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Department for Transport

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# AAIB Bulletin S2/2011

## SPECIAL

### SERIOUS INCIDENT

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

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This Special Bulletin contains facts which have been determined up to the time of issue. It is published to inform the aviation industry and the public of the general circumstances of accidents and serious incidents and should be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

The investigation is being carried out in accordance with The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996, Annex 13 to the ICAO Convention on International Civil Aviation and EU Regulation No 996/2010.

The sole objective of the investigation shall be the prevention of accidents and incidents. It shall not be the purpose of such an investigation to apportion blame or liability.

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## 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<sup>1</sup> 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)<sup>2</sup> 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

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### Footnote

<sup>1</sup> aal means 'above aerodrome level'.

<sup>2</sup> Abbreviated PAPIs consist of two lights to indicate the aircraft's runway approach angle to the pilot; PAPIs have four.

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.

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

RWY designator	TORA <sup>3</sup> (m)	ASDA <sup>4</sup> (m)	TODA <sup>5</sup> (m)	LDA <sup>6</sup> (m)	Remarks
10	553	553	623	540	THR DISP 30 M
28	553	553	830	540	THR DISP 30 M

Table 1

### Footnotes

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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.

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

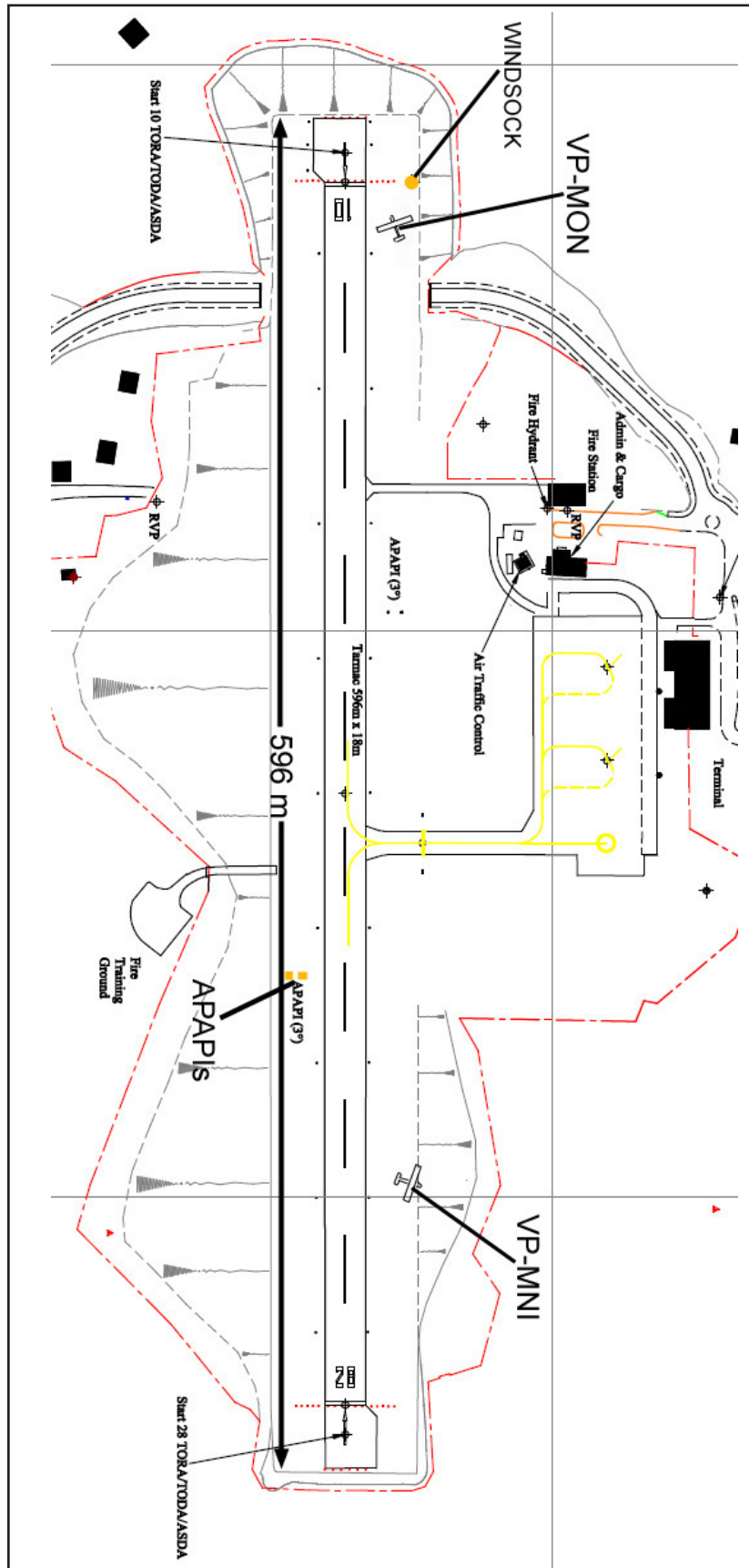


Figure 1

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.

#### **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.

*Published 21 July 2011*

#### **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<sup>7</sup>, 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**

<sup>7</sup> 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.