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## CONTENTS (Continued)

## ADDENDA and CORRECTIONS

None



**(ALL TIMES IN THIS BULLETIN ARE UTC)**

**SERIOUS INCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Britten-Norman BN2A-26, Islander, VP-MON |
| **No & Type of Engines:** | 2 Lycoming O540 piston engines |
| **Year of Manufacture:** | Not known |
| **Date & Time (UTC):** | 22 May 2011 at 2154 hrs |
| **Location:** | John A Osborne Airport, Montserrat |
| **Type of Flight:** | Commercial Air Transport (Passenger) |
| **Persons on Board:** | Crew - 1 Passengers - 7 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | None |
| **Commander's Licence:** | Commercial Pilot's Licence |
| **Commander's Age:** | 34 years |
| **Commander's Flying Experience:** | 3,600 hours (of which 2,000 were on type)<br>Last 90 days - 13 hours<br>Last 28 days - 13 hours |
| **Information Source:** | AAIB Field Investigation |

## Synopsis

While attempting to land on Runway 28 the aircraft skidded after the commander applied the brakes. As a result the commander performed a touch-and-go and positioned for another approach to Runway 28. On landing after the second approach the aircraft skidded again when brakes were applied, and the commander continued with the landing roll. However, believing there was insufficient runway ahead in which to stop the aircraft the commander steered the aircraft onto the grass verge in an attempt to stop it before the end of the prepared surface. The aircraft came to rest beside the runway, 46 m from its end. There were no injuries to the passengers and no damage to the aircraft. This was the commander's first landing on Runway 28.

A previous serious landing incident at John A Osborne airport, involving the same operator, is also being investigated by the AAIB, which is responsible for investigating accidents and serious incidents that occur in the UK Overseas Territories. As a result of initial investigations three safety recommendations have been made. All times in this special bulletin are UTC. Local time in Montserrat is 4 hours behind UTC.

**History of the flight**

The aircraft was on a scheduled flight from VC Bird Airport, Antigua, West Indies, to John A Osborne Airport, Montserrat. The departure and cruise from Antigua were uneventful. As the aircraft approached Montserrat the pilot was instructed to join left hand downwind for Runway 10 and informed that the wind was from 090° at 5 kt. Approximately three minutes later the ATCO advised the pilot that the wind was now from 360° at 3 kt. The pilot replied that he would nevertheless like to conduct an approach to Runway 10. However the ATCO added that there were clouds at approximately 600 ft aal[1] drifting from the west with visibility of approximately 6 km. As a result the pilot requested Runway 28. He was instructed to report on final for Runway 28 and advised that the wind was from 350° at 4 kt. When the pilot reported that he was approximately 3 nm from landing the ATCO informed him that there was a light rain shower at the airfield. Shortly thereafter the ATCO reported that he could see VP-MON and cleared the aircraft to land on Runway 28, reporting a surface wind from 300° at 4 kt.

The pilot stated that he touched down in the area of the Runway 28 identification numbers. After he applied the brakes the aircraft skidded, so he decided to perform a touch-and-go and to make another approach to Runway 28. The passengers, ATCOs and AFRS personnel stated that the aircraft appeared to have touched down approximately a third to halfway along the runway.

On short final during the second approach the ATCO informed the pilot the wind was from 320° at 3 kt. The pilot stated that he touched down just past the runway threshold marker and the aircraft skidded again on the initial application of the brakes, however, he elected to continue with the landing roll. Most of the witnesses stated that the aircraft landed just before the Abbreviated PAPIs (APAPIs)[2] for Runway 28, which are located approximately 190 m from the Runway 28 threshold. As he continued the landing roll he continued to 'pump' the brakes; however, he judged he might overrun the runway. As a result he elected to steer the aircraft right onto the grass verge, approximately 156 m from the end of the paved surface, in an attempt to slow down the aircraft more effectively. The aircraft came to rest on the grass approximately 46 m from the end of the paved runway surface. The runway was described as 'damp' by the pilot and most of the witnesses.

After the pilot had shut down the aircraft's engines he vacated the aircraft, followed by the passengers. There were no injuries to the passengers and no apparent damage to the aircraft. After the passengers had been driven to the terminal in an airport vehicle the pilot started the aircraft's engines and taxied it to the apron without requesting permission from ATC. Having informed the operator's chief pilot and sought some engineering advice from an off-island maintenance organisation the pilot left the airport.

**Footnote**

[1] aal means 'above aerodrome level'.

**Footnote**

[2] Abbreviated PAPIs consist of two lights to indicate the aircraft's runway approach angle to the pilot; PAPIs have four.

The following morning the pilot flew the aircraft empty to Anguilla for a scheduled maintenance inspection.

**Notification**

The locally based Accident Investigation Manager (AIM) was informed of the incident by Montserrat ATC at approximately 2200 hrs (all times in this report are UTC) and arrived at the airport at 2238 hrs. Initially he was unable to inform the AAIB by telephone, and made contact at 1230 hrs the following day. After further enquiries the AAIB travelled to Montserrat on 13 June 2011 to conduct a field investigation.

**Runway inspection**

The runway was inspected by the AIM and latterly by the AAIB. They noted a skid mark approximately 24 m long made by the aircraft's right main tyres that started approximately 191 m from the beginning of the paved area of Runway 28 (163 m from the threshold), 12 m before the Runway 28 APAPIs.

The aircraft's tyre marks continued along the runway until the left and right tyre marks left the paved surface about 115 m and 148 m from the end of the paved surface respectively.

**Weather information**

The Terminal Aerodrome Forecast (TAF) for John A Osborne Airport issued at 1000 hrs on 22 May 2011 stated that the surface wind was expected to be calm and the visibility in excess of 10 km, with SCATTERED cloud at 2,200 ft aal. There was a 30% chance that between 1200 hrs on 22 May and 1200 hrs on 23 May there would temporarily be showers of rain. The surface wind was expected to become 10 kt from 120° between 1200 hrs and 1600 hrs.

The reported conditions at 2100 hrs were surface wind from 110° at 12 kt, visibility in excess of 10 km, BROKEN cloud at 1,600 ft aal, temperature 26°C, dew point 25°C and QNH 1014 mb. There had been recent rain at the aerodrome and there was rain to the west.

The reported conditions at 2200 hrs were surface wind from 320° at 4 kt, visibility of 6 km, light showers of rain and thunder storms, BROKEN cloud at 600 ft aal, and FEW cumulonimbus clouds at 1,000 ft aal. The temperature and dew point were both 25°C and the QNH was 1015 mb.

**Pilot's experience**

The pilot of VP-MON had over 2,000 hrs experience on the Britten-Norman Islander and had started working for the operator on 11 May 2011. On 13 May 2011 he successfully completed a flight check to operate at Montserrat; however, only takeoffs and landings from Runway 10 were completed. This incident occurred on the pilot's first landing on Runway 28.

**Previous serious landing incident**

On 17 April 2011 another Britten-Norman Islander aircraft, registration VP-MNI, operated by the same operator as VP-MON, departed the side of the runway at John A Osborne Airport, Montserrat. The aircraft had departed from VC Bird Airport, Antigua, and was making an approach to Runway 10 at John A Osborne Airport at about 1915 hrs. After a normal touchdown the pilot applied the brakes and noticed that there was no response from the right brake pedal. While maintaining directional control with the rudder the pilot tried to "pump" the brake pedals but this had no effect on the right brakes. To avoid departing the end of the runway the pilot allowed the aircraft to turn left onto grass just beyond the taxiway exit. The aircraft struck an embankment located 20 m north of the runway edge, approximately 150 m from the

end of the runway. The impact, which was estimated by the pilot to be at approximately 10 kt, resulted in damage to the nose structure and caused the nose landing gear leg to collapse. The left wing tip leading edge was also damaged when it struck the embankment. The seven passengers were able to exit the aircraft via the main door after the aircraft came to rest.

The investigation by the aircraft owner's engineering representatives revealed that the right brake had failed due to trapped air in the right brake hydraulic line. One of the right brake assembly O-ring seals had been replaced prior to the incident flight to address a hydraulic oil leak. The brakes had been tested following this work and were found to be working correctly. The investigation continues and is focussing on brake maintenance procedures.

**Aerodrome information**

The Aeronautical Information Publication states the following declared distances for John A Osborne Airport, see Table 1.

There are no overrun areas on either runway. At the end of each runway is a vertical drop in excess of 200 ft. See Figure 1 for a diagram of the airfield.

There is one windsock located to the north of the Runway 10 threshold.

There is a wireless weather station in the ATC tower with the anemometer mounted on the roof. This is currently the primary device used to display current wind to the ATCOs. There is also a mast-mounted anemometer, on the grass, between the fire station and the windsock but this is only partially serviceable as the display, which is on the ATCO's console, receives only wind direction information. There is another mast-mounted anemometer north of the tower, which has not been commissioned. The aerodrome operator commented that this will be relocated to the grass area west of the taxiway and commissioned. They plan to have this completed by end of August.

There is a 'Griptester' continuous runway friction measuring device available for use at the aerodrome, however it was last used in 2007. It requires calibrating before it can be used and there are no personnel at the airport trained in its operation.

| RWY designator | TORA[3] (m) | ASDA[4] (m) | TODA[5] (m) | LDA[6] (m) | Remarks |
|---|---|---|---|---|---|
| 10 | 553 | 553 | 623 | 540 | THR DISP 30 M |
| 28 | 553 | 553 | 830 | 540 | THR DISP 30 M |

**Table 1**

**Footnotes**

[3] Takeoff Run Available (TORA). The distance from the point on the surface of the aerodrome at which the aeroplane can commence its takeoff run to the nearest point in the direction of takeoff at which the surface of the aerodrome is incapable of bearing the weight of the aeroplane under normal operating conditions.

[4] Accelerate Stop Distance Available (ASDA). The distance from the point on the surface of the aerodrome at which the aeroplane can commence its takeoff run to the nearest point in the direction of takeoff at which the aeroplane cannot roll over the surface of the aerodrome and be brought to rest in an emergency without the risk of accident.

[5] Takeoff Distance Available (TODA). Either the distance from the point on the surface of the aerodrome at which the aeroplane can commence its takeoff run to the nearest obstacle in the direction of takeoff projecting above the surface of the aerodrome and capable of affecting the safety of the aeroplane, or one and one half times the takeoff run available, whichever is the less.

[6] Landing distance available (LDA). The length of runway which is declared available and suitable for the ground run of an aeroplane landing.

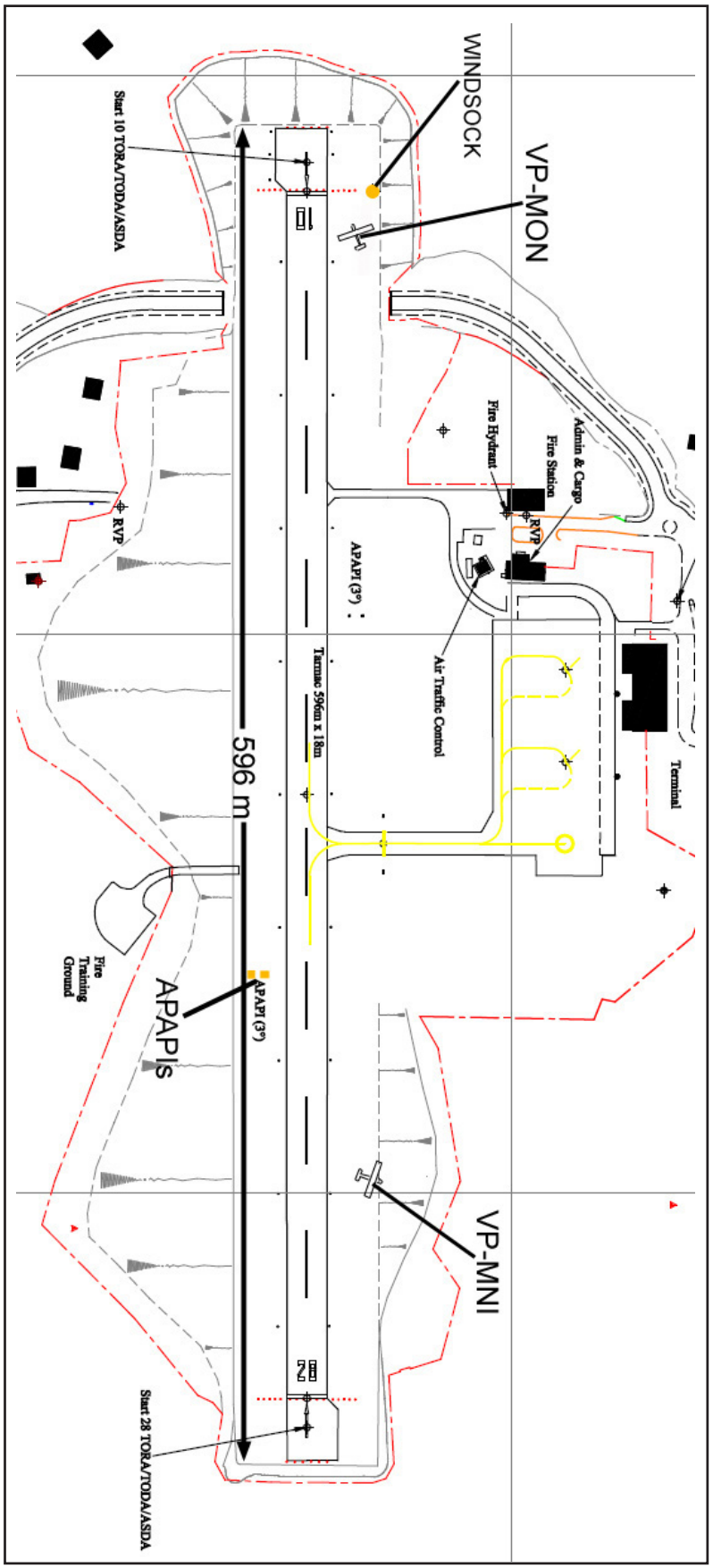


**Figure 1**

**Aerodrome manual**

The John A Osborne Airport aerodrome manual states:

> ***'9 Runway Surface friction Measurement***
>
> *9.1 A continuous friction measuring device is available.*
> *9.2 In order to provide a record of the reduction in friction characteristics with time, friction testing is carried out periodically but at not less than six-monthly intervals by the Operations Officer and the results reported to the Duty ATCO. Friction testing may also be carried out when the Aerodrome Manager so decides e.g. following a runway incident or particularly heavy rain.'*

Due to the absence of trained personnel the aerodrome operator has been unable to meet these requirements.

**Safety Recommendations**

The following Safety Recommendations are made:

**Safety Recommendation 2011-077**

The operator of John A Osborne Airport, Montserrat, should install a windsock and anemometer adjacent to the Runway 28 threshold.

**Safety Recommendation 2011-078**

The operator of John A Osborne Airport, Montserrat, in consultation with Air Safety Support International[7], should revise its operations manual to permit pilots to operate only to and from the runway on which they have been flight checked.

**Safety Recommendation 2011-079**

The operator of John A Osborne Airport, Montserrat should ensure that a runway friction assessment is carried out at the earliest opportunity by a qualified person using suitable equipment.

The investigation continues. A full report will be published in due course.

**Footnote**

[7] Air Safety Support International, a subsidiary company of the UK Civil Aviation Authority, has been designated by the Governor of Montserrat to perform the civil aviation regulatory tasks on behalf of the Governor.

*Published 21 July 2011*

**INCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | DHC-8-402 Dash 8, G-JEDR |
| **No & Type of Engines:** | 2 Pratt & Whitney Canada PW150A turboprop engines |
| **Year of Manufacture:** | 2003 |
| **Date & Time (UTC):** | 30 November 2010 at 1902 hrs |
| **Location:** | Bournemouth Airport, Dorset |
| **Type of Flight:** | Commercial Air Transport (Passenger) |
| **Persons on Board:** | Crew - 4 Passengers - 69 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | Damage to frangible 'touch runway' switch |
| **Commander's Licence:** | Airline Transport Pilot's Licence |
| **Commander's Age:** | 48 years |
| **Commander's Flying Experience:** | 9,000 hours (of which 765 were on type)<br>Last 90 days - 168 hours<br>Last 28 days - 39 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB |

**Synopsis**

As the aircraft approached touchdown following a flap 0° approach, the pilot increased the pitch attitude to control the rate of descent and the aft lower fuselage of the aircraft struck the runway. One Safety Recommendation was made.

**History of the flight**

The aircraft was on a VOR approach to Southampton Airport in icing conditions when, as the first stage of flap was selected, the amber FLAP POWER caution illuminated on the Caution and Warning Panel (CWP) and the flaps remained up. The crew calculated that the runway at Southampton Airport was not long enough for a flap 0° approach in icing conditions and decided to carry out an ILS approach to Runway 08 at Bournemouth Airport. The weather conditions reported at Bournemouth Airport were wind from 050° at 10 kt, 10 km visibility, broken cloud at 1,500 ft aal, and a temperature of 1°C.

Seven miles from touchdown on the final approach to Bournemouth Airport, the aircraft's landing gear was down, its speed was stabilised at a $V_{REF}$ of 150 kt IAS and its attitude was 5° nose-up. At 1,000 ft aal, the commander disconnected the autopilot and began to fly manually, in accordance with the Emergency Check List (ECL). When the aircraft was within approximately 2 nm of the runway, the co-pilot began to call out the

aircraft's pitch attitude. As the aircraft approached the touchdown point, the commander perceived a high rate of descent and increased the pitch attitude to reduce it. The co-pilot called "PITCH 8°, DON'T PITCH ANY MORE" but, as the aircraft touched down, a Master Warning was triggered and the crew observed the TOUCHED RUNWAY caption illuminate on the CWP. The aircraft vacated the runway and taxied to a parking stand, where the pilots carried out a normal shutdown. An inspection of the aft lower fuselage of the aircraft revealed that the frangible touch runway detection switch was broken.

**Comments from the commander**

The commander commented that, although he was aware of the ECL requirement to avoid pitch attitudes in excess of 6° at touchdown, he found the temptation to flare the aircraft to reduce the rate of descent overwhelming. He also thought that the advice in the ECL to gradually reduce power to achieve flight idle at touchdown might have contributed to the aircraft's high rate of descent. In addition, the commander reported that the wind dropped significantly as the aircraft approached the runway – an assessment confirmed later by the operator following flight data analysis – which might have caused some windshear to be present in the final stages of the approach.

**AAIB investigation into a similar event**

The report of an AAIB investigation into a tail strike incident involving another DHC-8-402 Dash 8[1] referred to the manufacturer's Service Letter DH8-400-SL-00-020, which advised operators to include in their procedures an alert call at 5º pitch attitude and stated that:

> *'Descent control below 200 ft agl must be through power lever management rather than adjusting pitch.'*

The manufacturer commented further that:

> *'The result of small power lever movement ahead of FLIGHT IDLE is an immediate reduction in the sink rate even before there is an actual increase in power due to the effectiveness of lift due to slipstream.'*

**Operator's investigation**

The operator's investigation of the incident, which included an interview of the crew and analysis of flight data downloaded from the aircraft, highlighted some anomalies in the company's manuals. The ECL for a landing with an abnormal flap configuration (flap 5° or flap 0°) instructs pilots to:

> *'Reduce power gradually to achieve FLT IDLE at touchdown.'*

In Part B4 of the operator's Operations Manual, the section that deals with landing with an abnormal flap configuration states that:

> *'Power should be reduced to FLT IDLE at touchdown and the nose-wheel promptly lowered to the ground.'*

The Airplane Flight Manual (AFM) for the aircraft considers abnormal flap landings and states:

> *'Power should be reduced gradually to achieve FLT IDLE at or just prior to touchdown.'*

In all cases, there is a caution to avoid pitch attitudes in excess of 6° at touchdown.

**Footnote**

[1] AAIB Bulletin 7/2010; aircraft registration G-ECOZ, which was not carrying out a flap 0° approach.

Flight data showed that the commander began reducing power to FLT IDLE when the aircraft was below approximately 30 ft agl.

**Discussion with the manufacturer**

The operator believed that the ECL requirement to reduce power gradually to achieve FLT IDLE at touchdown contradicted the manufacturer's advice to use power to manage the rate of descent below 200 ft agl. The manufacturer offered a further explanation to the company, which was subsequently reiterated to the AAIB:

> *'With the aircraft flying at the correct $V_{REF}$, the power levers are intended to be selected to FLIGHT IDLE immediately prior to the main wheels arriving on the runway surface. In the abnormal flap condition, the [difference is that] power levers are put to FLIGHT IDLE "at" ahead of "just prior to" touchdown. The pitch attitude for a flap 0 or 5 degree landing, when stabilized at the correct $V_{REF}$, will give a pitch attitude of between 5 and 6 degrees, which, from a pilot handling perspective, should suggest a flare is not possible and power will be maintained to main wheel contact followed by promptly lowering the nosewheel to the runway.'*

The AFM states in the section on normal landing procedures that:

> *'To decrease the landing descent rate, when the landing descent rate is higher than desired, power will be required in the landing flare through touchdown.'*

The manufacturer stated that procedures in the case of abnormal flap landings differed from those of normal landings only with respect to those procedures given in the AFM section on abnormal flap landings. Consequently:

> *'all the normal expected handling activities associated with power management for approach airspeed, descent rate and pitch attitude control are relevant [to an abnormal flap landing] and expected to be executed by the pilot flying.'*

At light weights in the flap 5° configuration, the power levers would need to be selected to FLT IDLE just prior to, rather than at, touchdown and so the AFM abnormal flap procedure covered both conditions of power management. In addition:

> *'power lever movement toward FLT IDLE should be gradual to avoid a sudden pitch attitude change.'*

The manufacturer believed that the AFM contains adequate information to enable pilots to control the rate of descent at maximum pitch attitude and concluded that, in this incident, the appropriate pilot action required the:

> *'application of power coincidental with lowering of the pitch attitude to the allowed 6°.'*

**Rate of descent**

An aircraft with a typical $V_{REF}$ of 120 kt in a 10 kt headwind would require a rate of descent of 582 ft/min to maintain a 3° glidepath. During the incident approach, flight data showed that the groundspeed of the aircraft between 1,000 ft and 20 ft agl varied between 131 and 139 kt, with a typical value of 136 kt. This groundspeed required a rate of descent of 720 ft/min to maintain a 3° glidepath, representing a 24% increase

from a typical approach. The operator required its pilots to practise a flap 0° approach in the simulator once every three years.

As G-JEDR descended between 300 and 100 ft agl, its rate of descent was between 700 and 800 ft/min. The rate of descent increased to 1,000 ft/min as the aircraft descended to 30 ft agl and then reduced progressively to 200 ft/min at touchdown. The reduction in rate of descent corresponded to an increase in aircraft pitch attitude from 6° nose-up at 30 ft agl to 9° nose-up immediately before touchdown. The power levers were retarded slightly as the aircraft passed 100 ft agl and retarded to idle below 30 ft agl.

**Analysis**

The rate of descent required for a flap 0° approach is significantly higher than for a normal approach but the operator's pilots practise flap 0° approaches in the simulator only once every three years. Consequently, the incident aircraft pilot's perception of a high rate of descent might be expected of most of the operator's pilots when flying a flap 0° approach. The aircraft's rate of descent was already higher than required when the pilot began to reduce power towards FLT IDLE in accordance with the ECL instructions. The reduction in power would probably have increased the rate of descent further in the absence of any other action. However, the pilot increased the aircraft pitch attitude at the same time, and the aft lower fuselage struck the runway.

The manufacturer considered that sufficient information was provided in the AFM to enable crews to control high rates of descent during abnormal flap landings. A note in the AFM section regarding normal landings indicated that power may remain applied until touchdown to reduce the rate of descent and the manufacturer stated that this technique is also applicable to the abnormal flap landing case. The manufacturer also commented that, in abnormal flap landings, the pitch attitude is so close to the pitch limit that a flare is not possible and power will be maintained until main wheel contact.

With regard to landing with abnormal flap, the current edition of the ECL instructs pilots to reduce thrust gradually to achieve FLT IDLE '*at*' touchdown, meaning that power reduction will begin while the aircraft is still airborne. In this respect, the ECL instructions describe power lever control in a flap 5° landing at light aircraft weight. However, as a source of guidance for pilots who rarely fly or train for abnormal flap approaches, the ECL should contain the most complete information that it is practical to provide. Therefore, the following Safety Recommendation is made:

**Safety Recommendation 2011-081**

It is recommended that Bombardier Aerospace amends the DHC-8-402 Dash 8 emergency checklist section concerning abnormal flap landings to reflect their advice that power will be maintained until main wheel contact.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Piper PA-23-250 Aztec, N40267 |
| **No & Type of Engines:** | 2 Lycoming TI0-540 SER piston engines |
| **Year of Manufacture:** | 1973 |
| **Date & Time (UTC):** | 23 April 2011 at 1815 hrs |
| **Location:** | Virgin Gorda Airport, British Virgin Islands |
| **Type of Flight:** | Comercial Air Transport (Non-Revenue) |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Underside of left wing, flap, gear doors, propeller, main gear and actuator damaged |
| **Commander's Licence:** | Commercial Pilot's Licence |
| **Commander's Age:** | 33 years |
| **Commander's Flying Experience:** | 4,500 hours (of which 200 were on type)<br>Last 90 days - 200 hours<br>Last 28 days - 45 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The left main landing gear collapsed when the aircraft landed on Runway 03 at Virgin Gorda Airport, British Virgin Islands. The pilot stated that he had selected the landing gear down, observed three green landing gear position lights and carried out a normal landing. As the aircraft decelerated on the runway, the pilot heard the landing gear warning horn and the aircraft rolled to the left until its left wing and propeller contacted the runway. The aircraft skidded for a further 100 ft before coming to rest on the left side of the runway, where the pilot shut down and vacated it without injury. The landing gear actuator for the left main gear had failed in overload. It is likely that the left main landing gear was not fully locked down, which resulted in the actuator being subjected to excessive loads that caused it to fail. The investigation did not determine why the left landing gear was not fully locked down.

**INCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Saab-Scania SF340B, G-LGNI |
| **No & Type of Engines:** | 2 General Electric CO CT7-9B turboprop engines |
| **Year of Manufacture:** | 1989 |
| **Date & Time (UTC):** | 16 December 2010 at 1555 hrs |
| **Location:** | Kirkwall Airport, Orkney Islands |
| **Type of Flight:** | Commercial Air Transport (Passenger) |
| **Persons on Board:** | Crew - 3 Passengers - 17 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | None |
| **Commander's Licence:** | Airline Transport Pilot's Licence |
| **Commander's Age:** | 43 years |
| **Commander's Flying Experience:** | 4,100 hours (of which 3,200 were on type)<br>Last 90 days - 125 hours<br>Last 28 days - 17 hours |
| **Information Source:** | AAIB Field Investigation |

**Synopsis**

When landing in a strong crosswind on a slush covered runway the nosewheel steering system did not operate and, initially, the power levers could not be moved into the beta range. When the aircraft decelerated to taxi speed the nosewheel steering system operated normally. It is probable that delayed closure of the mainwheel weight-on-wheels switches caused both problems.

**History of the flight**

The aircraft departed Inverness Airport at 1510 hrs on a scheduled passenger flight to Lerwick Airport, where it landed at 1555 hrs. Weather conditions reported at the time were surface wind from 330° at 27 kt, visibility 7,000 m, light showers of hail, few cloud at 700 ft, broken cumulonimbus cloud at 1,000 ft, temperature -2°C, dewpoint -5°C and sea level pressure 1002 mb.

Runway 27 was reportedly covered with slush to depths between 3 mm and 5 mm. On landing, the aircraft commander, who was pilot flying, gave the co-pilot control of the control yoke, in accordance with normal procedures. He attempted to select the beta range (ground pitch control) of propeller operation by moving the power levers aft. Initially he was unable to do so and they remained in the flight idle position. At the same time he attempted to use the nosewheel steering but was unable to operate it, so used a combination of rudder and differential braking to steer the aircraft. Shortly after commencing

braking he was able to select the power levers into the beta range. When the aircraft had slowed to taxiing speed the commander again tried to use the nosewheel steering system and found that it responded normally. The aircraft taxied to a parking stand without further incident. A subsequent engineering investigation did not find any related technical defects.

**Flight idle stop system**

The purpose of the flight idle (FI) stop system is to prevent the pilot from selecting the beta range in flight. It consists of an automatically operated mechanical stop arm located within the control quadrant which physically blocks power lever movement below flight idle when the aircraft is in flight. The stop is opened by a solenoid, allowing unrestricted movement of the power levers, when the following conditions are met:

| | | |
|---|---|---|
| Left or right landing gear extended | AND | Left or right inboard or outboard wheel speed greater than 25 kt<br>OR<br>left or right weight on wheels detected |

The manufacturer stated that the Saab 340 has "relatively stiff" main undercarriage oleos and that propeller wash at flight idle may result in sufficient wing lift that the weight of the aircraft is slow to settle fully onto its wheels after landing. Consequently, in normal operation it may be wheel speed rather than weight on wheels that causes the FI stop to open. Then, when the power levers are moved to the beta range the resulting reduction in propeller wash will allow the aircraft to settle fully onto the main oleos allowing the weight-on-wheels switches to close.

**Nosewheel steering system**

The nosewheel steering system has a single hydraulic actuator. An electrically operated shutoff valve prevents hydraulic pressure from reaching the steering control valve in flight. There is a deflection switch in the system that detects the castor angle of the nosewheel. This switch operates at a castor angle of 20° ± 5°. The shutoff valve is opened by applying electrical power through the following switches in series.

| Nosewheel deflected by less than 20°±5° | Nosewheel deflected by more than 20°±5° |
|---|---|
| 1. Nose landing gear downlock<br>2. Steering wheel microswitch<br>3. Nosewheel deflection switch<br>4. Ground handling lockout switch | 1. Left or Right weight-on-wheels<br>2. Nosewheel deflection switch<br>3. Ground handling lockout switch |

**Analysis**

Slush covering the runway at Lerwick may have delayed acceleration of the main landing gear (MLG) wheels to above 25 kt. This, together with any delay in closure of the weight-on-wheels switches, would have delayed opening of the FI stop and initially prevented the pilot from moving the power levers to the beta range.

During landing on a slush covered runway in a crosswind of the magnitude reported, it is likely that the nosewheel would castor before the nosewheel steering was engaged. If the castor angle exceeded 20° ± 5°, power for the nosewheel steering system would be routed through the MLG weight-on-wheels switches rather than the nose landing gear downlock. Nosewheel steering would not then be available until closure of a MLG weight-on-wheels switch or until the castor angle reduced below 20° ± 5°.

**Safety action taken**

The manufacturer has taken action to publish suitable warnings in the Aircraft Operations Manual to warn crews of the possibility that:

> *'1. When landing on a slippery surface there could be a transitory delay in opening of the flight idle stop.*
>
> *2. When landing on a slippery surface with a crosswind there could be a transitory delay in the nosewheel steering system becoming operational.'*

**Conclusion**

The investigation determined that castoring of the nosewheel when landing on a slippery surface in a crosswind could render the nosewheel steering system inoperative until closure of a weight-on-wheels switch. Delay in closure of weight-on-wheel switches, together with slow acceleration of the main wheels, would also delay opening of the FI stop. Together these conditions could result in the symptoms reported by the commander. Considering the safety action taken by the manufacturer, no Safety Recommendations were made.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Sikorsky S-92A, G-IACC |
| **No & Type of Engines:** | 2 General Electric Co CT7-8A turboshaft engines |
| **Year of Manufacture:** | 2007 |
| **Date & Time (UTC):** | 30 March 2011 at 0725 hrs |
| **Location:** | Stand A2, Scatsta Airport, Shetland Islands |
| **Type of Flight:** | Commercial Air Transport (Passenger) |
| **Persons on Board:** | Crew - 2 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Left landing gear and fuselage |
| **Commander's Licence:** | Airline Transport Pilot's Licence |
| **Commander's Age:** | 49 years |
| **Commander's Flying Experience:** | 6,430 hours (of which 1,575 were on type)<br>Last 90 days - 92 hours<br>Last 28 days - 8 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

**Summary**

The helicopter was ground taxied onto a parking spot and brought to a stop by the commander, who was the pilot flying. He then intended to apply the parking brake but inadvertently raised the collective control lever, which caused the helicopter to become airborne. He released the collective control lever, which was lowered by the collective trim system to the fully down position, and the helicopter landed heavily, causing damage to the landing gear and airframe.

**History of the flight**

The helicopter was being ground taxied onto Spot A2 by the commander, who was occupying the right seat. The taxiing was under the direction of a marshaller, who, when the helicopter reached the parking position, signalled the pilot to stop. In accordance with the Standard Operating Procedures (SOPs), the co-pilot in the left seat stated "Disc/Brakes/Lights". The commander levelled the disc, exerted toe pressure on the foot brakes and then intended to raise the parking brake handle. The parking brake handle is located to the left of the right seat collective lever hand grip (see Figure 1) and, instead of applying the parking brake, the commander inadvertently raised the collective lever. The helicopter lifted approximately six feet into the air, with a slight roll to the left, and the commander instinctively released the collective lever, thinking it was the parking brake handle. The helicopter immediately descended and landed heavily, resulting in a 'HARD LANDING' caution caption on the Engine Indication Caution Advisory System (EICAS).

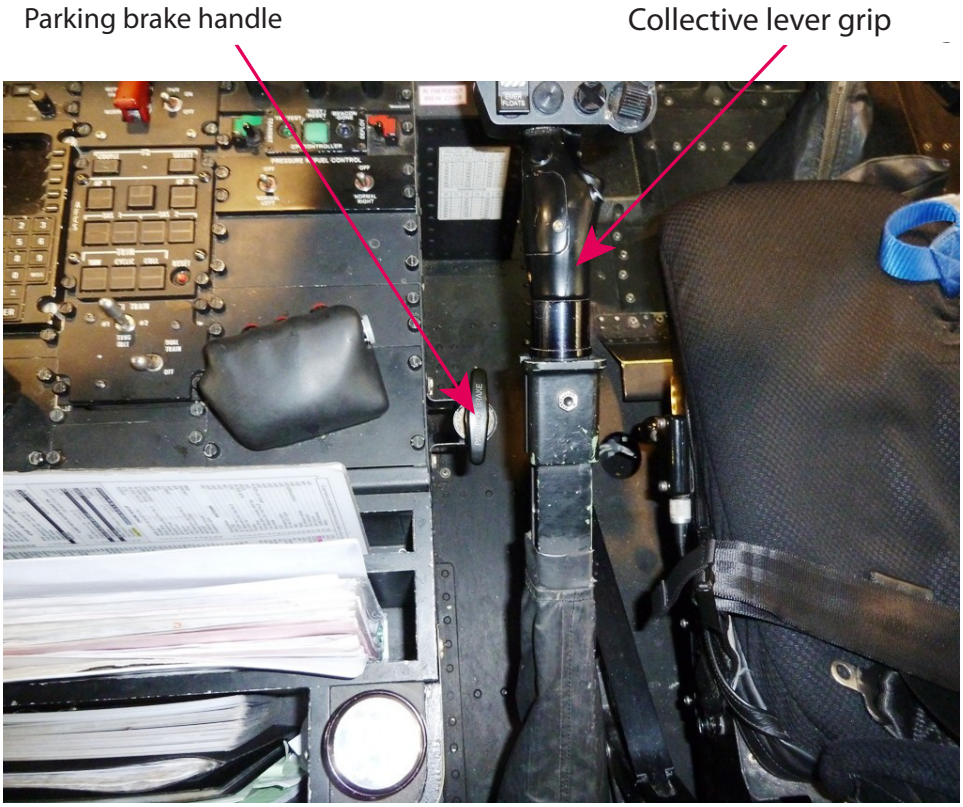


**Figure 1**

Photograph of the collective lever and parking brake handle, on the left of the pilot in the right seat

The crew advised their company of the event by radio and taxied to the North Apron in order that an engineering inspection could be carried out. The inspection revealed that there had been some deformation of the airframe structure in two places and a crack in one of the left main landing gear wheel rims, on which the tyre had deflated.

**Collective trim system**

The collective lever on the SK92 is equipped with a trim position mechanism. This incorporates an electromagnetic brake, with a control trigger on the underside of the collective lever grip. When the trigger is depressed the electromagnetic brake is released, which allows the collective lever to be moved up or down freely. When the trigger is released, the electromagnetic brake is applied and the collective lever adopts the new 'trim neutral' position. Raising or lowering the collective lever without depressing the trigger is possible but the pilot must overcome the resistance imposed by the electromagnetic brake. If the collective is released under these circumstances, the lever will rapidly return to the previously selected 'trim neutral' position.

**Safety action**

As a result of the incident, the operator issued a Flying Staff Instruction (FSI), *'Guarding Flight Controls and Control Handover'*. This stressed the importance of using the positive handover technique when the pilot flying (PF) passes control of an individual flying control or controls to the pilot monitoring (PM). It includes the following paragraph:

*'Before removing hands from the flight controls to activate other switches or controls during critical phases of flight or when on ground rotors running, PF shall hand control of the appropriate flight control to PM using the standard two crew hand over technique and calls. This applies especially when applying the parking brake, to avoid the possibility of the collective lever being raised inadvertently instead of the parking brake, unless the helicopter type is fitted with a collective lock and Part B SOP requires the lock to be engaged before applying the parking brake.'*

**Conclusions**

After the helicopter had been brought to a stop on the parking spot, the collective lever was lowered fully and the collective trim system trigger was released in the Minimum Pitch On Ground (MPOG) 'trim neutral' position. When the commander raised the collective lever, instead of the parking brake handle, lifting the helicopter into the air, he did so against the electromagnetic brake. As the collective lever was released, the electromagnetic brake lowered it back to the MPOG position. This caused the helicopter to descend rapidly, resulting in a hard landing. Subsequently, damage was discovered on the fuselage and left main landing gear.

The commander concluded that the accident was the consequence of an unintentional and inadvertent application of the collective lever, instead of the parking brake. As a result of this occurrence, the operator promptly issued a Flying Staff Instruction to ensure that the PF or PM has control of the flying controls during critical phases of flight or when on the ground, rotors running.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Casa 1-131E Series 2000 Jungmann, G-RETA |
| **No & Type of Engines:** | 1 Enma Tigre G-IV-B piston engine |
| **Year of Manufacture:** | 1967 |
| **Date & Time (UTC):** | 3 July 2011 at 0900 hrs |
| **Location:** | Approx 1.5 miles north north-west of Old Warden Aerodrome, Bedfordshire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Substantial |
| **Commander's Licence:** | Airline Transport Pilot's Licence |
| **Commander's Age:** | 51 years |
| **Commander's Flying Experience:** | 14,500 hours (of which 12 were on type)<br>Last 90 days - 160 hours<br>Last 28 days - 57 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The pilot was practising an aerobatic routine and was performing a stall turn to the left when the engine stopped. The aircraft was beyond gliding range of an airfield and, after confirming correct cockpit selections, the pilot unsuccessfully attempted to restart the engine by diving and yawing the aircraft. The aircraft overturned during the subsequent forced landing. The pilot was uninjured and able to vacate the aircraft unaided. He reported that the engine had stopped due to the limited negative g capability of the carburettor and that a restart was not possible as the aircraft was not fitted with a starter and the coarse pitch of the propeller did not allow it to windmill.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Cessna 120, G-BPWD |
| **No & Type of Engines:** | 1 Continental Motors Corp O-240-E piston engine |
| **Year of Manufacture:** | 1946 |
| **Date & Time (UTC):** | 2 June 2011 at 0945 hrs |
| **Location:** | Field adjacent to Hucknall Airfield, Nottinghamshire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - 1 (Minor) Passengers - 1 (Minor) |
| **Nature of Damage:** | Left main landing gear, fuselage floor pan and left wing damaged |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 70 years |
| **Commander's Flying Experience:** | 640 hours (of which 310 were on type)<br>Last 90 days - 2 hours<br>Last 28 days - None |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

**Synopsis**

After takeoff on a Permit to Fly renewal flight, the engine stopped. The subsequent forced landing in a corn field adjacent to the airfield caused the left main landing gear to collapse.

**History of the flight**

The aircraft was being prepared for renewal of its Permit to Fly. Having performed all the usual engine ground run checks, the pilot and passenger, also a pilot, taxied the aircraft to the holding point of Runway 04R for the magneto checks, which were satisfactory. The aircraft was lined up and took off normally.

However, at a height of about 250 ft, both pilots detected what they described as a momentary "flutter" from the engine, although it picked up again. As a precaution, they decided to return to Hucknall, turning to the north to avoid woods to the south; this presented a corn field which the pilot judged would make an acceptable forced landing field in case the engine stopped, which it did shortly afterwards. Being unable to make the airfield, the pilot landed in the field, causing the left main landing gear to collapse, with consequent major damage to the aircraft and back injuries to the two occupants. They were, however, able to exit the aircraft unaided.

Both occupants were of the opinion that the behaviour of the engine was consistent with fuel starvation. However,

when they removed the carburettor bowl, there was ample fuel present and the accelerator pump worked normally. An in-depth investigation of the engine is planned and any significant findings will be reported in a future AAIB Bulletin addendum.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Cessna 182S Skylane, G-BXZM |
| **No & Type of Engines:** | 1 Lycoming IO-540-AB1A5 piston engine |
| **Year of Manufacture:** | 1998 |
| **Date & Time (UTC):** | 24 February 2011 at 1256 hrs |
| **Location:** | White Waltham Airfield, Berkshire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 3 |
| **Injuries:** | Crew - 1 (Minor) Passengers - 3 (Minor) |
| **Nature of Damage:** | Nosewheel, propeller, left wing spar, right wingtip, tail and fuselage |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 44 years |
| **Commander's Flying Experience:** | 84 hours (of which 4 were on type)<br>Last 90 days - 8 hours<br>Last 28 days - 6 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries |

**Synopsis**

After touchdown the aircraft became airborne again and then bounced a number of times. A heavy touchdown on the nose landing gear following one of the bounces caused the nosewheel to detach. The propeller subsequently struck the ground and the nose landing gear leg progressively dug into the soil, causing the aircraft to pitch over onto its back. The pilot and three passengers suffered minor injuries.

**History of the flight**

On returning from a short flight in the local area, the pilot made an approach to grass Runway 25 at White Waltham Airfield. The pilot described the approach as normal but, as the aircraft passed over the runway threshold, he thought the aircraft was a little high. He did not consider this to be a problem as there was sufficient runway length remaining. The aircraft initially touched down approximately one third of the way along the runway. The pilot reported that while the main wheels were on the ground, but before the nosewheel had made contact with the runway, the aircraft encountered a dip in the runway surface. A gust of wind, coincident with the aircraft coming out of the dip, caused the aircraft to become airborne again. He attempted to correct this by applying a small amount of power, but he was unsuccessful in reducing the rate of

descent and the aircraft touched down quite hard and once again became airborne. Further attempts to control the bounce were unsuccessful. The pilot was aware of hearing a "thump" during the resulting touchdown, but at that point was not aware that the nosewheel had detached from the nose landing gear. The aircraft bounced once more before finally touching down with very little forward speed. The propeller struck the runway and the nose landing gear leg progressively dug into the ground, causing the aircraft to pitch over onto its back. The pilot and three passengers, who were wearing lap and diagonal harnesses, sustained bruising during the accident, but were otherwise uninjured and were able to exit the aircraft unassisted.

The weather conditions at the time of the accident were good, with a reported a wind of $260^0$ at 10 kt gusting to 15 kt.

**Pilot's experience**

The pilot held a PPL and had a total of 84 hours flying experience, of which 22 hours were as Pilot in Command (PIC). He had undertaken his PPL training and subsequent flying on other aircraft types and had recently been checked out by an instructor to fly the Cessna 182. He had a total of four hours experience on the Cessna 182. The accident flight was his first flight as PIC on the type.

**Ground markings**

Photographs of the accident site provided to the AAIB show ground markings consistent with a heavy nosewheel touchdown (Figure 1). The nosewheel (Figure 2) was found approximately 10 m to the right of the runway centreline. Subsequent propeller strikes and a furrow caused by the nose landing gear leg contacting the ground are also evident (Figure 3).

**Figure 1**

Nosewheel impact mark

**Figure 2**

Nosewheel

**Figure 3**

Propeller strike and ground marks

**Examination of the nosewheel**

The nosewheel yoke had fractured causing the nosewheel to separate from the landing gear. The fracture surfaces of the yoke were examined using a binocular microscope and a scanning electron microscope to determine the failure mechanism. Two distinct regions of fracture were evident indicating a two-stage failure process, resulting from overload of the component. It was concluded that a crack had initially propagated upwards from the base of the yoke due to tensile overload caused by excessive drag loading on the nosewheel. There was also evidence of compressive loading consistent with a hard landing. It is likely that the nosewheel buckled under the compressive loading after one of the bounces, causing compressive failure on one side of the yoke. Drag loading is likely to have arisen from the nosewheel impact shown in Figure 1; the depth of this mark also indicates the presence of significant compressive loading.

It was not possible to determine whether the failure had occurred progressively during multiple impacts of the bounced landing, or solely during one of the impacts. There was no evidence of fatigue propagation; nor were there any indications of pre-existing damage within the structure of the component.

**Discussion**

Ground marks indicate that the aircraft landed heavily on its nose landing gear after bouncing, causing the nosewheel to detach. The pilot elected to continue the landing rather than initiating a go-around and his attempts to correct the bounces were unsuccessful. Metallurgical examination of the failed nosewheel yoke did not reveal any evidence of fatigue propagation or pre-existing defects which may have contributed to its failure.

The pilot considers that the accident was the result of electing to land rather than initiating a go-around immediately upon becoming airborne after the first touchdown.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | DH87B Hornet Moth, G-ADNE |
| **No & Type of Engines:** | 1 de Havilland Gipsy Major 1C piston engine |
| **Year of Manufacture:** | 1936 |
| **Date & Time (UTC):** | 3 June 2011 at 1355 hrs |
| **Location:** | Unst, Shetland Islands |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | Right main landing gear, propeller, cowling |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 71 years |
| **Commander's Flying Experience:** | 22,994 hours (of which 524 were on type)<br>Last 90 days - 27 hours<br>Last 28 days - 9 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

Following an uneventful flight from Sumburgh, the pilot joined the right-hand circuit for Runway 30 at Unst. From the windsock he estimated the wind to be from 270° between 15 and 20 kt. The approach and landing were made left wing down because of the crosswind, with the left mainwheel contacting the ground just before the right. The aircraft skipped briefly before landing back onto the mainwheels. The pilot kept the aircraft straight using full right rudder and some right wheel braking during the landing roll. As the aircraft slowed to about 20 kt the aircraft's tail rose and could not be lowered with up elevator. The tail continued to rise until the chin cowling and propeller contacted the runway. The propeller shattered and the right undercarriage partially collapsed before the aircraft came to halt. The aircraft was made safe and both occupants vacated the aircraft without injury. The pilot inspected the main undercarriage wheels and brakes and found no defects. He considered that the right wheel brake may have locked up during the landing roll and caused the tail to rise.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Jabiru SK, G-HINZ |
| **No & Type of Engines:** | 1 Jabiru Aircraft PTY 2200A piston engine |
| **Year of Manufacture:** | 2000 |
| **Date & Time (UTC):** | 17 April 2011 at 1320 hrs |
| **Location:** | Manchester Barton Airport |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 2 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Nosewheel, propeller, cabin floor, engine shock-loaded |
| **Commander's Licence:** | National Private Pilot's Licence |
| **Commander's Age:** | 63 years |
| **Commander's Flying Experience:** | 730 hours (of which 1 was on type)<br>Last 90 days - 4 hours<br>Last 28 days - 4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The pilot had just completed an aircraft familiarisation flight and was returning to Barton Airport, Runway 27. The weather was fine with a light variable wind. He reported that the approach was "quite normal" at 250 ft aal but, while descending through 200 ft aal, airspeed reduced and he increased engine power. The aircraft then pitched up, down then up again before it "suddenly pitched down", striking the ground. The nosewheel detached and the aircraft slid along the runway for 30-40 m.

Both occupants were wearing lap and diagonal harnesses and were uninjured. After the accident, the ASI was tested and found to be reading correctly. The pilot was unable to identify a single cause of the accident.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Piper PA-28-140 Cherokee, G-ATPN |
| **No & Type of Engines:** | 1 Lycoming O-320-E2A piston engine |
| **Year of Manufacture:** | 1966 |
| **Date & Time (UTC):** | 2 May 2011 at 1240 hrs |
| **Location:** | Norwich Airport, Norfolk |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - None Passengers - 1 (Serious) |
| **Nature of Damage:** | None |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 58 years |
| **Commander's Flying Experience:** | 91 hours (of which 63 were on type)<br>Last 90 days - 8 hours<br>Last 28 days - 2 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries |

**Synopsis**

After landing at Norwich Airport with a single stage of flap selected, the pilot omitted to retract the flaps when completing the *'After Landing'* checklist. As a result the flaps were not secured. When the passenger exited the aircraft she stepped on the flap and fell to the ground, sustaining a serious fracture to one leg. The pilot considered that the accident was the result of the high workload caused by the challenging conditions experienced during landing and operating at an unfamiliar airfield, which had distracted him from properly following the checklist.

**History of the flight**

Following an uneventful flight from Southend, the pilot selected one stage of flap during approach to Norwich Airport. After landing, he taxied the aircraft as instructed by ATC and was marshalled on to the parking area. After the engine had been shut down, the passenger exited the aircraft onto the right wing and while reaching for the hand grip to aid her step down from the wing, she fell to the ground. It became apparent that the flaps had not been raised from the first stage position and were therefore unsecured. As the passenger stepped on the flap, it moved downwards, causing her to fall. She sustained an injury to her left leg, which was subsequently diagnosed as a serious fracture requiring operative treatment.

**Discussion**

The pilot reported that the flight to Norwich was the most distant "land away" he had attempted since gaining his PPL. He was progressively attempting longer and more complex flights in order to gain experience, and this was the first time he had landed at Norwich. Runway 09 was in use and the reported wind was $060^0$ at 18 kt. The pilot found the landing challenging at his level of experience, given the wind conditions and the fact that Norwich was an unfamiliar airport. He had initially considered a flapless approach, but then elected to select one stage of flap. He described the landing as safe, but heavier than he generally achieved. In addition, taxiing at an unfamiliar airfield and the new experience of being marshalled onto the parking area completely occupied his attention up to the point where the engine was shut down. While he recalled completing the *'After Landing*' and *'Engine Shutdown'* checks, the pilot acknowledged that he clearly missed the '*Flaps UP*' item. He reported that he may have treated this checklist item superficially as he believed the flaps were already retracted. He did not recall touching the flap control, and a quick glance out of the window reinforced his belief that the flaps were retracted as the flap appeared to be aligned with the aileron. The pilot and passenger had flown together on a number of occasions and both were familiar with the specific aircraft. The passenger was accustomed to exiting the aircraft, in the manner adopted on this occasion, having done so safely on numerous occasions.

The pilot considered that the accident was the result of high workload caused by the challenging conditions during landing and operating at an unfamiliar airfield, which had distracted him from following the checklist properly. In addition, the fact that he had initially considered a flapless approach may have led to a mindset that the flaps were already up. In order to prevent a similar occurrence in the future, the pilot has added a further item to ensure the flaps are up, to the *'After Shutdown'* section of his checklist.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Piper PA-28R-200 Cherokee Arrow, G-AYAC |
| **No & Type of Engines:** | 1 Lycoming IO-360-C1C piston engine |
| **Year of Manufacture:** | 1969 |
| **Date & Time (UTC):** | 13 July 2011 at 1219 hrs |
| **Location:** | Old Buckenham Airfield, Norfolk |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Damage to the propeller and lower engine cowling |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 58 years |
| **Commander's Flying Experience:** | 150 hours (of which 27 were on type)<br>Last 90 days - 16 hours<br>Last 28 days - 1.4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The pilot reported that he completed an external check of the aircraft while it was in its hangar at Knettishal Airfield, about 20 nm south-west of Norwich. He then pulled the aircraft out of the hangar using a tow bar attached to the nosewheel. The pilot subsequently boarded the aircraft having inadvertently left the tow bar still attached.

The takeoff run appeared normal until rotation, at which point the pilot heard a loud bang and felt a kick through the rudder pedals. The pilot raised the landing gear and retracted the flaps but the landing gear UNSAFE warning light remained illuminated.

The pilot discovered that the nose landing gear was inoperative and initiated a diversion to Old Buckenham Airfield, where a visual inspection confirmed that the nose landing gear was not visible. The aircraft landed on Runway 02 on its main landing gear with the nose leg not lowered, causing damage to the propeller and engine cowling. Emergency services were on hand and the pilot, who was uninjured, vacated the aircraft through the cockpit door. The tow bar was still attached to the aircraft.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Pitts S-1S Special, G-STYL |
| **No & Type of Engines:** | 1 Lycoming O-320-E2D piston engine |
| **Year of Manufacture:** | 1986 |
| **Date & Time (UTC):** | 27 June 2011 at 1700 hrs |
| **Location:** | Private Airstrip, Shelsley Beauchamp, Worcestershire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Damage to left wingtip, left tailplane, fin and rudder |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 56 years |
| **Commander's Flying Experience:** | 379 hours (of which 8 were on type)<br>Last 90 days - 4 hours<br>Last 28 days - 4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

In still wind conditions, the pilot made a sideslipping approach to Runway 13 at the unlicensed airstrip. The left sideslip provided the pilot with a clear view of the final approach, and, in his report, he remarked that this was a normal approach technique for this aircraft type. The aircraft landed smoothly, in a three-point attitude, touching down approximately 40 m along the 630 m airstrip. During the landing rollout, the aircraft drifted to the right and, despite the pilot applying left brake, the right wing caught in standing crop that was next to the 20 metre-wide runway. The aircraft yawed to the right and nosed over into the crop, coming to rest inverted. The pilot switched the ignition and battery master switches to OFF and closed the fuel cock. After releasing his harness, he found that the canopy had jammed due to his weight bearing on it but, adjusting his position, the canopy opened normally and he was able to vacate the aircraft. The pilot commented that adoption of a 'wheeler' landing technique, in which the aircraft touches down on the mainwheels only, would have provided him with a better view of the narrow runway, and may have helped avoid the accident.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Pitts S-2A Pitts Special, G-ODDS |
| **No & Type of Engines:** | 1 Lycoming AEIO-360-A1E piston engine |
| **Year of Manufacture:** | 1980 |
| **Date & Time (UTC):** | 2 July 2011 at 1555 hrs |
| **Location:** | White Waltham Airfield, Berkshire |
| **Type of Flight:** | Training |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Damage to propeller spinner, propeller blades and wheel spats |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 27 years |
| **Commander's Flying Experience:** | 106 hours (of which 31 were on type)<br>Last 90 days - 10 hours<br>Last 28 days - 4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The aircraft was returning from a solo aerobatic flight to the south of White Waltham Aerodrome. The weather was good, with the surface wind calm, and the aircraft was positioned for a landing on Runway 21. Following a normal approach, the aircraft bounced on touchdown and the pilot performed a go-around, rejoining the circuit for a second approach. On the second approach, the pilot maintained the normal approach speed of 85 mph IAS and flared the aircraft, touching down at the normal point on the grass runway. The pilot applied the wheel brakes and the aircraft tipped forward onto its nose. The pilot isolated the fuel and, having notified ATC of the situation, vacated the aircraft.

The pilot and pilot's instructor, who observed the landing, considered that the accident was caused by the brakes being applied too early and too heavily after touchdown.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | SIAI-Marchetti SF-260D, N405FD |
| **No & Type of Engines:** | 1 Lycoming 0-540 piston engine |
| **Year of Manufacture:** | 1990 |
| **Date & Time (UTC):** | 9 April 2011 at 1200 hrs |
| **Location:** | Oaksey Park Airfield, Wiltshire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Damage to propeller and wings, engine shock-loaded |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 54 years |
| **Commander's Flying Experience:** | 826 hours (of which 60 were on type)<br>Last 90 days - 5 hours<br>Last 28 days - 4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

Oaksey Park Airfield is located 1 nm to the south-east of the Kemble ATZ. It has two runways: 04/22 and 17/35. Runway 17 is normally restricted to takeoffs only. The pilot decided to land on Runway 17 after a previous discussion about its use with the airfield owner. His choice of runway was based on the wind at Halfpenny Green (the departure airfield), which was 170° at 12 kt. The pilot had not landed on this runway before and he flew a tight circuit to avoid the Kemble ATZ. An Air/Ground radio service is normally provided at Oaksey Park but was not available at the time. He selected the landing gear down when late downwind and observed a red light, which indicates that the gear is in transit, but did not check for "three greens". The aircraft landed gear-up on the grass runway. The pilot subsequently found that the circuit breaker for the landing gear had tripped.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Wolf WII Boredom Fighter, G-BMZX |
| **No & Type of Engines:** | 1 Continental Motors Corp A65-8F piston engine |
| **Year of Manufacture:** | 1989 |
| **Date & Time (UTC):** | 8 May 2011 at 1115 hrs |
| **Location:** | Henham Park, Southwold, Suffolk |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Lower right wing spars broken |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 44 years |
| **Commander's Flying Experience:** | 782 hours (of which 198 were on type)<br>Last 90 days - 11 hours<br>Last 28 days - N/K |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The pilot stated that, as the aircraft was rolling out after landing at a speed of about 25 mph, he became distracted by a marshaller. As the pilot turned his head back in line with the rollout, he realised that the aircraft was yawed to the left and so he applied full right brake, but was unable to arrest the swing to the left. At the final point of the ground loop, the right lower wingtip struck the ground, bending it upwards. After the aircraft came to rest, he exited the aircraft normally, having switched off the fuel and electrics. He attributed the accident to "a momentary lapse of concentration".

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | EC120B Colibri, G-FEDA |
| **No & Type of Engines:** | 1 Turbomeca Arrius 2F turboshaft engine |
| **Year of Manufacture:** | 2000 |
| **Date & Time (UTC):** | 4 June 2011 at 1653 hrs |
| **Location:** | Redhill Aerodrome, Surrey |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 2 |
| **Injuries:** | Crew - 1 (Minor) Passengers - 2 (Minor) |
| **Nature of Damage:** | General damage to fuselage; main blades, tail section, skids and floats all detached |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 32 years |
| **Commander's Flying Experience:** | 126 hours (of which 41 were on type)<br>Last 90 days - 17 hours<br>Last 28 days - 4 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

**Synopsis**

Control was lost during a turn whilst hover taxiing in gusting wind conditions. The right skid contacted the ground, causing the helicopter to roll onto its side.

**History of the flight**

The helicopter was hover taxiing towards its allocated landing pad beside a hangar. The wind at the time was described as north-easterly at 9 kt, gusting to 21 kt. The pilot stated that as he approached the landing pad he applied left yaw pedal to turn left. The helicopter responded but continued to turn beyond the desired heading. The pilot applied right pedal in an attempt to stop the turn, but the helicopter continued to rotate at an increasing rate until control was lost. The right skid contacted the ground, causing the helicopter to roll onto its right side and the main rotors to strike the ground. When the helicopter came to rest, the pilot applied the rotor brake and fuel shutoff lever before jettisoning the front left door and assisting his passengers.

**Cause**

The pilot believed the initial left turn had allowed the helicopter's tail to be pushed by the wind, rotating it further and more rapidly than intended. He applied insufficient right yaw pedal to compensate, allowing the rate of turn to accelerate sufficiently for control to be lost.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Cyclone AX3/503, G-MYRO |
| **No & Type of Engines:** | 1 Rotax 503-2V piston engine |
| **Year of Manufacture:** | 1994 |
| **Date & Time (UTC):** | 7 May 2011 at 1410 hrs |
| **Location:** | Linton, Maidstone, Kent |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - None |
| **Injuries:** | Crew - None Passengers - N/A |
| **Nature of Damage:** | Damage to the propeller, nose landing gear, pod, screen, cockpit floor tubes, left aileron and left wing |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 65 years |
| **Commander's Flying Experience:** | 244 hours (of which 62 were on type)<br>Last 90 days - 20 hours<br>Last 28 days - 11 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

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, G-OMSA |
| **No & Type of Engines:** | 1 Rotax 912ULS piston engine |
| **Year of Manufacture:** | 2009 |
| **Date & Time (UTC):** | 1 June 2011 at 1028 hrs |
| **Location:** | Peterborough (Sibson) Airfield, Cambridgeshire |
| **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)<br>Last 90 days - 26 hours<br>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.

**ACCIDENT**

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|---|---|
| **Aircraft Type and Registration:** | Mainair Scorcher, G-MVBE |
| **No & Type of Engines:** | 1 Rotax 503 piston engine |
| **Year of Manufacture:** | 1988 |
| **Date & Time (UTC):** | 2 July 2011 at 1730 hrs |
| **Location:** | Seaville, Cumbria |
| **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)<br>Last 90 days - 2 hours<br>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.

**ACCIDENT**

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|---|---|
| **Aircraft Type and Registration:** | Rans S6-ES Coyote II, G-CBZG |
| **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:** | Runway 12, Plaistows Farm, Hertfordshire |
| **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)<br>Last 90 days - 21 hours<br>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.

**ACCIDENT**

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|---|---|
| **Aircraft Type and Registration:** | Rans S6-ESD XL (Modified) Coyote II, G-MZOZ |
| **No & Type of Engines:** | 1 Rotax 503-2V piston engine |
| **Year of Manufacture:** | 1998 |
| **Date & Time (UTC):** | 19 June 2011 at 0850 hrs |
| **Location:** | Sywell Airfield, Northampton |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | Nose leg, nose cone, propeller hub |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 73 years |
| **Commander's Flying Experience:** | 976 hours (of which 976 were on type)<br>Last 90 days - 11 hours<br>Last 28 days - 2 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

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.

**ACCIDENT**

| | |
|---|---|
| **Aircraft Type and Registration:** | Rotorsport UK MTOSport, G-CGGV |
| **No & Type of Engines:** | 1 Rotax 912 ULS piston engine |
| **Year of Manufacture:** | 2009 |
| **Date & Time (UTC):** | 5 June 2011 at 0930 hrs |
| **Location:** | Culbokie Airfield, Dingwall, Inverness |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | Damage to the nose landing gear, pod, rotor blades and rudder |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 62 years |
| **Commander's Flying Experience:** | 184 hours (of which 103 were on type)<br>Last 90 days - 19 hours<br>Last 28 days - 9 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

The gyroplane was departing from Runway 03. The takeoff weight was 489 kg, which was within the maximum permitted takeoff weight of 500 kg. The weather was CAVOK, with a light and variable wind from the north-northeast, with occasional stronger gusts. The pilot had previously operated from the airfield and the takeoff seemed to be normal.

As the gyroplane began to climb, a left turn through approximately 90° was made in order to avoid some trees on the extended centreline. As the turn was commenced, it was not possible to maintain the angle of climb and the rotor blades contacted the top of a tree. The pilot made a controlled descent into a clearing but, due to the lack of space, this resulted in a heavy landing. The nose landing gear detached, the underside of the pod was damaged and the flailing rotor struck and dislodged the rudder. The pilot and his passenger were uninjured.

From the evidence of witnesses who observed the departure, the pilot concluded that there had been a strong gust of wind which had veered through some 90°. This placed the gyroplane downwind and resulted in the reduction in the rate of climb.

**ACCIDENT**

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|---|---|
| **Aircraft Type and Registration:** | Rotorsport UK MT-03, G-RSMT |
| **No & Type of Engines:** | 1 Rotax 912 ULS piston engine |
| **Year of Manufacture:** | 2007 |
| **Date & Time (UTC):** | 3 July 2011 at 1450 hrs |
| **Location:** | Fine Lane, Fradley, near Lichfield, Staffordshire |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - None Passengers - 1 (Minor) |
| **Nature of Damage:** | Nosewheel, fuselage, airframe, mast, rotor, propeller, rudder and fuel tanks |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 58 years |
| **Commander's Flying Experience:** | 132 hours (of which 132 were on type)<br>Last 90 days - 5 hours<br>Last 28 days - 1 hour |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot |

**Synopsis**

The pilot reported that shortly after takeoff the aircraft did not climb as expected and, with the aircraft in level flight and throttle fully open, the aircraft did not accelerate as expected. The pilot subsequently made a forced landing onto a road and the rotor impacted the ground.

**History of the flight**

On the afternoon of the accident, the pilot and a passenger had flown approximately 15 nm from Stoke Golding Airfield to Roddige Airfield. After about an hour on the ground the pilot and his passenger prepared for a flight to Otherton Airfield. No additional fuel or baggage was uploaded and having completed his pre-flight checks, he taxied the aircraft to the holding point for grass Runway 27. After waiting for two aircraft to land, he positioned the aircraft on the threshold and lined up for takeoff. The reported wind was from 270° at 2 kt. The pilot pre-rotated the rotor to 240 rpm and smoothly applied full throttle whilst checking the engine indications, which appeared normal. After about 200 m, the aircraft became airborne and, as it reached the end of the runway having travelled about 430 m, its airspeed was about 60 mph (the best climb speed $V_{climb}$ is 60-65 mph). Pulling back on the control stick to climb, the pilot reported that the climb rate was very low and so lowered the nose slightly to gain airspeed. However, having levelled at approximately 15 ft above

a standing crop of rapeseed in an adjacent field with the throttle lever in the fully open position, the aircraft did not accelerate as expected and airspeed remained at about 65 mph.

Approaching a line of trees and suspended electrical cables ahead, the pilot pulled back on the stick and the aircraft climbed to about 40 ft, at which point the passenger advised the pilot to "watch your speed" as the airspeed had reduced to about 30 mph (minimum speed $V_{min}$ is 25 mph at maximum takeoff weight (MTOW)). With the obstacles still ahead, the pilot positioned the aircraft for a forced landing on an adjacent road. The aircraft touched down heavily, tail first, before the rotor impacted the ground at the side of the road. The aircraft then came to a stop resting against some trees. Having switched off the ignition, the pilot and passenger vacated the aircraft unaided and moved a safe distance away as a fuel leak had developed. The pilot was uninjured, but the passenger sustained minor injuries. The nosewheel, fuselage, mast, rotor, propeller, rudder and fuel tanks were damaged.

The reported takeoff weight of the aircraft was 434 kg, which was 16 kg below the MTOW of 450 kg. The Pilot's Handbook states that at MTOW at sea level, with standard atmospheric conditions, the nominal climb rate is 600 ft/min for this aircraft and engine combination. At 1320 hrs, which coincided with the takeoff time, the METAR for Birmingham Airport, which is approximately 16 nm from Roddige Airfield, advised that the temperature was 22°C, the dew point was 08°C, QNH was 1017 mb and CAVOK. Roddige Airfield elevation is approximately 180 ft, with a calculated density altitude of about 800 ft at the time. Stoke Golding Airfield elevation is about 280 ft.

The pilot stated that the preceding flight from Stoke Golding Airfield had been uneventful, with the takeoff and climb performance appearing normal considering the atmospheric conditions and the aircraft being near to its MTOW. The pilot considered that shortly after takeoff from Roddige Airfield, the engine had suffered an unexplained partial loss of power.

**ACCIDENT**

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|---|---|
| **Aircraft Type and Registration:** | Thruster T600N 450, G-KIPP |
| **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:** | Field adjacent to Compton Abbas Airfield |
| **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)<br>Last 90 days - 6 hours<br>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.

**ACCIDENT**

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|---|---|
| **Aircraft Type and Registration:** | X'air 582(2), G-BZGN |
| **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:** | Sutton Bank Airfield, North Yorkshire |
| **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)<br>Last 90 days - 6 hours<br>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.

# FORMAL AIRCRAFT ACCIDENT REPORTS ISSUED BY THE AIR ACCIDENTS INVESTIGATION BRANCH

## 2009

3/2009 Boeing 737-3Q8, G-THOF
on approach to Runway 26
Bournemouth Airport, Hampshire
on 23 September 2007.
Published May 2009.

4/2009 Airbus A319-111, G-EZAC
near Nantes, France
on 15 September 2006.
Published August 2009.

5/2009 BAe 146-200, EI-CZO
at London City Airport
on 20 February 2007.
Published September 2009.

6/2009 Hawker Hurricane Mk XII (IIB), G-HURR
1nm north-west of Shoreham Airport,
West Sussex
on 15 September 2007.
Published October 2009.

## 2010

1/2010 Boeing 777-236ER, G-YMMM
at London Heathrow Airport
on 28 January 2008.
Published February 2010.

2/2010 Beech 200C Super King Air, VQ-TIU
at 1 nm south-east of North Caicos
Airport, Turks and Caicos Islands,
British West Indies
on 6 February 2007.
Published May 2010.

3/2010 Cessna Citation 500, VP-BGE
2 nm NNE of Biggin Hill Airport
on 30 March 2008.
Published May 2010.

4/2010 Boeing 777-236, G-VIIR
at Robert L Bradshaw Int Airport
St Kitts, West Indies
on 26 September 2009.
Published September 2010.

5/2010 Grob G115E (Tutor), G-BYXR
and Standard Cirrus Glider, G-CKHT
Drayton, Oxfordshire
on 14 June 2009.
Published September 2010.

6/2010 Grob G115E Tutor, G-BYUT
and Grob G115E Tutor, G-BYVN
near Porthcawl, South Wales
on 11 February 2009.
Published November 2010.

7/2010 Aerospatiale (Eurocopter) AS 332L
Super Puma, G-PUMI
at Aberdeen Airport, Scotland
on 13 October 2006.
Published November 2010.

8/2010 Cessna 402C, G-EYES and
Rand KR-2, G-BOLZ
near Coventry Airport
on 17 August 2008.
Published December 2010.

AAIB Reports are available on the Internet
http://www.aaib.gov.uk