winds and with good visibility, the pilot noticed a higher than normal cylinder head temperature reading. He decided to make a precautionary landing on the beach at Oldshoremore, Kinlochbervie. The landing was on firm sand but at the end of the landing run the nosewheel sank into softer sand, dug in and the plane rolled over, coming to a stop upside down. The aircraft sustained wing, propeller and cockpit damage but there were no injuries to the pilot or passenger. The pilot contacted the police and pulled the aircraft up the beach for recovery the next day. In hindsight the pilot stated that his precautionary landing, in response to the higher cylinder head temperature, may have been unnecessary. At the time of writing this report, the cause of the higher than normal cylinder head temperature is unknown.

**BMAA Comment**

This was a precautionary landing not a forced landing. It is quite possible that there was no viable alternative surfaces within a reasonable range but beach landings always carry the risk of not being able to identify whether the sand is hard or soft. When landing onto a potentially soft surface the pilot should use a Soft Field landing technique. As low an airspeed as is safe for the conditions, a shallow approach with power and a fully held off touchdown.
ACCIDENT

Aircraft Type and Registration: Pegasus Quik
No & Type of Engines: 1 Rotax 912-UL piston engine
Year of Manufacture: 2003
Date & Time (UTC): 31 August 2010 at 1800 hrs

Location:
Type of Flight: Private

Persons on Board:
Crew - 1  Passengers - 1

Injuries:
Crew - None  Passengers - None

Nature of Damage:
Leading edge of right wing and king post bent, right wheel spat damaged

Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 36 years
Commander’s Flying Experience:
225 hours (of which 185 were on type)
Last 90 days - 51 hours
Last 28 days - 8 hours

Information Source:
Aircraft Accident Report Form submitted by the pilot

The aircraft was approaching to land on Runway 36 at Bycross Farm Airstrip in calm wind conditions. The pilot reported that, due to an excessive approach speed, the aircraft landed long on the 235 m grass runway, which had a wet surface due to the presence of dew. The pilot applied the brakes fully which caused the aircraft to skid on the wet runway surface and the right wing contacted the ground. The aircraft rolled onto its right side, bending the right wing leading edge and the king post, and damaging the right wheel spat. The pilot and his passenger were uninjured and were able to leave the aircraft without further incident. The pilot reported that he had placed himself under pressure to land expeditiously due to his passenger becoming nervous. He considered that with hindsight, and given the calm wind conditions at the time, he should have gone around and landed on the longer 300 m Runway 27/09 that was also available to him. The pilot commented that the dew formation was surprisingly rapid as the grass surfaces at the airstrip were dry when he had taken off 30 minutes earlier.

BMAA Comment
Passenger distraction has been the cause of several aircraft mis-handlings. Consider briefing the passenger that the aircraft will be flown safely at all times, even at the expense of potentially prolonging the passenger’s discomfort. Sadly, the very thing the pilot may have been trying to protect his passenger from appears to have occurred. Going around and establishing a stable approach would have paid dividends here.
ACCIDENT

Aircraft Type and Registration: Skyranger R100(1)
No & Type of Engines: 1 BMW R100 piston engine
Year of Manufacture: 2003
Date & Time (UTC): 22 September 2010 at 1330 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - 1
Injuries: Crew - None Passengers - None
Nature of Damage: Nosewheel and strut, propeller, windshield, wing struts and pilot seat bolts
Commander’s Licence: Private Pilot’s Licence
Commander’s Age: 69 years
Commander’s Flying Experience: 328 hours (of which 235 were on type)
Last 90 days - 19 hours
Last 28 days - 5 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot was flying from Barton Ashes Farm Strip, which has one undulating runway orientated 25/07 surrounded by trees approximately 25 ft high. The approach to Runway 07 crosses open fields and the approach to Runway 25 crosses a strip of woods.

The pilot used Runway 25 for takeoff and landing on a previous flight about an hour before the accident, with a light breeze from approximately 190°. During the approach he experienced turbulence caused by the wind funnelling through a gap in the adjacent woods, but landed safely.

On the accident flight, having taken off from Runway 25, the pilot planned to land on Runway 07 in order to approach across open fields. The wind had increased to approximately 10 kt. The approach was “smooth” but just before touchdown the aircraft encountered a “rotor” of turbulent air from the right. This caused the aircraft to pitch forward uncontrollably onto its nosewheel, which collapsed. The aircraft came to rest inverted. The uninjured pilot and passenger vacated the extensively damaged aircraft with the aid of another pilot.

The pilot commented that the effects he experienced are well known at this farm strip and that a diversion would have been sensible.

No BMAA Comment
The pilot states that with hindsight, he should have diverted. A considered diversion plan will always be useful in dealing with unexpected conditions at your destination - doing so will reduce your workload when potentially under stress in resolving these difficulties.
ACCIDENT

Aircraft Type and Registration: EV-97 TeamEurostar UK Eurostar
No & Type of Engines: 1 Rotax 912-UL piston engine
Year of Manufacture: 2008
Date & Time (UTC): 13 October 2010 at 1630 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1  Passengers - 1
Injuries: Crew - None  Passengers - None
Nature of Damage: Nosewheel, propeller, cowling, radiator
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 50 years
Commander’s Flying Experience: 158 hours (of which 12 were on type)
Last 90 days - 13 hours
Last 28 days - 6 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot conducted an approach to Runway 08 at Clench Common. The weather conditions were good, with an 8 kt wind from the east. Following touchdown, which the pilot described as slightly fast, the aircraft bounced and became airborne again. The pilot attempted to hold off to allow the aircraft to settle back onto its main landing gear, however the aircraft pitched nose down prior to contacting the ground, causing the nose landing gear to collapse. The aircraft came to rest on the runway and the pilot and his passenger, who were uninjured, were able to vacate the aircraft via the normal exit.

The pilot considered that the accident was the result of not applying full power to initiate a go-around after the bounce.

BMAA Comment
Learning to control the bounce or balloon should be part of training. As the aircraft climbs away from the ground it loses airspeed. Very accurate pitch control may help retain airspeed and then allow a second flare. However an application of power, either to help prevent loss of airspeed or as part of a committed go-around will usually help the less experienced.
ACCIDENT

Aircraft Type and Registration: Flight Design CTSW
No & Type of Engines: 1 Rotax 912ULS piston engine
Year of Manufacture: 2006
Date & Time (UTC): 23 October 2010 at 1305 hrs
Location:
Type of Flight: Private
Persons on Board:
Crew - 1  Passengers - 1
Injuries:
Crew - 1 (Serious)  Passengers - 1 (Minor)
Nature of Damage: Aircraft destroyed
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 45 years
Commander’s Flying Experience:
274 hours (of which 240 were on type)
Last 90 days - 35 hours
Last 28 days - 8 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

Synopsis
Due to the prevailing crosswind, which had increased since his departure one hour earlier, the pilot decided to land the aircraft on a much shorter grass area, adjacent to the threshold of Runway 23, which had a reduced crosswind component. During the latter stages of the approach, the pilot abandoned the landing, but at about 80 ft, whilst banking right away from an area of trees, the aircraft rolled rapidly to the right. The right wingtip struck the ground and the aircraft cartwheeled. Both pilot and passenger sustained whiplash injuries to the neck. The pilot also suffered a broken left ankle. The aircraft was destroyed.

History of the flight
The pilot was returning to North Coates Airfield, following a local flight of about one hour duration. North Coates has a single unlicensed grass runway, on a heading of 07/23. Near to the threshold of Runway 23 is a much shorter grass area, bounded to the north by an area of trees. The pilot reported that he took off from Runway 23, with a westerly wind of about 20 kt but, upon returning to the airfield, he noted from the windsock that the wind was now from a northerly direction across the runway. He estimated the wind speed to be between 25 and 30 kt.

Initially he positioned the aircraft for a landing on Runway 23, but due to the high crosswinds and turbulent conditions, he abandoned the approach. Having had
previous experience of landing on the north-south grass area, he advised the air/ground radio operator that he would land there in a northerly direction, into wind. The approach appeared normal, but shortly before touching down the pilot abandoned the landing and applied full power. As the aircraft climbed to about 80 ft, level with the tops of the trees ahead, the pilot started to make a progressive right turn. The aircraft rolled rapidly to about 90° right wing down. The pilot applied full left rudder and full left aft stick, but the aircraft failed to respond. The right wing tip struck the ground and the aircraft cartwheeled, before coming to a stop. The pilot and passenger were both wearing four-point harnesses and were able to vacate the aircraft unaided. Both pilot and passenger sustained whiplash injuries to the neck and the pilot also suffered a broken left ankle. The aircraft was damaged beyond economic repair.

The pilot considered that the cause of the accident was due to the aircraft entering turbulent air near to the top of the tree line during the go-around. The Pilot’s Operating Handbook (POH) states that the maximum crosswind components for takeoff and landing are 16 kt to 13 kt for flap settings of -6° to 15° and 13 kt to 11 kt for flap settings of 15° to 40°. The POH also provided the following guidance regarding wind limitations:

> ‘In gusty wind or wind speeds greater than 21 kt (24 mph) flight operations should be stopped.’

**BMAA Comment**

A good move to use a more into wind landing area, but we should look up-wind to see what effect obstructions might have. This may be another occasion when a diversion to an airfield with an into wind runway would have been preferable. Microlights have weather limits. Pilots have weather limits. Limits should be respected.
ACCIDENT

Aircraft Type and Registration: Flight Design CTSW
No & Type of Engines: 1 Rotax 912 ULS piston engine
Year of Manufacture: 2007
Date & Time (UTC): 3 October 2010 at 1050 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1    Passengers - 1
Injuries: Crew - None    Passengers - 1 (Minor)
Nature of Damage: Damage to engine cowling and propeller, nose landing gear, right wing, windscreen and passenger window, rudder hinge
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 39 years
Commander’s Flying Experience: 124 hours (of which 99 were on type)
Last 90 days - 28 hours
Last 28 days - 5 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot was flying from Wycombe Air Park to Barton Aerodrome and had checked the Manchester Airport TAF before departing from Wycombe Air Park. This TAF forecast a 40% to 50% probability of 3,000 m visibility in heavy rain, with a broken cloud layer at 900 ft agl for the planned arrival time at Barton Aerodrome, which is 8 nm from Manchester Airport. The pilot reported being confronted by low cloud on his intended route to Barton Aerodrome and he decided to make a precautionary landing at Arclid airstrip. He descended to 500 ft agl whilst positioning the aircraft on a right-hand downwind leg for Runway 20. The aircraft flew into heavy rain during the turn onto final approach and the pilot reported that the airspeed shown on the ASI fell to zero. The final approach was high and fast, and the aircraft touched down approximately halfway along the 400 m grass runway. Following a bounce, the aircraft landed and during heavy braking, it departed from the runway approximately 15 m from its end. The nose landing gear leg collapsed and the aircraft overturned. The pilot and his passenger were able to vacate the aircraft without further incident.

BMAA Comment
Similar conditions have killed people. If you are continuing towards known bad weather, a comprehensive diversion plan should be in place and acted upon in good time before the conditions actually deteriorate.
ACCIDENT

Aircraft Type and Registration: Pegasus Quantum 15-912
No & Type of Engines: 1 Rotax 912-UL piston engine
Year of Manufacture: 2004
Date & Time (UTC): 3 June 2010 at 0930 hrs
Location:
Type of Flight: Training
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Wing, struts, sail, pylon, hang bracket
Commander’s Licence: Student
Commander’s Age: 38 years
Commander’s Flying Experience: 12 hours (of which 2 were on type)
Last 90 days - 3 hours
Last 28 days - 3 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The student pilot was just completing a solo flight during which the wind had strengthened, and was gusting up to 20 kt from the east for his approach and landing onto Runway 03. He had taken off earlier from the same runway when the wind was lighter. The instructor had briefed the student to consider using Runway 14 for landing if the conditions changed sufficiently, and to ‘go around’ if unhappy with the approach or landing. The aircraft touched down and, at speed, departed the grass runway to the left shortly afterwards, and then rolled over causing substantial damage to the wing structure, sail and parts of the airframe. The student pilot, who was wearing a three-point lap strap and shoulder harness, was uninjured.

No BMAA Comment
ACCIDENT

Aircraft Type and Registration: Pegasus XL-Q
No & Type of Engines: 1 Rotax 462 HP piston engine
Year of Manufacture: 1989
Date & Time (UTC): 3 September 2010 at 1814 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - 1 (Minor) Passengers - N/A
Nature of Damage: Pod and propeller shattered, tubes bent and broken, sail torn
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 62 years
Commander’s Flying Experience: 105 hours (of which 40 were on type) Last 90 days - 1 hour Last 28 days - 1 hour
Information Source: Aircraft Accident Report Form submitted by the pilot

During the final stages of a glide approach in benign weather conditions, the aircraft encountered a sudden and rapid descent. The pilot applied power in an attempt to arrest the rate of descent, but the aircraft’s mainwheels contacted the hedge on the airfield boundary. The aircraft impacted the ground heavily at the beginning of the grass strip and came to a rapid halt.

The pilot was wearing a lap harness and a protective helmet and suffered minor injuries. He assessed the cause as a “sudden unexpected sink” encountered during the latter stages of the approach.

No BMAA Comment
INCIDENT

Aircraft Type and Registration: Thruster T600N 450

No & Type of Engines: 1 Jabiru Aircraft PTY 2200A piston engine

Year of Manufacture: 2002

Date & Time (UTC): 2 August 2010 at 1530 hrs

Location:

Type of Flight: Training

Persons on Board:

Crew - 2  Passengers - None

Injuries:

Crew - None  Passengers - N/A

Nature of Damage: Propeller detached

Commander’s Licence: National Private Pilot’s Licence

Commander’s Age: 47 years

Commander’s Flying Experience:

n/k hours (of which n/k were on type)
Last 90 days - 55 hours
Last 28 days - 11 hours

Information Source: AAIB Field Investigation

Synopsis

At approximately 300 ft agl, just after takeoff, the propeller blades, hub and mounting flange detached from the engine, forcing the pilot to land in a nearby field. Forensic examination of the failed flange mounting screws identified high cycle fatigue, possibly due to relative movement between the flange and crankshaft following loss of clamping load.

History of the flight

The pilot successfully completed a flight to Popham airfield, Hampshire and was on the return leg to his departure farm strip at Bradley Lawn Farm. During the last 5 miles of the flight, the pilot noticed a low frequency vibration, but landed without incident at around 1100 hrs. The propeller blades had recently been replaced, so the pilot checked that the blade pitch angle had not changed. He could find nothing wrong with the aircraft to explain the vibration.

The next flight conducted by the pilot¹ in the aircraft was at 1530 hrs the same day. This was to be a cross-country navigation exercise with a student. The student handled the aircraft and completed the pre-departure checks, with no abnormal indication from the engine. The aircraft lined up on Runway 22 and the student opened the throttle fully and accelerated along the runway at full power. After the aircraft rotated into the air and climbed through 100 ft, the pilot reported that he felt

Footnote

¹ The pilot was a qualified microlight instructor.
heavy vibration through the airframe and took control from the student; he then reduced the engine speed from 2,850 rpm to 2,600 rpm (under normal circumstances, full power is maintained to 700 ft). He commenced a right turn in an effort to fly a low-level circuit to land again; however, with the aircraft at approximately 300 ft agl, the propeller hub and blades detached from the engine, narrowly missing the wing. The pilot shut the engine down and performed a successful forced landing in a field. Despite numerous searches, the propeller could not be located.

**Aircraft description**

The aircraft is a fixed wing microlight constructed with a steel and aluminium frame, a glass-fibre cabin pod, tricycle landing gear and fabric covered wings and rear fuselage. The engine is mounted on a pole extending forward from the top of the cabin pod and braced by an A-frame. The propeller hub is bolted to a flange, which is secured by cap screws to the front of the engine crankshaft. The incident aircraft was fitted with two individual composite propeller blades, secured in the hub by separate retaining bolts.

**Aircraft inspection**

The pilot recovered the aircraft from the landing site to a hangar at the farm strip, prior to inspection by the AAIB. No damage was evident on the airframe. The engine propeller hub, flange and blades were detached, though the remains of the shanks from the six flange mounting screws were still present in the engine crankshaft (Figure 1). Replicas of the screw fracture surfaces were taken for forensic analysis and the remains of the screws, following extraction, were submitted for metallurgical examination. Aircraft documentation showed that a manufacturer approved

![Figure 1](Image)

Front face of crankshaft showing shanks of failed screws still in-situ.
propeller hub and blades had been fitted, though it was not possible to confirm this physically due to the loss of these components in the incident.

Manufacturer’s documentation

The manufacturer issued service bulletin JSB 022-1 on 28 July 2008. This stated that there had been a number of in-service propeller loss events due to failure of the flange mounting screws, resulting from incorrect installation procedures. The service bulletin highlights the importance of using the correct technique (use of a bonding agent and a specified torque load) to install the screws, and recommends the refitting of any propeller flanges, that are suspected of having been incorrectly installed, within 50 hours.

Service bulletin JSB 014-1 details important information regarding the installation and inspection of propellers and mounting flanges.

Service bulletin JSB 012-1 recommends the replacement of the flywheel mounting bolts, due to the possibility of damage from high propeller vibration due to propeller strikes or the incorrect fitting of the propeller.

Consultation with the engine manufacturer confirmed that they recommend checking the torque of the flange mounting screws every 100 hours for approved propeller types. This advice is included in the maintenance manual, though in a generic manner which covers all propeller related bolts and screws. The maintenance manual also recommends full overhaul of the engine at 2,000 hours, with a ‘top end’ overhaul at 1,000 hours. Replacement of the flange screws is recommended at full overhaul.

Maintenance history

The pilot advised that the aircraft was normally stored with an engine cover fitted, in an open hangar (roof, but no walls) and typically could be stored for up to a month at a time during the winter period.

At the time of the incident, the aircraft had flown 615.6 hours since new. A manufacturer approved repair organisation had extensively repaired the engine at 424.8 hours since new, due to an oil pump gear attachment failure that damaged the camshaft and timing gear. The invoice for the engine repair did not list new flange screws among the items fitted. The propeller blades were replaced approximately 12 flying hours prior to the incident due to a crack in the collar of one of the blades. There was no evidence from the engine logbook to suggest the failed flange screws had been replaced in-service, so it is likely they were original from first build of the engine.

The engine logbook identified that the repair organisation carried out service bulletin JSB 012-1 during the engine repair in 2006. There was no record of service bulletin JSB 022-1 being completed on the engine.

Detailed inspection findings

Screw 1

Scanning Electron Microscope (SEM) inspection revealed smooth, flat fracture surfaces, which exhibited clear beach marks; these confirmed High Cycle Fatigue (HCF) as the fracture mechanism (Figure 2). Initiation occurred at multiple locations around the thread roots (a region of stress concentration). A region of possible intergranular fracture was found at one of the thread root

Footnote

2 High Cycle Fatigue is characterised by a large number of load cycles to failure (typically $>10^6$), for example due to a high frequency vibration.
initiation sites, suggesting that some stress-corrosion cracking (SCC) might have contributed to fatigue initiation.

**Screw 2**

The screw exhibited smooth, flat fracture surfaces as with screw 1, but the beach marks were more difficult to distinguish. Some regions contained features that could have been corrosion. The fatigue appeared to have initiated from the stress concentration of the thread root. The fracture surface consisted of two large flat regions of fatigue that initiated on opposite sides of the screw, with a thin strip of final overload fracture between them.

**Screw 3**

The screw exhibited two main fatigue regions, which initiated diametrically opposite one another, at the thread roots.

**Screw 4**

This screw also suffered fatigue in two regions diametrically opposite one another.

**Screw 5**

In contrast to the other screws examined, there were no large flat regions on this fracture surface. SEM examination revealed some areas of overload and some areas of smeared surface, typical of contact between fracture surfaces during separation from torsional overload.

**Screw 6**

Beach marks, indicating fatigue, were very clear on this surface and several initiation points were obvious. Again, all initiation sites were at thread roots, with two main areas of initiation diametrically opposite one another.
Metallographic examination and hardness testing

Sectioning revealed that many of the screws contained secondary fatigue cracks, usually initiating at the next thread down from the primary fracture surface. The section through screw 5 showed a crack at a thread root and possible fatigue cracking on the side of the threads. Each screw section was subjected to micro-hardness testing in three locations. The results indicated that all six screws were of similar strength. The microstructure, hardness, strength and chemical composition of the screw material were consistent with the manufacturer’s recommendation for use in this application; the testing showed no evidence of manufacturing defects.

Analysis

The forensic analysis indicated that five of the six screws suffered fractures due to HCF. The remaining screw’s (screw 5) fracture surface was damaged after failure, though some evidence of fatigue and overload were identifiable.

The cracks within the screws initiated in two regions diametrically opposite one another, suggesting a reversed bending load pattern. However, the orientations of each initiation relative to the crankshaft show that they all aligned tangentially. This may indicate relative rotational movement between the flange and the crankshaft.

Therefore, the most likely cause of failure of the screws was a loss of clamping load on the flange, due to reduced torque load on the mounting screws. This would allow movement between the flange and the crankshaft and create an additional load cycle on the flange screws related to the engine rpm. HCF cracks developed from initiation points in areas of stress concentration within the screw threads, until the critical crack length was reached and the screws failed in overload. The flange and propeller then released during the incident flight.

This incident highlights the importance of installing the propeller mounting flange in accordance with the engine manufacturer’s guidance detailed in service bulletin JSB 022-1 and inspecting the flange screws in accordance with the manufacturer’s recommended maintenance schedule. Both of these documents are freely available on the manufacturer’s website.

BMAA Comment
This incident is identical with similar engine/propeller combination incidents and is now subject to a Mandatory Permit Directive which can be found at:
http://www.bmaa.org/files/jsb014-2_jsd014-2.pdf
BULLETIN CORRECTION

Aircraft Type and Registration: Thruster T600N 450

Date & Time (UTC): 26 October 2009 at 1330 hrs

Location:

Information Source: Aircraft Accident Report Form submitted by the pilot

AAIB Bulletin No 4/2010, page 82 refers

The last sentence of the report erroneously referred to ‘propeller attachment bolts’ when these should have been described as ‘propeller flange mounting screws’.

Therefore, the last sentence should now read:

‘Subsequent examination revealed evidence of extensive fatigue crack propagation in the propeller flange mounting screws (Figure 1), which eventually failed in ductile overload, causing the propeller to detach.’

In addition the description under Figure 1 should now read:

‘Figure 1  View of the front of the crankshaft showing failed screws with evidence of fatigue propagation (arrowed)’

BMAA Comment
This incident is identical with similar engine/propeller combination incidents and is now subject to a Mandatory Permit Directive which can be found at:
http://www.bmaa.org/files/jsb014-2_jsd014-2.pdf
**ACCIDENT**

**Aircraft Type and Registration:** Cyclone AX2000  
**No & Type of Engines:** 1 Rotax 582-48 piston engine  
**Year of Manufacture:** 1998  
**Date & Time (UTC):** 10 November 2010 at 1415 hrs  
**Location:**  
**Type of Flight:** Private  
**Persons on Board:**  
Crew - 2  
Passengers - None  
**Injuries:**  
Crew - None  
Passengers - N/A  
**Nature of Damage:** Landing gear collapsed  
**Commander’s Licence:** Private Pilot’s Licence (Microlight) with Instructor and Examiner ratings  
**Commander’s Age:** 50 years  
**Commander’s Flying Experience:** 7,000+ hours (of which 900+ were on type)  
Last 90 days - about 70 hours  
Last 28 days - about 20 hours  
**Information Source:** Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

**Synopsis**

During a simulated engine failure after takeoff the student pilot reduced the throttle rapidly and did not immediately lower the nose of the aircraft. The examiner took control and increased the power to full but his actions were too late to prevent a heavy touchdown.

**History of the flight**

The Cyclone AX2000 is a high-wing three-axis microlight aircraft with tricycle landing gear. It has side-by-side seating with a single control stick mounted in the centre. It has a high thrust-line configuration with its engine mounted on a strut forward of the wing leading edge. The purpose of the flight was to conduct a ‘General Skills Test’ (GST). The student pilot was in the left seat and the examiner (pilot-in-command) was in the right seat. Following successful completion of the Oral Test the examiner briefed the student on the GST. The student was told to expect to be asked to perform a simulated engine failure after takeoff (EFATO) and that this might be requested during the first takeoff. The examiner expected the student to retard the throttle when the simulated EFATO was called for and then to land straight ahead.

After carrying out the pre-flight and pre-takeoff checks
the student lined up on Runway 29 (grass) which was 450 m long and 15 m wide. The wind was from the north-west at about 10 kt. After a normal takeoff, and at a height of about 100 feet, the examiner called “Engine Failure”. The examiner reported that at this point the student closed the throttle “very abruptly” and did not lower the nose of the aircraft. The aircraft decelerated and, when the examiner realised that the student was not performing the correct recovery procedure, he took control of the aircraft and increased the power to full. However, his actions were too late to prevent a heavy touchdown, causing the landing gear to collapse.

Student’s comments on the accident

The student said that he recalled having practised the EFATO on two previous occasions, both of which were using the longer runway. He agreed that he had not lowered the nose quickly enough, but also commented that as it was the first manoeuvre of the test he had not yet had a chance to get settled.

Examiner’s comments on the accident

The examiner stated that in a teaching situation he would always cover the controls with his hands in case a student made an error but that, in a GST in an aircraft with a single control stick, he cannot easily do this as he needs to give the student full control of the aircraft. He also said that he called for the EFATO on the first takeoff because the wind was due to increase and because the student had performed a good takeoff. He stated that with the benefit of hindsight it might have been better to have done the EFATO later in the test sequence. He also noted that the aircraft’s high thrust line meant that the aircraft had a tendency to pitch up when power was reduced.

BMAA Comment

The examiner should always be in a position to recover the situation if the candidate fails to fly the aircraft correctly during the test. Although being tested rather than instructed, the student is still “unqualified” so the examiner remains the commander of the aircraft. Difficulties with particular aircraft control systems should be factored when conducting the test (or instruction) and the situations in which the aircraft is placed.
ACCIDENT

Aircraft Type and Registration: Pegasus Quantum 15
No & Type of Engines: 1 Rotax 582 piston engine
Year of Manufacture: 2001
Date & Time (UTC): 8 January 2011 at 1400 hrs

Location:

Type of Flight: Private

Persons on Board:
Crew - 1
Passengers - None

Injuries:
Crew - None
Passengers - N/A

Nature of Damage: Wing, front of pod and landing gear

Commander’s Licence: National Private Pilot’s Licence

Commander’s Age: 44 years

Commander’s Flying Experience:
104 hours (of which 54 were on type)
Last 90 days - 6 hours
Last 28 days - 3 hours

Information Source:
Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries

Synopsis

The aircraft’s engine stopped without warning at a height of approximately 700 ft during the climb after takeoff. The pilot attempted to land back on the grass runway in the direction of takeoff, but there was insufficient height remaining to make the final turn and so he landed across the threshold, perpendicular to the runway. On realising that the aircraft was likely to collide with a fence, he pushed the control bar forward to become airborne again and clear the fence. The back wheels of the trike struck the top of the fence as the aircraft passed over it and the aircraft dropped into the adjacent field, coming to rest on its side. The pilot considered that the most likely cause of the engine failure was either carburettor icing or ice in the fuel line.

History of the flight

The pilot had completed a number of circuits at Tain Airfield earlier in the day, followed by a 45 minute flight in the local area with a passenger. After a short break for refreshments he decided to undertake another local flight. After takeoff from grass Runway 34, the engine stopped without warning at approximately 700 ft. The pilot attempted to select a suitable field in which to conduct a forced landing, however all the fields ahead had livestock in them. He commenced a left turn back towards the runway and planned to conduct a downwind landing. He subsequently realised he was too high to make a successful landing in the runway length remaining, and so continued his turn through the centreline to reposition to land on Runway 34.
However, there was then insufficient height remaining to make the final turn and he landed across the threshold, perpendicular to the runway. The pilot realised that he would be unable to stop the aircraft before it reached an approaching fence line, so he pushed the control bar forward to become airborne again and clear the fence. The back wheels of the trike contacted the top of the fence as the aircraft passed over it and the aircraft dropped into the adjacent field, coming to rest on its side. The pilot was uninjured and was able to exit the aircraft unassisted.

The weather was reported as fine and sunny with surface wind from 230º at 6 kt, visibility 10 km, scattered cloud at 4,900 ft, temperature -1ºC, dew point -3ºC and sea level pressure 989 mb.

**Discussion**

There were no engine problems noted during the earlier flights or during the pre-flight checks immediately prior to the take off. Engine indications were normal prior to the loss of power and sufficient fuel was available in the fuel tank. Subsequent examination of the engine by the pilot did not determine the cause of the engine failure. The pilot considered that the most likely cause was either carburettor icing or ice in the fuel line.

The weather conditions were conducive to carburettor icing at cruise or descent power settings, however the event occurred at the takeoff power setting. A carburettor heater system is not fitted as standard to this aircraft. The Pegasus Quantum 15 Operator’s Manual indicates that while these systems are rarely necessary on Quantum aircraft fitted with two-stroke engines, such as the Rotax 582, a carburettor heater is available as an optional modification.

**BMAA Comment**

An engine failure immediately after take off is always challenging so it is gratifying that the pilot walked away uninjured. There are occasions when it is better to "brake into the inevitable crash" than try and get airborne again and fly into it.
ACCIDENT

Aircraft Type and Registration: Pegasus Quik

No & Type of Engines: 1 Rotax 912ULS piston engine

Year of Manufacture: 2007

Date & Time (UTC): 2 March 2011 at 1205 hrs

Location:

Type of Flight: Training

Persons on Board:

Crew - 1
Passengers - 1

Injuries:

Crew - 1 (Minor)
Passengers - 1 (Serious)

Nature of Damage: Severe structural damage

Commander’s Licence: Private Pilot’s Licence

Commander’s Age: 45 years

Commander’s Flying Experience:

6,911 hours (of which 2,870 were on type)
Last 90 days - 52 hours
Last 28 days - 12 hours

Information Source:

Aircraft Accident Report Form submitted by the pilot

Synopsis

During a training detail on practice forced landings, the student pilot operated the control bar of the weight shift microlight aircraft in the opposite direction to that required for the go-around and pitched the aircraft nose-down. The instructor was unable to arrest the high rate of descent in time to prevent the aircraft from striking the ground at high speed. The nosewheel assembly failed and the aircraft turned over and it was severely damaged. The student pilot suffered serious injuries and was airlifted to hospital. The instructor sustained minor injuries. Both occupants were wearing helmets and lap straps.

History of the flight

The student had completed approximately six hours of training on weight shift microlight aircraft and had, five years previously, completed approximately 20 hours of flying training on fixed wing light aircraft. Prior to this lesson, the student had worked a night shift in their job as a firefighter and had reported for duty at 1800 hrs the day before. The shift finished at 0900 hrs on the day of the accident. A period of rest from 0000 hrs to 0700 hrs was scheduled, subject to operational demands. During the rest period, the student was called out in the early hours of the morning to a serious incident that involved finding and rescuing a person from a burning building and was later deployed to another incident. After finishing the shift, the student went home, had a meal and rested before the lesson which commenced at 1100 hrs.
The airfield was approximately 15 minutes away from home. On arriving at the airfield the student reported feeling fine, but a bit more fatigued than normal.

The instructor was aware the student had worked a night shift prior to the lesson and was therefore a little tired. The lesson progressed well and after a demonstration by the instructor, the student completed the first approach and go-around without incident. The second approach was without incident until the instructor called for a go-around to be flown from around 100 ft agl. The student applied full power with the foot throttle and pulled back on the control bar instead of pushing it forward. Despite telling the student to relax their grip, the instructor was unable to push hard enough on the training bars to arrest the descent before the aircraft stuck the ground.

**Discussion**

The student’s incorrect control input may have been due to reverting to a previously learnt response appropriate for a fixed wing aircraft, or as a result of a simple error. The student’s performance on the day may have been seriously affected by the lack of sleep and the nature of the work activities undertaken the previous night.

Pilots and instructors should be alert to the effects of fatigue and stress on performance and be prepared to take appropriate mitigating actions. CAA Safety Sense Leaflet 24, ‘Pilot Health’, gives advice on the subjects of stress and fatigue and provides a basic checklist for pilots to use in assessing their fitness to fly.

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**BMAA Comment**

A couple of issues are highlighted in the full AAIB report including the possibility reverse control input by the student (previous 3 axis experience) and that fact that the student was probably fatigued having worked a night shift prior to the lesson. The instructor, seated in the rear, was physically unable to overcome the student's inputs which, although thankfully rare, is a potential problem on all such flights.
ACCIDENT

Aircraft Type and Registration: Thruster T600N 450
No & Type of Engines: 1 Jabiru Aircraft PTY 2200A piston engine
Year of Manufacture: 2004
Date & Time (UTC): 22 February 2011 at 1200 hrs
Location:
Type of Flight: Training
Persons on Board: Crew - 2 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Damage to nosewheel, pod and tail
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 58 years
Commander’s Flying Experience: 510 hours (of which 42 were on type)
Last 90 days - 14 hours
Last 28 days - 7 hours
Information Source: Aircraft Accident Report Form submitted by the commander

The commander was teaching circuits to the co-pilot, who was an experienced flex-wing microlight pilot. Following two well-flown circuits, the co-pilot landed the aircraft and back-tracked Runway 25, in preparation for a further takeoff. The weather conditions were reported as being CAVOK, with no significant wind. The commander reported that, after a takeoff roll of 330 m and with the ASI reading 55 kt, the co-pilot pulled back sharply on the control column, causing the aircraft to unstick and decelerate. The aircraft drifted right of the runway, with the right wing low. The co-pilot reduced power and the aircraft touched down on the right mainwheel, before pitching forward onto its nose and overturning. Both occupants were uninjured and were able to release their four-point harnesses before leaving the aircraft via the cabin doors, without further incident. The commander commented that the single central control column made it difficult to shadow the co-pilot’s control movements whilst instructing on this aircraft type.

BMAA Comment
The instructor should be in a position to take control of the aircraft at any time when flying with a student. In this case the instructor comments on the difficulty of shadowing the student’s movements in this type of aircraft due to the layout of the controls which may be a consideration when selecting the type of aircraft for a training sortie.
ACCIDENT

Aircraft Type and Registration: X’Air 582(1)
No & Type of Engines: 1 Rotax 582/48-2V piston engine
Year of Manufacture: 2000
Date & Time (UTC): 19 March 2011 at 1200 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - 1
Injuries: Crew - None Passengers - None
Nature of Damage: Front fuselage and nosewheel
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 52 years
Commander’s Flying Experience:
- 83 hours (of which 19 were on type)
- Last 90 days - 0 hours
- Last 28 days - 0 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

Synopsis

Whilst in the cruise at 1,000 ft, the engine suddenly stopped. Following a series of engine restarts and subsequent stoppages, the pilot carried out a forced landing into a grass field. During the rollout, the aircraft’s nosewheel dug into soft ground. The aircraft tipped forward and came to rest upside down. The pilot and passenger were uninjured and vacated the aircraft unaided. The cause of the engine failure was not identified.

History of the flight

The pilot planned to make a local flight, before returning to a private airfield near Portadown, Northern Ireland. The aircraft had been parked in a hangar since its last flight in December 2010. During the pre-flight inspection, the fuel tank, which contained approximately ten litres of fuel, was uplifted with 20 litres of fuel. The engine was started without incident and as the aircraft had not been flown for several months, the pilot extended his normal period of engine ground running before completing his pre-flight checks, which included a power run. The takeoff appeared normal, and at 1,000 ft, the pilot levelled the aircraft and reduced the engine rpm for the cruise.

Approximately eight minutes later, the engine suddenly stopped. The aircraft was in straight and level flight and the pilot recalled confirming that the fuel selector switch was in the correct position and both engine temperature and pressure indications had been normal.
The pilot trimmed the aircraft for a glide approach before attempting to restart the engine. It restarted almost immediately and the pilot made a shallow 180° turn to position back towards the airfield, which was to the north. The reported wind was from the south at 8 kt. The engine initially operated correctly, responding to throttle commands, but then stopped again. The aircraft was now at about 600 ft. After two further attempts, the engine briefly restarted for about 10 seconds before stopping. Following a further unsuccessful attempt to restart the engine, the pilot looked for an appropriate landing site. The pilot stated that the optimal site was a large grass field directly ahead of the aircraft and, although he would be landing with a tailwind, the field offered the safest possible landing area as there were limited options to the left and right of his track. The touchdown appeared normal, but after approximately 80 m the aircraft entered an area of soft ground where the nosewheel dug into the ground, tipping the aircraft forward until it came to rest inverted. Both the pilot and passenger were wearing full harnesses and exited the aircraft uninjured. The forward fuselage and nose wheel were damaged.

A post-accident examination of the fuel and engine electrical system revealed no signs of blockage or failure, although the fuel tank was found to contain some small particles of debris. However, it could not be determined if the debris had entered the tank following the accident. The pilot advised that he had not carried out a water drain check of the fuel system during his pre-flight inspection.

**BMAA Comment**

Having suffered a series of engine failures and successful restarts, the aircraft height was gradually reducing as were the landing field options. Having landed safely, there may have been an element of bad luck when the aircraft encountered soft ground on the rollout. In general, following a successful restart after an in flight engine failure, pilots should actively fly "from field to field" - if they choose to continue - so as to keep a forced landing option open in the event of another engine failure.
ACCIDENT

<table>
<thead>
<tr>
<th>Aircraft Type and Registration:</th>
<th>Pegasus Quantum 15-912</th>
</tr>
</thead>
<tbody>
<tr>
<td>No &amp; Type of Engines:</td>
<td>1 Rotax 912 piston engine</td>
</tr>
<tr>
<td>Year of Manufacture:</td>
<td>1999</td>
</tr>
<tr>
<td>Date &amp; Time (UTC):</td>
<td>28 March 2011 at 1220 hrs</td>
</tr>
<tr>
<td>Location:</td>
<td></td>
</tr>
<tr>
<td>Type of Flight:</td>
<td>Training</td>
</tr>
<tr>
<td>Persons on Board:</td>
<td>Crew - 1</td>
</tr>
<tr>
<td></td>
<td>Passengers - None</td>
</tr>
<tr>
<td>Injuries:</td>
<td>Crew - None</td>
</tr>
<tr>
<td></td>
<td>Passengers - N/A</td>
</tr>
<tr>
<td>Nature of Damage:</td>
<td>Pod and propeller damaged</td>
</tr>
<tr>
<td>Commander’s Licence:</td>
<td>Airline Transport Pilot’s Licence</td>
</tr>
<tr>
<td>Commander’s Age:</td>
<td>58 years</td>
</tr>
<tr>
<td>Commander’s Flying Experience:</td>
<td>17,500 hours (of which 13 were on type)</td>
</tr>
<tr>
<td></td>
<td>Last 90 days - 221 hours</td>
</tr>
<tr>
<td></td>
<td>Last 28 days - 60 hours</td>
</tr>
<tr>
<td>Information Source:</td>
<td>Aircraft Accident Report Form submitted by the pilot</td>
</tr>
</tbody>
</table>

The pilot, who was undergoing a course of training on the aircraft, had completed 10 minutes of dual flight followed by 50 minutes of solo flight when he made an approach to Runway 06N with the intention of carrying out a touch-and-go. He reported that immediately before touchdown the aircraft encountering a sudden gust of wind that caused the aircraft to drift left. The aircraft touched down on the left edge of the grass runway heading towards a rough grass area beside it. The pilot was aware of a tree “some distance away” and, concerned that the aircraft might collide with it, attempted to get airborne. Acceleration in the rough grass was slower than the pilot expected and the aircraft became airborne with insufficient height to clear the tree or manoeuvre around it. Impact between the pod and the tree stopped the aircraft. The pilot was uninjured but the pod and propeller were damaged.

The pilot concluded that the accident was caused by an unforeseen gust of wind that, at a critical moment, was outside his experience on this aircraft type.

**BMAA Comment**

Landings in gusty conditions, particularly for students or pilots with limited experience on type, are challenging. If the circumstances force a snap decision to take off or stay on the ground, it may be better to be braking on the ground than accelerating in flight into a potential accident. You cannot, however, be taught experience.
### ACCIDENT

**Aircraft Type and Registration:** Renegade Spirit UK  
**No & Type of Engines:** 1 Rotax 582 piston engine  
**Year of Manufacture:** 1993  
**Date & Time (UTC):** 1 November 2010 at 1500 hrs  
**Location:**  
**Type of Flight:** Private  
**Persons on Board:**  
- Crew - 1  
- Passengers - None  
**Injuries:**  
- Crew - None  
- Passengers - N/A  
**Nature of Damage:** Damage to landing gear and wings  
**Commander’s Licence:** National Private Pilot’s Licence  
**Commander’s Age:** 47 years  
**Commander’s Flying Experience:**  
- 419 hours (of which n/k were on type)  
- Last 90 days - Not known  
- Last 28 days - Not known  
**Information Source:** Aircraft Accident Report Form submitted by the pilot

The Renegade Spirit is a three-axis microlight aircraft with a biplane and tailwheel configuration. During an attempted landing on a 325-metre grass strip the pilot overshot the runway and initiated a go-around. During the go-around the landing gear clipped the top of a hedge, causing the aircraft to hit the ground in the field beyond. In his written report the pilot assessed the cause of the accident as “pilot error”.

**No BMAA Comment**
ACCIDENT

Aircraft Type and Registration: Tanarg/Ixess 15 912S(1)
No & Type of Engines: 1 Rotax 912ULS piston engine
Year of Manufacture: 2006
Date & Time (UTC): 19 March 2011 at 1600 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Propeller, left suspension leg and fairings damaged
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 63 years
Commander’s Flying Experience: 169 hours (of which n/k were on type)
Last 90 days - 8 hours
Last 28 days - 4 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

During the approach to Runway 27 at Palmer Moor Farm, the aircraft experienced an area of sink. The pilot attempted to correct this, but the aircraft clipped a fence, veered to the left and struck a chicken wire fence that ran alongside the runway. Damage was sustained to the left suspension leg, fibre glass fairings and the propeller. The pilot was uninjured.
# ACCIDENT

<table>
<thead>
<tr>
<th>Aircraft Type and Registration:</th>
<th>Thruster TST Mk 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>No &amp; Type of Engines:</td>
<td>1 Rotax 503 piston engine</td>
</tr>
<tr>
<td>Year of Manufacture:</td>
<td>1988</td>
</tr>
<tr>
<td>Date &amp; Time (UTC):</td>
<td>28 November 2010 at 1500 hrs</td>
</tr>
<tr>
<td>Location:</td>
<td></td>
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<tr>
<td>Type of Flight:</td>
<td>Private</td>
</tr>
<tr>
<td>Persons on Board:</td>
<td>Crew - 1 Passengers - 1</td>
</tr>
<tr>
<td>Injuries:</td>
<td>Crew - None Passengers - None</td>
</tr>
<tr>
<td>Nature of Damage:</td>
<td>Damage to fibreglass cockpit, cabin floor cracked, wing strut bent, fuselage spar damaged and left mainwheel sheared off</td>
</tr>
<tr>
<td>Commander’s Licence:</td>
<td>Private Pilot’s Licence</td>
</tr>
<tr>
<td>Commander’s Age:</td>
<td>46 years</td>
</tr>
<tr>
<td>Commander’s Flying Experience:</td>
<td>3,670 hours (of which 1 was on type) Last 90 days - 58 hours Last 28 days - 17 hours</td>
</tr>
<tr>
<td>Information Source:</td>
<td>Aircraft Accident Report Form submitted by the pilot</td>
</tr>
</tbody>
</table>

## Synopsis

Just after lift-off, the pilot perceived that the aircraft was not climbing as expected due to a suspected lack of engine thrust. He abandoned the takeoff but after touchdown, the aircraft deviated to the side of the runway causing significant damage. Calculations performed after the accident confirmed that the aircraft was above its maximum takeoff weight by approximately 13 kg.

## History of the flight

After completing the engine warm-up procedure, the pilot taxied the aircraft to Runway 04 where he lined up for takeoff with approximately 4,700 ft of takeoff distance available. A second ‘full and free’ control check was performed prior to takeoff and no problems were identified. Weather conditions were benign but the pilot described the runway surface as “slippery”. He applied full power and the aircraft accelerated, taking off before the intersection with a disused runway. Just after lifting off, at a height of approximately 10 ft, the pilot felt that the aircraft was not climbing so he reduced power and abandoned the takeoff. The aircraft landed back on the runway just past the intersection and to the left of the centreline. Almost immediately it began deviating to the left. The pilot attempted to correct the deviation with rudder but the aircraft left...
the paved surface and ran into heavy mud, bringing it to an abrupt halt and briefly tipping on its nose. Both occupants, who were wearing full harnesses, escaped uninjured.

**Aircraft takeoff weight**

In 2001 the aircraft was fitted with an approved modification for an enclosed cockpit. The effect of the additional weight of this modification was that there was a need to carefully monitor the aircraft takeoff weight and, if necessary, carry less than the maximum fuel load if the zero fuel weight was high enough. This information was included in the Pilot’s Operating Handbook and was placarded on the fuel tank.

The aircraft basic weight was 186 kg with a maximum takeoff weight (MTOW) of 360 kg. The pilot indicated that the aircraft was fully fuelled, carrying approximately 25 kg. The total weight of the two occupants was 162 kg giving a takeoff weight of 373 kg, 13 kg above the MTOW.

**Discussion**

The registered owner of G-MVIU changed on 20 October 2010. The pilot indicated that when the aircraft was purchased, he did not perform a thorough review of the manuals and was therefore unaware of the weight restriction imposed by the enclosed cockpit modification. It was for this reason that he considered that the aircraft was overweight on takeoff. He also suspected that a shortage of engine thrust may have contributed to the perceived limited climb performance. He assessed that as the takeoff was aborted, he may have reduced power too quickly, leading to insufficient rudder authority available to correct the deviation on the slippery runway.

**BMAA Comment**

The lack of familiarity on type as noted in the pilot's report highlights the importance of differences training.
ACCIDENT

Aircraft Type and Registration: Savannah Jabiru(5)
No & Type of Engines: 1 Jabiru Aircraft Pty 2200 piston engine
Year of Manufacture: 2006
Date & Time (UTC): 25 March 2011 at 1500 hrs

Location:

Type of Flight: Private
Persons on Board: Crew - 1  Passengers - 1
Injuries: Crew - None  Passengers - None
Nature of Damage: Damage to nose landing gear, forward fuselage, flight controls and propeller; engine shock-loaded

Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 55 years
Commander’s Flying Experience:

- 248 hours (of which 110 were on type)
- Last 90 days - 17 hours
- Last 28 days - 9 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries

The pilot reported that he flew over the airfield prior to landing, and observed that the wind was light and from approximately 110°. He decided to land on Runway 17, rather than the more into-wind Runway 13, because he was concerned about landing towards cliffs which form the eastern boundary of the airfield. On approach, he judged that the aircraft was “rather too high”, but considered that there was sufficient runway ahead to land. The aircraft bounced on touchdown, the nose landing gear buckled under the fuselage, and the propeller struck the runway surface. The pilot considered that the aircraft had been affected by rotary airflow in the lee of the cliffs, and that the second touchdown was on a ridge running across the airfield.

The airfield operator had granted the pilot permission to use the airfield by telephone, but had advised him to make radio contact before landing, with the intention of warning him not to approach over the cliffs (the operator’s standard practice). The pilot did not call on the radio before landing. Published information concerning the airfield includes the warning ‘Rwy 17 not recommended for first time visitors’. 
ACCIDENT

Aircraft Type and Registration: Flight Design CT2K
No & Type of Engines: 1 Rotax 912ULS piston engine
Year of Manufacture: 2001
Date & Time (UTC): 16 April 2011 at 1300 hrs

Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - 1
Injuries: Crew - None Passengers - None
Nature of Damage: Left wing root and leading edge
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 53 years
Commander’s Flying Experience: 141 hours (of which 36 were on type)
Last 90 days - 10 hours
Last 28 days - 5 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

Synopsis

Shortly after touchdown, the aircraft drifted to the left of the runway centreline. Although corrective aileron and right rudder were applied, the aircraft departed the runway and struck a wooden windsock pole. A subsequent check of the rudder and nosewheel steering mechanism did not identify any defects.

History of the flight

The aircraft is a monoplane with a tricycle undercarriage and nosewheel steering. Kilkeel Airfield has a single grass Runway 18/36 and, upon making an overhead join, the pilot estimated from the windsock that the wind was light to moderate from approximately 300° and positioned for a landing on Runway 36. Having descended to circuit height, Kilkeel radio advised that the wind was from 250° at 5 kt. The pilot confirmed this from the windsock and repositioned for a landing on Runway 18. Having confirmed that the crosswind component was within the aircraft’s limits (maximum crosswind limit with flap 15° to 40° is 13 kt to 11 kt), the pilot continued his approach, configuring the aircraft for a flap 30° landing. On short final, the pilot considered that he was high and carried out a go-around.

Having positioned for a second approach, the aircraft was configured for a flap 40° landing and a approach speed of between 50 kt to 55 kt. Although touchdown on the mainwheels appeared normal, the aircraft started to drift to the left of the runway centreline. The pilot
stated that the aircraft had a normal tendency to drift to the left during the hold off. He had applied corrective aileron and right pedal, but the controls felt as though they had “locked” and were not responding. The aircraft continued to drift to the left until it departed the runway and entered an area of long grass. Whilst travelling at about 10 kt, the left wing struck a wooden windsock pole, which slewed the aircraft to the left and brought it to a halt. The pilot shut down the engine before he and his passenger, both uninjured, exited the aircraft. The left wing root and leading edge were damaged.

The pilot stated that he had found that this aircraft type had less rudder authority at low airspeeds and power settings compared to other microlights he had flown. However, he advised that he had not previously experienced problems controlling the aircraft after touchdown and that under the prevailing conditions he considered that he should have been able to maintain directional control. A subsequent check of the rudder and nosewheel steering mechanism identified that although slightly stiff in operation, full travel was available.

No BMAA Comment
SERIOUS INCIDENT

Aircraft Type and Registration: Dynamic WT9 UK
No & Type of Engines: 1 Rotax 912-UL piston engine
Year of Manufacture: 2007
Date & Time (UTC): 26 February 2011 at 1250 hrs
Location: Training
Type of Flight: Training
Persons on Board: Crew - 2  Passengers - None
Injuries: Crew - None  Passengers - N/A
Nature of Damage: Nosewheel, nose leg and engine cowling
Commander’s Licence: Airline Transport Pilot’s Licence
Commander’s Age: 60 years
Commander’s Flying Experience: 9,000 hours (of which 20 were on type)
Last 90 days - 4 hours
Last 28 days - 4 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

Synopsis
During the landing roll, the aircraft nose pitched up and back down twice, resulting in the propeller striking the ground and the nosewheel detaching.

History of the flight
Following an uneventful training flight, the pilot landed the aircraft on the grass strip at Chiltern Park Aerodrome. The pilot reported that about 100 m along the landing roll and as he applied the brakes, the aircraft rapidly pitched nose-up then down again, twice in succession. The final time the aircraft came to rest on the engine cowl, following collapse of the nose gear. The pilot estimated his speed at the start of the first pitch-up event to be 15 kt.

Ground marks
Ground marks left by the aircraft consisted of a short depression, 1 m long and the width of the nosewheel (Figure 1), followed 21 m later by two propeller strike marks and then a further depression that became a deep gouge (Figure 2), next to where the nosewheel was found detached. The pilot stated that the field had a reputation for good drainage and there had been no rain in the preceding days.

Discussion
After consultation with other pilots and the aircraft owner, the pilot considered that the most likely cause of the initial depression was the nosewheel sinking into soft ground, with the aircraft then pitching up as the wheel contacted firmer ground again. He considers
that this may have damaged the nose gear causing the nosewheel to detach, though he could not rule out pre-existing damage to the nose gear.

Figure 1
Initial depression

Figure 2
Ground marks
ACCIDENT

Aircraft Type and Registration: Flight Design CTSW
No & Type of Engines: 1 Rotax 912ULS piston engine
Year of Manufacture: 2006
Date & Time (UTC): 1 May 2011 at 1105 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1  Passengers - None
Injuries: Crew - None  Passengers - N/A
Nature of Damage: Extensive fire damage from post-accident fire
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 49 years
Commander’s Flying Experience:
Last 90 days - 38 hours
Last 28 days - 18 hours
Information Source:
Aircraft Accident Report Form submitted by the pilot

The pilot had operated the aircraft from the private airstrip over the preceding two days without incident. The wind conditions on the day of the accident were similar to those of the previous day and the same runway was being used. The runway surface was grass, approximately four inches long, and damp from overnight dew. The pilot applied full power for the takeoff. After lift off, which was slightly further down the strip than on the previous days, the aircraft was reluctant to climb and the engine seemed low on power. At this point the pilot was committed to continuing with the takeoff, but the aircraft was unable to clear the boundary hedge at the end of the runway. Its main landing gear struck the hedge and the aircraft turned over, coming to rest inverted in the field beyond. The pilot was uninjured and able to vacate the aircraft unaided via the left door.

He considers that the aircraft may have been affected by a wind rotor triggered by the crest of a ridge which was slightly upwind of the far end of the runway. He commented that pilot of the next aircraft to depart the field reported encountering a strong rotor just after takeoff.

BMAA Comment
4 inch long, wet grass is going to have quite an effect on take off performance. Having a take off abort point on each take off run would help make the decision to abort or continue. Awareness of the effect of terrain on wind rotor is useful too. CAA Safety Sense Leaflet 07 (available on CAA website) contains lots of useful information on this subject.
ACCIDENT

Aircraft Type and Registration: P and M Aviation Pegasus Quik
No & Type of Engines: 1 Rotax 912ULS piston engine
Year of Manufacture: 2010
Date & Time (UTC): 29 April 2011 at 1940 hrs

Location:

Type of Flight: Private
Persons on Board: Crew - 1  Passengers - None
Injuries: Crew - None  Passengers - N/A
Nature of Damage: Wing, control frame, propeller and monopole damaged
Commander’s Licence: Private Pilot’s Licence
Commander’s Age: 51 years
Commander’s Flying Experience: 181 hours (of which 33 were on type)
Last 90 days - 8 hours
Last 28 days - 8 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The aircraft tipped onto its left side when, while taxiing in a right turn, a gust of wind caught its right wing, causing the left wingtip to contact the ground. The pilot vacated the aircraft without injury.

BMAA Comment
A reminder of how vulnerable microlight aircraft are on the ground as well as in the air.
ACCIDENT

Aircraft Type and Registration: Pegasus Quantum 15
No & Type of Engines: 1 Rotax 582-48 piston engine
Year of Manufacture: 2004
Date & Time (UTC): 19 May 2011 at 1755 hrs
Location: Harringe Court Airfield, Kent
Type of Flight: Private
Persons on Board: Crew - 1   Passengers - None
Injuries: Crew - None   Passengers - N/A
Nature of Damage:

Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 58 years
Commander’s Flying Experience: 59 hours (of which 19 were on type)
Last 90 days - 13 hours
Last 28 days - 6 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

After an uneventful takeoff, at approximately 500 ft agl, the engine began to run roughly and lost power. There was sufficient altitude available for the pilot to return to the airfield where he carried out a landing on the reciprocal runway. An inspection of the engine revealed damage to the bottom of the spark plugs fitted in the rear cylinder. After replacing all of the spark plugs the engine ran smoothly and the pilot, believing the fault had been corrected, prepared to takeoff again.

No problems were observed during the second takeoff, but at a height of 90 ft above the runway, the engine began to run roughly once again. With insufficient height to land in the next field, the pilot attempted to land on the remaining length of the runway. The aircraft landed hard and came to a halt resting on its left wingtip. The pilot was uninjured.

A detailed examination of the engine revealed damage to the crown and underside of the rear piston. The evidence suggested that this had been caused by foreign object debris, passing from the crankcase, through the rear cylinder inlet valve, into the cylinder. No defects were observed within the crankcase and no further foreign objects were found. It could not be determined when the foreign object debris had entered the crankcase.

BMAA Comment
The pilot did well to deal with the first engine failure successfully. When investigating the cause of engine misbehaviour it is easy to stop at the first likely cause and look no further. This incident shows that all may not be as first seen.
ACCIDENT

Aircraft Type and Registration: Thruster T600N 450
No & Type of Engines: 1 Jabiru Aircraft Pty 2200A piston engine
Year of Manufacture: 2004
Date & Time (UTC): 20 March 2011 at 1515 hrs
Location:

Type of Flight: Training
Persons on Board: Crew - 2 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Failure of screws attaching the propeller flange to the crankshaft, leading to propeller detachment

Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 25 years
Commander’s Flying Experience: 508 hours (of which 477 were on type)
Last 90 days - 55 hours
Last 28 days - 17 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries

The propeller and hub assembly separated from the aircraft shortly after takeoff. The pilot completed a successful forced landing in an adjacent field. Examination revealed that all of the propeller flange mounting screws had failed. Some of the screws showed evidence of having fractured some time before the propeller finally separated.

Two previous, similar propeller attachment failures on this aircraft type were reported on in AAIB bulletins; both had resulted from fatigue failures of the corresponding screws. These were on aircraft G-EVEY on 26 October 2009 and G-CBWJ on 2 August 2010.

On 20 May 2011 the UK Civil Aviation Authority published an Emergency Mandatory Permit Directive applicable to all Thruster T600 aircraft having Jabiru 2200A engines driving two-bladed ground-adjustable Warp Drive propellers of 64-inch nominal diameter. This required replacement of the flange-to-crankshaft screws on reaching 500 hours operating life, or within 5 flight hours for those having lives between 500 and 1,000 hours, and before further flight on those having exceeded 1,000 hrs life.

**BMAA Comment**

This incident is identical with similar engine/propeller combination incidents and is now subject to a Mandatory Permit Directive which can be found at: [http://www.bmaa.org/files/jsb014-2_jsd014-2.pdf](http://www.bmaa.org/files/jsb014-2_jsd014-2.pdf)
The aircraft was on final approach to Runway 11 at an airstrip at Linton, near Maidstone, Kent. The weather was reported to be generally good, with a light wind from the south that occasionally gusted to 12 kt. The pilot reported that “while holding off prior to flare, the aircraft was suddenly hit by a very large/freak gust of wind that began to carry it sideways towards adjoining rough ground”. The pilot initiated a go-around but was unable to prevent the aircraft from rolling to the left and colliding with the ground to the north of the runway. The aircraft was badly damaged but the pilot, who was uninjured, was able to vacate the aircraft normally. There was no fire.
ACCIDENT

Aircraft Type and Registration: Flight Design CTSW
No & Type of Engines: 1 Rotax 912ULS piston engine
Year of Manufacture: 2009
Date & Time (UTC): 1 June 2011 at 1028 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Substantial
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 48 years
Commander’s Flying Experience: 188 hours (of which 136 were on type)
Last 90 days - 26 hours
Last 28 days - 3 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

Synopsis

Whilst landing at Sibson, the aircraft bounced and on the second touchdown the nose landing gear collapsed. The aircraft came to rest inverted and the pilot, who was uninjured, was able to vacate the aircraft unaided. The pilot was possibly distracted by the upslope to the displaced threshold and his proximity to the preceding aircraft.

History of the flight

G-OMSA was being flown in loose formation with another, similar aircraft. On joining the circuit at Sibson the two pilots agreed on the radio that the other aircraft would approach first to perform a touch-and-go. G-OMSA followed the other aircraft around the circuit as agreed.

A flying instructor, who was taxiing an aircraft with a student on board to the holding point of Runway 24, heard the radio conversation between the two pilots. On reaching the holding point he saw the two aircraft during their final approach and landing. He observed the first aircraft perform a touch-and-go and saw G-OMSA on short final descend to just above the surface of the starter extension to the runway. It then flew up the slope, at a constant height and touched down in a flat attitude just before the runway displaced threshold. It bounced, touched down again in a flat attitude and the nose gear then collapsed. As the aircraft slowed, it tipped over, coming to rest inverted. The pilot was uninjured and vacated the aircraft unaided. The instructor shut his aircraft down and went to assist the accident pilot. He
reported that he thought that G-OMSA was too close to
the first aircraft and was expecting to see it go-around.

Pilot’s comments

The pilot reported that he had not flown to Sibson
before and although he had self-briefed using a flight
guide, he was unaware of the upslope to the displaced
threshold of Runway 24.

He candidly commented that he had possibly been
distracted by the upslope and his proximity to the
preceding aircraft. He suggested the nosewheel may
have caught in a divot which may have led to the nose
gear to collapse. He intends to visit the airfield again
with an instructor to practise the approach and will be
researching new destinations more thoroughly in the
future.

BMAA Comment

In a candid comment in the full report, the pilot states that "He intends to visit the airfield again with an instructor to
practise the approach and will be researching new destinations more thoroughly in the future". Not a bad idea at
all.
ACCIDENT

Aircraft Type and Registration: Mainair Scorch

No & Type of Engines: 1 Rotax 503 piston engine

Year of Manufacture: 1988

Date & Time (UTC): 2 July 2011 at 1730 hrs

Location:

Type of Flight: Private

Persons on Board:

Crew - 1

Passengers - None

Injuries:

Crew - 1 (Serious)

Passengers - N/A

Nature of Damage: Aircraft destroyed

Commander’s Licence: National Private Pilot’s Licence

Commander’s Age: 58 years

Commander’s Flying Experience:

65 hours (of which 65 were on type)

Last 90 days - 2 hours

Last 28 days - 1 hour

Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot was returning from a local flight to land at a private grass airstrip near Seaville. The airstrip has a single 180 m runway on a heading of approximately 260°/080° and bounded by a hedge. The pilot had landed at the airstrip before, but had previously joined overhead before flying a circuit to position for landing. On this occasion he positioned the aircraft onto a long final approach for Runway 26 from an altitude of about 3,000 ft and about 6 nm from the runway. As he passed the position where he would normally turn from base leg onto the final approach, he realised that he was lower than normal, but considered that the approach path was still acceptable. As the aircraft overflew the airstrip boundary the undercarriage struck the hedge and the aircraft impacted the ground heavily. The pilot suffered serious injuries and was airlifted to hospital. The aircraft was damaged beyond economic repair.

The pilot stated that, when realising that he was below his normal descent path, he should have carried out a go-around.

BMAA Comment

Flying a “non standard” approach such as a six mile final may well present a pilot with an unexpected perspective as it did in this case. We all get used to a view of a strip from certain angles and positions so varying that requires some consideration. Once again, the pilot notes that he should have gone around once he realised that his approach path was lower than normal.
ACCIDENT

Aircraft Type and Registration: Rans S6-ES Coyote II
No & Type of Engines: 1 Jabiru Aircraft Pty 2200A piston engine
Year of Manufacture: 2002
Date & Time (UTC): 30 April 2011 at 1800 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - 1
Injuries: Crew - None Passengers - None
Nature of Damage: Nose landing gear, engine and engine mount, safety cage and propeller
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 47 years
Commander’s Flying Experience: 94 hours (of which 20 were on type)
Last 90 days - 21 hours
Last 28 days - 14 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot reported that, while landing on Runway 12, the aircraft bounced on its main landing gear. The pilot lowered the nose and the aircraft landed heavily on its nose landing gear, before bouncing into the air a second time. The aircraft then landed normally on its main landing gear and, as the pilot lowered the nose landing gear on to the runway, the nose gear fork detached. The nose landing gear leg dug into the grass runway tipping the aircraft forward on to its propeller. The aircraft came to rest on the remains of the nose leg and propeller spinner.

The surface wind was reported to be down the runway at 10 kt. The pilot concluded that he should have held the landing attitude or gone around after the aircraft’s first bounce.

BMAA Comment
Being able to control a bounce on landing should be considered an essential part of every pilot's skill set. Apart from that particular skill, there is always the option of going around - as the pilot has commented on this occasion.
<table>
<thead>
<tr>
<th>ACCIDENT</th>
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<tr>
<td><strong>Aircraft Type and Registration:</strong> Rans S6-ESD XL (Modified) Coyote II</td>
</tr>
<tr>
<td><strong>No &amp; Type of Engines:</strong> 1 Rotax 503-2V piston engine</td>
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<tr>
<td><strong>Year of Manufacture:</strong> 1998</td>
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<tr>
<td><strong>Date &amp; Time (UTC):</strong> 19 June 2011 at 0850 hrs</td>
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<tr>
<td><strong>Location:</strong></td>
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<tr>
<td><strong>Type of Flight:</strong> Private</td>
</tr>
<tr>
<td><strong>Persons on Board:</strong> Crew - 1 Passengers - 1</td>
</tr>
<tr>
<td><strong>Injuries:</strong>                Crew - None                                Passengers - None</td>
</tr>
<tr>
<td><strong>Nature of Damage:</strong> Nose leg, nose cone, propeller hub</td>
</tr>
<tr>
<td><strong>Commander’s Licence:</strong> Private Pilot’s Licence</td>
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<tr>
<td><strong>Commander’s Age:</strong> 73 years</td>
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<tr>
<td><strong>Commander’s Flying Experience:</strong> 976 hours (of which 976 were on type)</td>
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<tr>
<td>Last 90 days - 11 hours</td>
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<tr>
<td>Last 28 days - 2 hours</td>
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<tr>
<td><strong>Information Source:</strong> Aircraft Accident Report Form submitted by the pilot</td>
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After a normal touchdown on the Runway 21 at Sywell, the pilot applied heavy braking in order to vacate the active runway quickly. While decelerating below 15 mph, with heavy braking still applied and the engine idling, the aircraft encountered what the pilot described as a “significant undulation in the runway surface”. At this point the nose landing gear collapsed and the aircraft slid to a rest. Both occupants were wearing lap and diagonal harnesses and escaped uninjured. The pilot considered that the combination of heavy braking and the undulated surface of the grass runway caused the nose landing gear to collapse.

No BMAA Comment
ACCIDENT

Aircraft Type and Registration: Thruster T600N 450
No & Type of Engines: 1 Jabiru Aircraft Pty 2200A piston engine
Year of Manufacture: 2003
Date & Time (UTC): 29 May 2011 at 0940 hrs
Location:
Type of Flight: Training
Persons on Board: Crew - 1  Passengers - 1
Injuries: Crew - 1 (Minor)  Passengers - 1 (Minor)
Nature of Damage: Damage to fuselage, wings, rudder and landing gear, engine shock-loaded
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 55 years
Commander’s Flying Experience: 360 hours (of which 87 were on type)
Last 90 days - 6 hours
Last 28 days - 2 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot was conducting an air experience flight with a passenger. He reports that, whilst on final approach to Runway 26, he encountered turbulence at 300 ft agl. The wind at the time was reported as 250º at approximately 12 kt. The pilot descended to 20 ft above the runway, at 50 kt IAS, with the aircraft flying into wind and with left aileron applied. The aircraft then encountered a gust of wind, causing it suddenly to lose height whilst rolling to the right, before bouncing firmly onto the runway, puncturing the right mainwheel. The aircraft yawed to the right and departed the runway, and despite the pilot applying full power, the aircraft’s nosewheel struck the top of a hedge. The aircraft came to rest inverted in a field, 10 m beyond the hedge line. The pilot turned the ignition switch and battery isolator to OFF and closed the fuel valve, although fuel was leaking from the left wing’s fuel filler cap. The pilot vacated the aircraft after releasing his harness, and with the assistance of a nearby club member, he then helped the passenger to leave the aircraft. Both the pilot and passenger sustained minor injuries in the accident.

BMAA Comment
This accident illustrates how gusty winds can seriously affect the handling of microlight aircraft, even in the hands of an instructor. The low inertia and low wing loadings of our aircraft make can make them extremely difficult to control in these circumstances.
ACCIDENT

Aircraft Type and Registration: X’air 582(2)
No & Type of Engines: 1 Rotax 582/48-2V piston engine
Year of Manufacture: 2000
Date & Time (UTC): 29 June 2011 at 1030 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Engine, propeller, nosewheel, tail assembly, cockpit pod, instrument panel, fuselage tubing, control linkages
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 68 years
Commander’s Flying Experience: 113 hours (of which 33 were on type)
Last 90 days - 6 hours
Last 28 days - 3 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

On left base to the grass strip the pilot experienced significant sink and so increased the engine power to maintain altitude. The pilot reduced power on final approach as he set the aircraft up for a crosswind landing on Runway 20. The pilot stated that the wind at the time was from 185° at 5 kt. As he rounded out he encountered more sink, causing the aircraft to descend rapidly and touchdown on the main gear in long grass just short of the runway. The aircraft travelled along the runway on the main gear for about 40 m before the nosewheel touched down. The nose gear collapsed and the aircraft pitched over to the inverted position before coming to rest, causing substantial damage to the aircraft. The pilot, who was wearing a four-point harness, was uninjured and made the aircraft safe before exiting.
ACCIDENT

Aircraft Type and Registration: EV-97 TeamEurostar UK
No & Type of Engines: 1 Rotax 912-UL piston engine
Year of Manufacture: 2006
Date & Time (UTC): 20 June 2011 at 1510 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1  Passengers - 1
Injuries: Crew - None  Passengers - None
Nature of Damage: The right main landing gear and right wing were damaged
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 48 years
Commander’s Flying Experience: 191 hours (of which 43 were on type)
  Last 90 days - 10 hours
  Last 28 days - 2 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

The aircraft joined a right hand circuit pattern for grass Runway 11 at a private landing strip. The runway was 350 m in length and 14 m (45 ft) wide. On each side of the runway was a standing crop of oilseed rape, some 4 ft high. The surface wind was light and variable in direction, mainly along the runway or slightly from the right.

The approach and touchdown were reported as normal. When the nosewheel was on the ground, the pilot applied the brakes but, as the speed reduced, the aircraft drifted to the left. The pilot was looking ahead along the runway and did not appreciate the proximity of the vegetation to his left. The left wing made contact with the crop and the aircraft immediately slewed round to the left. Its nose entered the crop and the engine stopped.

There was a small drop at the edge of the runway by the cultivated area and, as the aircraft crossed this, damage was caused to the right main landing gear and the right wing. The pilot and his passenger, who were both wearing full shoulder harnesses, were uninjured and vacated the aircraft unaided after it had been shut down.

BMAA Comment
There have been several instances of low wing aircraft running into crop. Pilots of low wing aircraft in particular should be aware of the potential danger created by crop at certain times of the year.
ACCIDENT

Aircraft Type and Registration: X’Air Falcon 133(2)
No & Type of Engines: 1 Verner 133M piston engine
Year of Manufacture: 2006
Date & Time (UTC): 29 June 2011 at 1645 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - None Passengers - N/A
Nature of Damage: Damage to landing gear and pod
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 51 years
Commander’s Flying Experience: 58 hours (of which 28 were on type)
Last 90 days - 32 hours
Last 28 days - 28 hours
Information Source: Aircraft Accident Report Form submitted by the pilot

Following normal pre-flight checks, the pilot took off and climbed to a height of between 100 and 150 ft agl, at which point the engine lost power and he could no longer maintain altitude. Due to the close proximity of power lines, the choice of location for a forced landing was limited to a field containing crops, which were approximately 1.8 m high. The pilot elected to stall the aircraft as it touched the top of the crop, resulting in damage to the nosewheel and pod assembly of the aircraft when it subsequently contacted the ground. Investigation of the engine identified a failure of the rocker arm that operated the inlet ports on one cylinder. As the engine was a twin cylinder model, the power generated by one operational cylinder alone had not been sufficient to maintain flight.

No BMAA Comment
### ACCIDENT

Aircraft Type and Registration: Gemini Flash IIA

No & Type of Engines: 1 Rotax 503 piston engine

Year of Manufacture: 1988

Date & Time (UTC): 27 May 2011 at 1330 hrs

Location:

Type of Flight: Training

Persons on Board:

- Crew - 1
- Passengers - 1

Injuries:

- Crew - None
- Passengers - None

Nature of Damage: Keel and front strut

Commander’s Licence: Private Pilot’s Licence

Commander’s Age: 56 years

Commander’s Flying Experience:

- 685 hours (of which 240 were on type)
- Last 90 days - 110 hours
- Last 28 days - 22 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot carried out an uneventful takeoff from Runway 24 at Netherthorpe Aerodrome where the forecast wind was 15 kt from the north. After a training flight, he returned to Netherthorpe and began an approach to the same runway. He reported that the conditions had deteriorated and that the windsock indicated gusts from a variable direction. Conscious of the crosswind limit of the aircraft as being 10 mph (8.7 kt), he continued the approach to Runway 24 with the intention of making a right turn as the aircraft approached the intersection with Runway 36, to land more into the wind.

During the approach, the pilot recalled encountering increasing turbulence and, when approaching 100 ft above ground level, noticed an increase in airspeed and rate of descent. At 40 ft above ground level, this descent rate increased further and the pilot decided to go around and applied full power. However, the aircraft continued to descend and touched down heavily, causing damage to the keel and front strut.

Both occupants, who were wearing lap and diagonal harnesses and protective helmets, were uninjured. The pilot considered that the aircraft had been affected by rotary airflow in the lee of nearby trees and buildings.

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**BMAA Comment**

This accident illustrates how gusty winds can seriously affect the handling of microlight aircraft, even in the hands of an instructor. The low inertia and low wing loadings of our aircraft make them extremely difficult to control in these circumstances.
### ACCIDENT

**Aircraft Type and Registration:** EV-97 Teameurostar UK  
**No & Type of Engines:** 1 Rotax 912-UL piston engine  
**Year of Manufacture:** 2007  
**Date & Time (UTC):** 2 August 2011 at 1630 hrs  
**Location:** Training  
**Persons on Board:**  
<table>
<thead>
<tr>
<th>Crew</th>
<th>Passengers</th>
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<tr>
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<td>None</td>
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**Injuries:**  
<table>
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<tr>
<th>Crew</th>
<th>Passengers</th>
</tr>
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<tbody>
<tr>
<td>None</td>
<td>N/A</td>
</tr>
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</table>

**Nature of Damage:** Damaged firewall  
**Commander’s Licence:** National Private Pilot’s Licence  
**Commander’s Age:** 61 years  
**Commander’s Flying Experience:** 878 hours (of which 21 were on type)  
Last 90 days - 27 hours  
Last 28 days - 11 hours  

**Information Source:** Aircraft Accident Report Form submitted by the pilot

### Synopsis

The aircraft bounced on landing during the student’s first solo flight. He attempted to control the bounce, but believes he applied incorrect inputs resulting in two further bounces. The aircraft suffered damage to the engine firewall.

### History of the flight

The student, a qualified flex wing pilot, was undertaking a conversion course to fly fixed wing aircraft and had undergone 21 hours of training for this purpose. On the day of the accident he had flown three circuits with his instructor to a sufficiently high standard for the instructor to send him on his first solo flight. The weather was “good” with light winds along the runway and after briefing the exercise, the student took off to fly a solo circuit.

The student reported that the flight had gone well until, on landing, the aircraft landed firmly on the main wheels and bounced. He maintained idle power and attempted to control the bounce with the flying controls, but the aircraft bounced twice more, each time landing first on the nosewheel. The aircraft finally settled on the runway and the student brought it to a halt, switching off the engine. He was uninjured and initially there appeared to be no damage to the aircraft, although a subsequent inspection identified damage to the engine firewall.

The student pilot remembered little of the events after the initial bounce but believed he either over-controlled the aircraft or applied controls in the wrong sense, reverting to what would have been natural inputs to make in the
same situation on a flex-wing aircraft. He reported that he had practised bounced landing procedures whilst training with his instructor and considered he should have applied power on bouncing the first time.

BMAA Comment
Being able to control a bounce on landing should be considered an essential part of every pilot's skill set. Apart from that particular skill, there is always the option of going around - as the pilot has commented on this occasion.
ACCIDENT

Aircraft Type and Registration: EV-97 TeamEurostar UK
No & Type of Engines: 1 Rotax 912-UL piston engine
Year of Manufacture: 2010
Date & Time (UTC): 18 August 2011 at 1200 hrs

Location:
Type of Flight: Training
Persons on Board: Crew - 1  Passengers - None
Injuries: Crew - 1 (Minor)  Passengers - N/A
Nature of Damage: Substantial
Commander’s Licence: Student
Commander’s Age: 57 years
Commander’s Flying Experience: 95 hours (of which 40 were on type)
Last 90 days - 11 hours
Last 28 days - 5 hours

Information Source: Aircraft Accident Report Form submitted by the student and further enquiries by the AAIB

The instructor had released the student pilot for a solo flight after a satisfactory dual training detail. During the landing on this solo flight the aircraft bounced and the student decided to go around in accordance with his training. As he applied full power the aircraft pitched up, veered left and stalled. The left wing dropped and the aircraft impacted a field to the left of the runway. The student sustained a minor injury to his left arm but was able to vacate the aircraft unaided. He candidly reported that he probably did not apply the correct control inputs when he initiated the go-around.

BMAA Comment

Being able to control a bounce on landing should be considered an essential part of every pilot’s skill set. Apart from that particular skill, there is always the option of going around - as the pilot has commented on this occasion.
ACCIDENT

Aircraft Type and Registration: Gemini Flash IIA
No & Type of Engines: 1 Rotax 503 piston engine
Year of Manufacture: 1988
Date & Time (UTC): 31 July 2011 at 1200 hrs
Location:

Type of Flight: Private
Persons on Board: Crew - 1 Passengers - 1
Injuries: Crew - None Passengers - None
Nature of Damage: Keel tube in wing, control bar, monopole, right wing and pod

Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 32 years
Commander’s Flying Experience: 124 hours (of which 2 were on type)
Last 90 days - 6 hours
Last 28 days - 6 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and subsequent enquiries by the AAIB

After an uneventful local flight, the pilot landed back at Cromer Airfield on grass Runway 22. The landing was reported as smooth but, as the speed reduced, the trike veered to the left. This, and the corrective action, set up an oscillation resulting in the aircraft tipping onto its left side and nose at an estimated speed of between 10 and 15 mph. Both pilot and passenger, wearing a lap strap and full harness respectively and both wearing helmets, were uninjured.

The pilot considered that, given the low speed, the option not to correct the initial turn to the left and to allow the aircraft to run into the adjoining stubble field may have been better. He also reported that a subsequent examination of the trike did not find any pre-existing failures but that general levels of wear may have contributed to the event.

No BMAA Comment
ACCIDENT

Aircraft Type and Registration: Thruster T600N 450
No & Type of Engines: 1 Rotax 582 UL-DCDI piston engine
Year of Manufacture: 1998
Date & Time (UTC): 5 July 2011 at 1115 hrs
Location:
Type of Flight: Private
Persons on Board: Crew - 1  Passengers - 1
Injuries: Crew - None  Passengers - None
Nature of Damage: Damage to pod, wings and propeller; detached nosewheel and bent tubes in cockpit cage
Commander’s Licence: National Private Pilot’s Licence
Commander’s Age: 65 years
Commander’s Flying Experience: 130 hours (of which 73 were on type)
Last 90 days - 2 hours
Last 28 days - 1 hour
Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot reports that he was landing on Runway 06 at Stoke Airfield, which has a length of 400 metres. There was a light crosswind but very late on the approach the wind changed to a tailwind of some 10 kt. The pilot reports that he “flared late”, hitting the ground “too fast” and the aircraft bounced back into the air nose high. The aircraft stalled and nosed into the ground. Neither the pilot nor the passenger was injured and they were able to leave the aircraft safely.

No BMAA Comment